PETITION TO AMEND FINAL COMMISSION DECISION FOR THE EL SEGUNDO POWER REDEVELOPMENT PROJECT

CEC-800-2005-001-CMF

Project Number 1009724011

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Table of Contents

List of Figures vi
List of Tables vii
List of Appendices viii
Acronyms and Abbreviations ix

1.0 Introduction 1-1
1.1 Overview of Amendment 1-1
1.2 Consistency of Amendment with License 1-1
1.3 Necessity of Proposed Change 1-2
1.4 Cumulative Impact 1-2
1.5 Laws, Ordinances, Regulations, and Standards (LORS) 1-2
2.0 Proposed Amendment to the Project Description 2-1
2.1 Facility Design 2-2
2.1.1 Equipment Layout 2-2
2.1.2 Equipment Technology 2-4
2.1.3 Efficiency and Reliability 2-8
2.2 Oversize Equipment Delivery 2-13
2.2.1 Beach Delivery 2-13
2.2.2 Overland Delivery 2-15
2.3 Offsite Laydown and Parking Areas 2-15
2.4 Plant Entrance Road Improvements 2-15
2.5 Schedule 2-16
3.0 Environmental Analysis of the Proposed Amendment 3-1
3.1 Air Quality 3-1
3.1.1 Introduction 3-1
3.1.2 Affected Environment 3-1
3.1.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-1
3.1.2.2 Oversize Equipment Delivery 3-1
3.1.2.3 Offsite Laydown and Parking Areas 3-2
3.1.2.4 Plant Entrance Modifications 3-2
3.1.3 Environmental Analysis 3-2
3.1.3.1 Rapid Response Combined Cycle (R2C2) Technology 3-2
3.1.3.2 Oversize Equipment Delivery 3-11
3.1.3.3 Offsite Laydown and Parking Areas 3-13
3.1.3.4 Plant Entrance Modifications 3-13
3.1.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-13
3.1.5 Conditions of Certification 3-15
3.2 Biological Resources 3-16
3.2.1 Introduction 3-16
3.2.2 Affected Environment and Environmental Analysis 3-16
3.2.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-17
3.2.2.2 Oversize Equipment Delivery 3-17
3.2.2.3 Offsite Laydown and Parking 3-37

3.2.2.4 Plant Entrance Road Modification 3-40
3.2.3 Cumulative Impact 3-41
3.2.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-41
3.2.5 Changed Conditions of Certification 3-42
3.3 Cultural Resources 3-45
3.3.1 Introduction 3-45
3.3.2 Affected Environment and Environmental Analysis 3-45
3.3.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-45
3.3.2.2 Oversize Equipment Delivery 3-45
3.3.2.3 Offsite Laydown and Parking Areas 3-46
3.3.2.4 Plant Entrance Modifications 3-46
3.3.3 Cumulative Impacts 3-47
3.3.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-47
3.3.5 Conditions of Certification 3-47
3.4 Geology and Soils 3-48
3.4.1 Introduction 3-48
3.4.2 Affected Environment and Environmental Analysis 3-48
3.4.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-49
3.4.2.2 Oversize Equipment Delivery 3-50
3.4.2.3 Offsite Laydown and Parking Areas 3-52
3.4.2.4 Plant Entrance Modifications 3-53
3.4.3 Cumulative Impacts 3-54
3.4.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-54
3.4.5 Conditions of Certification 3-54
3.5 Hazardous Materials 3-55
3.5.1 Introduction 3-55
3.5.2 Affected Environment and Environmental Analysis 3-55
3.5.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-55
3.5.2.2 Oversized Equipment Delivery 3-56
3.5.2.3 Offsite Laydown and Parking Areas 3-58
3.5.2.4 Plant Entrance Modifications 3-58
3.5.3 Cumulative Impacts 3-58
3.5.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-58
3.5.4.1 Rapid Response Combined Cycle (R2C2) Technology 3-59
3.5.4.2 Oversized Equipment Delivery 3-59
3.5.4.3 Offsite Laydown and Parking Areas 3-59
3.5.4.4 Plant Entrance Modifications 3-59
3.5.5 Conditions of Certification 3-60
3.6 Land Use 3-61
3.6.1 Introduction 3-61
3.6.2 Affected Environment and Environmental Analysis 3-61
3.6.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-62
3.6.2.2 Oversize Equipment Delivery 3-62

3.6.2.3 Offsite Laydown and Parking Areas 3-66
3.6.2.4 Plant Entrance Modifications 3-66
3.6.3 Cumulative Impacts 3-66
3.6.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-66
3.6.4.1 Oversize Equipment Delivery 3-66
3.6.5 Conditions of Certification 3-68
3.7 Noise 3-70
3.7.1 Introduction 3-70
3.7.2 Affected Environment and Environmental Analysis 3-70
3.7.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-70
3.7.2.2 Beach Delivery 3-73
3.7.2.3 Offsite Laydown and Parking Areas 3-75
3.7.2.4 Plant Entrance Modifications 3-75
3.7.3 Cumulative Impacts 3-75
3.7.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-75
3.7.5 Conditions of Certification 3-75
3.8 Paleontological Resources 3-76
3.8.1 Introduction 3-76
3.8.2 Affected Environment and Environmental Analysis 3-76
3.8.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-76
3.8.2.2 Oversize Equipment Delivery 3-76
3.8.2.3 Offsite Laydown and Parking Areas 3-76
3.8.2.4 Plant Entrance Modifications 3-77
3.8.3 Cumulative Impacts 3-77
3.8.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-77
3.8.5 Conditions of Certification 3-77
3.9 Public Health 3-79
3.9.1 Introduction 3-79
3.9.2 Affected Environment and Environmental Analysis 3-79
3.9.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-79
3.9.2.2 Oversize Equipment Delivery 3-79
3.9.2.3 Offsite Laydown and Parking Areas 3-79
3.9.2.4 Plant Entrance Modifications 3-80
3.9.3 Laws, Ordinances, Regulations, and Standards (LORS) 3-80
3.9.4 Cumulative Impacts 3-80
3.9.5 Conditions of Certification 3-80
3.10 Socioeconomics 3-81
3.10.1 Introduction 3-81
3.10.2 Affected Environment and Environmental Analysis 3-82
3.10.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-82
3.10.2.2 Beach Delivery 3-83
3.10.2.3 Offsite Laydown and Parking Areas 3-83
3.10.2.4 Plant Entrance Modifications 3-84

3.10.3 Cumulative Impacts 3-84
3.10.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-84
3.10.5 Conditions of Certifications 3-84
3.11 Traffic and Transportation 3-85
3.11.1 Introduction 3-85
3.11.2 Affected Environment and Environmental Analysis 3-85
3.11.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-92
3.11.2.2 Oversize Equipment Delivery 3-93
3.11.2.3 Offsite Laydown and Parking Areas 3-94
3.11.2.4 Plant Entrance Modifications 3-95
3.11.3 Cumulative Impacts 3-95
3.11.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-95
3.11.5 Conditions of Certification 3-95
3.12 Visual Resources 3-96
3.12.1 Introduction 3-96
3.12.2 Affected Environment 3-96
3.12.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-96
3.12.2.2 Oversize Equipment Delivery 3-97
3.12.2.3 Offsite Laydown and Parking Areas 3-98
3.12.2.4 Plant Entrance Modifications 3-98
3.12.3 Environmental Analysis 3-98
3.12.4 Cumulative Impacts 3-110
3.12.4.1 Beach Delivery 3-110
3.12.4.2 Offsite Laydown and Parking Areas 3-111
3.12.4.3 Plant Entrance Modifications 3-111
3.12.5 Laws, Ordinances, Regulations, and Standards (LORS) 3-113
3.12.6 Conditions of Certification 3-113
3.13 Waste Management 3-117
3.13.1 Introduction 3-117
3.13.2 Affected Environment and Environmental Analysis 3-117
3.13.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-117
3.13.2.2 Beach Delivery 3-119
3.13.2.3 Offsite Laydown and Parking Areas 3-122
3.13.2.4 Plant Entrance Modifications 3-123
3.13.3 Cumulative Impacts 3-123
3.13.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-123
3.13.5 Conditions of Certification 3-124
3.14 Water Quality 3-125
3.14.1 Introduction 3-125
3.14.2 Affected Environment and Environmental Analysis 3-125
3.14.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-126
3.14.2.2 Beach Delivery 3-128
3.14.2.3 Offsite Laydown and Parking Areas 3-128

3.14.2.4 Plant Entrance Modifications 3-129
3.14.3 Cumulative Impacts 3-129
3.14.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-129
3.14.5 Conditions of Certification 3-132
3.15 Water Resources 3-137
3.15.1 Introduction 3-137
3.15.2 Affected Environment And Environmental Analysis 3-137
3.15.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-138
3.15.2.2 Beach Delivery 3-145
3.15.2.3 Offsite Laydown and Parking Areas 3-146
3.15.2.4 Plant Entrance Modifications 3-147
3.15.3 Cumulative Impacts 3-147
3.15.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-147
3.15.4.1 Rapid Response Combined Cycle (R2C2) Technology 3-147
3.15.4.2 Beach Delivery 3-148
3.15.4.3 Offsite Laydown and Parking Areas 3-149
3.15.4.4 Plant Entrance Modifications 3-149
3.15.5 Conditions of Certification 3-149
3.16 Worker Health and Safety 3-151
3.16.1 Introduction 3-151
3.16.2 Affected Environment and Environmental Analysis 3-151
3.16.2.1 Rapid Response Combined Cycle (R2C2) Technology 3-151
3.16.2.2 Beach Delivery 3-153
3.16.2.3 Offsite Laydown and Parking Areas 3-154
3.16.2.4 Plant Entrance Modifications 3-154
3.16.3 Cumulative Impacts 3-155
3.16.4 Laws, Ordinances, Regulations, and Standards (LORS) 3-155
3.16.5 Conditions of Certification 3-156
4.0 El Segundo Power Redevelopment Project Conditions of Certification 4-1
5.0 Potential Affects on the Public and Property Owners 5-1
5.1 Potential Effects on the Public 5-1
5.2 List of Property Owners 5-1
5.3 Potential Effects on Property Owners 5-1

List of Figures

2.0-1 Local Setting - Segundo Generating Station
2.1-1 NRG El Segundo Dual R2C2 Site Plan; Drawing No. 1009725000-F-10-D
2.1-2a Previously Permitted Site Plan - North
2.1-2b Previously Permitted Site Plan - South
2.1-3 Picture: 3-D Model of Standard R2C2 Technology
2.1-4 El Segundo R2C2 Process Flow Chart
2.2-1 Preliminary Beach Roll Off Survey and Elevation at El Segundo: Mammoet Drawing
2.2-2 Picture: Beach Ramp and Delivery Rendering
2.2-3 Proposed Safety/Security Fence For Beach RO-RO Operation; Drawing No. 0010022747-000-D-G01-4/8
2.3-1 777 190th Street Laydown Area
3.2-1 Location of Intertidal, Subtidal, and Vegetation Survey A, 7 November 2006
3.4-1 Beach Soil Sample Locations
3.5-1 Schematic of Water Flow; Maximum Daily Flow; Units 3, 4 (Existing) and 5,6,7 & 8 (New)
3.5-2 Proposed Beach Fill Details Over the Beach Equipment Delivery
3.6-1 Bicycle Path, Detour Route, and Beach Delivery Path
3.7-1 Sound Plan; Sound Level Contours; Baseline Conditions
3.7-2 Sound Plan; Sound Level Contours; ESPR Operating
3.11-1 Study Intersection Locations
3.11-2 Offsite Laydown and Parking Areas
3.12-1 KOP Location Map
3.12-2a Existing View KOP 1
3.12-2b Final View KOP 1
3.12-3a Existing View KOP 2
3.12-3b Final View KOP 2
3.12-4a Existing View KOP 3
3.12-4b Final View KOP 3
3.12-5a Existing View KOP 4
3.12-5b Final View KOP 4
3.12-6a Existing View KOP 5
3.12-6b Final View KOP 5
3.12-7a Existing View KOP 6
3.12-7b Final View KOP 6
3.12-8a Existing View KOP 7
3.12-8b Final View KOP 7
3.12-9a Existing View KOP 8
3.12-9b Final View KOP 8
3.15-1 Units 5, 6, 7, and 8 Water Balance; Average Daily Use; Ambient Conditions 62F, 70% Relative Humidity
3.15-2 Units 5, 6, 7, and 8 Water Balance; Maximum Flow; Ambient Conditions 83F, 47% Relative Humidity

List of Tables

Table 2.1-1 Annual Water Use
Table 2.1-2 Daily Water Supply Requirements
Table 2.1-3 Estimated Liquid Process Wastewater Volumes to Discharge
Table 3.1-1 Maximum Heat Input Rate Gas Turbines
Table 3.1-2 Gas Turbine Operating Hours
Table 3.1-3 Maximum Hourly Gas Turbine Emissions – Normal Operation
Table 3.1-4 Maximum Hourly Gas Turbine Emissions – Startups/Shutdown
Table 3.1-5 Maximum Daily Gas Turbine Emissions
Table 3.1-6 Maximum Annual Gas Turbine Emissions
Table 3.1-7 Comparison of Hourly CO Gas Turbine Emissions – Startups/Shutdowns
Table 3.1-8 Emissions Offset Summary
Table 3.1-9 Net Emissions Increase for Federal Attainment Pollutants
Table 3.1-10 Comparison Between Beach Delivery and Truck Delivery Daily Emissions
Table 3.1-11 Comparison Between Beach Delivery and Truck Delivery Overall Emissions
Table 3.2-1 Summary of Benthic Community Parameters Off the ESGS, Summer 2005
Table 3.2-2 Benthic Infuana Data for the Ten Most Abundant Species Collected at Station B3 Off the ESGS, Summer 2005
Table 3.2-3 Summary of Sandy Intertidal Invertebrate Parameters, 7 November, 2006, and 22 May, 2007
Table 3.2-4 Sandy Intertidal Invertebrate Abundances by Transect, Elevation (ft MLLW) and Survey Date, 7 November, 2006, and 22 May, 2007
Table 3.2-5 Intertidal Invertebrate Observed on the Rock Groin by Tidal Height, 7 November, 2006
Table 3.2-6 Intertidal Invertebrate Observed on the Rock Groin by Tidal Height, 22 May, 2007
Table 3.2-7 Summary of Changes/Additions of Potentially Occurring Special Status Species in the Proposed Beach Delivery Project Area
Table 3.2-8 Plant and Animal Species Observed at the Proposed W. 190th Street Offsite Location. 18 May, 2007
Table 3.2-9 Summary of Changes/Additions of Potentially Occurring Special Status Species in the Proposed W. 190th Street Offsite Location
Table 3.7.1 Summary of Modeled Existing and ESPR Noise Sources
Table 3.7.2 ESPR Increase in Baseline Sound Level
Table 3.11-1 LOS and Delay Ranges
Table 3.11-2 Existing Conditions AM and PM Peak Hours LOS
Table 3.11-3 Area Bike Routes
Table 3.12-1 Equipment Dimensions
Table 3.12-2 Resultant Changes in Visual Impact Severity
Table 3.15-1 Expected Water Supply Quality
Table 3.15-2 Daily Water Supply Requirements
Table 3.15-3 Estimated Liquid Process Wastewater Volumes To Discharge
Section 4.0 Conditions of Certification Tables
Gen-2 Table 1: Major Structures and Equipment List
TSE-1 Table 1: Major Equipment List

List of Appendices

3.1 Air Quality Appendices
3.2 Biological Appendices
3.4 Geology & Soils Appendices
3.8 Paleontological Resources Appendices
5.2 Potential Effects on Public Appendices

Acronyms and Abbreviations

AFC	Application for Certification
BACT	BACT
BNSF	Burlington Northern Santa Fe
BPHX	Back Pressure Heat Exchanger
Caltrans	California Department of Transportation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	carbon monoxide
COC	Conditions of Certification
COES	City of El Segundo
CPM	Compliance Project Manager
CTG	gas turbine generator
CWA	Clean Water Act
DOT	Department of Transportation
EPA	U.S. Environmental Protection Agency
ESGS	El Segundo Generating Station
ESPR	El Segundo Power Redevelopment
FDOC	Final Determination of Compliance
GPD	Gallons Per Day
HAPs	Hazardous Air Pollutants
HCM	High Capacity Manual
HMMP	Hazardous Material Management Plan
HOV	High Occupancy Vehicle
HP	high pressure steam
HRSGs	heat recovery steam generators
ITM	Inland Testing Manual
KOP	Key Observation Point
LACMTA	Los Angeles County Metropolitan Transportation Authority
LADWP	Los Angeles Department of Water and Power
LAX	Los Angeles International Airport
LORS	Laws, Ordinances, Regulations, and Standards
LOS	level of service
MW	mega watt
NAAQS	National Ambient Air Quality Standards
NFPA	National Fire Protection Association
NMFA	National Marine Fisheries Agency
NOI	Notice of Intent
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration
PAG	power augmentation
POTW	Publicly Operated Treatment Works

PSD	Prevention of Significant Deterioration
PTA	Petition to Amend
R2C2	Rapid Response Combined Cycle
RO	reverse osmosis
RWUP	Reclaimed Water Use Plan
SCAQMD	South Coast Air Quality Management District
SCR	selective catalytic reactor
SCRTD	Southern California Rapid Transit District
SLC	State Lands Commission
SOx	sulfur oxide
SPMT	Self-Propelled Mobile Transporter
STG	steam turbine generator
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
ULN	ultra low NOx
USACE	U.S. Army Corps of Engineers
VOC	volatile organic compounds
WBMWD	West Basin Municipal Water District

1.0 Introduction

ESP II LLC (ESP II) is requesting that the California Energy Commission's (CEC) February 2, 2005 decision for the El Segundo Power Redevelopment Project (ESPR or Project) be amended to include several modifications to the current license. This document describes in detail and sets forth an environmental analysis of the requested modifications and the potential effects on the resources as compared to the previous evaluation documented in ESPR's Application for Certification (AFC) and the related Final Commission Decision. As part of the evaluation set forth herein, the final Conditions of Certification (COC) were reviewed and proposed changes to affected COCs are included.

1.1 Overview of Amendment

The modifications proposed for this project include the use of new state-of-the-art Rapid Response Combined Cycle (R2C2) technology not available during the siting of the previously permitted project. This new technology will eliminate the need for once-through cooling and the intended operation of the R2C2 technology will eliminate the need for wastewater discharge to the ocean or to a publicly operated treatment works (POTW). In addition, other modifications proposed include changes in the method and route for delivery of oversize equipment associated with this new technology; modification of the plant entrance road to allow for oversize equipment delivery and improved plant access; and the addition of a new offsite laydown area and elimination of one previously approved laydown area. Section 2.0 describes the proposed Amendment to the Project Description and facility design. The environmental analysis of the modified project description and facility design is presented in Section 3.0. The Final Commission Decision Conditions of Certification and ESP II's proposed modifications of the associated COCs are presented in Section 4.0. Potential effects on the Public and near by property owners is presented in Section 5.0.

1.2 Consistency of Amendment with License

Section 1769(a)(1)(D) of the CEC Siting Regulations requires a discussion of the Amendment's consistency with the requisite laws, ordinances, regulations, and standards (LORS) and whether the modifications are based upon new information that changes or undermines the assumptions, rationale, findings, or other bases of the Final Commission Decision for ESPR. If the project is no longer consistent with the license, an explanation of why the modification should be permitted must be provided. The sections that follow provide an explanation of the proposed modifications, rationale for the modifications, and a LORS compliance analysis. Proposed modifications to the existing COC are included in Section 3.0 and the accompanying appendix.

1.3 Necessity of Proposed Change

Section 1769(a)(1)(B) and 1769(a)(1)(C) of the CEC Siting Regulations require a discussion of the necessity for the proposed changes to the project and whether this modification is based on information known by the petitioner during the certification proceeding. Use of the new technology will provide significant benefits described in greater detail in the sections that follow, including the elimination of once-through cooling and the elimination of discharge of industrial wastewater from the site. During the licensing period, the R2C2 technology proposed in this amendment was not available. Proposed modifications to the methods of equipment delivery and modifications to the plant entrance road and gate area are needed to allow delivery of associated equipment for the new technology and a new laydown site is required due to the unavailability of a previously permitted site.

1.4 Cumulative Impact

Section 3.0 addresses each environmental area affected by the proposed modifications and a cumulative impact assessment is included within each issue area. The modifications discussed herein, however, will not result in significant, unmitigated cumulative impacts in excess of those already analyzed by the Commission, and this Amendment will not change the assumptions or conclusions made in the CEC's Final Commission Decision for ESPR.

1.5 Laws, Ordinances, Regulations, and Standards (LORS)

The February 2005 Commission Decision certifying ESPR concluded that the project complied with all applicable Laws, Ordinances, Regulations, and Standards (LORS). As discussed in detail in Section 3.0, the proposed modifications will not affect the project's ability to comply with all applicable LORS.

2.0 Proposed Amendment to the Project Description

ESPR was certified by the CEC on February 2, 2005. ESPR was permitted as a nominally rated 630-megawatt (MW) combined-cycle facility located at the existing El Segundo Generating Station in El Segundo, California (Figure 2.0-1). ESP II is proposing several modifications to the previously permitted project, which requires an amendment to the permitted project design and related Conditions of Certification. The modifications are limited in scope and center around the following proposed changes:

1. Specification of different equipment and design to take advantage of state-of-the-art technology not available during siting of the previously permitted project (i.e., rapid response with combined cycle). The new R2C2 design will consist of two gas turbine generators (GTG), heat recovery steam generator (HRSG), and one steam turbine generator (STG) utilizing air cooled heat exchangers for cycle heat rejection. The R2C2 air cooled design will enable water/steam cycle wastewaters to be recycled back to the single-pressure RO water storage tank where they will be diluted for reuse as evaporative cooler makeup or reprocessed by mobile demineralizers. With the zero liquid discharge system, water/steam cycle wastewaters will be recycled and reused to the extent practicable eliminating once-through cooling at the site and eliminating discharge of water/steam cycle wastewaters. In addition, the modification of power delivery equipment will change the nominal plant capacity from 630 MW to 560 MW.

2. Different method of delivery of the oversize equipment to the plant including ocean delivery by barge over the beach using proven state-of-the-art technology and a new land route.

3. Addition of one new offsite laydown area and removal of a previously considered laydown area. The new offsite laydown area (referred to as "777 W. 190th Street") has ample space for component and equipment staging and parking for ESPR. One laydown area (Fed Ex) will be removed, because it is no longer available for staging or parking (i.e., the property has been redeveloped into a multi-level commercial building).

4. Modifications of the plant entrance road and gate area to enable delivery of oversize equipment to the plant during the construction phase of ESPR and to improve future equipment deliveries into the plant.

The benefits of these proposed modifications to ESPR are significant and include the following:

1. The use of the R2C2 technology eliminates the need for once-through cooling and the associated impingement and entrainment effects on marine resources.

2. Unprecedented rapid response design that provides comparable start-up rates to simple cycle units with the efficiency of a combined cycle power plant; specifically, each unit can deliver 150 MWs of capacity within 10 minutes of startup;

3. The rapid starting capability also supports wind and solar renewable generation by providing reliable localized generation that can quickly respond should wind or solar resources not be available during peak electrical demand periods.

4. Elimination of the discharge of industrial wastewater to the ocean and the associated reliance on the existing intake/outfall 001. There will be no discharge of industrial wastewater from the project.

5. Reduced onsite construction activity associated with ability to transport larger prefabricated modules via beach delivery and/or via the modified plant entrance road;

6. Modified plant entrance road, which will improve the safety and efficiency of the plant entrance; and

7. Significant improvement in the visual aesthetics associated with the change from the previously permitted vertical heat recovery steam generators (HRSGs) to the proposed R2C2 BENSON-type HRSG.

In addition to the benefits identified above, this Petition to Amend preserves the following benefits identified in the approved project.

1. Replacement of the existing less efficient, higher emitting 1950s steam generator power plant with a state-of-the-art power plant with BACT (BACT) pollution controls and that will utilize existing transmission and natural gas facilities and existing power plant labor and ancillary equipment resources.

2. Providing much needed, highly efficient, additional power supply in the western Southern California Edison load center, replacing aged, former RMR, Units 1 and 2 with rapid starting R2C2 technology.

As a part of the proposed revisions, ESP II is committed to continue an open candid dialog with the local communities and other state and federal agencies, as needed, to address project issues.

2.1 Facility Design

2.1.1 Equipment Layout

The site plan on Figure 2.1-1 illustrates the location and size of the proposed generating facility. For comparison, Figure 2.1-2a and 2.1-2b shows the site plan as it was approved on February 2, 2005. The overall layout of the new R2C2 will be located in the same general area of the facility as previously permitted. The primary changes to the site plan include the following:

- Two 1x1x1 (one gas turbine generator [GTG], one HRSG, and one steam turbine generator [STG]) combined cycle power blocks, referred to as units 5, 6, 7, and 8, instead of one 2x2x1 (two combustion turbine generators (CTGs), two HRSGs, one STG) power block, previously referred to as units 5, 6, and 7;

- Addition of two air cooled heat exchangers for cycle heat rejection;

- Use of single pressure, single-pass HRSGs instead of three pressure, vertically oriented drum HRSGs;
- Movement of northern end of the facility seawall to the west to accommodate the slightly larger footprint of the R2C2 technology;
- Modification of the plant entrance road including widening and straightening; and,
- Location of water storage tanks on the south side of existing units 3 and 4.

The R2C2 arrangement of two 1x1x1 power blocks occupies a slightly larger footprint than the previously permitted project. Since the two power blocks can operate independently and include more equipment than a 2x2x1 configuration, an access road has been added between the power blocks. Access roads around dimensions and turning radii have been reviewed with El Segundo Fire Department for compliance with local codes.

Two air cooled heat exchangers are new to the layout and contribute to the larger site footprint. However, this equipment is significantly smaller than conventional combined cycle air cooled condensers due to the design of the single pressure HRSGs and due to size and operation of the R2C2 steam turbines.

The footprint of the HRSGs differs from the previously permitted project in that the heat surface tubes are oriented vertically, perpendicular to the horizontally oriented flue gas flow. Because of this arrangement, the HRSG stacks are located at the end of the equipment instead of near the center.

To accommodate the larger facility footprint, the new seawall location will be closer to the facility property line to the west. This revised location of the seawall will also provide improved noise reduction along the public bike path in the area adjacent to the facility. A set-back to the perimeter sea wall at the southern end of the plant is planned to account for the previously agreed public access area at the northern end of the plant.

The plant entrance road location is shown as straighter and wider to enable oversize equipment deliveries into the facility. This will also improve ease of access as part of normal plant operation and maintenance.

Another change resulting from the larger plant footprint is the need to locate the facility's water storage tanks south of the existing units 3 and 4. These tanks include new condensate storage for units 3 and 4, the facility fire water storage, and the new units' raw water and demineralized water storage.

2.1.2 Equipment Technology

State-of-the-art technology available from Siemens is being proposed for use at ESPR. The new R2C2 technology combines the efficiency of combined cycle power plant with rapid response design for fast start-ups. A 3-D model of the standard R2C2 equipment is shown in Figure 2.1-3. Each unit can deliver 150 MWs of electrical generation within 10 minutes. This technology includes a 1x1x1 power block arrangement including an F-Class GTG, single-pressure steam generator or HRSG, a back pressure STG with an air cooled condenser for heat rejection. Two of these power blocks are proposed; one power block will be designated as units 5 and 6 and the second power block will be designated as units 7 and 8.

Use of this new technology requires modifications to site layout, since the footprint of the two R2C2 blocks is slightly larger than the previously approved 2x2x1 arrangement. The revised site layout is shown on Figure 2.1-1.

<u>Combustion Gas Turbine Generators</u>

Two Siemens SGT6-5000F GTGs are proposed for ESPR, one per unit; the Siemens GTGs are proposed as replacement to the two GE 7FA GTGs previously approved. The proposed Siemens GTGs are comparable to the GE model in size and performance. Each GTG includes the following auxiliary equipment.

- Inlet air filters
- Inlet air evaporative coolers
- Lube oil cooler
- Air to air rotor air cooler
- Electrical package

- Generator step up transformer
- Ultra Low NOx (ULN) combustion system
- Compressor wash system
- Fire detection and protection system

The GTGs will combust natural gas to produce thermal energy that is converted to mechanical energy to drive the compressor section and air cooled electric generators. The inlet evaporative coolers will be used during warmer ambient conditions to increase GTG output via cooling of the intake air. Steam injection in the combustion section of the GTG will also be utilized for power augmentation by increasing mass flow through the GTG turbine section.

Heat Recovery Steam Generator

Two BENSON technology single-pressure HRSGs are proposed for ESPR – one per unit. The HRSG design is a single pressure unit supplied with either a natural circulation evaporator or a single-pass evaporator to minimize thermal stresses during the startup process. Heat in the gas turbine exhaust flue gas is recovered in the HRSG to generate high pressure (HP) steam. The HRSG is of horizontal design and consists of an economizer, evaporator, and superheater heating surfaces.

Feedwater is delivered to the HP economizer where it is preheated to approximate saturation temperature before being discharged to the evaporator. One of the two evaporator systems will be provided:

1. The natural circulation evaporator uses a steam drum for water inventory and external separators for steam/water separation. Feedwater from the economizer is injected into the drum and mixed with saturated steam/water returning from the boiler tube riser pipes. Water is fed via downcomer pipes flows to the boiler tubes where additional heat is absorbed and a portion of the water is evaporated. The resulting steam/water mixture is discharged back to the steam drum. Steam and water mixture is piped to the external separators and separated; saturated steam is discharged into the superheater and saturated water returned to the drum.

2. The single-pressure evaporator uses a separator and surge tank arranged at the outlet of the evaporator section to separate water and steam during start-up and shutdown periods. During normal operation there is little or no water to separate and the steam would normally be slightly superheated. From the evaporator sections steam passes through the separator and surge tank before entering the superheater. Saturated steam is passed to the superheater where the steam temperature is increased. The HP final steam temperature is controlled using a final stage. Superheater heating surfaces are designed such that HP steam attemperation is not required for operation at the design point. During certain load conditions, attemperation is required.

The HRSG will be equipped with air emissions controls equipment including selective catalytic reactor (SCR) system for nitrogen oxides (NOx) control and an oxidation catalyst for carbon monoxide (CO) control. A continuous emissions monitoring system (CEMS) will also be included.

Steam Turbine Generators

Two Siemens STGs are proposed for ESPR, one per unit. Each of the STGs has a rated capacity 60 MW. The STGs are non-reheat, single pressure, back pressure type turbines. Each STG will include the following auxiliary equipment.

- Lube oil cooler
- Air cooled gland steam condenser
- Power control center
- Generator step up transformer

Steam generated in the HRSGs will be expanding through the STGs, which drive air cooled electric generators. During normal operation, the turbine is operated using backpressure closed-loop control. There is also a steam pressure limit controller to prevent an impermissible decrease in initial pressure.

Air Cooled Condenser

Two air cooled condensers (also referred to as steam turbine fin/fan cooler or air cooled back pressure heat exchangers) are utilized for steam turbine exhaust steam heat rejection (Figure 2.1-4). This system will replace the previously approved once-through cooling system.

Steam exhausted from the steam turbine is condensed in the air cooled back pressure heat exchanger (BPHX). Exhausted steam is transported to the BPHX via ducting. The BPHX is comprised of a number of cells arranged in rows. The modules consist of horizontal fin tube bundles. The tube bundles are complete with inlet and outlet headers and piped to distribute the wet low pressure steam being condensed and slightly sloped to aid drainage of the saturated water exiting the bundles. Pressure in the tube bundles is maintained slightly above atmospheric pressure. Fans force cooler ambient air over tube bundles to condense exhaust steam. The condensate is collected in the condensate receiver tank.

The steam ducting transmits exhaust steam to the BPHX. The ducting is designed to accommodate allowable forces, moments, and movements permitted at the LP steam turbine outlet. Thermal movements in the system are accommodated by means of expansion joints, spring supports, and slide pads that are incorporated in the ducting and piping. The steam ducting and distribution system is designed to be leak tight.

The forced draft air circulation system consists of axial propeller fans, electric motors, and gear reducers. The entire air circulation system is mounted on a fan bridge assembly that is attached to the fan deck platform. Fans are to be single-speed, on/off and are operated individually for back pressure control and during start-up.

In normal operation the internal pressure is above atmospheric and vents are periodically opened to remove any non condensable gases. During startup automatic vents are used to clear any non condensable gases and any nitrogen added to maintain the positive pressure during shutdown.

The entire BPHX is designed to be self-draining to reduce the possibility of freezing stagnant pockets of **c**ondensate when the BPHX (or any section) is shut down.

Support Equipment

Each GTG and STG is equipped with auxiliary equipment to support its operation. The primary change in design of this support equipment compared to the previously permitted project is that the cooling systems are all air cooled. Air cooler auxiliary equipment for the R2C2 includes the GTG and STG lube oil coolers as well as the rotor air cooling required for the GTG. This change eliminates the need for cooling water.

Tanks

To support the R2C2 units, new water storage tanks will be installed. A fire/service water storage tank will be utilized to store water supplied by the City of El Segundo for fire water and plant sanitary uses. A raw water storage tank will be installed to store single-pass reverse osmosis (RO) quality reclaimed water supplied by West Basin Municipal Water District (West Basin). A third tank will be installed to store demineralized water generated from the single-pass RO water that will ultimately be used in the plant steam cycle.

Electric Transmission

The change from 1-2x2x1 to 2-1x1x1 equipment configuration does not impact the planned transmission tower arrangement described in the previously permitted project. From SCE's El Segundo 230-kV substation, electricity will be transmitted to users by the existing transmission and distribution network. No new towers will need to be constructed off-site; the existing steel frame structures on-site will be replaced with pole structures.

Capacity Factor

Operations of each of the R2C2 units are forecasted to be up 60% capacity factor annually, including 200 hours per year where a unit startup would occur and 200 hours per year where a unit shutdown would occur. This is a reduction in expected annual operating hours as compared

with the original permitted project, which was authorized up to nearly 100% annual capacity factor.

2.1.3 Efficiency and Reliability

Operation of the Siemens R2C2 design offers several advantages compared to a conventional combined cycle. This design solves one of the major limitations associated with conventional combined cycles in intermediate duty applications: slow start up times. During conventional combined cycle start up, which can typically be 3 hours for a warm or hot start and six hours for a cold start, the GTG is operated well below its optimal performance point in terms of thermal and air emissions performance. In comparison, the R2C2 configuration can delivery 150 MWs of power generation within 10 minutes of unit startup and can achieve full load within 45 minutes for hot starts, 85 minutes for warm starts, and 125 minutes for cold starts. This faster startup time allows the GTG ramp up to maximum efficiency more quickly and provides the following benefits.

- Reduced start up fuel consumption
- Reduced air emissions (GTGs reach optimal emissions performance faster)
- Reduced steam loss associated with steam seal warming during start up

The R2C2 is capable of faster startups that combined cycle primarily due to the HRSG technology utilized. The long thermal soaks required for steam drum HRSGs are not applicable to the R2C2.

The expected facility availability, equipment redundancy ability to respond to varying utility needs for power, maintenance program, fuel availability and project quality control measures remain consist with the previously permitted project. The modification to the facility design will require more reliability on reclaimed water, which is discussed in more in Section 3.15.

Water Requirements and Demand

As mentioned above, water usage with the R2C2 is reduced during startup since venting associated with steam seal warming is reduced. Additionally, the continuous blowdown associated with conventional steam drum HRSGs is eliminated with this technology, further reducing the R2C2's water demand. Water usage in the GTGs is comparable to other F-Class combined cycles. ESPR's GTGs will make use of media type evaporative cooling and steam injection technologies for power augmentation (PAG).

Conventional media type evaporative cooling will be used to lower the temperature of the GTG inlet air during warmer ambient conditions. The PAG feature injects steam into the combustion section of the GTGs and can be utilized over the entire ambient temperature range expected for this project. PAG steam will be taken from the steam generated in the HRSG.

Similar to the previously permitted project design water for the proposed Project will be supplied to the El Segundo Generating Station from two sources: potable city water from the City of El Segundo (Metropolitan Water District of Southern California) and California State Title 22 reclaim water from West Basin Municipal Water District (West Basin).

The facility will utilize city water for potable use and fire emergencies. The Title 22 reclaim water, first-pass RO product water, will be used as the supply to the cycle makeup treatment system as well as makeup to the evaporative cooler. Title 22 reclaim water, irrigation quality, will be blended with the single-pass RO product water for use in the GTG inlet evaporative coolers. The proposed plant design will utilize two air-to-air heat exchangers for thermal cycle heat rejection. Seawater will no longer be used for heat rejection.

The average and peak annual use from city potable and reclaim water supply comparisons from the previously permitted and proposed plant design are listed in Table 2.1-1.

Table 2.1-1
Annual Water Use

Water Source	Annual, Average		Annual, Maximum	
	Previously Permitted [1]	**Proposed [5]**	**Previously Permitted [2]**	**Proposed[6]**
City of El Segundo (Metropolitan Water District of Southern California)	97	0.72	104	0.84
West Basin Municipal Water District	112 [3,4]	33.2	120 [3,4]	647.3
Seawater	215,000	0	231,000	0

Units = Acre-feet per year
[1] Annual average is estimated as the daily average x 365 days x 93 percent.
[2] Annual maximum is estimated as the daily average x 365 days x 100 percent.
[3] Annual average reclaim water demand is estimated as the peak daily use x 42 days + the average daily use x 23 days the quantity x 93 percent.
[4] Annual maximum reclaim water demand is estimated as the peak daily use x 42 days + the average daily use x 323 days the quantity x 100 percent.
[5] Annual average is estimated as the daily average usage (Table 3.4-1) x 313 days.
[6] Annual maximum is estimated as the daily average usage (Table 3.4-1) x 365 days.

Reclaim single-pass RO product water will be treated on site by portable cycle make-up treatment equipment, which will be regenerated offsite, to supply demineralized make-up water to the steam cycle, and the combustion turbines for steam injection power augmentation.

Reclaim single-pass RO water will be directed from West Basin via a new 10-inch line to a storage tank prior to the cycle makeup treatment system. This system will include a permanently installed forwarding pump and mobile demineralization equipment that will be regenerated

offsite. Demineralized water produced by the cycle makeup treatment system will be stored in a demineralized water storage tank. The design and location of the new 10-inch water will be as licensed in the 2005 Commission's Decision.

The average and peak daily use for each process utilizing city potable or reclaim water supply is provided in Table 2.1-2, and is compared to the previously permitted project design.

Table 2.1-2
Daily Water Supply Requirements

Water Source	Daily Average Usage		Daily Peak Usage	
	Previously Permitted [1]	Proposed [3]	Previously Permitted [2]	Proposed [4]
City of El Segundo (Metropolitan Water District of Southern California)				
Potable Water – Sanitary[5]	750	750	750	750
Plant and Equipment Drains	25,000	0	25,000	0
Makeup to Evaporative Cooler	44,000	0	85,000	0
Quench	23,000	0	33,000	0
Total City Water (Potable)	92,750	750	143,750	750
West Basin Municipal Water District Title 22 Reclaim Water				
Single-Pass RO Quality Water				
Single-pass RO Makeup to HRSGs and Evaporative Coolers, and Misc. Steam Losses	64,000	15,360	440,000	529,920
Irrigation Quality				
Makeup to Evaporative Cooler[6]	0	19,200	0	48,000
Total Title 22 West Basin Water Demand (RO and Irrigation Quality)	157,000	34,000	440,000	577,920
Seawater				
Once-Through Cooling Water	206,000,000	0	206,000,000	0

Units = Gallons per day

1 Daily average based on 59 °F average annual ambient temperature, not firing the HRSGs, no steam injection to the CT, evaporative coolers on, assumed for 24-hour day.

2 Daily average for peak load operation based on 83 °F ambient temperature, the HRSGs fired, 12 hours of steam injection to the CT, evaporative coolers on, assumed for 24 hour day.

3 Daily average usage is based on 62 °F DBT, 70% RH, no power augmentation, water injection to CTs, and evaporative coolers on, 16-hour/day operation.

4 Daily peak usage is based on 83 °F DBT, 47% RH, HRSGs in use; power augmentation, injection to CTs, and evaporative coolers on, 16 hour/day operation.

5 Daily potable water consumption is based on 24 hours @ 0.52 gpm.

6 Make up to evaporative coolers is mixed Reclaimed Single Pass RO water and Irrigation Quality water.

The existing 6-inch line at the site carrying the Title 22 irrigation water will be used for supplying ESPR requirements for irrigation water. No proposed changes are needed for the planned reclaim or potable water line interconnections referenced in the Final Decision.

High purity water produced by mobile demineralizer equipment will be used in the steam cycle and will be treated by the chemicals to minimize corrosion and scale formation inside HRSGs and related hot sections of steam handling equipment. The system will feed oxygen scavenger and pH control chemicals to control the feedwater and boiler water chemistry. The design of the feedwater system includes combination of inline and grab sample monitoring to ensure water chemistry parameters are within acceptable ranges. The feedwater system will provide for automatic feed of conditioning chemicals.

Wastewater

The process wastewaters from Units 5, 6, 7, and 8 will consist of HRSG and inlet evaporative cooler blowdowns. These two wastewater streams will be recycled back to the single-pass RO water storage tank, partly for reprocessing by the mobile demineralizers and partly for reuse as make-up to the evaporative coolers. Waste streams will be sampled in accordance with the existing monitoring and reporting program to ensure that the chemistry of the process waste is within the limits of the discharge permits. While process wastewater from Units 5, 6, 7, and 8 will be recycled when possible, wastewater will be disposed off site as necessary if the water cannot be recycled and processed in a manner to meet the water quality objectives for the R2C2 power blocks. No process wastewater will be discharged from the facility via the existing retention basin or either outfall structure. The dissolved and suspended solids captured in the demineralizer beds will be removed via regeneration process offsite.

Plant drains that conveyed plant wastes from the retired Units 1 and 2 to the retention basin will be removed and the piping capped during construction of Units 5, 6, 7, and 8.

No changes are planned for the management of plant wastes from existing Units 3 and 4 operations. As stated in the 2005 Commission's Decision, plant wastes from Units 3 and 4 are conveyed to the existing retention basin and the effluent from the retention basin is discharged to Outfall 002.

Sanitary wastewater, including eyewash station water and shower water, will be directed to the City of Manhattan Beach Municipal Sanitary Sewer in accordance with the City Public Works Department's discharge requirements and in accordance with existing Conditions of Certification in the 2005 Commission's Decision. Discharge of sanitary wastes to Outfalls 001 and 002 will be discontinued.

Site Drainage

Outfall 001, currently the discharge point for stormwater in the area of retired Units 1 and 2, will no longer be used for site drainage during construction. Stormwater generated during construction will be discharged under an existing Construction Stormwater National Pollutant Discharge Elimination System discharge permit obtained in compliance with existing Conditions of Certification. Future site stormwater in the area of Units 5 – 8, following their construction, will be collected in yard drains that will rout stormwater to an oil/water separator prior to discharge at Outfall 002.

Estimated volumes of the facility's liquid wastewater discharge are shown in Table 2.1-3.

Table 2.1-3
Estimated Liquid Process Wastewater Volumes to Discharge

Waste Stream	Source	Qty/Day[2]	
		Previously Permitted [1]	**Proposed**
Circulating Water Return	Condenser	206,000,000	0
Stormwater Oil Water Separators Effluent	Plant and equipment drains, area precipitation runoff	3,100	3,100
Existing Retention Basin	Effluent HRSG, oil water separator effluent	80,000	0
Total Effluent to Outfall 001	Circulating water and oil water separator effluent	207,000,000	0
Total Sanitary Effluent to City Sewer[1]	Sanitary drains system	750 [3]	750 [3]

Units = Gallons per day
[1] Assumes 6 gallons per minute, 24 hour day.
[2] All numbers are approximate based on peak discharge conditions.
3 Assumes an average daily flow of 0.52 gpm total from all sanitary waste streams.

Air Emission Characteristics

The R2C2 technology incorporates Siemens ultra low NOx (ULN) combustion system. In this combustion system, NOx control is achieved without use of water or steam injection. As described above, the R2C2 fast start capability allows the GTGs to reach their optimum air emissions performance operating levels faster which significantly reduces startup emissions.

The HRSG will be equipped with air emissions controls equipment including selective catalytic reactor (SCR) system for NOx control and an oxidation catalyst for CO control. CEMS will also be included.

The combination of a decrease in maximum heat input levels for the gas turbines/HRSGs (2,496 vs. 2,096 MMBtu HHV) and controlled emission concentration levels equal to or less then the licensed project, result in an overall net decrease in normal operation gas turbine/HRSG emission rates for NOx, CO, VOC, SOx, and PM_{10}. Depending on the pollutant, these net emission rate decreases range from approximately 16% to 37%. A more detailed review of the emission levels for the amended project is included in Section 3.1: Air Quality.

2.2 Oversize Equipment Delivery

The dimensions of some of the equipment comprising the new R2C2 technology will require modifications to the proposed delivery routes from the previously permitted ESPR. In order the mitigate some of the effects of delivering oversize components by overland transport and to provide other advantages, major plant equipment may be delivered to the facility from barges via a ramp system across the beach. A new truck route through the City of El Segundo is also proposed to accommodate the dimensions of new equipment that may not clear the previously proposed truck route to El Segundo Generating Station via Vista Del Mar Boulevard from Imperial Highway. The clearance beneath an existing pedestrian bridge connecting Hyperion Waste Water Treatment Plant with the employee parking area on the beach side of Vista Del Mar Boulevard is too low for some of the anticipated oversize equipment deliveries.

2.2.1 Beach Delivery

The oversize plant equipment that may be delivered from barges includes two HRSG units, two GTGs, two steam turbines, partial pipe rack assemblies, two air cooled condensers, and other equipment. If implemented, beach delivery will provide several advantages. For example, such delivery will reduce the number of transport vehicle trips which would be required if overland transport was used. In addition, use of beach delivery will also allow some components to be partially fabricated offsite and delivered to the facility. This modularization will reduce the amount of construction performed at the facility.

Beach delivery will generally follow the sequence below:

Step 1: Construction of a ramp system across the beach fronting the El Segundo site.

Step 2: Docking and securing a non-powered barge (construction barge) at the nearshore zone immediately seaward of the ramp system. The construction barge will be used as an extension of the beach-landing ramp to transfer equipment loads from the delivery barges to the facility. T-plates and ramps will be installed to connect the 1st loaded barge to the construction barge stern to stern,

Step 3: Docking of the delivery barge to the construction barge, and installation of T-plates and ramps to connect the two barges stern to stern,

Step 4: Closure of the bike patch in accordance with prior notification to bike path users.

Step 5: Roll off (transfer) of the equipment from the delivery barge onto the construction barge.

Step 6: Movement of the equipment via self-propelled motorized transporters (SPMTs) over the beach ramp into the facility where the equipment will be delivered directly onto the awaiting foundations. Equipment will be lifted onto foundations by cranes.

Step 7: Following completion of beach deliveries, the construction barge and ramp structure will be removed. The beach zone disturbed as a result of the beach delivery will be restored in accordance with a restoration plan. No ballast water will be discharged into the ocean.

There will be an estimated up to six separate deliveries via barge, and steps 2-6 will be completed for each delivery barge. Figures 2.2-1 through 2.2-3 provide details regarding the location and sequencing of the deliveries and other details of beach delivery. The entire beach delivery will be completed during a 3 to 6 month window, allowing for mobilization and demobilization time and fabrication and delivery of major equipment intended for beach delivery. A construction barge will be transported via a 7200 horse power tug boat powered with an engine meeting the EPA Tier II standards for non-road engines. The construction barge will be pulled onto the beach at high tide with two D-6 dozers and secured to the beach with the dozers via sea fastening from the barge to the dozers staged on the beach. The dozers will also be on standby for use in the event there may be a malfunction in the transport trailers to prevent extended closure of the bike path. The construction barge will be ballasted to a grounded position. Once secured, a beach ramp system will be constructed.

The beach ramp will extend from the construction barge shoreward into the El Segundo facility. Figure 2.2-2 provides a visual rendering of what the construction barge and beach ramping can be expected to look like. The ramp will be constructed using a combination of geo-tech fiber, wood matting and sandbags filled with clean sand that are similar in nature to the native sand. A temporary access ramp will be constructed over the bike path to allow transport of the equipment from the beach into the facility. Following the delivery operations, the ramp materials will be removed immediately following the final delivery; however, to restore the beach to pre-project conditions the sand bags will be opened and the sand will be left on the beach in accordance with a beach restoration plan to be developed as part of the Project's Section 404 Permit. The geo-tech fabric matting will provide a base for the sand bags and timbers and will prevent the materials from subsiding.

The safety of workers and the public will be the top priority during the beach delivery operations. An access ramp will be constructed across the existing bike path to allow a minimum of interruption by users of the path when deliveries are not scheduled. The access ramp will enable safe use of the bike path when deliveries are not scheduled. The access ramp would include closure gates across the bike path to prevent public access to the beach ramp during deliveries. Perimeter fencing (security barrier) would also be installed around the work zone to prevent public access to the barge, ramp, and the area surrounding the work zone would be posted with signage. Signage would also be posted along the bike path to identify the crossing and the times the bike path would be closed.

The schedule for bike path closures would also be published via local print media and direct mailings. Local law enforcement would also be informed of the schedule for bike path closures. In addition, security personnel will also be onsite before, during, and after any scheduled crossing since it is anticipated that the unique delivery method may attract public attention.

2.2.2 Overland Delivery

A portion of the originally proposed truck route is unsuitable for oversize equipment associated with the R2C2 technology due to height restrictions from an overhead pedestrian walkway connecting Hyperion Waste Treatment Plant to an employee parking area. The new proposed truck route avoids this obstruction by going from El Segundo Blvd. (west) to Main Street (north) to Grand Avenue (west), returning to the original route at Vista Del Mar Blvd. and thereby avoiding the Hyperion Waste Treatment Plant pedestrian bridge.

2.3 Offsite Laydown and Parking Areas

Following the licensing of ESPR in 2005, the Fed Ex site previously considered for offsite laydown was redeveloped into a multi-level commercial office space. Thus, the site is no longer considered for laydown. One replacement laydown area is considered in this Amendment. The new proposed laydown area is approximately 12 acres, of which 10 acres are usable, located at 777 W. 190th Street in the City of Gardena, near the 405 and 110 freeway interchange (Figure 2.3-1). This site is less than 10 miles southeast of ESGS and is readily accessible to approved traffic routes to the ESGS. Currently the site is used for commercial truck, RV and automobile storage. The laydown site is paved, lighted, and enclosed with a perimeter fence and has an approximately 5,500 square foot industrial building on the property.

2.4 Plant Entrance Road Improvements

The current in-plant roadway at ESPR leading from the main entrance gate at Vista Del Mar to the lower level grade of the facility consists of three 90 degree turns, and a maximum slope of 9% (average is 7% to 9%), which creates difficult access and equipment delivery issues. To improve the access, the existing entrance road will widened to 24’ wide, the sharp curves

eliminated, and the slope decreased where possible. The proposed roadway (and the existing roadway) is shown in the site layout (Figure 2.2-1). No modifications to Vista Del Mar would be required to construct the new access road.

Based on a geotechnical study conducted for the proposed plant entrance road improvement, the proposed fill slope would not exceed a 2:1 slope but the natural cut slopes can be at maximum of 1.5:1 cross slope. A guardrail will be installed on the southwest shoulder due to the fill slope. The cut to fill ratio for the plant entrance improvements would be 0.04, with a total a total balance import of 8151 cubic yards.

At the entrance, there would be an approximate 30' x 100' long gantry crane pad. The small raised island at the main gate must be demolished, and the area paved so that heavy equipment delivery vehicles can maneuver (back into) the gantry crane area. Drainage off the new roadway would be handled through a "curbed" road section to collect and control the runoff. The existing guard house would remain at its current location.

2.5 Schedule

Construction is anticipated to begin in September 2008. The total construction schedule is estimated to be approximately 18 to 20 months.

3.0 Environmental Analysis of the Proposed Amendment

3.1 Air Quality

3.1.1 Introduction

The ESPR project modifications described in Section 2.0 are evaluated here for changes in air quality impacts as compared with the originally approved ESPR project description.

3.1.2 Affected Environment

3.1.2.1 Rapid Response Combined Cycle (R2C2) Technology

The February 2005 Commission approval of the ESPR project included a project design comprised of two General Electric 7FA combined cycle gas turbines each equipped with vertical flow Heat Recovery Steam Generators (HRSGs). The HRSGs were equipped with 600 MMBtu/hr duct burners. The gas turbines/HRSGs included the use of dry low-NOx combustors, selective catalytic reduction (SCR), and oxidation catalysts. The previously permitted project also included the installation of an emergency firepump Diesel engine.

As discussed in Section 2.0, the proposed project includes a change from two General Electric 7FA combined cycle gas turbines to two Siemens SGT6-5000F rapid response combined cycle gas turbines. The proposed project no longer includes the use of duct burners or the installation of an emergency firepump engine. The proposed gas turbines/HRSGs will use dry low-NOx combustors, oxidation catalysts, and SCR systems. The change from General Electric to Siemens gas turbines, elimination of duct burners, and elimination of the Diesel fire pump engine will result in a change to the emission levels estimated for the project. Accordingly, the potential air quality impacts associated with this project modification are discussed in Section 3.1.3.

3.1.2.2 Oversize Equipment Delivery

As part of the construction air quality impact analysis in the AFC for the ESPR project, the emissions associated with truck deliveries to the project site were quantified. This amendment proposes the use of barges to deliver some of the oversize equipment and construction materials to the project site that would have otherwise been delivered using trucks. As discussed in Section 2.0, the beach delivery project modification includes a total of six barge deliveries. Support equipment for the beach delivery includes self-propelled modular transporters (SPMTs), pumps, and bulldozers. Because the tugs used to transport the barges and the beach delivery support equipment will be powered by Diesel engines, it is necessary to estimate the emissions associated with the use of this equipment. Accordingly, the potential air quality impacts associated with the project modification are discussed in Section 3.1.3.

3.1.2.3 Offsite Laydown and Parking Areas

As discussed in Section 2.0, the proposed project includes the possible use of new offsite laydown/parking areas. The proposed change to the offsite laydown and parking areas will not result in an increase in the material hauling or worker travel distances analyzed for the previously permitted project (165.6 miles average round trip distance for truck hauling and worker travel).1 Therefore, this project amendment is not expected to affect the emission levels or air quality impacts previously analyzed for this phase of the project.

3.1.2.4 Plant Entrance Modifications

As discussed in Section 2.0, the proposed project includes some modifications to the plant entrance to improve the material delivery options available to the project site. The proposed change to the plant entrance will include the operation of construction equipment over approximately a four-week period. Because this construction equipment will be powered by Diesel engines, there will be combustion emissions associated with the use of this equipment. However, this activity is not scheduled to overlap any other project construction phases. In addition, the number of construction equipment necessary for the plant entrance modification will be less than the number of construction equipment included in worst-case construction phase scenarios previously analyzed for the ESPR project.2 Finally, the plant entrance modification is not expected to increase the overall construction period of approximately 20 months previously analyzed for the ESPR project.3 Therefore, this project modification is not expected to affect the emission levels or air quality impacts previously analyzed for this phase of the project.

3.1.3 Environmental Analysis

3.1.3.1 Rapid Response Combined Cycle (R2C2) Technology

In order to quantify the change in emission levels associated with the use of the rapid response combined cycle gas turbines/HRSGs, it is important to compare the maximum heat input rating, expected operating hours, and maximum normal operation hourly emission levels for the approved and amended gas turbines/HRSGs. As shown in Tables 3.1-1, 3.1-2, and 3.1-3 there is net reduction in all of these operating factors with the exception of the maximum number of daily operating hours. The increase in the daily operating hours is associated with a project operating change allowing both gas turbines to undergo startups at the same time.

1 Application for Certification of El Segundo Power Redevelopment Project, 2000, Appendix I.2 (Construction Phase Impacts), Appendix I.2-1 (Delivery Truck and Worker Travel tables).
2 Application for Certification of El Segundo Power Redevelopment Project, 2000, Appendix I.2 (Construction Phase Impacts), Appendix I.2-1 (Construction Equipment Daily Exhaust Emission tables).
3 Application for Certification of El Segundo Power Redevelopment Project, 2000, Appendix I.2 (Construction Phase Impacts), Section I.2.1.

The net change in the above operating factors results in a corresponding net decrease in the daily and annual emissions for the gas turbines/HRSGs during normal operation. This net decrease is shown below in Tables 3.1-5 and 3.1-6. The net decreases in normal operation are attributed to the proposed project conforming to BACT emission levels, which have either stayed the same or have been lowered since the original project approval. These BACT levels can be seen in the Concentration Level column of Table 3.1-3.

While there is a net decrease in emissions during normal operation, Tables 3.1-5 and 3.1-6 show that there is a net increase in emissions during gas turbine startups/shutdowns. This increase in gas turbine startup/shutdown emissions is due to two factors. First—as shown in Table 3.1-4, there is a net increase in maximum hourly NOx, CO, and VOC emission rates during gas turbine startups/shutdowns. This change was due to new information that is now known about startup/shutdown emissions for F-Class gas turbines including specific information recently provided by Siemens for the SGTG-5000F machines proposed for the amended project. The largest apparent startup/shutdown net emission increase is for CO. As shown in Table 3.1-7, the gas turbine startup/shutdown CO emissions for the proposed project are less then those approved by the CEC for similar F-Class gas turbine projects. Therefore, while these calculations imply that startup emissions are increased associated with this project change, in reality startup emissions are actually lower due to the rapid starting feature of these gas turbines as compared with traditional combined cycle units, like those originally approved by the Commission for this project.

As shown in Table 3.1-2, the maximum daily gas turbine startups/shutdown hours have increased from 3 to 4 hours per day. This change is necessary due to the rapid startup feature of these R2C2 units, which requires additional operating flexibility from multiple startups/shutdowns during a single day to help support electrical grid reliability and renewable energy deliveries. While these factors result in a net increase in gas turbine startup/shutdown emissions, when all operating and emission factors are taken into consideration with the exception of CO there is a net decrease in annual emissions for the gas turbines. This apparent increase in annual CO emissions is attributed to the more accurate accounting of CO emissions associated with startup as compared with the original emission estimates, which have been refined considerably during more recent F-Class gas turbine projects. When compared with these more recent traditional combined cycle startup emission rates, the project would actually show a reduction in annual emissions of CO. Additionally, the air basin where the project is located is classified as an attainment area for the state CO ambient air quality standard, and this air basin was also reclassified in June 2007 as a federal attainment area for CO, therefore this net increase in emissions is not considered significant.

Similar to the previously permitted project, emissions of non-attainment pollutants from the proposed project will be fully offset following the rules and regulations of the South Coast Air Quality Management District. Offsets will be provided via traditional Emission Reduction Credits held in inventory for the project pursuant to District Rule 1303(b)(2) and 2005(b)(2), by District Rule 1304(a)(2) steam boiler to combined cycle offsets, and with the balance provided by Priority Reserve Credits from District Rule 1309.1, which is expected to be re-adopted by the South Coast AQMD on July 13, 2007. Therefore in a similar way to the original project, air quality impacts from these proposed changes will be fully mitigated. Table 3.1-8 shows a summary of the emission reductions required for CO, VOC, PM_{10}, and SOx. The NOx emissions for the proposed project will be fully mitigated under the District RECLAIM program with the use of NOx RECLAIM Trading Credits.

With regards to federal attainment pollutants NOx, CO, and SOx, the proposed ESPR is considered a modification to an existing major facility under the federal Prevention of Significant Deterioration (PSD) program. Therefore, to determine whether the ESPR project will trigger PSD review, it is necessary to compare the net emission changes associated with the ESPR project to the PSD significant levels. Since a final PSD permit has not yet been issued for the ESPR project, the ESPR permit application package submitted to the SCAQMD in December 2000 remains an open permit application package for federal PSD purposes. Accordingly, the net emission change calculations for PSD applicability purposes needs to include any increases or decreases in emissions that occurred at the El Segundo Generating Station during the period starting on December 1995 (i.e., five years prior to the submittal date of the ESPR project PSD permit application) and ending when construction begins on the new CTGs. This time period includes the shutdown of existing boiler Units 1 and 2 which occurred at the end of 2002. Consequently, the emission reductions from the shutdown of Units 1 and 2 is included in the PSD net emission change calculations. The PSD net emission changes are summarized below in Table 3.1-9. As shown in this table, the ESPR project will not have a significant net emission increase for any pollutant. Consequently, the ESPR project is not subject to PSD review. Because the project area is classified as a federal nonattainment area for PM_{10} and ozone, the PSD regulations do not apply to PM_{10} or VOC emissions.

Enclosed as Appendix 3.1 are the detailed emission calculations for the Siemens gas turbines.

Table 3.1-1 Maximum Heat Input Rate Gas Turbines (per gas turbine)			
	Previously Permitted Project[a]	Proposed Project	Net Change
	(MMBtu/hr)[b]	(MMBtu/hr)[b]	(MMBtu/hr)[b]
Gas Turbine	1,896	2,096	200
Duct Burner	600	0	-600
Total =	2,496	2,096	-400

[a]From February 2005 Commission Decision for the El Segundo Power Redevelopment Project (00-AFC-14), Equipment Description for Conditions AQ-2 through AQ-27.
[b]In terms of high heating value (HHV).

Table 3.1-2 Gas Turbine Operating Hours			
	Previously Permitted Project[a]	Proposed Project	Net Change
Daily			
Unit 5 – Normal Operation	21	20	-1
Unit 5 – Startup/Shutdown	3	4	1
Unit 7 – Normal Operation	18	20	2
Unit 7 – Startup/Shutdown	3	4	1

Table 3.1-2 (Continued) Gas Turbine Operating Hours			
	Previously Permitted Project[a]	Proposed Project	Net Change
Annual			
Unit 5 – Normal Operation	8,395	5,056	-3,339
Unit 5 – Startup/Shutdown	365	400	35
Unit 7 – Normal Operation	8,395	5,056	-3,339
Unit 7 – Startup/Shutdown	365	400	35

[a]From September 2002 Final Staff Report for the El Segundo Power Redevelopment Project (00-AFC-14). For hourly gas turbine operating hours see Air Quality Table 10. For daily gas turbine operating hours see Air Quality Table 11. For annual gas turbine operating hours see Air Quality Table 12.

Table 3.1-3 Maximum Hourly Gas Turbine Emissions - Normal Operation (per gas turbine)					
	Concentration Level		Mass Emission Level		
	Previously Permitted Project[a]	Proposed Project	Previously Permitted Project[c]	Proposed Project	Net Change
Pollutant	ppmvc[b]	ppmvc[b]	Lbs/hr	Lbs/hr	Lbs/hr
NOx	2.0	2.0	18.27	15.44	-3.83
CO	4.0	3.0	22.24[d]	14.10	-8.14
VOC	2.0	2.0	6.37	5.37	-1.00
SOx	0.25 gr S/100 scf fuel	0.25 gr S/100 scf fuel	1.76	1.46	-0.30
PM_{10}	--	--	15.00	9.50	-5.50

[a]The NOx and CO ppmv levels from February 2005 Commission Decision for the El Segundo Power Redevelopment Project (00-AFC-14), Condition AQ-9. The natural gas sulfur content is shown in page 4.1-32 of the September 2002 Final Staff Report for the El Segundo Power Redevelopment Project (00-AFC-14).
[b]This is the corrected concentration level (ppmv @ 15% O_2).
[c]From September 2002 Final Staff Report for the El Segundo Power Redevelopment Project (00-AFC-14), Air Quality Table 8.
[d] An hourly CO emission rate of 11.12 lbs/hr is shown in the September 2002 Final Staff Report for the El Segundo Power Redevelopment Project (00-AFC-14), Air Quality Table 8. This emission rate is associated with a long-term CO level of 2.0 ppmvc rather than the allowed short-term level of 4.0 ppmvc. The CO emission rate in this table has been correct to the allowed short-term CO level of 4.0 ppmvc.

Table 3.1-4 Maximum Hourly Gas Turbine Emissions – Startups/Shutdowns (per gas turbine)			
	Previously Permitted Project[a]	**Proposed Project[b]**	**Net Change**
Pollutant	**Lbs/hr**	**Lbs/hr**	**Lbs/hr**
NOx	80.0	91.1	11.1
CO	100.0	823.3	723.3
VOC	6.4	21.7	15.3

[a]From September 2002 Final Staff Report for the El Segundo Power Redevelopment Project (00-AFC-14), Air Quality Table 10.
[b]This value reflects a worst case maximum hourly emission rate considering a startup and a shutdown occurs within the same hour. The previously permitted project only considered startup emissions in its maximum hourly calculations. This should be considered when comparing both numbers.

Table 3.1-5 Maximum Daily Gas Turbine Emissions (combined emission both gas turbines)			
	Previously Permitted Project[a]	**Proposed Project**	**Net Change**
Pollutant	**Lbs/day**	**Lbs/day**	**Lbs/day**
Normal Operation			
NOx	674.3	617.7	-56.6
CO	805.4[b]	563.9	–241.5
VOC	214.3	214.8	0.5
SOx	63.6	58.3	-5.3
PM_{10}	549.0	380.0	-169.0
Startups/Shutdowns[b]			
NOx	480.0	487.9	7.9
CO	300.0	3,405.9	3,105.9
VOC	15.4	108.2	92.8
SOx	7.2	11.7	4.5
PM_{10}	66.0	76.0	10.0

Table 3.1-5 (Continued) Maximum Daily Gas Turbine Emissions (combined emission both gas turbines)			
	Previously Permitted Project[a]	**Proposed Project**	**Net Change**
Pollutant	**Lbs/day**	**Lbs/day**	**Lbs/day**
Total Emissions			
NOx	1,154.3	1,105.6	-48.7
CO	1,105.4[c]	3,969.8	2,864.4
VOC	229.7	323.0	93.3
SOx	70.8	69.9	-0.9
PM_{10}	615.0	456.0	-159

[a]From September 2002 Final Staff Report for the El Segundo Power Redevelopment Project (00-AFC-14), Air Quality Table 11.

[b]Proposed project startup and shutdown emission increases are attributed to increases in the number of gas turbine starts and stops per day as well as from the more accurate accounting of startup and shutdown emissions, as refined during more recent F-Class gas turbine projects. When compared with these more recent traditional combined cycle startup emission rates, the project would actually show a reduction in startup and shutdown emissions.

[c]A gas turbine normal operation daily CO emission rate of 402.7 lbs/day is shown in Air Quality Table 11 of the September 2002 Final Staff Report for the El Segundo Power Redevelopment Project (00-AFC-14). This emission rate is associated with a long-term CO level of 2.0 ppmvc rather than allowed the short-term level of 4.0 ppmvc. The CO emission level in this table has been corrected to the allowed CO short-term level of 4.0 ppmvc.

Table 3.1-6 Maximum Annual Gas Turbine Emissions (combined emission both gas turbines)			
	Previously Permitted Project[a]	**Proposed Project**	**Net Change**
Pollutant	**Tons/year**	**Tons/year**	**Tons/year**
Normal Operation			
NOx	123.8	72.7	-51.1
CO	75.4	66.4	-9.0
VOC	30.7	25.3	-5.4
SOx	11.9	6.9	-5.0
PM_{10}	100.7	48.0	-52.7
Startups/Shutdowns			
NOx	29.2	18.3	-10.9
CO	18.3	127.7	109.4
VOC	0.9	5.4	4.5
SOx	0.4	0.6	0.2
PM_{10}	4.0	3.8	-0.2
Total Emissions			
NOx	153.0	91.0	-62.0
CO	93.6	194.1	100.5
VOC	31.6	30.7	-0.9
SOx	12.4	7.4	-5.0
PM_{10}	104.8	51.8	-53.0

[a]From September 2002 Final Staff Report for the El Segundo Power Redevelopment Project (00-AFC-14), Air Quality Table 12.

Table 3.1-7 Comparison of Hourly CO Gas Turbine Emissions – Startups/Shutdowns (per gas turbine)		
Project	**Gas Turbine**	**Startup/Shutdown CO Emissions (Lbs/hr)**
Proposed ESPR Project	Siemens SGT6-5000F	823
East Altamont Energy Center	GE 7FA	930[a]
Metcalf Energy Center Project	Siemens 501F	2,500[b]

[a]From Commission Decision for the East Altamont Energy Center (01-AFC-04), August 2003, COC AQ-14.
[b]From Commission Decision for the Metcalf Energy Center Amendment (99-AFC-3C), March 2005, COC AQ-11.

Table 3.1-8 Emission Offset Summary (lbs/day)				
	CO	**PM_{10}**	**VOC**	**SOx**
Average Daily Emissions (Units 5 and 7) =	1,907	462	294	71
Rule 1304.a.2 Correction Factor (replacement of Units 1 and 2) =	0.3892	0.3892	0.3892	0.3892
Corrected Daily Emissions (Units 5 and 7) =	742	180	114	28
Offset Ratio =	1.2	1.2	1.2	1.2
ERCs Required =	890	216	136	34
ERCs Purchased =	0	24	146	45
Surplus/Shortfall =	890	192	-10	-11
Priority Reserve ERCs =	N/A	192	N/A	N/A
Remaining ERCs to Acquire =	0[a]	0	0	0

[a] No remaining CO ERCs required due to the June 2007 change to federal CO attainment status of the SCAQMD. As an attainment pollutant, the SCAQMD Regulation XIII will not require ERCs for CO emissions.

Table 3.1-9 Net Emission Increase for Federal Attainment Pollutants (tons/year)					
	NOx	**SOx**	**CO**	**VOC**	**PM_{10}**
ESPR Project	91.0	7.4	194.1	N/A	N/A
Emission Decrease for Units 1 and 2[a]	-396.2	-1.8	-223.2	N/A	N/A
Net Emission Change	-305.2	-5.6	-29.1	N/A	N/A
PSD Significance Levels[b]	40	40	100	N/A	N/A
PSD Review Required?	No	No	No	N/A	N/A

[a] From SCAQMD engineering evaluation, ESPR project, November 29, 2001, PDC, AN378766, Appendix A, pages 56 and 57.
[b] Per 40 CFR 52.21.b.23.

3.1.3.2 Oversize Equipment Delivery

Emissions during beach delivery activities will include combustion emissions from the tugs used to transport the loaded barges to the project site. After unloading, the tugs will return the empty barges. In addition to tug emissions, there will be combustion emissions associated with the SPMTs that will be used to transport the equipment from the barges to the appropriate locations onsite. There will also be combustion emissions associated with the use of bulldozers that will be used to help maintain the position of the barges during unloading operations. To calculate the combustion emissions for this equipment, it was assumed that the equipment would be equipped with Diesel engines meeting the EPA Tier II standards for non-road engines. In addition, it was assumed that 15 ppm sulfur Diesel fuel would be used by the equipment. The beach delivery of pre-assembled power plant components will result in a net reduction in the overall on-site construction workforce of approximately 23 percent. Accordingly, the detailed emission calculations included in Appendix 3.1 quantify the emission reductions associated with this workforce decrease, and the tables below account for these emission reductions in the estimated beach delivery emissions.

Beach delivery will result in a decrease of approximately 400 truck deliveries to the site. In order to compare the beach delivery emissions to truck delivery emissions, it was also necessary to calculate the combustion emissions associated with the 400 truck deliveries. To calculate emissions for the delivery trucks, the same round-trip haul distance (approximately 166 miles) used for the previous construction delivery truck analysis was used for the new analysis. In addition, EMFAC2007 emission factors for heavy-duty Diesel trucks (fleet average for Los Angeles County 1965 – 2007) were used to calculate delivery truck emissions.

Table 3.1-10 summaries the daily emissions associated with beach delivery and truck delivery. As shown on this table, both delivery methods result in NOx emissions above the South Coast Air Quality Management District daily significance thresholds. In addition, both delivery methods result in CO, VOC, SOx, and PM_{10} emissions below the daily significance levels. Furthermore, the Beach Delivery option has lower daily emissions then the truck delivery option for CO, VOC, SOx, and PM_{10}. With regard to overall emissions, Table 3.1-11 summaries the total emissions associated with the two delivery options. As shown on this table, with the exception of NOx there is a net emission reduction in overall emissions with the Beach delivery option.

The previously permitted project recognized that the short-term air quality impacts associated with construction would be mitigated to the extent feasible pursuant to the Commission's standard conditions of certification. Mitigating conditions include measures like minimizing equipment operation when not in use; performing regular preventive maintenance on engines, use of low-sulfur fuels where feasible, etc. This project modification would have similar conditions by which the short-term limited air quality construction impacts would be mitigated to

the extent feasible down to levels of insignificance (see pages 16 & 17 of the original project CEC Decision). Accordingly, there are no new significant impacts associated with the beach delivery modification. Enclosed as Appendix 3.1 are the detailed emission calculations for both beach and truck delivery options.

Table 3.1-10
Comparison Between Beach Delivery and Truck Delivery
Daily Emissions

	NOx	**CO**	**VOC**	**SOx**	**PM_{10}**
Beach Delivery Daily Emissions (lbs/day)					
Beach Delivery Emissions	653	15	9	-6	10
CEQA Significance Level*	100	550	75	150	150
Significant?	Yes	No	No	No	No
Truck Delivery Daily Emissions (lbs/day)					
Truck Delivery Emissions	293	183	31	0	15
CEQA Significance Level*	100	550	75	150	150
Significant?	Yes	No	No	No	No

**SCAQMD CEQA air quality significance thresholds for construction (SCAQMD CEQA Handbook, section revised October 2006).*

Table 3.1-11
Comparison Between Beach Delivery and Truck Delivery
Overall Emissions

	NOx	**CO**	**VOC**	**SOx**	**PM_{10}**
Beach Delivery Daily Emissions (lbs)					
Beach Delivery Emissions	5,158	-654	-9	-71	70
Truck Delivery Daily Emissions (lbs)					
Truck Delivery Emissions	2,933	1,834	308	3	150
Net Emission Change					
Net Change =	2,225	-2,487	-317	-74	-80

3.1.3.3 Offsite Laydown and Parking Areas

As discussed in Section 3.1.2.3, this project modification is not expected to have an impact on the air quality analyses previously performed for this project. Accordingly, no further air quality evaluations were performed for this project modification.

3.1.3.4 Plant Entrance Modifications

As discussed in Section 3.1.2.4, this project modification is not expected to have an impact on the air quality analyses previously performed for this project. Accordingly, no further air quality evaluations were performed for this project modification.

3.1.4 Laws, Ordinances, Regulations, and Standards (LORS)

The Final Commission Decision approving the ESPR project found the project to be in compliance with applicable LORS. As described in this Amendment, the modifications proposed for this project are consistent with applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the Final Commission Decision for the ESPR project. Since the Final Commission Decision for the ESPR project in 2005, there have been the three following new air quality regulatory developments that may apply to ESPR modifications:

National Emission Standards for Hazardous Air Pollutants (NESHAP)

Authority: Clean Air Act §112, 42 USC §7412

Requirements: Establishes national emission standards to limit emissions of hazardous air pollutants (HAPs, or air pollutants identified by EPA as causing or contributing to the adverse health effects of air pollution, but for which NAAQS have not been established) from major sources of HAPs in specific source categories.4 These standards are implemented at the local level with federal oversight. Only the NESHAP for combustion turbines (40 CFR 63, Subpart YYYY) adopted on March 5, 2004, which limits formaldehyde emissions from turbines, is potentially applicable to the ESPR project. However, the combustion turbine NESHAP is not expected to be applicable to the ESPR project because the facility would not be a major source of HAPs (i.e., 10 tpy of one HAP or 25 tpy of all HAPs).

Administering Agency: SCAQMD, with EPA Region 9 oversight.

National Standards of Performance for New Stationary Sources

Authority: Clean Air Act §111, 42 USC §7411; 40 CFR Part 60

4 A major source of HAPs is one that emits more than 10 tons per year (tpy) of any individual HAP, or more than 25 tpy of all HAPs combined.

Requirements: Establishes standards of performance to limit the emission of criteria pollutants (air pollutants for which EPA has established national ambient air quality standards [NAAQS]) from new or modified facilities in specific source categories. These standards are implemented at the local level with federal oversight. The applicability of these regulations depends on the equipment size, process rate, and/or the date of construction, modification, or reconstruction of the affected facility. The new NSPS Subpart KKKK, Standards of Performance for Stationary Gas Turbines (constructed after February 18, 2005), supersedes existing NSPS Subpart GG in setting limits on NOx and sulfur dioxide (SO_2) emissions from turbines. This regulation applies to gas turbines with a heat input in excess of 1 MMBtu/hr that commence construction after February 18, 2005, and hence, it is applicable to the ESPR project. Subpart KKKK limits NOx and SO_2 emissions from new gas turbines based on power output. The limits for turbines greater than 30 MW are 0.39 lb NOx per MW-hr and 0.59 lb SO_2 per MW-hr. Since the required NOx and SOx emission levels that will be required by CEC Conditions of Certification and SCAQMD Final Determination of Compliance will be more stringent then these NOx and SOx emission levels, ESPR gas turbines will comply with this regulation.

Administering Agency: SCAQMD, with EPA Region 9 oversight.

SCAQMD Preconstruction Review for Criteria Pollutants
Authority: H&SC §40000 et seq., H&SC §40400 et seq.

SCAQMD Regulation XIII (New Source Review) combines the federal and state NSR requirements into a single rule. Regulation XIII establishes pre-construction requirements for new or modified facilities to ensure that operation of such facilities does not interfere with progress toward the attainment of ambient air quality standards without unnecessarily restricting economic growth. For RECLAIM facilities, this rule only applies to those nonattainment pollutants, or their precursors, not regulated under the RECLAIM program. Since the ESPR project is a modification to an existing RECLAIM facility for NOx, nonattainment pollutant provisions for NOx are addressed under Regulation XX and not under Regulation XIII. For the ESPR project, Regulation XIII currently regulates CO, VOC, SOx, and PM_{10} as nonattainment pollutants or their precursors.

There are two upcoming events that will affect the implementation of Regulation XIII. First - In June 2007 the SCAQMD was reclassified as a federal attainment area for CO. Immediately upon that action, CO is no longer be classified as a nonattainment pollutant (or a precursor to a nonattainment pollutant) under Regulation XIII. As an attainment pollutant, the BACT (BACT), emission offset, and ambient air quality impact analysis requirements of Regulation XIII will no longer apply to CO. Accordingly, there are no new regulatory requirements associated with this change to the implementation of Regulation XIII. However, as noted in Section 2.0 and previously in this section, the project continues to propose the use of oxidation catalyst for the

control of CO down to BACT levels. The affects of this change to the attainment status of CO will be reflected in the new Final Determination of Compliance (FDOC) that will be issued by the SCAQMD for the Rapid Response Combined Cycle Technology amendment. Second – On July 13, 2007, the SCAQMD board is expected to re-approve an amended version of Rule 1309.1 (Priority Reserve). Under the amended version of Rule 1309.1, the ESPR project will continue to qualify as an Electrical Generating Facility (EGF) based on the version of Rule 1309.1 in effect when the permit application package for the ESPR project is deemed complete by the SCAQMD. Also under the amended version of Rule 1309.1 the priority reserve mitigation fees will be based on the version of Rule 1309.1 in effect when the ESPR project is issued the SCAQMD permit. Accordingly, the main impact of the amendment to Rule 1309.1 for the ESPR project is that the offset ratio for credits obtained from the SCAQMD Priority Reserve will increase from 1.0 to 1.0 to 1.2 to 1.0. The ESPR project will comply with the above changes to Regulation XIII by using the correct Priority Reserve offset ratio when purchasing credits from the SCAQMD.

Administering Agency: SCAQMD, with EPA Region 9 oversight.

3.1.5 Conditions of Certification

In February 2005 the Commission approved the ESPR project. As part of this approval, the Commission imposed a number of air quality Conditions of Certification (COCs) on the project based on the South Coast Air Quality Management District's (SCAQMD's) FDOC that was issued on February 14, 2002. The proposed Rapid Response Combined Cycle Technology project amendment will require the submittal of a new permit application to the SCAQMD requesting a new FDOC for the ESPR project. When issued, the new FDOC will likely include a number of new and/or revised equipment descriptions, emission limits, and operating restrictions. The new FDOC is also likely to include air quality conditions established by the SCAQMD to address combustor tuning activities and temporary emission exclusions due to gas turbine load changes. Since the new FDOC is not yet issued, it is currently impossible to provide an accurate markup of the existing air quality COCs showing the necessary changes to match the new FDOC. However, included in Appendix 3.1 is a table summarizing the likely changes to the air quality COCs that will occur as a result of the new FDOC.

There are no proposed changes to the air quality Conditions of Certification associated with delivery of oversize equipment, the proposed new laydown and parking area, or the plant entrance modifications.

3.2 Biological Resources

3.2.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to specific Conditions of Certification. The proposed project modifications are limited in scope and center around the proposed changes in 1) the plant's design to Rapid Response Combined Cycle technology; 2) the method of delivery for oversize equipment; 3) the addition of an offsite laydown and parking area for equipment staging and construction employee parking; and 4) the modification of the plant entrance road. This section describes potential effects that the proposed changes may have on biological resources and evaluates the potential impacts to these resources as a result of the proposed project modifications.

3.2.2 Affected Environment and Environmental Analysis

MBC Applied Environmental Sciences conducted site visits and surveys of marine and terrestrial habitats not previously investigated as part of the previously permitted project. Project changes which may potentially affect biological resources include beach delivery of plant equipment, the addition of a new offsite laydown area, and straightening and widening of the entrance road.

To determine the potential impacts of beach delivery on aquatic and terrestrial resources in the delivery site, the local sandy and rocky intertidal communities in the project area were surveyed twice to ensure documentation of seasonal variables. In addition, a survey was conducted of dune vegetation and vegetation on the ESGS property that may be removed. The nearshore subtidal habitat was surveyed for species of concern and invasive plant species and for the presence of any marine associated birds observed in the area was noted. Bird use of the proposed beach delivery site was further reviewed, along with the status of sensitive species. A summary of offshore subtidal habitat is included in our analysis.

Terrestrial surveys were conducted on the proposed offsite laydown area at 777 W. 190th Street and on the ESGS property where entrance road improvements are proposed. The California Natural Diversity Database and the California Native Plant Society website were reviewed for these sites prior to conducting the surveys, to determine if sensitive species had previously been reported in the area. The sensitive information from these sites are summarized according to U.S. Geological Survey topographic quadrant, and are included in Appendix 3.2-A. The site visits included a survey of plant and notes were taken on any animals observed. All plant species observed were identified to the lowest practical taxonomic level (usually species) and unusual species or specimens of uncertain identification in the field were collected for further identification. Survey methods for each site were recorded and California Native Species Field Survey Forms were filled out for each native species found. These are included as

Appendix 3.2-B. Since no sensitive species were found during the surveys, the forms were not submitted to the California Natural Diversity Database. Survey results are summarized below.

3.2.2.1 Rapid Response Combined Cycle (R2C2) Technology

There are no additional impacts on biological resources associated with the proposed change to R2C2 technology. In fact, this proposed modification to the previously permitted project will have a net reduction in impacts to biological resources. The proposed use of air-cooled R2C2 technology is a beneficial change to the permitted project because it will eliminate the entrainment and impingement of marine organisms associated with the seawater once-through cooling component of the previously permitted project. Potential impacts to marine biological resources due to thermal discharge will also be eliminated. Nitrogen deposition associated with the R2C2 equipment will be decreased due to the reduction in short-term and long-term maximum fuel consumption rates and nitrogen emissions levels. There will therefore be no impact to biological resources associated with the proposed change in technology.

3.2.2.2 Oversize Equipment Delivery

The beach delivery site is bounded upcoast by a rock groin, and downcoast by buried Outfall 001. The rock groin is one of more than 40 originally constructed in Santa Monica Bay for beach stabilization (Woodell and Hollar 1991). It was constructed in 1984 and is approximately 200 meters long. The depth of the nearshore zone shoreward of the rock groin ranges from approximately –8 feet to approximately +5 feet Mean Lower Low Water (MLLW). Subtidal sediments are composed primarily of sand, and waters are saline (32 to 34 practical salinity units) (MBC 2006a).

On November 7, 2006, two biologist-divers surveyed the beach delivery site from shore out to –10 ft MLLW (beyond the end of the rock groin) to document the presence of any hard substrate or vegetative communities (**Figure 3.2.-1**). Visibility during the survey was approximately three meters, and there was a patchy algal bloom (red tide) at the surface. Where visibility was limited due to surf (in the surf zone), biologists crawled/walked transects feeling for any bottom structure, relief, vegetation, or animals. No reefs or vegetation (*Caulerpa* or surfgrass) were observed in the beach delivery site. No giant kelp exists in the area due to lack of suitable hard substrate (MBC 2006b).

Intertidal sediments were collected in the beach delivery site during biological surveys conducted on November 7, 2006 and May 22, 2007. Samples were collected at four tidal levels (0 ft, +1 ft, +3 ft, and +5 ft MLLW) along two transects (A and B) using a 3.5-centimeter (cm) diameter, acrylic core tube with a penetration depth of 10-12 cm (**Figure 3.2-1**). Samples were analyzed by a certified laboratory using a series of sieves (ASTM D422M) or a compatible method utilizing laser light diffraction laser to determine fractional composition of sediment grain size in a sample (ASTM D422/D4464M).

In November, intertidal sediments averaged 98% sand and 2% silt/clay (**Chart Sediment-1**). No gravel was collected in any of the samples, and median grain size for the eight core samples ranged narrowly from 164 to 188 micromhos (µmhos) and averaged 174 µmhos, in the fine sand category. Subtidal sediments (collected in 2005 on the 20-ft isobath) in the beach delivery site by biologist-divers averaged 96% sand and 4% silt/clay (MBC 2006a). The subtidal sediments were collected with the same 3.5-cm diameter core tube, and analyzed using standard sieving for the gravel fraction and laser light diffraction for the sand/silt/clay fraction.

During the May survey, intertidal sediments averaged 99% sand and 1% silt/clay (**Chart Sediment-2**). While no gravel or coarse sand was collected in any of the samples, percentage of medium sand was higher at all stations in May, resulting in a slightly coarser median grain size overall than occurred during the November survey. Average median grain size for the eight cores was 258 µmhos in May, ranging from 226 to 285 µmhos, all within the fine sand category.

Chart Sediment-1. Grain size distribution at intertidal Transects A & B on 7 November 2006 and at subtidal Station B3 offshore the ESGS. Data for Station B3 from MBC (2006a).

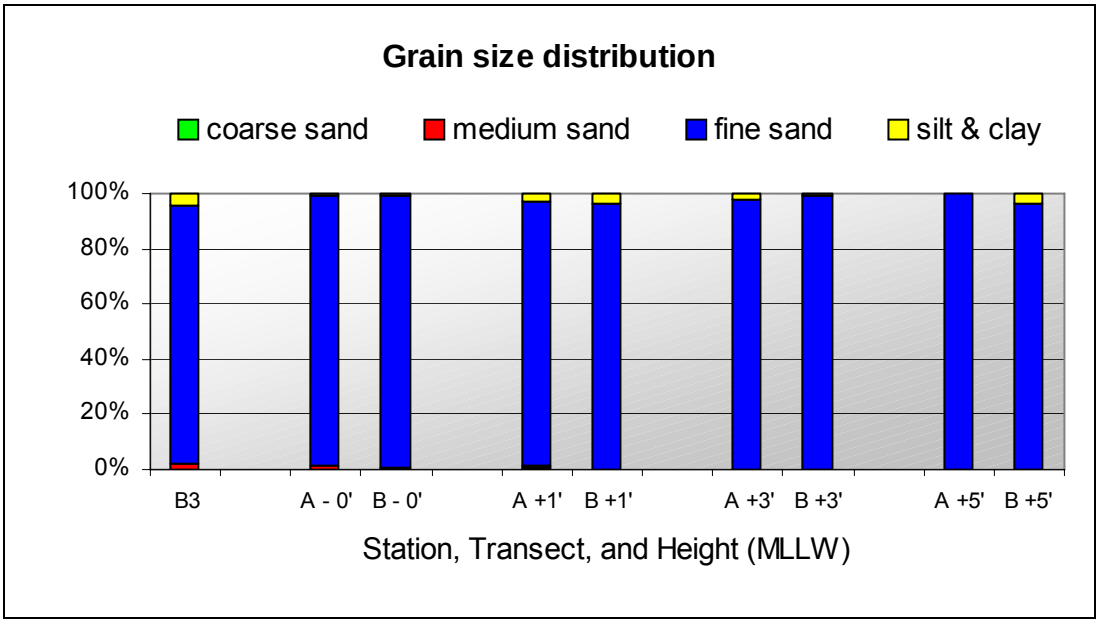
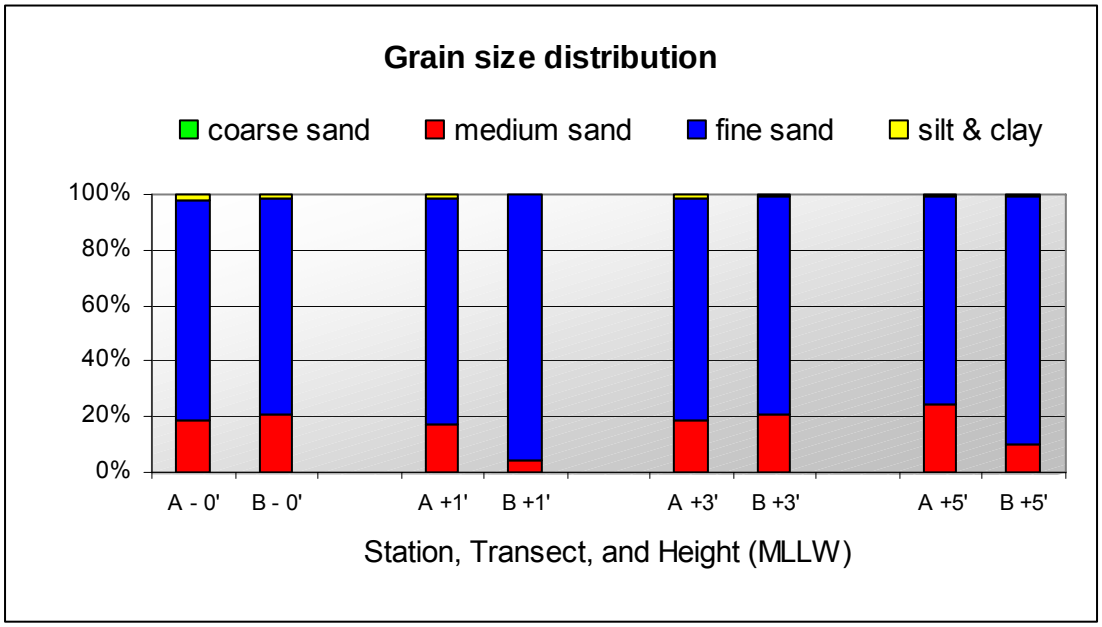


Chart Sediment-2. Grain size distribution at intertidal Transects A & B on 22 May 2007.



<u>Fishes and Invertebrates.</u> Section 5.6.1.4.2 of the ESPR AFC summarized the fish and invertebrate species likely to occur offshore ESGS. The following is an update of that section based on recent impingement data from ESGS, and other published sources.

Common fishes in the nearshore zone off ESGS include queenfish (*Seriphus politus*), blacksmith (*Chromis punctipinnis*), northern anchovy (*Engraulis mor*dax), and black croaker (*Cheilotrema saturnum*) (MBC 2006a). Fishes likely to occur in the surf zone off ESGS include water column species such as walleye surfperch (*Hyperprosopon argenteum*), barred surfperch (*Amphistichus argenteus*), topsmelt (*Atherinops affinis*), jacksmelt (*Atherinopsis californiensis*), bottom-oriented species such as California corbina (*Menticirrhus undulatus*), round stingray (*Urobatis halleri*), gray smoothhound (*Mustelus californicus*), and leopard shark (*Triakis semifasciata*) (Allen and Pondella 2006). The biologists performing the subtidal survey on November 7, 2006 observed a bat ray (*Myliobatis californica*) and an unidentified surfperch (Embiotocidae) near the surf zone.

California grunion (*Leuresthes tenuis*) is one of few fish species that spawns in the sandy intertidal zone (Walker 1949). This species can be harvested by hand during spawning runs, excluding April and May, and there is currently no take limit (CDFG 2006). From March through mid-September, grunion spawn about every two weeks during the full moon tidal series. Spawning runs last for about three to four nights during each full or new moon, and runs occur on both ascending and descending tidal series.

On the night of initial spawning, grunion move inshore to the surf zone, making their way onto the beach 15 to 30 minutes before spawning, typically returning to the ocean when waves recede. Females position themselves tail-first in the sand and deposit eggs, with males encircling the females and releasing milt. Both males and females are then washed back to the ocean. The eggs are further buried by sand deposition. Eggs of grunion do not hatch at a specific time or developmental stage, but in response to an environmental trigger (Walker 1952). Eggs develop rapidly and are ready to hatch in seven to eight days at 18°C. Normally, the eggs are triggered to hatch at the high tide of the subsequent new or full moon by the waves that reach high enough on shore to wash out the sand and carry the eggs into the ocean, approximately 10 days after fertilization. When the eggs are washed free from the sediments, they hatch within three to four minutes, and the larvae are washed to sea. It is not certain that grunion spawn on the sandy shores off ESGS, but it is likely (Walker 1952; SMBRC 2004).

Common invertebrates in the nearshore zone off ESGS include Pacific rock crab (*Cancer antennarius*), opalescent nudibranch (*Hermissenda crass*icornis), red rock shrimp (*Lysmata californica*), purple-striped jelly (*Chrysaora colorata*), and yellow crab (*Cancer an*thonyi) (MBC 2006a). Other invertebrates likely to be found in the nearshore area include California spiny lobster (*Panulirus interruptus*), slender crab (*Cancer gracilis*), and intertidal coastal shrimp (*Heptacarpus palpator*).

Essential Fish Habitat. The Magnuson-Stevens Fishery Conservation and Management Act (MSA) was authorized in 1996 and requires the National Marine Fishery Service (NMFS) to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a federal fisheries management plan. Essential Fish Habitat is defined as the waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Specifically, the MSA requires: (1) federal agencies to consult with NMFS on all actions or proposed actions authorized, funded, or undertaken by the agency that could adversely affect EFH; (2) NMFS to provide conservation recommendations for any federal or state action that could adversely affect EFH; and (3) federal agencies to provide a detailed response in writing to NMFS within 30 days of receiving EFH conservation recommendations.

The proposed beach delivery site is located within an area designated as EFH for both the Coastal Pelagics and Pacific Groundfish Management Plans. The Coastal Pelagics include water column fishes such as northern anchovy and Pacific mackerel, as well as market squid (*Loligo opalescens*). The EFH for Coastal Pelagics is considered all marine/estuarine waters off the coasts of Washington, Oregon, and California from shore out to the boundary of the Exclusive Economic Zone (200 nautical miles offshore). The Pacific Groundfishes include primarily bottom-dwelling species such as rockfishes (*Sebastes* spp), skates (*Raja* spp), and roundfishes. The EFH for Pacific Groundfish is parsed into several categories depending on the habitat occupied by individual species. The Non-Rocky Shelf habitat is the habitat that could be affected by the proposed project.

Subtidal Infauna. Benthic invertebrates off of ESGS, including the beach delivery site are sampled annually as part of the NPDES receiving water monitoring program. A total of eight stations are sampled in summer of each year using a hand-held, diver-operated box corer which collects a 1.0-liter sample. The benthic samples are then screened in the field with a 0.5-millimeter (mm) stainless steel screen, labeled, and fixed in buffered 10% formalin-seawater. In the laboratory, samples are rewashed on a 0.25-mm screen and transferred to 70% isopropyl alcohol. Organisms are then sorted to major taxonomic groups, identified to the lowest practical taxonomic level, and enumerated. Following identification, the weight of organisms in the major taxonomic groups in each replicate is obtained.

Eight benthic stations are sampled annually in the offshore area between Los Angeles Airport and the Manhattan Beach Pier; four stations are on the 20-ft isobath, and four are on the 40-ft isobath. Four replicates are collected at each station. One station (B3) is located 2,500 ft downcoast from the proposed beach delivery area on the 20-ft isobath. Results from the summer 2005 benthic survey at that station, and for the entire study area, are summarized in **Table 3.2-1** (MBC 2006a).

Table 3.2-1. Summary of Benthic Community Parameters Off the ESGS, Summer 2005.

Parameter	Station B3 (off ESGS)	Study Area Mean
Total number of species	42	68
Replicate mean no. of species	21	34
Total number of individuals	3,217	930
Total density (No./m^2)	80,425	23,256
Replicate mean no. of individuals	804	233
Total Species Diversity (H')	0.47	2.62
Replicate mean H'	0.44	2.36
Total biomass (g)	5.79	3.77
Replicate mean biomass (g)	1.45	0.94

The benthic community off ESGS in 2005 was comprised primarily of annelids (19 species), arthropods (11 species), mollusks (6 species), nemerteans (2 species), and four other taxonomic groups represented by one species each. A summary of species collected at Station B3 is presented in **Table 3.2-2**.

Table 3.2-2. Benthic Infauna Data for the Ten Most Abundant Species Collected at Station B3 Off the ESGS, Summer 2005.

Species	Phylum	Abundance	Percent Composition	Density (No.m^2)
Apoprionospio pygmaea	Annelida	2,989	92.91	74,725
Jassa slatteryi	Arthropoda	55	1.71	1,375
Lineidae	Nemertea	25	0.78	625
Hartmanodes hartmanae	Arthropoda	18	0.56	450
Armandia brevis	Annelida	16	0.50	400
Spiophanex bombyx	Annelida	10	0.31	250
Glycera macrobranchia	Annelida	8	0.25	200
Spiochaetopterus costarum	Annelida	7	0.22	175
Caprella cornuta	Arthropoda	7	0.22	175
Stenothoe estacola	Arthropoda	7	0.22	175

In 2005, the benthic community at Station B3 was heavily dominated by the annelid *Apoprionospio pygmaea*, which comprised 93% of total abundance. This species was most abundant at 6 of the 8 stations off the ESGS in 2005. *A. pygmaea* is a tube-dwelling annelid, and is common where sediments are coarser. In 2005, sediments at Station B3 were composed of 97% sand, 2% silt, and 1% clay, which was coarser than at the other three 20-ft stations (average 84% sand, 13% silt, 3% clay). *A. pygmaea* has been the overall most abundant species in 10 of 14 surveys since 1990. The second most abundant species was the tube-building amphipod *Jassa slatteryi*, which has become increasingly abundant since 2001. The remaining 40 species each comprised 0.8% or less of total abundance at Station B3.

Intertidal Infauna. On November 7, 2006 and again on May 22, 2007, biologists performed surveys of the intertidal zone (+5 ft to 0 ft MLLW) in the beach delivery site These two sampling periods, spring/summer and late fall, were sampled to characterize seasonal differences of the intertidal infauna community which could be affected during the beach delivery. Identical sampling and collection methods were utilized during both surveys. Intertidal infauna were collected along two transects perpendicular to the shoreline (**Figure 3.2-1**). Transect A was approximately 30 meter (m) downcoast from the rock groin, and Transect B was approximately 60 m downcoast from the rock groin. Along each transect, three core samples were collected at four tidal heights (0 ft, +1 ft, +3 ft, and +5 ft MLLW), for a total of 24 samples. On November 7, 2006, samples were collected between 3:20 and 3:54 p.m., as the tide fell from –0.1 to –0.6 ft MLLW. On May 22 2007, samples were collected between 9:50 and 10:30 a.m. while the tide rose from –0.1 to 0.0 ft MLLW.

The coring device was 50-cm long by 20-cm diameter, with a penetration depth of 20 cm. Samples were sieved through a 2.5-mm diameter screen. Most animals retained on the screen were placed in prelabeled sample containers, preserved in the field in 10% buffered formalin-seawater, and returned to the laboratory for positive identification and enumeration. Taxonomic identification of the intertidal organisms was completed.

Results of the sandy intertidal survey are summarized in **Tables 3.2-3** and **3.2-4**. During the November survey, one sand crab (*Emerita analoga*) was identified positively in the field and not returned to the laboratory. Additionally, one marine mite (Acarina) was collected at Transect A at the +5 ft level. All animals collected during the May survey were returned to the laboratory for identification.

Table 3.2-3. Summary of Sandy Intertidal Invertebrate Parameters, 7 November, 2006 and 22 May, 2007.

	November 2006			**May 2007**			**Combined**
	Transect			**Transect**			**Area**
	A	**B**	**Total**	**A**	**B**	**Total**	**Totals**
Elevation							
0 ft MLLW							
Number of species	4	4	7	1	3	4	9
Number of individuals	10	5	15	1	3	4	19
Density (Individuals/m^2)	106.1	53.1	79.6	10.6	31.8	21.2	50.4
+1 ft MLLW							
Number of species	3	2	3	2	-	2	4
Number of individuals	7	2	9	3	-	3	12
Density (Individuals/m^2)	74.3	21.2	47.8	31.8	-	15.9	31.8
+3 ft MLLW							
Number of species	3	2	3	4	2	5	8
Number of individuals	5	8	13	5	2	7	20
Density (Individuals/m^2)	53.1	84.9	69.0	53.1	21.2	73.2	53.1
+5 ft MLLW							
Number of species	3	5	5	3	4	5	8
Number of individuals	9	19	28	21	5	26	54
Density (Individuals/m^2)	95.5	201.6	148.6	222.8	53.1	138.0	143.2

In November 2006, the lower and mid intertidal zones (0 to +3 ft) were dominated by the bean clam (*Donax gouldii*) and beach hopper (*Megalorchestia benedicti*), while the annelids *Scolelepis bullibranchia* and *Hemipodus borealis* were the most abundant organisms in the upper intertidal (+5 ft) (**Table 3.2-4**). Densities by elevation ranged from 48 organisms per square meter at an elevation of +1 ft MLLW to 149 individuals per square meter at +5 ft MLLW, while the number of species ranged from three at both the +1 ft and +3 ft MLLW to seven at 0 ft MLLW. (**Tables 3.2-3 and 3.2-4)**.

Table 3.2-4. Sandy Intertidal Invertebrate Abundances by Transect, Elevation (ft MLLW) and Survey Date, 7 November, 2006 and 22 May, 2007.

		November 2007									May 2007								
Phylum		0 ft		+1 ft		+3 ft		+5 ft		Survey	0 ft		+1 ft		+3 ft		+5 ft		Survey
	Species	A	B	A	B	A	B	A	B	Total	A	B	A	B	A	B	A	B	Total
AN	*Hemipodus borealis*	-	-	-	-	-	-	5	4	9	-	-	-	-	-	-	15	1	16
MO	*Donax gouldii*	3	-	4	1	3	6	-	-	17	1	-	-	-	-	-	-	1	2
AN	*Scolelepis bullibranchia*	-	1	-	-	-	-	3	12	16	-	-	-	-	-	-	3	-	3
AR	*Megalorchestia benedicti*	4	2	2	1	1	-	-	1	11	-	-	-	-	-	-	-	-	-
NE	*Cerebratulus sp*	2	-	1	-	1	2	-	-	6	-	-	2	-	-	-	-	-	2
NE	*Carinoma mutabilis*	-	1	-	-	-	-	-	-	1	-	-	-	-	1	-	3	1	5
NE	Nemertea	-	-	-	-	-	-	1	1	2	-	-	-	-	1	-	-	-	1
NE	*Tetrastemma sp*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	3
AR	*Emerita analoga*	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	1
NE	Lineidae	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2
AN	*Nephtys californiensis*	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	2
AC	Acarina	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
AN	*Mediomastus acutus*	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
AR	*Lepidopa californica*	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
AN	*Notomastus sp*	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
AN	*Onuphis eremita parva*	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
	Number of Species	4	4	3	2	3	2	3	5	10	1	3	2	-	4	2	3	3	13
	Number of individuals	10	5	7	2	5	8	9	19	65	1	3	3	-	5	2	21	5	40
	Density (Number/m^2)	106.1	53.1	74.3	21.2	53.1	84.9	95.5	201.6	86.2	10.6	31.8	31.8	0.0	53.1	21.2	222.8	53.1	53.1

Phylum Key: AC = Arachnida, AN = Annelida, AR = Arthropoda, MO = Mollusca, NE Nemertea

In May 2007, animals in the lower intertidal zones (0 to +3 ft) were found in low abundances, with no more than two individuals of any species taken in a transect. (**Table 3.2-4**). One sand crab and one mole crab (*Lepidopa californica*) were taken in May, both at the 0 ft MLLW elevation. Only one bean clam occurred in the lower zones in May, although upper intertidal (+5 ft) was again dominated by annelids, particularly *Hemipodus borealis* which contributed more than 61% of the abundance at the upper level, while the annelid *Scolelepis bullibranchia* and the ribbonworm *Carinoma mutabilis* were also relatively abundant. Densities by elevation ranged from 16 organisms per square meter at an elevation of +1 ft MLLW to 138 individuals per square meter at +5 ft MLLW, while the number of species ranged from two at +1 ft MLLW to five at both the +3 ft and +5 ft MLLW levels (**Tables 3.2-3 and 3.2-4)**.

The sandy intertidal zone was also sampled in November 1971, May 1972, August 1972, and November 1972 as part of the ESGS Thermal Effect Study (Benson et al. 1973, included in Appendix H of the AFC). Sediments were sampled between an area 1,200 feet upcoast and downcoast of the centerline of the ESGS discharge conduits. A total of 10 transects

(perpendicular to shore), with six quadrats along each transect, were sampled during each survey between the high and low water marks. Quadrats were 0.9 meters by 0.9 meters (3 ft x 3 ft) and sampled to a depth of 15 centimeters (0.5 ft), with all sediments sifted through a 3.175-mm (0.125-in.) mesh screen.

Average density of sandy intertidal organisms during that study was 13.1 organisms per square meter. Sand crab (*Emerita analoga*) and the isopod *Excirolana chiltoni* were the most abundant organisms, comprising 51% and 47%, respectively, of total abundance. The other five species collected represented about 2% of total abundance. The isopod was most abundant in the high tide zone, while *Emerita* was most abundant in the mid- and low tide zones.

Rocky Intertidal. On November 7, 2006, biologists performed a survey of the rocky intertidal zone community along the downcoast (southeastern) side of the rock groin (**Figure 3.2-1**). Observed species are summarized in **Table Groin-1**.

Table 3.2-5. Intertidal Invertebrates Observed on the Rock Groin by Tidal Height, 7 November, 2006.

		Tidal Height (MLLW)				
Species	**Common Name**	**+5 ft**	**+4 ft**	**+3 ft**	**+2 ft**	**+1 ft**
Enteromorpha sp.	green alga	X				
Chthamalus fissus	brown acorn barnacle	X	X	X		
Collisella limatula	file limpet	X	X	X	X	X
Collisella digitalis	ribbed limpet	X	X	X	X	X
Balanus glandula	white acorn barnacle		X	X		
Pollicipes polymerus	gooseneck barnacle		X		X	X
Mytilus californianus	California mussel		X	X	X	X
Littorina scutulata	checkered periwinkle		X	X		
Lottia gigantea	owl limpet			X		
Acanthina spirata	angular unicorn			X		
Nuttallina californica	California chiton			X		
Anthopleura elegantissima	colonial anemone			X	X	X
Anthopleura xanthogrammica	green anemone			X	X	X
Pisaster ochraceous	ochre star				X	X

Additionally, the biologists performing the subtidal survey on November 7 swam along the groin and observed most of the same species, but also numerous (>100) Pacific rock crabs (*Cancer antennarius*). Present in lesser abundance were striped shore crabs (*Pachygrapsus cra*ssipes) and sea stars (*Pisaster* sp.).

On May 22, 2007, biologists again surveyed the rocky intertidal zone community along the downcoast (southeastern) side of the rock groin (**Figure 32.2-1**). Observed species are summarized in **Table 3.2-6**. No additional subtidal surveys were conducted in May.

Table 3.2-6. Intertidal Invertebrates Observed on the Rock Groin by Tidal Height, 22 May, 2007.

		Tidal Height (MLLW)				
Species	**Common Name**	**+5 ft**	**+4 ft**	**+3 ft**	**+2 ft**	**+1 ft**
Balanus glandula	white acorn barnacle	X	X	X	X	X
Chthamalus fissus	brown acorn barnacle	X	X	X	X	X
Enteromorpha spp	green alga	X	X	X	X	X
Littorina scutulata	checkered periwinkle	X	X			X
Collisella digitalis	ribbed limpet		X	X	X	X
Mytilus californianus	California mussel		X	X	X	X
Mytilus galloprovincialis	blue bay mussel		X	X	X	X
Pachygraspus crassipes	striped shore crab		X	X	X	X
Tegula funebralis	black turban snail		X	X	X	X
Lottia gigantean	owl limpet		X		X	X
Ligia occidentalis	rock louse		X			
Anthopleura elegantissima	colonial anemone			X	X	X
Anthopleura xanthogrammica	green anemone			X	X	X
Collisella limatula	file limpet			X	X	X
Pollicipes polymerus	gooseneck barnacle			X	X	X
Acanthina spirata	angular unicorn				X	X
Nucella emarginata	emarginate dogwinkle				X	X
Phragmatopoma californica	sand-castle worm				X	X
Nuttallina californica	California chiton					X
Pisaster ochraceous	ochre star					X
Protothaca staminea	Pacific littleneck					X

Birds. Sections 5.6.1.3 and 5.6.1.5 of the ESPR AFC summarized the potential for birds to occur in the project vicinity. Due to the nature of the proposed project changes, additional information is provided in this Amendment on birds that could potentially be affected by beach delivery activities.

During the November 7, 2006 biological surveys, a western gull (*Larus occidentalis*) were observed on the rock groin and a California brown pelican (*Pelecanus occidentalis californicus*) was seen foraging (plunge-diving) offshore near the groin terminus. Additionally, several shorebirds were observed feeding in the intertidal zone in the beach delivery site including: 8 sanderlings (*Calidris alba*), 2 willets (*Catoptrophorus semipalmatus*), and 2 marbled godwits (*Limosa fe*doa).

Seabird diversity and abundance increase during the winter in Santa Monica Bay when migratory species arrive, and decrease during summer when they depart, leaving only resident species. Few species nest along the Bay shores; most use the Bay as either a migratory stop or for foraging.

Marine Mammals and Reptiles. Sections 5.6.1.4.3 and 5.6.1.5.2 of the AFC, respectively, summarized the marine mammals and reptiles that could occur offshore of ESGS.

Vegetation. On November 7, 2006, biologists performed a survey of the vegetation in the proposed beach delivery site. Areas surveyed included (1) the rock groin, (2) beach and bike path areas between the groin and where Outfall 001 is buried, and (3) the fenced, grassy area within ESGS boundaries (**Figure 3.2-1**).

The vegetation in the grassy area on the ESGS property is entirely non-native, and includes: iceplant, gazania daisy, natal plum, fan palm, flax, mock orange, carob tree, banana, fortnight lily, and asparagus fern.

Plant species observed between the bike path and ESGS fenceline were almost all native (excluding bermuda grass and *Conyza*) and included:

- sea rocket (Cakile maritima)
- nightshade (Solanum amercanum)
- pitseed goosefoot (Chenopodium berlandieri)
- bermuda grass (Cynodon dactylon)
- plant – no common name (Conyza bonariensis)
- plant – no common name (*Eclipta prostrata*)

Plant species observed on the beach back dunes seaward of the bike path, off Units 1 and ”2 were almost all native (excluding hottentot fig) and included:

- beach bur (silver beachweed; *Ambrosia chamissonis*)
- beach evening primrose (*Camisonia cheiranthifolia*)
- heliotrope (*Heliotropum curassavicum*)
- hottentot fig (*Carpobrotus edulis*)
- beach sand verbena (*Abronia umbellata*)

Threatened, Endangered, and Sensitive Species. Section 5.6.1.5 of the AFC summarized the potential for sensitive species to occur in the project vicinity. Due to the nature of the proposed project changes, the California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) database were re-queried (Venice quad) on October 26, 2006 to identify any changes in the listings since 2000 (Appendix 3.2-A). This information was reviewed prior to field surveys of the area on November 7, 2006. A summary of changes/additions since the AFC filing are presented in Table **3.2-7**.

Table 3.2-7. Summary of Changes/Additions of Potentially Occurring Special Status Species in the Proposed Beach Delivery Project Area (Venice quad).

	Scientific Name	Common Name	Status	Change
Bird	*Charadrius alexandrius nivosus*	western snowy plover	FT	Still extirpated from the project area. Critical Habitat designated adjacent to proposed project site in September 2005.
Bird	*Passerculus sandwichensis beldingi*	Belding's savannah sparrow	SE	Still presumed extant. Observed in 2001 in wetland between Culver Blvd. and Ballona Creek (~6.2 km upcoast from the project site)
Bird	*Pelecanus occidentalis californicus*	California brown pelican	FE, SE	Not included in AFC. Presumed extant. Roost at the Marina del Rey breakwater is the second largest in southern California.
Mammal	*Perognathus longimembris pacificus*	Pacific pocket mouse	FE, CSC	Not included in AFC. Extirpated. Last seen in 1938 in Playa del Rey, and 0.8 to 1.6 km north and northwest of El Segundo.

Notes:

CSC – California State Species of Concern, FE – Federal Endangered, FT- Federal Threatened, SE – California State Endangered.

In October 2005, the U.S. Fish and Wildlife Service designated Critical Habitat for the Pacific coast population of western snowy plover (*Charadrius alexandrinus nivosus*) pursuant to the Endangered Species Act of 1973 (the Act). In total, approximately 12,145 acres of habitat were designated in 20 counties in Washington, Oregon, and California. Twenty-four acres were designated in Dockweiler South, immediately upcoast from ESGS, adjacent to the beach delivery site. Dockweiler South, along with forty-three acres in Dockweiler North, further upcoast from ESGS, and ten acres Hermosa Beach, annually supports a significant wintering flock of plovers in a location with high-quality breeding habitat (69 FR 75627). Primary threats to this stretch of beach include disturbance from human recreational use, and beach raking, which removes the wrack line and reduces food resources.

Critical Habitat is defined as: (1) the specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (a) essential to the conservation of the species, and (b) that may require special management considerations or protection; and (2) specific areas outside the geographic area occupied by a species, at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Section 7 of the Act requires federal agencies to ensure the actions they fund, authorize, or carry out are not likely to destroy or adversely modify Critical Habitat. Destruction or adverse modification is defined as "a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species" (50 CFR 402.2).

California brown pelican (*Pelecanus occidentalis californicus*) is listed as endangered by both the federal and state governments. It was originally listed in 1970 because of its low reproductive success attributed to eggshell thinning as a consequence of pesticide contamination. Following the prohibition on the use of DDT, the population largely recovered. Brown pelicans occur along the Pacific coast from California to Chile and the Atlantic coast from North Carolina through the Caribbean to South America. The current breeding distribution of the California subspecies of the brown pelican ranges from the Channel Islands of southern California southward to Isla Isabela and Islas Tres Marias off Nayarit, Mexico and Isla Ixtapa off Acapulco, Guerrero, Mexico. The U.S. colonies are currently the only colonies which are protected from human disturbance. Between breeding seasons, pelicans may range from as far north as Vancouver Island, British Columbia, and south to Central America. Brown pelicans are plunge divers, feeding primarily on fish in open waters nearshore and in harbors. Northern anchovy comprise a significant portion of their diet.

Invasive Species. Harmful aquatic organism invasions through ballast water are recognized as a serious threat to global diversity and human health. Multiple species of bacteria, plants, and animals can survive in ballast water and sediment carried in ships. The subsequent discharge of ballast water or sediment into the waters of port states could result in the establishment of these harmful organisms, thereby creating a potential detriment to the marine environment. Several invasive species of fishes, algae, and invertebrates have been identified in southern California's coastal waters in recent years. There are no known invasive species in the rocky/sandy intertidal or beach areas off ESGS.

An invasive alga, *Caulerpa taxifoli*a, was discovered in Agua Hedionda Lagoon (San Diego County) and Huntington Harbour (Orange County) in 2000. This species is native to the tropical waters of the Caribbean, Indo-Pacific, and Red Sea. In the 1980s, a modified strain of this species was introduced to the Mediterranean, where it began to spread rapidly and displace native seaweeds. This habitat alteration subsequently affected other algal, invertebrate, fish, and

mammal populations. Reproduction of *Caulerpa* is asexual, and occurs through fragmentation and dispersal. Therefore, agitation of existing stands can lead to further spreading. *Caulerpa* has not been documented in Santa Monica Bay, but the potential remains for further introductions.

Projected Impacts

The proposed changes to the ESPR project will not result in the permanent alteration of any existing habitat. Biological Avoidance and Minimization Measures will serve to minimize potential temporary impacts.

The following is a discussion of potential impacts resulting from beach delivery activities. These impacts could result from the following activities: (1) beach/intertidal preparation for construction of the beach delivery ramp; (2) construction/deconstruction of the beach delivery ramp; and (3) noise/disturbance related to barge delivery and beach transport.

1. **Temporary loss of subtidal, intertidal, and beach organisms and habitat from beach construction, barge delivery, and equipment transfer.**

The proposed beach delivery activities will result in the temporary disturbance or loss of beach and intertidal organisms. In preparation for construction of the beach delivery ramp, minor grading of the intertidal zone to smooth out any cusps and swales will be performed. Subsequently, the beach delivery ramp will be constructed proceeding from the ESGS shoreward. These activities will disturb beach wildlife, especially seabirds and shorebirds. However, the beach is already groomed regularly by mechanized machines, so this type of disturbance occurs regularly in the beach delivery site. Implementation of Pre-Construction Employee Training will serve to minimize inadvertent habitat disturbance.

The grading and placement of fill material will result in the loss of intertidal organisms in the beach delivery site. The beach delivery ramp will extend into the intertidal zone to approximately +3 ft MLLW, and cover approximately 1,500 square meters (0.37 acre) of intertidal sediments between +3 ft and +6 ft MLLW. This will result in the potential for temporary loss of sandy intertidal fauna of approximately 70 organisms per square meter (average of tidal heights sampled) or about 104,000 intertidal organisms total. Grounding of the construction barge is estimated to temporarily affect an additional 1,500 square meters of intertidal habitat between +3 ft and –2 ft MLLW.

On the subject of sandy intertidal disturbance and meiofaunal succession, McLachlan and Brown (2006) noted:

> *Disturbance does not occur in the sense of rocky shores, clearing patches of attached organisms and enabling succession to start. On beaches, it is usually localized, and barring major storms (which restructure the entire beach environment and often cause offshore migration into deeper water) disturbance*

usually has minimal effects, perhaps causing small local accumulations or temporary patchiness. Succession has not been studied on a sandy beach, and in the classic sense probably does not exist. Beach faunas are opportunistic, mobile, and plastic in their behavior, and any defaunated area (created, for example, by artificial beach nourishment) will be rapidly colonized with little interaction between species and both pre- and post-settlement processes playing a role. There is no indication of any sequence of community states on a sandy beach or habitat modification by some species influencing the success of other colonists. Instead, in most cases there is not a structured community, just a number of independent species populations. The colonization of barren sand beaches by microbes and meiofauna may be different.

Additionally, suspension of sediment in the intertidal zone could affect rocky intertidal organism growing on the rock groin. Suspended sediments could smother organisms, interfere with filter feeding, interfere with growth or reproduction, etc. However, due to the limited nature of proposed sediment disturbance, and the relatively large particle size of intertidal sediments, this impact is considered unlikely and insignificant.

Beach delivery activities, including the use of geo-fiber on intertidal sediments, could preclude California grunion from spawning in the affected area off ESGS, or preclude hatching of eggs already laid. However, at the +5-ft MLLW tidal level, the geo-fiber would only affect a beach width of about 60 meters. This impact would also be of short duration. Impacts to intertidal spawning areas will be minimized by limiting construction activities below the high tide line to only necessary construction events. Additionally, the clean sand used for ramp construction will be used as beach nourishment, ultimately increasing the spawning habitat available for California grunion. The ramp laid across the beach could also result in the disturbance/loss of vegetation (1) on the back beach dune seaward of the bike path, and (2) between the bike path and the ESGS fenceline. Any loss of native vegetation will be restored to levels recorded during the Pre-Construction Vegetation Survey, and in the Restoration Plan. Therefore, this impact is considered insignificant.

2. Temporary disturbance during beach construction, barge delivery, and cargo offload.

Endangered snowy plovers winter at Santa Monica Beach, and from November through March mechanical beach cleaning is replaced by hand cleaning to lessen disruption. While there are no recent records of this species in the proposed beach delivery project areas, critical habitat is designated adjacent to the proposed beach delivery area. However, the beach delivery construction and operation activities will not destroy or adversely modify this habitat. Additionally, pre-construction snowy plover surveys will document if snowy plovers are using the project site for nesting or wintering. Due to the narrow beach width, plovers are unlikely to use the beach adjacent to ESGS. However, if they are documented within the beach delivery site,

measures will be taken to minimize impacts to the extent practicable in coordination with the U.S. Fish and Wildlife Service.

The presence of personnel, vehicles, equipment, and vessels could result in disruption of California least tern and California brown pelican foraging in nearshore waters. Least terns prefer to feed in nearshore areas adjacent to nesting sites, and specifically, most foraging occurs within two miles of nesting sites (Keane 1987). The nearest nesting site is nearly 13 km (8 miles) upcoast, so least terns are not likely to feed in nearshore waters off ESGS. Brown pelicans and other shorebirds, however, are likely to feed in the project area. These birds are relatively common on the shores of Santa Monica Bay, and there is sufficient foraging habitat in areas adjacent to the project site. The beach is already subject to public activity, including vehicle use, i.e. lifeguards and beach grooming machines. The limited extent and short duration of these activities will limit impacts to less than significant levels.

There are no in-water, beach delivery, construction-related noises that would be likely to disturb marine mammals (whales, pinnipeds, or dolphins). Construction activities will be performed onshore, and there will be no pile-driving or underwater noise-making. The only noise generated from beach delivery operations that could potentially affect marine mammals would be vessel propulsion from the tugs moving up to six barges.

Gray whales are migratory and appear in southern California during their southbound migration to wintering grounds in Baja California, and northbound migration to arctic seas (MBC 1989). In three years of monthly aerial surveys in the Southern California Bight, more than 90% of all gray whale sightings occurred from January through March, comprised of both northbound and southbound whales relatively close to the mainland. Industrial sounds have been found to result in slight changes in swimming speed and course in gray whales (Malme et al. 1984). However, gray whales are fairly tolerant of noise from ships and are likely to deviate from their migratory course just enough to avoid ships (Lecky 1992). The low number of vessel trips and the relatively short distance traveled make noise-related impacts to other marine mammals unlikely. Impacts due to ship-related noise are considered unlikely and insignificant.

The proposed project will not result in any permanent adverse effects to the EFH on any of the Coastal Pelagic or Pacific Groundfish species, though there could be short-term disruptions to these habitats during project construction. NMFS identifies potential impacts to managed species resulting from placement of fill material. These include: (1) smothering of prey items; (2) habitat modification; (3) turbidity plumes if fill material is fine-grained (silt or finer); (4) introduction of contaminants; (5) increase in biochemical oxygen demand (BOD); and (6) alteration of current patterns. Placement of fill material will result in the temporary modification of nearshore habitat, and smothering/loss of some organisms. No turbidity plumes or introduction of contaminants/nutrients are expected due to the characteristics of the proposed fill material. There

are no anticipated substantial changes in current patterns or increases in BOD. Due to the limited extent and duration of the construction impacts, effects to EFH are considered insignificant.

3. Vessel Collisions and Spills

The possibility exists for injury or mortality to marine mammals or turtles due to collision with vessels (tugs or barges) involved in beach delivery to the ESGS site. Killing or injuring marine mammals and/or turtles violates the Marine Mammal Protection Act of 1972 (whales and dolphins) and/or the Endangered Species Act of 1973 (turtles). However, based on the limited number of vessels proposed for beach delivery, and the limited duration of the project, this is considered extremely unlikely. In 2001, there were only three reported mortalities to California sea lions from vessel collisions along the entire U.S. Pacific Coast (Carretta et al. 2003). From 1997 to 2000, there were 12 mortalities and 2 injuries to Pacific harbor seals reported in California (Carretta et al. 2003). Therefore, this potential impact is considered unlikely and insignificant, given that beach delivery requires only up to six total barge round trips.

The possibility exists for accidental spills from vessels associated with beach delivery activities (as described in Section 3.15). These could potentially affect intertidal/subtidal resources. However, with the implementation of the Storm Water Pollution Prevention Plan (SWPPP) in proposed Condition of Certification WATER QUALITY-10 and other proposed protective measures, these impacts are considered unlikely and insignificant.

Biological Avoidance and Minimization Measures

To ensure the impacts from the proposed project are temporary and insignificant, ESP II offers the following measures. These will enable the ultimate restoration of affected beach areas to their pre-construction conditions.

1. **Pre-Construction Dune Vegetation Survey.** A pre-construction vegetation survey at potentially affected areas adjacent to ESGS will be conducted. This survey will be done within 60 days of commencement of construction activities, and will identify plant resources on the beach dune that could be affected by beach delivery construction. The survey report will attempt to identify plant species and their approximate areal coverage (m^2). All reasonable efforts will be made to avoid these plants during construction. Because avoidance may not be possible, a Vegetation Restoration Plan will be prepared as part of the ACOE Section 404 Permit Restoration Plan. The Vegetation Restoration Plan will propose to restore any native vegetation adversely affected by beach construction activities.

2. **Pre-Construction Snowy Plover Surveys.** A weekly pre-construction snowy plover survey will be conducted at potentially affected areas adjacent to ESGS, and extending at least 100 meters upcoast and downcoast from potentially affected areas. These surveys will commence within 30 days of commencement of construction activities, and will attempt to identify any snowy plovers or plover nesting sites that could be

affected by beach delivery construction. The survey report will identify plover nests and their position on the beach. These nests will be avoided during construction to the extent feasible. These report findings will be reported via telephone at the end of each week to the U.S. Fish and Wildlife Service.

3. **Pre-Construction Employee Training.** Personnel performing activities on the beach will receive adequate environmental training prior to commencement of heavy-haul construction work. This training will include: (1) identification of sensitive areas to avoid, (2) identification of sensitive plant and bird species, and (3) required measures to minimize potential impacts, including proper disposal of trash, and potential effects of harassment or disturbance to habitat.

4. **Pre-Construction *Caulerpa* Survey.** A pre-construction *Caulerpa* survey will be conducted at potentially affected areas adjacent to ESGS. This survey will be done within 60 days of commencement of construction activities, and will be performed in accordance with the NMFS and CDFG *Caulerpa* survey protocols. Results will be transmitted to NMFS and CDFG within 48 hours of completion of the survey.

5. **State Ballast Water Guidelines.** The discharge of ballast water from beach delivery vessels could introduce non-native/invasive organisms into the coastal waters off ESGS. In 1997, the International Maritime Organization issued voluntary guidelines, addressing ballast water management, which it recommended all maritime nations adopt: "*The California State Lands Commission has adopted "Ballast Water Regulations for Vessels Arriving at California Ports or Places after Departing from Port or Places within the Pacific Coast Region.*" Adherence to these regulations is designed to prevent invasive species introductions, and will reduce the possibility of such introductions to less than significant. These include at least one of the following ballast water management practices:

   - Exchange of vessel ballast water in near-coastal waters (>50 nautical miles from land), before entering waters of the state, if that ballast water has been taken on in a port or place within the Pacific Coast region.
   - Retain all ballast water on board the vessel.
   - Use a U.S. Coast Guard approved alternative, environmentally sound method of ballast water management.
   - Discharge the ballast water to a reception facility approved by the California State Lands Commission.
   - When compliance with sections 1 through 4 (above) are not practicable, performance of a ballast water exchange within an area agreed to by the State Lands Commission in consultation with the U.S. Coast Guard at or before the time of request.

   Under the proposed project, vessels will adhere to State ballast water guidelines, and no ballast water would be discharged at the project site.

3.2.2.3 Offsite Laydown and Parking

On May 18, 2007, biologists performed a survey of the vegetation in the proposed W. 190th Street offsite laydown area. The proposed staging area is an active, operational vehicle parking lot, with a surface covered by an estimated 70% asphalt and 15% dirt, with another 15% landscaped. Most of the site is covered with trucks, construction equipment, trailers, buses, boats and cars. Vegetation at the site is found almost exclusively along the perimeter, including along the fence line on W. 190th Street and the Dominguez Channel to the east and neighboring properties to the west, and in a landscaped belt to the north and west on a hillside at the back of the site. The hillside is planted with myoporum ground cover and a variety of ornamental trees including eucalyptus, willow and peppers. The hillside landscape belt is contiguous with the landscaped "panhandle" of the site to the west, which is fenced and inaccessible. A total of 49 plant species were observed at the W. 190th Street site, as well as three species of birds (**Table 3.2-8**).

Table 3.2-8. Plant and Animal Species Observed at the Proposed W. 190th Street Offsite Location. 18 May 2007.

Plants		**Native**			**Native**
Species name	**Common name**	**+/-**	**Species name**	**Common name**	**+/-**
Acacia sp	acacia	-	*Polygonum arenastrum*	knotweed	-
Agave attenuata	agave	-	*Callistemon citrinus*	lemon bottlebrush	-
Hordeum sp	barley	-	*Chenopodium ambrosioides*	Mexican tea	-
Cynodon dactylon	Bermuda grass	-	*Myoporum parvifolium* ?	myoporum	-
Bougainvillea sp	Bougainvillea	-	*Avena* sp	oats	-
Schinus terebinthefolius	Brazilian pepper	-	*Nerium oleander*	oleander	-
Plantago lanceolata	buckhorn plantain	-	*Xylosma congestum*	ornamental	-
Malva nicaeensis	bull mallow	-	*Coreopsis* sp	ornamental daisy	-
Ceratonia siliqua	carob	-	*Schinus molle*	Peruvian pepper	-
Ricinus communis	castor bean	-	*Chenopodium album* ?	pigweed, lamb's quarters	-
Sonchus oleraceus	common sowthistle	-	*Pinus* sp	pine	-
Baccharis pilularis	coyote brush	+	*Sonchus asper*	prickly sowthistle	-
Paspalum dilatatum	dallis grass	-	*Polypogon monspeliensis*	rabbitfoot grass, annual beard grass	-
Hedera helix	English Ivy	-	*Salsola tragus*	Russian thistle	-
Eucalyptus sp	eucalyptus	-	*Piptatherum miliaceum*	smilo grass	-
Puccinella distans	European alkali grass	-	*Chamaesyce maculata*	spurge	-
Washingtonia sp	fan palm	-	*Erodium botrys*	storksbill, filaree	-
Foeniculum vulgare	fennel	-	*Nicotiana glauca*	tree tobacco	-
Brassica nigra	field mustard	-	*Cyperus involucratus*	umbrella sedge	-
Pennisetum setaceum	fountain grass	-	*Morus alba*	white mulberry	-
Populus fremontii	Fremont cottonwood	+	*Melilotus alba*	white sweetclover	-
Solanum sarrachoides	hairy nightshade	-	*Raphanus sativus*	wild radish	-
Conyza canadensis	horseweed	+	*Salix* sp	willow	-
Aptenia cordifolia	iceplant	-	*Melilotus officinalis*	yellow sweetclover	-
Lolium multiflorum	Italian ryegrass	-			
Animals observed					
Corvus brachyrhynchus	American crow	+			
Passer domesticus	house sparrow	-			
Columba livia	rock pigeon	-			

Threatened, Endangered, and Sensitive Species. Section 5.6.1.5 of the ESPR AFC summarized the potential for sensitive species to occur in the project vicinity. The newly proposed W. 190th Street staging area is located in the Torrance quad topographic quadrangle. This information was reviewed prior to field surveys of the area on 18 May 2007 (Appendix 3.2-A). A summary of special status species listed in the CNDDB that could potentially occur at that site is presented in Table **3.2-9**. Plant species listed by the California Native Plant Society database in the Torrance quad that were not included in the CNDDB included:

- Coastal dunes milk-vetch (*Astragalus tener var. titi*) 1B.1
- Coulter's goldfields (*Lasthenia glabrata ssp. coulteri*) 1B.1
- coast woolly-heads (*Nemacaulis denudata var. denudata*) 1B.2
- California Orcutt grass (*Orcuttia californica*) 1B.1
- San Bernardino aster (*Symphyotrichum defoliatum*) 1B.2

Table 3.2-9. Summary of Changes/Additions of Potentially Occurring Special Status Species in the Proposed W. 190th Street Offsite Location (Torrance quad).

	Scientific Name	Common Name	Status	Comments
Bird	*Agelaius tricolor*	tricolored blackbird	CSC	Observed at Harbor Lake, San Pedro, and Madrona Lake (1980s). Presumed extant.
Bird	*Polioptila californica californica*	coastal California gnatcatcher	FT, CSC	Observed near Palos Verdes (1980), Hawthorne Blvd. (2005), and San Pedro (2003). Requires coastal sage scrub. Presumed extant.
Bird	*Sterna antillarum browni*	California least tern	FE, SE	Observed on Terminal Island (1985 – extirpated), Harbor Lake (1977-presumed extant).
Fish	*Gila bicolor mohavensis*	Mohave tui chub	FE, SE	Observed at South Coast Botanic Garden, Palos Verdes (1976). Extirpated.
Insect	*Cicindela hirticollis gravida*	sandy beach tiger beetle	S1	Observed on Terminal Island (1979). Extirpated.

	Scientific Name	Common Name	Status	Comments
Insect	*Danaus plexippus*	monarch butterfly	S3	Observed north of Sepulveda Blvd., 0.5 miles west of Palos Verdes Blvd. (1989). Presumed extant.
Insect	*Glaucopsyche lygdamus palosverdesensis*	Palos Verdes blue butterfly	FE, S1	Observed at Ranchos Palos Verdes (1982 – Possibly extirpated). Restricted to the cool, fog-shrouded seaward side of Palos Verdes Hills.
Plant	*Atriplex parishii*	Parish's brittlescale	CNPS 1B.1	Observed in Redondo (date unknown). Presumed extant.
Plant	*Atriplex pacifica*	South Coast saltscale	CNPS 1B.2	Observed in San Pedro and Redondo (1903-1931). Presumed extant.
Plant	*Atriplex sernana var. davidsonii*	Davidson's saltscale	CNPS 1B.2	Observed in San Pedro (1906). Presumed extant.
Plant	*Centromeadia parryi ssp. australis*	southern tarplant	CNPS 1B.1	Observed at Harbor Lake (2001) and Madrona Marsh (1997), associated with marshes and swamps. Presumed extant.
Plant	*Cordylanthus maritimus ssp. maritimus*	salt marsh bird's-beak	S2.1	Observed on Terminal Island (1901). Possibly extirpated.
Plant	*Navarretia prostrata*	prostrate navarretia	S2.1	Observed in Wilmington (1882). Possible extirpated.
Plant	*Pentachaeta lyonii*	Lyon's pentachaeta	S1.1	Observed in San Pedro Hills (1889-1910) and Wilmington. Presumed extant to extirpated.

	Scientific Name	Common Name	Status	Comments
Plant	*Phacelia stellaris*	Brand's phacellia	S1.1, CNPS 1B.1	Observed in Redondo Beach (1909). Presumed extant.
Plant	*Suaeda esteroa*	estuary seablite	CNPS 1B.2	Observed in San Pedro (1904). Presumed extant.
Reptile	*Phrynosoma coronatum*	Coast (San Diego) horned lizard	CSC, S3S4	Observed 8 miles NW of Los Angeles (date unknown). Extirpated.
Mammal	*Nyctinomops femorosaccus*	pocketed free-tailed bat	S2S3	Observed in Harbor City (1985). Presumed extant.
Mammal	*Perognathus longimembris pacificus*	Pacific pocket mouse	FE, CSC	Observed in Redondo (1931) and Wilmington (1865). Extirpated.

Notes:

CSC – California State Species of Concern, FE – Federal Endangered, FT- Federal Threatened, SE – California State Endangered, CNPS – California Native Plant Society ranking.

Projected Impacts

Use of the proposed new offsite locationwill not result in the permanent alteration of any existing habitat. Use of the W. 190th Street location as a staging/laydown area will likely result in the removal or disturbance of some plants, almost all of which are non-native. The site is already subject to continual disturbance from ongoing human activities. Impacts to vegetation resulting from use of the W. 190th Street location as a staging/laydown area are considered insignificant.

3.2.2.4 Plant Entrance Road Modification

On January 17, 2007, biologists performed a survey of the vegetation in the proposed entrance road realignment area at ESGS. The areas surveyed included those that would be potentially disturbed or removed as part of the realignment. Vegetation was almost entirely ornamental/planted sea fig (*Carpobrotus chilensis*). Other vegetation observed in the survey area included:

- India hawthorn (*Raphiolepis indica*) – 6 plants
- acacia (*Acacia cultriformis*) – 3 plants
- myoporum (*Myoporum laetum*) – 11 plants
- plant – no common name (*Lantana camara*) – 4 plants
- oleander (*Nerium oleander*) – 4 plants

Threatened, Endangered, and Sensitive Species. Section 5.6.1.5 of the ESPR AFC summarized the potential for sensitive species to occur in the project vicinity. Due to the nature of the proposed project changes, the CNDDB and the CNPS databases were re-queried (Venice quad) to identify any changes in the listings since 2000 (Appendix 3.2-B). This information was reviewed prior to field surveys of the area on January 17, 2007. The review of the databases and survey of the area determined that special status species are unlikely to occur at this site.

Projected Impacts

The proposed changes to the ESPR project will not result in the permanent alteration of any existing habitat. Improvements to the entrance road will result in the removal of some plants, almost all of which are ornamental sea fig. The road margin will be landscaped after completion of the improvements. Impacts to vegetation as a result of entrance road improvements are considered insignificant.

3.2.3 Cumulative Impact

The proposed project changes will not result in any significant cumulative impacts to biological resources beyond those addressed in the CEC's Final Commission Decision for ESPR. The cumulative impacts to biological resources, which were identified by CEC staff as part of the previously permitted project, focused on potential cumulative impacts associated with once-through cooling. The proposed elimination of once-through cooling associated with the R2C2 technology presents a net benefit to marine biological resources and eliminates the previously permitted project's main contribution to cumulative impacts on biological resources. Beach delivery will result in only temporary impacts to biological resources and therefore does not pose a significant cumulative impact. Use of the new offsite laydown area also will not pose any cumulative impacts, given the proposed temporary use of the site, the continued industrialized use of the site and the surrounding areas, and the absence of any sensitive species or habitat on the laydown site.

3.2.4 Laws, Ordinances, Regulations, and Standards (LORS)

The Final Commission Decision certifying ESPR found the project to be in compliance with applicable LORS. As described in this Amendment, the modifications proposed are consistent with applicable LORS related to biological resources, and the Amendment will not alter the assumptions or conclusions made in the CEC’s Final Commission Decision for ESPR.

Additional LORS which are applicable to the proposed project modifications will be complied with. These additional LORS include:

Clean Water Act of 1977. Section 404. Section 404 of the CWA regulates the discharge of dredged material and placement of fill material within waters of the U.S., and requires the U.S. Army Corps of Engineers (ACOE) to issue permits prior to such activities. The ACOE can issue

two types of permits: (1) general permits for projects anticipated to have minimal individual and cumulative environmental impacts, and (2) project-specific permits for projects not authorized under a general permit. An important provision of Section 404 is that it incorporates all of the other federal environmental laws into the permit process. Therefore, to obtain a 404 permit for a project, an applicant must assure the ACOE that the project is in compliance with other environmental laws.

Rivers and Harbors Act of 1899. The Rivers and Harbors Act provides the ACOE with authority over all construction in navigable waters. Specifically, Section 10 of the Rivers and Harbors Act requires authorization for all construction between the Mean High Tide Line and the limit of territorial seas (three nautical miles offshore). Activities not regulated under Section 404 of the CWA, such as removal of structures or placement of moorings, are subject to Section 10 authority if they occur within the three-mile area. Section 13 of the Act makes it a crime to discharge refuse material into any navigable water without the ACOE's permission.

Executive Order 13112. Invasive Species Executive Order 13112 was enacted in 1999 and established the National Invasive Species Council, which is required to provide leadership and oversight on invasive species issues. The goal of the Order is to prevent the introduction of invasive species and provide for their control and minimize economic, ecological, and human health impacts that invasive species may cause.

Magnuson-Stevens Fishery Conservation and Management Act of 1996. The Magnuson-Stevens Fishery Conservation and Management Act (MSA) was authorized in 1996 and requires the National Marine Fisheries Service (NMFS) to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a federal fisheries management plan. Essential Fish Habitat is defined as the waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Specifically, the MSA requires: (1) Federal agencies to consult with NMFS on all actions or proposed actions authorized, funded, or undertaken by the agency that could adversely affect EFH; (2) NMFS to provide conservation recommendations for any federal or state action that could adversely affect EFH; and (3) Federal agencies to provide a detailed response in writing to NMFS within 30 days of receiving EFH conservation recommendations.

3.2.5 Changed Conditions of Certification

Because the project amendment proposes to entirely eliminate the use of once-through cooling for the new R2C2 units, this amendment proposes deletion of all BIO Conditions of Certification and Verification requirements associated with compliance with LORS or mitigation measures associated with the use of once-through cooling for the previously approved project configuration. These conditions are not relevant or appropriate to apply to the proposed air-cooled R2C2 units, since all potential impacts associated with intake of seawater or discharge

of thermal or plant wastes have been totally eliminated with the proposed modified project description. Therefore this amendment proposes to delete in their entirety Conditions of Certification and Verification requirements for BIO-1, BIO-2, BIO-3, BIO-4, and BIO-5.

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3.3 Cultural Resources

This section discusses the cultural resources environment and potential effects on these resources due to the proposed modifications to the El Segundo Power Redevelopment Project.

3.3.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to specific Conditions of Certification. The proposed project modifications are limited in scope and center around the proposed changes in 1) the plant's design to Rapid Response Combined Cycle technology; 2) the method of delivery for oversize equipment; 3) the addition of an offsite laydown and parking area for equipment staging and construction employee parking; and 4) the modification of the plant entrance road. This section describes potential affects that the proposed changes may have on cultural resources and evaluates the potential impacts to cultural resources as a result of the proposed project modifications and those impacts not previously addressed in the Cultural Resource Mitigation Monitoring Plan (CRMMP). These modifications have been assessed to determine whether they may result in any additional impacts on cultural resources.

3.3.2 Affected Environment and Environmental Analysis

3.3.2.1 Rapid Response Combined Cycle (R2C2) Technology

The proposed R2C2 modifications involve excavation that may have an impact to cultural resources. Although the R2C2 modifications involve excavation over a slightly larger footprint area, the excavations will be shallower than for the previously permitted project, resulting in a lower volume of materials excavated from the site. Thus, the proposed modifications in the plant area add to the total area of sensitive environment that may contain unknown cultural material. However, there is no net effect to the environment as was the case for the previously permitted project. As stated in the existing CRMMP, any ground disturbance may potentially impact unknown cultural material, thus this project enhancement will require the presence of a designated CRM.

3.3.2.2 Oversize Equipment Delivery

The proposed Beach Delivery area is an environment that has a low sensitivity for the occurrence of cultural resources. The beach sands have been highly disturbed by natural and manmade occurrences. This stretch of shoreline has experienced substantial erosion since a rock jetty constructed immediately north of the El Segundo property line has affected the natural littoral drift patterns. As part of the proposed modification, construction of a beach delivery ramp will require light grading along the ramp corridor to level the work area and to provide a stable ground surface for the beach delivery ramp structures. Shoreward of the surf zone, the beach area may include areas that are potentially sensitive cultural resources. However, given the

scope of the construction associated with the proposed beach delivery, and the current condition of the beach area, although a greater area will be disturbed during the proposed modifications, which will result in a net increase in potential to encounter cultural resources, the overall impact is the same as for the previously permitted project. There is planned monitoring for this area since some minimal excavation is proposed. As stated in the CRMMP, any ground disturbance may potentially impact unknown cultural material. Thus, this project enhancement will require the presence of a designated CRM.

3.3.2.3 Offsite Laydown and Parking Areas

The 12.1-acre proposed Laydown/Parking area is located at 777 W. 190th Street in the City of Gardena. The site is currently used as a truck storage yard. Except for the northwest corner of the yard which is dirt, it is completely paved with asphalt. One standing industrial structure (yard office) lies in the southwest corner of the yard and was constructed in 1955 or 1956. A review of the historic maps for the area indicated that all or part of the study area once comprised a depression or sink. It is apparent from an examination of the escarpment along the eastern property boundary that the majority of the study area has been artificially filled to achieve its current elevation.

The results of the records search conducted at the South Central Coastal Information Center at California State University, Fullerton indicated that no previously recorded sites or isolated finds have been recorded within the boundaries of the subject property. Furthermore, the study area was previously surveyed for cultural resources in 1984 with completely negative results. Within a ½ -mile radius of the property, one possible, prehistoric site (LAN-88) has been recorded. The site location, originally noted in 1939, was vaguely described as comprising small sites around a slough system. This site location has never been relocated.

The results of the field survey conducted on June 2, 2007 did not identify prehistoric material on the property. These results were not surprising since the vast majority of the study area is paved and the original surface covered with fill. However, the aforementioned yard office building is of sufficient age to be considered historic.

Present intent is to utilize the yard for parking, staging, and material storage. These uses will have no adverse affects on cultural resources. No modifications to the yard office, including alternation of demolition are proposed, therefore no impacts are expected.

3.3.2.4 Plant Entrance Modifications

The proposed modification of the access road alignment and entry gate area involve the excavation of parts of an existing fill slope that may consist, at least in part, of native soils that may contain unknown cultural material. Any proposed fill areas will be subjected to benching and may result in impact to native soil deposits. Thus, the proposed modifications in the

entrance road area add to the total area of sensitive environment that may contain unknown cultural material. However, the effect to the environment is the same as for the previously permitted project. There is planned monitoring for this area since excavation is proposed. As stated in the CRMMP, any ground disturbance may potentially impact unknown cultural material, thus this project enhancement will require the presence of a designated CRM.

3.3.3 Cumulative Impacts

The proposed project changes will not result in any significant cumulative impacts to cultural resources beyond those addressed in the CEC's Final Commission Decision for ESPR. The modifications will result in less impacts to cultural resources as a result of the proposed modifications.

3.3.4 Laws, Ordinances, Regulations, and Standards (LORS)

The proposed project will comply with applicable cultural resources LORS described in the previously permitted project. The proposed project modifications in the Amendment will not affect applicable compliance with individual archaeological LORS.

3.3.5 Conditions of Certification

The proposed changes addressed in this Amendment pose the same effect to cultural resources as the previously permitted project. The incremental effect caused by the changes does not raise the impact of the project as a whole above the present level of significance. No new LORS have been created since the AFC list. The existing COCs do not need to be modified. The Amendment does not require any changes to the mitigation measures in CUL 1-8 of the COC.

3.4 Geology and Soils

The proposed project will comply with applicable geology and soils LORS described in the previously permitted project.

3.4.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to specific Conditions of Certification. The proposed project modifications are limited in scope and center around the proposed changes in 1) the plant's design to Rapid Response Combined Cycle technology; 2) the method of delivery for oversize equipment; 3) the addition of an offsite laydown and parking area for equipment staging and construction employee parking; and 4) the modification of the plant entrance road. Section 3.4.2: Affected Environment and Environmental Analysis, describes changes in the area potentially affected by the proposed modifications. Section 3.4.3: Cumulative Impact Analysis, evaluates the potential impacts to these resources as a result of the proposed project modifications. Compliance with applicable LORS is also discussed.

3.4.2 Affected Environment and Environmental Analysis

Geological Setting

ESPR is located in the southwestern portion of the Los Angeles Structural Basin, which forms the transition between the northern portion of the Peninsular Ranges Physiographic Province and the southern portion of the Transverse Ranges Physiographic Province of California. The Peninsular Range Province is characterized by northwest-trending mountains and valleys formed largely by a system of active right-lateral, strike-slip faults with a similar trend. The Transverse Range Province is characterized by east-west trending mountains and intervening valleys that were formed by a series of east-west trending fold belts and active left-lateral reverse and thrust faults. Over geologic time, the site has been influenced by fluvial, marine, and littoral depositional processes as sea levels have risen and fallen and as tectonic forces have changed the regional landscape.

The project site is underlain by Holocene-age alluvial and dune deposits and a thick, interbedded sequence of Quaternary clays, silts, sands, and gravels. These quaternary deposits are underlain by Tertiary sedimentary rocks, including claystones, siltstones, and sandstones. Schist and gneissic basement rocks lie beneath the sedimentary rocks at depths of about 6,700 feet. The affected environment associated with geologic resources remains unchanged with respect to physiographic features. However, the proposed modifications potentially affect additional areas than those described in the previously permitted project.

Various geotechnical investigations have been performed at the ESGS since the Commission approved the AFC in 2005. A geotechnical investigation was conducted in the proposed location of the previously permitted plant area. This investigation concluded that the previously proposed power block design for two CTGs, two HRSGs, one STG (2x2x1) could feasibly be constructed on the site from a geotechnical perspective (Ninyo & Moore, 2006).

A geotechnical investigation for the proposed entrance road modifications was conducted at the ESPR (Ninyo & Moore, April 26, 2007).

A geotechnical investigation and evaluation was performed in accordance with condition of compliance Geo-3 to determine the stability of the existing slope along the east side of ESPR (Ninyo & Moore, April 6, 2007).

Soil Resources

The subsurface materials in the area of the proposed entrance and roadway modifications are eolian deposits consisting of loose to medium dense, poorly graded sand as defined by the ASTM Unified Soils Classification System (USCS). Detailed descriptions are presented on the boring logs in Appendix 3.4-A to this document. Soil samples were collected from the beach in two transects crossing the beach from west to east. Soils in the El Segundo beach area are poorly graded, well sorted, fine sand (USCS). Detailed descriptions of soils from the beach area are presented in Appendix 3.4-B to this document.

Agricultural Resources

No prime agricultural lands or other farmlands designated as Farmlands of Statewide Importance are within or adjacent to the proposed ESPR project modification areas. Additionally, no cropland or grazing land are located in the vicinity of the proposed ESPR project modification areas.

3.4.2.1 Rapid Response Combined Cycle (R2C2) Technology

The proposed conversion from a 2x2x1 power block to two 1x1x1 (one GTG, one HRSG, and one STG) combined cycle power blocks configuration will involve similar shallow ground disturbance for ancillary equipment and structures and similar excavations and backfills described in the previously permitted project. Although the foundation footprint and foundation design may differ slightly for the new plant configuration, the means and methods of addressing the site specific potential for soil liquefaction or foundation settlement are not different.

The same California Building Code (CBC) provisions apply to ESPR as the previously permitted project and the final earthwork and foundation will be designed and permitted by the same ASTM and CBC standards. Although the CBC has amended May 2, 2007, the proposed project modifications will comply with the recently amended CBC provisions. The same Conditions of Certification (COCs) and verifications will apply to the investigation of the subsurface conditions in and around the proposed plant area.

The planned project modifications will have no greater impact on the geological or soil resources of the site than the previously permitted project and the new configuration will not require changes to existing COCs related to geological resources or soils.

3.4.2.2 Oversize Equipment Delivery

The planned beach preparation and ramp construction from the beach to the El Segundo site and subsequent demobilization will temporarily affect the shoreline. The natural sand deposits along the seashore have adequate bearing capacity to support the ramp and heavy equipment moves. The ramps will be constructed using environmentally safe materials, such as geotextiles, wood matting and clean and bagged sand to preserve the natural beach conditions and facilitate restoration during removal of the ramp following the final equipment delivery. Minor grading will be required to prepare the beach and shoreline for ramp construction and restoration as part of the beach delivery demobilization activities. In general terms, the beach delivery will be sequenced as follows:

Step 1: Constructing a ramp system across the beach fronting the El Segundo site (2 to 4 weeks);

Step 2: Docking and securing a non-powered barge (construction barge) at the near shore zone immediately seaward of the ramp system;

Step 3: Movement of the first barge from the Port of Long Beach, positioning the delivery barge stern to stern of the construction barge;

Step 4: Closure of the bike path in accordance with prior notification to bike path users;

Step 5: Roll off (transfer) of the equipment from the delivery barge onto the construction barge (1 month);

Step 6: Movement of the equipment via motorized crawler over the beach ramp into the El Segundo facility where the equipment will be lifted by crane onto the awaiting foundations; and,

Step 7: Following completion of the beach barge delivery, the construction barge will be de-ballasted by pumping the ballast water into temporary containment tanks and the ramp system will be removed. The beach zone disturbed as a result of the beach delivery will be restored in

accordance with a restoration plan. No ballast water will be discharged into the ocean but will, instead, be disposed of properly at the Port of Long Beach (1 month).

Steps 2-6 will be repeated for each delivery barge. No more than up to six separate deliveries will be made via barge transport. Figure 2.2-1 referenced in the Project Description provides details regarding the location and sequencing of the deliveries. The beach delivery is expected to up to six months, including mobilization and demobilization.

The construction barge will be pulled onto the beach at high tide with two D-6 dozers staged on the beach and secured to the beach with the dozers via sea fastening from the barge to the dozers. The construction barge will be ballasted to a grounded position. Once secured, a beach ramp system will be constructed.

The beach ramp will extend from the construction barge shoreward into the El Segundo facility. Figure 2.2-2 referenced in the Project Description provides a visual rendering of what the construction barge and beach ramping will look like. The ramp will be constructed using a combination of geo-tech fiber, wood matting and sandbags filled with clean sand. The ramp will be removed immediately following the final delivery. The geo-tech fabric matting will provide a base for the sand bags and timbers and prevent the materials from subsiding. Use of the beach and bicycle path will be maintained during this period, except during equipment delivery periods, as described in Section 3.6.

The beach delivery will cross the beach directly west of the existing El Segundo Generating Station. The beach is leased by ESP II from the California State Lands Commission and this additional use of the beach will be coordinated with the State Lands Commission. The beach area encompasses a 200-yard strip of beach that exists between a bike path and the surf zone (submerged lands). The beach is open to the public and is maintained by the City of Manhattan Beach.

ESPR identified two soil sample transect locations on the beach area. These locations are shown in Figure 3.4-1. Four samples ranging in elevation from 0- to 5-feet from each location were collected were analyzed by ASTM D422 for grain sized distribution (Appendix 3.4-D). The soil samples indicate that the beach sand consists of fine sand (SP) as determined by the Unified Soils Classification System. This information is consistent with a beach environment and previous information collected from borings within the plant footprint.

The beach preparation will require grading of up to 4,166 cubic yards of material. This includes up to 25 cubic yards of imported beach sand that will remain and will be used for beach restoration and improvements after the conclusion of the Beach Delivery cycle.

The proposed beach and ramp construction, removal, and restoration will not result in a permanent adverse affect to the beach or shoreline area. No permanent construction features or equipment will be installed on the beach. The beach and shoreline area will be surveyed before the commencement of ramp construction and a survey will be conducted during restoration to ensure compliance with the Beach Delivery Repair and Enhancement Mitigation Plan.

The proposed area of the beach delivery will cross the inter-tidal zone on to the El Segundo Beach. The El Segundo Beach is not an area mapped by FEMA for flood hazards. Typically FEMA generates map for insurance reasons determining what is known as a Base Flood Elevation (BFE) and then statistical 100-year flood averages area applied the BFE. The BFE and 100-year flood maps are generally determined for insurance risk calculations for permanent structures or dwellings.

Dockweiler Beach immediately north of the El Segundo Beach is mapped as Zone V6 (an area inundated by 100-year flooding with velocity hazards (wave action); no BFEs have been determined), and Zone A6 (an area inundated by 100-year flooding, for which no BFEs have been established) for the submerged lands, and Zone B (an area inundated by 500-year flooding; an area inundated by 100-year flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile; or an area protected by levees from 100-year flooding) for the beach area. The upper beach dune area is not mapped or defined by FEMA as a flood zone.

Since the proposed Beach Delivery Site is not mapped by FEMA and will not be permanently modified or inhabited, the new ESPR project will not impact any 100-year flood zone. The methods used to construct the beach ramp will be specifically designed to account for the wave action on the inter-tidal zone. There will also not be any materials or equipment left unattended on the beach ramp that could result in a hazard to public safety during unloading operations or in the event of a flood or high water event.

3.4.2.3 Offsite Laydown and Parking Areas

The additional proposed offsite laydown area is located at 777 W. 190th Street in Gardena, near the 405 and 110 freeway interchange. This site is less than ten miles southeast of ESPR and is readily accessible to approved traffic routes to ESPR. The proposed offsite laydown area consists of approximately ten acres of level, paved land. The site, zoned M2 commercial, is easily accessible to the 405 North and 110 North freeways from Vermont Avenue and 190th Street.

The regional geologic, tectonic and seismic settings are the same as those for the plant site discussed in the original AFC application. The offsite laydown area will involve temporary use during construction and no new construction will be required offsite.

The proposed additional laydown area shares similar exposure to geologic hazards as with the previously permitted project. Given the current use and development of the proposed laydown area, coupled with the temporary nature of the activities proposed for this area, the likelihood of significant impacts to the project resulting from geologic hazards effecting the parking or staging areas are very low. The proposed use of this site as a laydown area will not result in a permanent adverse effect on the geological resources of the area. No excavation or grade modifications will occur at this site.

3.4.2.4 Plant Entrance Modifications

The current in-plant roadway is a two-lane roadway that extends from Vista del Mar to the northwest for approximately 450 feet and descends approximately 70 feet to the south of Units 3 and 4 (i.e., from an elevation of approximately 91 feet above mean low level water [MLLW] to approximately 21 feet above MLLW). The roadway consists of three 90 degree turns and a maximum slope of 9% (average is 7%-9%), which creates difficult access and equipment delivery issues.

To improve access to the site, the existing road will be widened to 24 feet wide, the sharp curves will be eliminated, and the slope decreased where possible. Modifications to the gate entrance and access road as shown in Figure 3.4-3 are planned to enable delivery of heavy and oversize equipment to the plant during the construction-phase of the ESPR and to improve future equipment deliveries into the plant. Refer to Appendix 3.4-E for general entrance and road area design plans. No modifications to Vista Del Mar will be required to construct the new access road.

Units 3 and 4 are situated at the base of the access road on relatively level terrain near the southern end of El Segundo Beach, at an elevation of approximately 19½ feet above MLLW. The soils in the road area consist of by-fill, older alluvium, and eolian soils generally consisting of alternating layers of medium dense to very dense sand, and silty sand. The roadway design requires fill slopes be 2H:1V. The natural cut slopes can be at 1.5H:1V cross slope. The rough earthwork estimate is 313 CY of cut and 8,464 CY of fill for roadway work. Landscaping will be required to stabilize the cut-fill slopes.

The proposed entrance and road modifications share similar exposure to geologic hazards as with the previously permitted project. The additional geotechnical report (Appendix 3.4-B) performed since the AFC was approved support conclusions that the road can be constructed in the proposed location with little risk from other geologic hazards, and that no permanent adverse effects to geological resources will result from the construction. The proposed road modifications will enhance site safety through improved road design and access.

3.4.3 Cumulative Impacts

The proposed project changes will not result any significant cumulative impacts to geology and soils beyond those addressed in the CEC's Final Commission Decision for ESPR.

3.4.4 Laws, Ordinances, Regulations, and Standards (LORS)

The proposed project will comply with all applicable geology and soils LORS described in the previously permitted project.

The Final Commission Decision certifying ESPR found the project to be in compliance with all applicable LORS. As described in this Amendment, the proposed conversion from a 2x2x1 (two CTGs, two HRSGs, one STG) power block to a two 1x1x1 (one GTG, one HRSG, and one STG) combined cycle power blocks configuration are consistent with all applicable LORS.

In addition, the use of the beach and bicycle path for beach delivery and associated disruption of public access to the beach and bicycle path is under the jurisdiction of the Los Angeles County Division of Beach and Harbors and the State Lands Commission. ESP II is currently in discussions with these agencies to obtain permission for temporary use and closure of the beach property.

The beach delivery will not violate any LORS concerning geology or soil use. LORS related to dredging and fills on the beach are discussed in the Water Quality Section of this document.

The use of the new offsite location at 777 W. 190th Street in Gardena and the proposed entrance and road modifications also are consistent with all applicable LORS. However, additional grading permits will need to be submitted and approved by the local agencies and the CBO. Nevertheless, the Amendment will not alter any assumptions or conclusions made in the CEC's Final Commission Decision for ESPR.

3.4.5 Conditions of Certification

The same COCs and verifications will apply to the subsurface conditions in and around the proposed plant area. Although the beach and roadway will experience impacts during construction, the previous COCs for Geology provide sufficient monitoring and mitigation. No changes to the existing GEO COCs or additional GEO COCs are proposed. Proposed COC changes addressing beach erosion issues and restoration plan changes associated with the beach delivery of equipment are addressed in Section 3.14 Water Quality.

3.5 Hazardous Materials

This section discusses the hazardous materials environment and potential effects on these resources due to the proposed modifications to the ESPR Project.

3.5.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to specific Conditions of Certification. The proposed project modifications are limited in scope and center around the proposed changes in 1) the plant's design to Rapid Response Combined Cycle (R2C2) technology; 2) the method of delivery for oversize equipment; 3) the addition of an offsite laydown and parking area for equipment staging and construction employee parking; and 4) the modification of the plant entrance road. This section describes potential effects that the proposed changes may have on hazardous materials and evaluates the potential impacts to these resources as a result of the proposed project modifications.

Onsite construction of the R2C2 design will not employ any different materials or generate any new or additional wastes evaluated by the previously permitted project. The R2C2 technology also will involve less hazardous materials than the previously permitted project such as hydrazine, chlorine, a neutralizing amine to control dissolved oxygen and pH in the feedwater, as well as sodium phosphate will no longer be required. The elimination of once-through cooling also eliminates the need for chlorine to control biological growth. However, as discussed in more detail below, the R2C2 technology will involve the use of ammonia for pH adjustment and dosing with a peroxide solution to maintain oxygen concentrations that was not part of the previously permitted project.

The proposed project's use of beach delivery for oversize equipment and the use of hazardous materials in connection with this new delivery method are also discussed below, as this method of delivery and the potential hazardous materials associated therewith was not analyzed in connection with the previously permitted project.

3.5.2 Affected Environment and Environmental Analysis

3.5.2.1 Rapid Response Combined Cycle (R2C2) Technology

As discussed in detail in Section 2 of this Amendment, a modification to the approved ESPR is to change the plant design to R2C2 technology. This involves converting from the previously permitted 2x2x1 (two GTGs, two HRSGs, one STG) power block configuration to the proposed two-1x1x1 (one GTG, one HRSG, and one STG) combined cycle power block configuration. Additionally, the proposed modifications incorporate two air-to-air heat exchangers for the

thermal cycle heat rejection and replaces the previously permitted three-pressure, vertically oriented drum HRSG with a single-pressure BENSON HRSG design developed by Siemens.

The reference chemistry for the proposed R2C2 plant is oxygenated treatment. The advantages of oxygenated chemistry include reduction of iron corrosion and iron transport to the HRSG, and the formation of protective layers with significantly lower propensity for attack by flow-accelerated corrosion.

The oxygenated chemistry requirements for the R2C2 water/steam cycle is limited to ammonia for pH control of the feedwater and dosing with a peroxide solution to maintain oxygen concentrations in the condensate and feedwater. The need for an oxygen scavenger (hydrazine) and neutralizing amine to control dissolved oxygen and pH in the feedwater, as well as the use of sodium phosphate in the HRSG boiler water to control pH is eliminated. "COC HAZ-4: Hydrazine Alternative Study" is therefore no longer appropriate since the R2C2 oxygenated chemistry scheme eliminates the use of hydrazine as an oxygen scavenger. Amines are forbidden from use in the HRSG and ancillary equipment by Siemens specifications.

The R2C2 system's two air-cooled condensers, used for steam turbine exhaust stream heat rejection, eliminates the need for the previously approved once-through cooling water system. Elimination of the circulating water cycle eliminates the need to use chlorine to control biological growth.

The R2C2 design also relies on a mixed-bed resin system for treatment of makeup water for the water/steam cycle. The mixed-bed resin system is not regulated by DOT when shipped domestically by land. It is listed an "immediate health hazard" under SARA Title III, and is considered a hazardous chemical as defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200.

3.5.2.2 Oversized Equipment Delivery

The City of El Segundo's Local Coastal Plan identifies the onshore portion of the coastal zone within the City of El Segundo of consisting of a narrow ribbon of land approximately 200 yards in width and 0.8 mile in length. The total land zone is approximately 50 acres. The coastal zone in El Segundo is bounded inland by Vista Del Mar Boulevard, on the north by the City of Los Angeles, on the south by the community of El Porto, and to the west by the Pacific Ocean.

As discussed in detail in Section 2 of this Amendment document, a modification to the approved ESPR is to transport HRSGs and other major plant equipment (i.e., steam turbines, pipe racks, etc) to the project site by barge. A total of up to six (6) barges will be used, one construction barge and five (5) delivery barges. Each barge will be transported to the El Segundo Beach

landing site by tug. The construction barge will be pulled onto the beach by, and moored to, two D-6 dozers during high tide.

Operation of the Beach Delivery equipment will require the use of fuels (gasoline and diesel) motor vehicle fluids (motor oils, transmission and brake system fluids); coolants/antifreeze; hydraulic fluids; and lubricants. Use of these types of hazardous materials can result in adverse impacts to the ocean and shoreline in the event of a spill or release. To ensure that the use of hazardous materials associated with the Beach Delivery operation do not adversely impact the environment, the applicant shall develop and implement the following spill prevention measures:

1. A Beach Delivery Hazardous Materials Management Plan (HMMP) that details the transport, use and storage of hazardous materials to be utilized during the Beach Delivery operation. The HMMP shall address the following:
   - Hazardous Material Inventory, identify what hazardous materials will be used; where and how will the material be used; and in what frequency and quantity;
   - Procedures to ensure that hazardous materials are stored with sufficient secondary containment and in properly labeled, compatible and secured containers;
2. An Emergency Response and Contingency Plan to ensure timely and effective spill response and cleanup of any spill or release of a hazardous material, including proper training and response equipment;
3. A Site Security Plan to minimize and control public access to the beach delivery site to prevent an accidental spill or release of a hazardous material as a result of vandalism or misuse;

Construction materials such as steel ramps, wooden mats, steel plates, dura-mats and beach sand will be used to construct a temporary and level platform from the bow of the construction barge to the bike path. To ensure that the beachfront, tidelands, and submerged lands are not exposed to potentially contaminated ramp construction materials, the following mitigation measures will be implemented:

1. An impervious fiber matting will be placed between the constructed ramp and beach surface;
2. Fill sand will be of beach nourishment quality with a medium, or larger, grain size;
3. Fill sand will be analyzed in accordance with the Inland Testing Manual (ITM);
4. Only untreated, unused wood mats shall be used for the construction of the beach landing ramp; and
5. All metal ramps, plates and/or any other metal material that may come in contract with the surf/tide shall be clean of all chemical residues, oils, greases and rust residues prior to use at the project site.

3.5.2.3 Offsite Laydown and Parking Areas

The additional proposed offsite laydown area is located at 777 W. 190th Street in Gardena, near the 405 and 110 freeway interchange, less than ten miles southeast of El Segundo Generating Station (ESGS). The site, zoned M2 commercial, is approximately ten acres in size and includes a 5,500 square-foot industrial building. The approximately 12.1 acre site paved with asphalt, lighted and includes a perimeter security fence.

During the construction phase, the types of hazardous materials that may be used or encountered at the 777 W. 190th Street laydown area are expected to be limited to automotive fluids from vehicle parking. The existing Condition of Certification ensure construction related activities conducted at 777 W. 190th Street laydown area comply with the appropriate hazardous materials management procedures and plans.

3.5.2.4 Plant Entrance Modifications

Modifications to the gate entrance and access road are planned to enable delivery of heavy and oversize equipment to the plant during the construction-phase of the ESPR and to improve future equipment and material deliveries into the plant.

The proposed road modifications will reduce existing entrance and in-plant road hazards, during both construction and operation of the new power block, by widening the road, and straightening and reducing the grade at the road's curves. The proposed plant entrance modifications will provide safer transport and delivery of hazardous materials to the facility.

During the construction phase, hazardous materials typical of liner roadway construction operations are anticipated, and may involve fuels, oils, greases and asphalt slurry and concrete. The existing Conditions of Certification will ensure the roadway construction related activities will comply with the appropriate hazardous materials procedures and plans.

3.5.3 Cumulative Impacts

The proposed project changes will not result in any significant cumulative impacts to hazardous materials beyond those addressed in the CEC's Final Commission Decision for ESPR. The modifications will result in less hazardous materials impacts as a result of a reduction in hazardous materials used at the site, including the elimination of hydrazine from plant operations.

3.5.4 Laws, Ordinances, Regulations, and Standards (LORS)

The Final Commission Decision certifying the ESPR found the project to be in compliance with applicable LORS. As described in this Amendment, the modifications proposed are consistent with all applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the CEC's Final Commission Decision for the ESPR.

3.5.4.1 Rapid Response Combined Cycle (R2C2) Technology

Modification of the proposed plant design to the R2C2 technology is consistent with applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the CEC's Final Commission Decision for the ESPR. No additional or revised LORS have been identified as a consequence of the proposed modification.

3.5.4.2 Oversized Equipment Delivery

The Final Commission Decision certifying the ESPR found the project to be in compliance with applicable LORS. As described in this proposed Amendment, the modifications proposed are consistent with applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the CEC's Final Commission Decision for the ESPR. Additional LORS associated with the proposed beach delivery of heavy equipment option include the following:

- The United States Coast Guard administers and enforces federal regulations affecting commercial vessel safety, port safety and security, and marine safety and environmental protection, in accordance with the following:
  - CFR Title 33: Navigation & Navigable Waters
  - CFR Title 46: Shipping
  - CFR Title 49: Transportation- Subpart B
- The United States Department of Labor, Occupational Safety & Administration (OSHA) administers and enforces federal regulations affecting worker safety at marine terminals and for longshoring operations, in accordance with the following regulations:
  - CFR Title 29, Part 1917: Marine Terminals
  - CFR Title 29, Part 1918: Safety and Health Regulations for Longshoring
  - CFR Title 29, Part 1919: Gear Certification

3.5.4.3 Offsite Laydown and Parking Areas

Use of the 777 W. 190th Street property as an offsite construction staging and parking area is consistent with applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the CEC's Final Commission Decision for the ESPR. No additional or revised LORS have been identified as a consequence of the proposed modification.

3.5.4.4 Plant Entrance Modifications

The proposed entrance and in-plant road modifications are consistent with all applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the CEC's Final Commission Decision for the ESPR. No additional or revised LORS have been identified as a consequence of the proposed modification.

3.5.5 Conditions of Certification

There are no additional proposed or amended changes to the approved Conditions of Certification (COC). Elimination of **COC-HAZ-4**: Hydrazine Alternative Study is appropriate since the R2C2 oxygenated chemistry scheme eliminates the use of hydrazine as an oxygen scavenger.

3.6 Land Use

3.6.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to specific Conditions of Certification. The proposed project modifications are limited in scope and center around the proposed changes in 1) the plant's design to Rapid Response Combined Cycle technology; 2) the method of delivery for oversize equipment; 3) the addition of an offsite laydown and parking area for equipment staging and construction employee parking; and 4) the modification of the plant entrance road. This section describes potential affects that the proposed changes may have on land use, and evaluates the potential impacts to these resources as a result of the proposed project modifications.

3.6.2 Affected Environment and Environmental Analysis

The project site is close to industrial, residential, commercial and open space uses. The ESPR site is consistent with existing and planned uses as well as city zoning designations at and around the site. The recently released City of El Segundo Specific Plan, which specifies current zoning requirements for the downtown area of El Segundo (north of El Segundo Boulevard to Mariposa Avenue), did not impact the current zoning of the ESPR site.

Land uses in the vicinity of the project site include:

To the north are the Chevron Marine Terminal, is where crude oil is offloaded from an underwater pipeline and transmitted to the Chevron Oil Refinery (see below); Hyperion Wastewater Treatment Plant, the largest wastewater treatment facility in the Los Angeles metropolitan area; and the Los Angeles Department of Water and Power Scattergood Generating Station, which is a generating station with three generating units and a once-through cooling water system with a net capacity of 818 megawatts. Further to the north are residences in the City of El Segundo Dockweiler State Beach is located to the northwest of the plant site. Los Angeles International Airport (LAX) is also located approximately 2.5 miles north of the site.

To the east is Vista Del Mar Boulevard and the Chevron Oil Refinery, which is the largest refinery on the West Coast.

To the south are residences and commercial uses within the City of Manhattan Beach, including a Manhattan Beach State Park.

To the west are the El Segundo City Beach and Santa Monica Bay (Pacific Ocean).

The ESPR site is within the City of El Segundo's designated coastal zone. The portion of the City's coastal zone consists of a narrow ribbon of land approximately 0.8 mile in length and 200 yards in width, for a total area of approximately 50 acres.

The majority of the coastal zone of El Segundo is industrially developed, including ESGS and the Chevron Marine Terminal. The remaining area includes a narrow shoreline and small retail service station. The narrow sandy beach west of ESGS and Chevron Terminal is publicly owned by the State Lands Commission and is maintained by the County of Los Angeles (City of El Segundo, 1992). The County of Los Angeles maintains a bicycle path (South Bay Bike Trail) that runs along the narrow shoreline and connects with County bike paths in the City of Los Angeles to the north and the City of Manhattan Beach to the south. Public access to the beach is provided north of ESGS through Dockweiler State Beach. No scenic resources are found within the study area. The use of the existing plant complies with Coastal Act Section 50260 which encourages use of existing coastal dependent industrial sites within the coastal zone.

3.6.2.1 Rapid Response Combined Cycle (R2C2) Technology

The introduction of R2C2 technology at ESPR requires that the site layout be revised. As a byproduct of this change the position of the seawall on the northwest corner of the site will be moved west eliminating the chain link fence that is currently in front of the landscaping. The movement of the fence is within the existing property boundary, therefore, ultimately there is no land use impact associated with the introduction of the new technology and associated revised layout of the facility.

3.6.2.2 Oversize Equipment Delivery

Beach Delivery

The proposed project may deliver oversize equipment to the site via barge and across the beach, rather than deliver all components via truck as in the previously permitted project. In the event the option of beach delivery is exercised, the primary impact to Land Use includes intermittent closure of the Los Angeles County maintained Class 1 bicycle path that borders ESGS. Beach delivery would also intermittently restrict public access to the beach section that would be occupied for transport of equipment. See Figures 2.2-1 and 2.2-2 for the location of the bike path and the proposed location of beach delivery.

It is estimated that the beach delivery phase will last up to six months. The narrow section of beach property involved would have restricted access for the entire six month period. The section of beach that will be restricted will be approximately 50 feet wide, extending from the north-west corner of the site out to and into the surf zone.

Delivery of equipment will require up to six barge deliveries. It is estimated that site preparation, deliveries and site restoration would disturb bike path access during 35 days. The

duration of bike path closure will range from one-half to two hours maximum. However, a temporary bike system will be constructed to minimize disruptions.

Bike Path:

To accommodate the public during the beach delivery operations, the project will include an access ramp constructed across the existing bike path to ensure a minimum of interruption by users of the path during periods when deliveries are not scheduled. The access ramp would also include closure gates to prevent public access to the ramp during delivery periods. Perimeter fencing will also be installed around the work zone to prevent public access to the barge and ramp, and the area surrounding the work zone will be posted with a notice identifying the crossing and times the bike path will be closed.

As mitigation, an evaluation of alternative routes that could be established during the scheduled closures was conducted. There was no route that was identified as being convenient for recreational riders. The only feasible path identified was via Vista Del Mar Boulevard. All other paths are too far east of the site with significant inclines, which preclude them from consideration for recreational riders.

Riders from the south could exit the bicycle path before 45th Street and proceed up a fairly steep incline to Vista Del Mar Boulevard. At the controlled intersection riders would then cross Vista del Mar and proceed north. Riders would reengage the bicycle path at Grand Avenue by turning west into the El Segundo Beach parking lot that is connected to the bike path.

In a similar manner, riders from the north could exit the bicycle path via the beach parking lot, crossing Vista Del Mar at Grand Avenue (a controlled intersection), and then proceed south on Vista Del Mar. Crossing Vista Del Mar from the east to the west at the controlled intersection of 45th Street, riders would head west and reconnect to the bike path.

These routes, however, are not convenient for recreational riders. The section of Vista Del Mar proposed for this re-routing is traveled by bikers who would be considered of a moderate to higher skill level. Recreational bikers going north in particular will have to climb or walk a fairly steep incline, cross Vista del Mar, and proceed on an asphalt sidewalk of less consistent surface than that of the Class I bicycle path.

ESP II will inform the Los Angeles County Department of Beaches and Harbors that the closure notifications will include an alternative route; however, the notification will inform riders that the path will be blocked and recommend waiting for the path to be reopened. The notifications will also warn riders that the alternative path routes include steeper grades and higher traffic areas.

The portion of the beach which will be affected by beach delivery is owned by the State Lands Commission (SLC). ESP II has recently renewed its lease with the SLC for use of a portion of the beach adjacent to ESP II's property. There were no material changes from the previous lease arrangement and the lease purpose remains limited to uses associated with outfalls 001 and 002. The SLC is the only state or local agency that has jurisdiction over the beach adjacent to ESGS. The State Lands Commission has been advised of the potential for beach delivery related to this project.

The bicycle path land adjacent to the power plant is owned by ESP II, however, the path falls under the jurisdiction of Los Angeles County Department of Beaches and Harbors (Beaches and Harbors). ESP II licensed the bike path land to Los Angeles County and as part of that license El Segundo Power reserved the right to make temporary closures of the bike path for construction and maintenance purposes. ESP II consulted with Beaches and Harbors and was informed that a specific permit for interruption of the bike path would be needed and that special provisions would apply. ESPR proposes Conditions of Certification LAND-10 and LAND-11 to implement those provisions for each interruption in use of the bike path.

In addition, a teleconference to discuss the proposed modifications was held with Mr. Tom Luster of the California Coastal Commission. The Coastal Commission communicated no concerns or objections to the proposed use of the beach for delivery of oversized equipment.

The primary phases of beach access that will disrupt both recreational use of the beach and the bike path are as follows:

Beach Preparation and Ramp Construction

Beach preparation will require intermittent blockage of the beach and bicycle path during a fifteen to thirty day period. During this period bike path and beach access will be closed for short periods of one-half to two hours maximum. During this period, the following activities will be conducted:

1. A temporary beach ramp will be constructed using environmentally safe materials, including geo-tech fiber, wood matting, and clean sand in sandbags. Linkspans will be fabricated to transport materials across the beach ramp.

2. A non-powered construction barge will be docked and secured at the near shore zone immediately seaward of the ramp system. The construction barge will be pulled onto the beach at high tide with the assistance of two dozers on shore, and ballasted to a grounded position.

3. A temporary bike access path will be constructed to minimize interruptions to the bike path.

4. At relevant times, a security barrier will be installed and signage will be posted in accordance with requirements provided by Beaches and Harbors.

Delivery of Equipment:

The beach delivery activities will require up to six barges trips each and moored to the construction barge, for off-loading of equipment. Access to the beach and bike path will be temporarily closed for no more than two hours when equipment roll-off activities using multi-axle, self-propelled mobile transporters (SPMT) are being conducted. During these times, recreational use of the beach and surf zone, including such activities as surfing, boating, and fishing may be temporarily disrupted due to necessary routes taken by the barges to the delivery site. Upon completion of roll-off activities, the equipment will be set on the foundations, and ancillary equipment will be set by cranes.

Ramp Deconstruction and Demobilization:

Following the final delivery, access and use of the beach and bicycle path will be intermittently interrupted in order to return the beach and bicycle path back to full use. The ramp and construction materials will be removed, leaving sand from the sandbags in place according to a Beach Restoration Plan and any disturbed beach habitat will be restored in accordance with the Restoration Plan.

Overland Delivery of Equipment:

The previously permitted project assumed delivery of all major components by road and rail. There are no new land use impacts related to overland delivery of equipment proposed for this revised project, other than the new laydown site.

3.6.2.3 Offsite Laydown and Parking Areas

ESP II proposes to use the property located at 777 W. 190th Street, in the City of Gardena, within Los Angeles County which consists of approximately 453,024 square feet (~10 usable acres), zoned M2, with an approximately 5,500 square foot industrial building. The area is paved with asphalt, lighted, and includes a perimeter fence. The site is easily accessible to the 405 north and 110 north freeways from the Vermont Avenue and 190th Street on-ramp. This site is less than ten miles southeast of ESPR and is readily accessible to approved traffic routes to ESPR. The intended use of the site is consistent with the current use of the property and is not in conflict with surrounding properties and businesses. The addition of the new off-site laydown location does not present any additional land use impacts.

Following the approved of ESPR in 2005, the previously permitted Fed Ex laydown site was redeveloped into a multi-level commercial office space. Thus, that site is no longer available for offsite laydown.

3.6.2.4 Plant Entrance Modifications

The modification of the gate entrance and associated widening and straightening of the main plant road presents no material change to Land Use as was defined for the previously permitted project.

3.6.3 Cumulative Impacts

The proposed project changes will not result in any significant cumulative impacts to land use beyond those addressed in the CEC's Final Commission Decision for ESPR. The only incremental impacts related to land use for the amendment that could occur would be short term interference with beach and bike access. ESP II contacted the relevant agencies and was not advised of other planned actions in the short term that will cause similar interference and it can be therefore be concluded that there will be no cumulative impacts. ESP II will work closely with Los Angeles County to monitor and anticipate any future community organized events such as charity walks, bike rides, or clean-ups to minimize the impact of disruption of the bike path.

3.6.4 Laws, Ordinances, Regulations, and Standards (LORS)

The proposed project will comply with all applicable Land Use LORS described in the previously permitted project, as well as additional LORS identified below related to the delivery of oversize equipment.

3.6.4.1 Oversize Equipment Delivery

The proposed alternative delivery method by way of the beach requires approval from the State Lands Commission. The associated dredging and ramp construction requires pre-construction notification to the Army Corps of Engineers and execution of work in compliance with Nationwide Permit #33. The scheduled interruption of the bicycle path would also require

coordination with the Los Angeles County, Department of Beaches and Harbors, as beach delivery interferes with their easement over the to bike path. The County has provided ESP II with the documented procedure for scheduling the bike path interruptions.

The additional LORS applicable to land use compliance resulting from the beach delivery and associated construction and access related activities are listed below.

- **Federal**

Clean Water Act (Army Corps of Engineers, EPA)	Requires pre-construction notification, application for fill and dredge permit. U.S. Army Corps of Engineers.
Rivers and Harbors Act of 1899 (Army Corps of Engineers) CFR's Title 33: Navigation and Navigable Waters; Title 46: Shipping; Title 49: Transportation System B	The Rivers and Harbors Act provides the ACOE to exercise control over all construction in navigable waters. Specifically, Section 10 of the Rivers and Harbors Act requires authorization for all construction between the Mean high Tide Line and the limit of territorial seas (three nautical miles offshore). Activities not regulated under Section 404 of the CWA, such as removal of structures of placement of moorings, are subject to Section 10 authority if they occur within the three-mile limit. Section 13 of the Act makes it a crime to discharge refuse material into any navigable water without the ACOE's permission.

- **State**

California Coastal Act (State Lands Commission)	Comply with Act policies and local programs. Authorization to use beach, lease for use, temporary closure.
California Public Resources Code section 35523(a)	Compliance with policies, development standards, special zoning requirements.

- **Local**

Los Angeles County Ordinance (L.A. Department of Beaches and Harbors)	Bike path closure; laydown area.
City of El Segundo Local Coastal Program as authorized by State Coastal Act	Authority to use beach, zoning, site plan, beach use.
City of El Segundo Beach Use Ordinances	Authority to use beach, zoning, site plan, beach use.
El Segundo Municipal Code (City)	Comply with municipal codes.
El Segundo General Plan (City)	Comply with land use provisions.
El Segundo Municipal Code	Signage requirements.
City of Los Angeles County Code	Signage for road closure.

3.6.5 Conditions of Certification

As previously stated, project preconstruction and construction activity will temporarily prevent public use of the County maintained Class 1 bicycle path and the state-owned beach. As such, the following new conditions of certification are proposed:

LAND 10- Construction of the beach delivery ramp will require temporary grading of the beach and introduction of sand to support construction of the temporary delivery ramp.

ESP II will prepare and deliver a Pre-Construction Notification to the Army Corps of Engineers, Los Angeles office.

Verification: The project owner will comply with the Nationwide Permit #33 requirements for dredging of the beach and surf zone areas and construction of the ramp.

The CPM, the designated representative of the State Lands Commission and the designated representative of the Army Corps of Engineers may conduct random site visits to verify compliance. Also, the CPM will investigate filed complaints to ensure compliance.

LAND-11: Project pre-construction and construction activity will temporarily prevent public use of the County maintained Class 1 bicycle path.

The County of Los Angeles has provided the following Bicycle Trail Special Provisions:

- If the existing bicycle trail width must be reduced to perform necessary work, access around the construction site shall be maintained with a minimum of eight feet of bicycle trail width to the greatest extent possible. In that case, construction signs warning "CONSTRUCTION AHEAD" and "BIKEWAY NARROWS" must be posted in advance of the site on all approaches along with delineators and barricades for channelization. If at least eight feet of bicycle trail cannot be provided, construction signs warning "CONSTRUCTION AHEAD" and "WALK BIKE" must be posted in advance of the site on all approaches. Where bicyclists are instructed to walk their bikes, flagmen must be present at all approaches. Delineators or barricades must also be placed to channelize pedestrians past the work site.

- If the existing bicycle trail must be closed to perform the necessary work, Los Angeles County recommends that the bicyclists use existing access ramps/gate at <u>LOCATION N</u> and at <u>LOCATION S</u> as a detour around construction site. The bicycle trail must be adequately barricaded immediately south of the access ramps/gates at LOCATION N and immediately north of the access ramps/gates at LOCATION S to keep bicycles out of the construction site. Signing advising of the closure should be posted north of LOCATION N for southbound bicyclists and south of LOCATION S for northbound Bicyclists. Signage advising of the closure shall be posted at the entrance of each of the access gates at <u>LOCATION A</u>, <u>LOCATION B</u>, etc. The signage shall read "BIKE PATH SUBJECT TO CLOSURE FROM LOCATION N TO LOCATION S FROM

DATE TO DATE" and shall include laminated location maps depicting the project's limits and the location of the sign relative to the project limits.

- The Los Angeles County Department of Beaches and Harbors Bikeway Coordinator must be contacted at (626) 458-3940 at least one month in advance to advise him/her of the anticipated move-in date. The above mentioned signs must be posted at least two weeks in advance of the start of construction. The Bikeway Coordinator must be contacted within one working day after placement of the required signing and within one working day after reopening of the bicycle trail. Any other details on the signing and barricading requirements can be found in the appropriate section within the project specifications.
- If feasible, the contractor must make the bicycle trail operable on weekends and holidays by removing barricades. The bicycle trail at the project site must be completely free of obstructions, swept clean, and have a minimum of eight-foot vertical clearance, although ten feet is desired. If two-foot-wide shoulder cannot be maintained, adequate warning devices should be installed.
- After project construction is completed and prior to the field acceptance of the project the bicycle trail pavement and striping shall be restored to its preconstruction condition.
- The project-specific text, which is underlined and in capital letters, will be provided by this Division upon review of final plans.

Verification: The project owner will comply with signage, schedule, barricade and detouring requirements (as provided by the County of Los Angeles) associated with the construction and delivery activities that will interrupt or re-route the bicycle path. The project owner shall complete any repair to the bicycle path pursuant to the schedule contained in Visual Resources Condition of Certification **VIS-3**.

The CPM and the designated representative of the affected local jurisdiction(s) and the designated representative of the Coastal Commission may conduct random site visits to verify compliance. Also, the CPM will investigate filed complaints to ensure compliance.

LAND 12: Project pre-construction and construction activity will temporarily prevent public use of the beach property fronting the project.

Verification: The project owner will comply with local beach use ordinances as applicable to construction activities.

The CPM, the designated representative of the affected local jurisdiction(s) may conduct random site visits to verify compliance. Also, the CPM will investigate filed complaints to ensure compliance.

3.7 Noise

3.7.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to specific Conditions of Certification. The proposed project modifications are limited in scope and center around the proposed changes in 1) the plant's design to Rapid Response Combined Cycle technology; 2) the method of delivery for oversize equipment; 3) the addition of an offsite laydown and parking area for equipment staging and construction employee parking; and, 4) the modification of the plant entrance road. This section describes potential effects the proposed changes may have on noise criteria established for the previously permitted project and evaluates the potential impacts to these resources as a result of the proposed project modifications

3.7.2 Affected Environment and Environmental Analysis

The ESPR project site is located within the existing El Segundo Generating Station (ESGS) in El Segundo, California. ESGS is located 2.5 miles south of Los Angeles International Airport and west of the I-405 freeway, on the eastern shore of Santa Monica Bay. The site is bordered by Vista Del Mar to the east, 45th Street in the City of Manhattan Beach to the south, Santa Monica Bay to the west, and the Chevron Refinery to the east. Generally, the topography of the area slopes downward from east to west. The site of the previously permitted project is located on the northern end of the existing ESGS.

The site is adjacent to a variety of land uses, including industrial, recreational (bike path and beach use) and residential. The nearest residential noise receptors are located approximately 2,200 feet south of the acoustical center of the proposed project, in the City of Manhattan Beach. Power Units 3 and 4 are located to the south of the proposed project, between the nearest residential noise receptors and the proposed project. A tank farm is also located between Units 3 and 4 and the nearest residential noise receptors on 45th Street. The tank farm, consisting of two large tanks that formerly contained oil, will be removed as part of the previously permitted and proposed project.

3.7.2.1 Rapid Response Combined Cycle (R2C2) Technology

The previously permitted project used GE7FA combustion turbines. The proposed project will use Siemens R2C2 combined cycle power plants, which are similar to the 7FAs, but utilize steam turbine fin fan coolers, eliminating the need for once-through cooling. In addition, the northernmost R2C2 unit will be 25 feet closer to the west property line than the previously permitted units. The R2C2 units also have slightly different sound power levels than the 7FAs. A noise analysis was therefore performed to take these differences into account.

Operations Phase Noise

The Conditions of Certification for the previously permitted project established operations phase noise criterion for ESPR. COC Noise-6 requires that with the addition of ESPR, and the removal of the two large oil tanks from the tank farm located south of the project, the noise increase in the baseline sound level must be less than 2 dBA. Noise modeling was conducted to ensure that the proposed project will meet this sound criterion.

Noise Modeling Methodology

Noise modeling was performed with SoundPLAN. SoundPLAN is a commercial computer program that predicts the sound levels in the vicinity of industrial and other noise sources. This program is equivalent to the Cadna/A program used for the previously permitted project. It calculates facility sound levels using internationally recognized algorithms of ISO 9613-2. The input to SoundPLAN included the sound power levels (source strength) of the significant existing and proposed modification related noise sources. These noise sources in the model are summarized in Table 3.7-1. SoundPLAN also incorporates a site arrangement drawing with equipment locations, and a topographic map with elevation contours.

Table 3.7-1
Summary of Modeled Existing and ESPR Noise Sources

FACILITY	NOISE SOURCES
Existing Sources	Units 1-4
	Metering Station
	Surf
Proposed Modifications to ESPR	Combustion Turbine Air Inlet
	Combustion Turbine Enclosure & Ventilation
	Combustion Turbine Generator
	HRSG Stack and Stack Top
	HRSG Feed Pumps
	Transformers
	Lube oil and Rotor Coolers
	Fin Fan Coolers
	Steam Turbine/Generator
	Steam Turbine Fin Fan Cooler
	Gas Compressor
	Metering Station

SoundPLAN calculated the sound attenuation with distance for each noise source propagating to each receptor, as well as the attenuation due to atmospheric absorption, ground absorption, and weather conditions. The program also calculated the barrier effects of the proposed project equipment, the existing Units 3 and 4, and the terrain. The most prominent terrain features are the onsite landforms supporting the switch yard and large tanks, as well as the new berm to be constructed along the south side of the large tanks. In addition, the 10-foot seawall on the west property line will serve as an effective sound barrier for the bike path and beach. The program output included both tabular summaries and sound level contours. The output of the model runs includes the predicted levels at the identified receptors and sound level contours. The predictions were made for steady state base operating conditions. The model was run assuming that no additional noise mitigation measures would be taken. It is likely, however, that additional noise mitigation measures will be developed as the final design progresses.

The sound level criterion at 45th Street was not a numerical criterion but is an allowable increase in the baseline sound levels of less than 2dBA upon project completion. The modeling approach was to first predict the baseline (existing) sound levels with SoundPLAN. The baseline sound levels used in the model were measured as part of a noise analysis conducted in response to Data Request No. 7 of the ESPR permitting process. The analysis was submitted to the CEC in December 2001. These include a direct sound level measurement of the existing units and metering station. The surf noise came from measurements collected at the large-tank west fence line for nine days. A “low surf” level of 61 dBA was established and used in the previous baseline model. The resulting baseline sound level predictions were similar to those modeled in the December 2001 Noise Analysis.[N-4]

After startup of ESPR, Units 3 and 4 will remain in operation. The two large oil tanks at the south end of the property will have been removed, and a new earth berm will have been constructed along a portion of the south property line.

These conditions were run in SoundPLAN to determine the resulting operational sound levels for Units 3 and 4, ESPR and surf. As shown in Table 3.7-2, the baseline levels increased by 1.5 dBA, which is less than the required 1.9 dBA limit. ESPR will therefore comply with the noise criterion established by COC Noise-6 for the previously permitted project. The 1.5 dBA increase is imperceptibly small, and the total station sound level remains several dBA below the “low surf” sound level. The sound level contours for both the existing and proposed project conditions are shown in Figures 3.7-1 and 3.7-2.

Table 3.7-2 ESPR Increase in Baseline Sound Level	
Noise Sources	**45th and The Strand* Sound Level, dBA**
Existing Conditions Existing Units 1-4 Metering Station Surf Tanks up	51.0
With Proposed Modifications Units 5-8 Existing Units 3 & 4 Surf Tanks down	52.5
Baseline increase with project	1.5
Allowable increase	1.9

** Center of North side, corner house, 45th Street and The Strand*

Based upon the noise level data, noise levels inside and near the R2C2 equipment will be, as with the previously permitted project, similar in magnitude to comparably sized power plants and other large industrial projects. These high noise levels could exceed federal Occupational Safety and Health Administration (OSHA) and California OSHA guidelines for worker noise exposure. In accordance with COC Noise-3, the project owner will conduct a noise survey and identify mitigation measures that will be employed to comply with applicable federal and state standards.

3.7.2.2 Beach Delivery

Beach delivery of oversize components will eliminate the construction noise that would be generated by onsite construction of these components. These brief delivery episodes, however, will generate sound that was not included in the original construction noise prediction.

The COCs of the previously permitted project require that the project meet the following standards for construction and demolition noise from the project site, other than the tank farm:

- 65 dBA hourly L_{50} at any residential receptor during the hours of 7:30 A.M. to 6:00 P.M. Monday-Friday, and 9:00 AM to 6:00 PM Saturday.
- The ambient hourly L_{50} value plus 2dB at any residential receptor at any other time.

The estimated sound levels from the construction of the beach ramp and delivery via barge will not exceed these limits.

The primary new sources of sound will be the two D-6 dozers that will pull the construction barge onto the beach, construction of the off-loading ramp on the beach, the tugboats handling

the delivery barge, and the four self-propelled motorized transporters (SPMT) that move the load.

The first step of the construction of the offloading ramp will be the securing of a construction barge on the beach. This will be performed with two D-6 dozers. These are expected to have a sound level of 82 dBA at 50 feet under full power. The sound level expected from the dozers at the nearest residential receptors on 45th and The Strand is less than 30 dBA, as calculated with SoundPLAN. Further out on the beach, where there is line of site to the equipment, the sound level could be approximately 45 dBA.

Construction of the offloading ramp will involve delivery of ramp material (primarily sand bags) by truck, and the unloading and movement of that material by crane. Trucks will emit maximum sound levels of 74 dBA at 50 feet, and the cranes will emit 81 dBA at the same distance. The sound levels will be briefly audible to those passing by the ramp construction site on the bike path when it is open. The noise impact on passing bicyclists will be minimal. The sound from this equipment was predicted at the nearest residences on 45th and The Strand. The SoundPLAN prediction indicated that their sound levels will be less than 30 dBA.

During beach delivery, the SPMTs will produce maximum sound levels of 84 dBA at 50 feet. The tugboats used to bring in the delivery barge are expected to have a sound level of 87 dBA at 50 feet.

The expected total sound level of the SPMTs and the tugboats was calculated with SoundPLAN for the nearest residential receptor. The predicted levels are 40 dBA or less. Surf noise in that area is in the low 50s as per SoundPLAN. Out on the beach the tank platform and oil tanks do not block unloading noise, and the predicted level rises to 54 dBA, away from the residential area. The baseline surf noise in that area exceeds 60 dBA as directly measured and from SoundPLAN. The resulting increase in baseline noise will therefore be less that 1dBA during delivery. As indicated in Section 3.7.4 of the LORS section below, the limit for nighttime construction is a 2dBA increase, so the heavy hauls will meet the nighttime construction noise limits. They are also less than the 65 dBA daytime requirement.

Based upon construction noise data, noise levels on the construction site could exceed federal OSHA and California OSHA guidelines for worker noise exposure. In accordance with COC Noise-3, the project owner will submit a noise control program to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal-OSHA standards.

3.7.2.3 Offsite Laydown and Parking Areas

These modifications will have no significant impact on the sound from the construction or operation of the facility.

3.7.2.4 Plant Entrance Modifications

These modifications will have no significant impact on the sound from the construction or operation of the facility. The total expected sound level of the equipment used to construct the road has been calculated not to exceed the construction noise criteria set forth in the COCs for the previously permitted project.

3.7.3 Cumulative Impacts

The proposed project changes will not result any significant cumulative impacts to sensitive receptors nor will such modifications create any significant, unmitigated impacts beyond those addressed in the CEC's Final Commission Decision for ESPR.

3.7.4 Laws, Ordinances, Regulations, and Standards (LORS)

The proposed project will comply with all applicable noise related LORS as set forth in the previously permitted project.

3.7.5 Conditions of Certification

No changes to the COCs of the previously permitted project are proposed.

References

U.S. Department of transportation, FHWA, Roadway Construction Noise Model Users Guide, FHW-HEP-05-054.

NRG Power Station, Preliminary Beach Roll Off Decibel Emissions at El Segundo, Mammoet, Drawing No. 0010022747-00-D-Mo1

Hudson River PCBs Superfund Site, Phase 1 Final Design Report, Attachment K – Noise Impact Assessment, Prepared for General Electric Company, Epsilon Associates, Inc. March, 2006.

3.8 Paleontological Resources

This section discusses the paleontological environment and potential effects on these resources due to the proposed modifications to the El Segundo Power Redevelopment Project.

3.8.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to specific Conditions of Certification. The proposed project modifications are limited in scope and center around the proposed changes in 1) the plant's design to Rapid Response Combined Cycle technology; 2) the method of delivery for oversize equipment; 3) the addition of an offsite laydown and parking area for equipment staging and construction employee parking; and 4) the modification of the plant entrance road. This section describes potential affects that the proposed changes may have on paleontological resources and evaluates the potential impacts to these resources as a result of the proposed project modifications and those impacts not previously addressed in the Paleontological Resource Mitigation Monitoring Plan (PRMMP). These modifications have been assessed to determine whether they may result in any additional impacts on paleontological resources.

3.8.2 Affected Environment and Environmental Analysis

3.8.2.1 Rapid Response Combined Cycle (R2C2) Technology

The proposed R2C2 modifications potentially involve excavation that may have an impact to paleontological resources. Thus, the effect to the environment is the same as for the previously permitted project. However, there is planned monitoring for this area to be conducted by a designated PRM in accordance with the CEC approved PRMMP as required by the previously permitted project.

3.8.2.2 Oversize Equipment Delivery

The affected environment is the active beach area composed of fine sands (>95% sand) with potentially fossiliferous Qal very close to the surface. As part of the proposed modification, construction of a beach delivery ramp will require light grading along the ramp corridor in order to level the work area and to provide a stable ground surface for the beach delivery ramp structures. The proposed Beach Delivery will add to the affected environment. However, the effect to the paleontological resources is the same as for the previously permitted project. There is no planned paleontological monitoring for this beach area if minimal to no excavation is proposed.

3.8.2.3 Offsite Laydown and Parking Areas

The 190th Street offsite laydown and parking area is located on the relatively flat basin surface of the Los Angeles plain. A recently conducted field reconnaissance survey indicated no

exposures on the site or on the adjacent properties (Appendix 3.8-A). There is no access to the underlying geologic unit. Geologic mapping indicates that excavation of the site may encounter surficial sedimentary rocks of the Los Angeles County coastal plain area known to be Pleistocene to Holocene in age. These sediments include deposits that range from floodplain to marine near-shore deposits. Lithologies include sand, gravel, silt and clay; all of which are potentially favorable to the preservation of paleontological resources. However, no excavations or significant ground disturbance is proposed for this site. Although the addition of the 190th Street laydown and parking area does add a potentially sensitive environment to the affected area, there is no additional impact to paleontological resources beyond that described in the previously permitted project. There is no planned paleontological monitoring for this area if minimal to no excavation is proposed.

3.8.2.4 Plant Entrance Modifications

The proposed modification of the access road alignment and entry gate area involve the excavation of parts of an existing slope that may consist, at least in part, of Qal. Any proposed fill areas will be subjected to benching and may result in impact to Qal. The potentially fossiliferous Qal in the entrance road area adds sensitive environment that may contain paleontological resources. The plant entrance modifications will add to the affected environment. However, the effect to the environment is the same as for the previously permitted project. There is planned paleontological monitoring for this area since excavation is proposed.

3.8.3 Cumulative Impacts

The proposed project changes will not result any significant cumulative impacts to paleontological resources beyond those addressed in the CEC's Final Commission Decision for ESPR.

3.8.4 Laws, Ordinances, Regulations, and Standards (LORS)

The proposed project will comply with all applicable paleontological resources LORS described in the previously permitted project. The proposed project modifications will not affect applicable compliance with individual paleontologic LORS.

3.8.5 Conditions of Certification

The proposed changes addressed in this Amendment add to the affected environment since areas not previously addressed are included within the proposed project (i.e., beach zone and offsite laydown area). However, the effect to the environment is the same as for the previously permitted project. The incremental effect caused by the proposed changes does not raise the impact of the project as a whole above the present level of significance. No new LORS have been created since the previously permitted project list. The existing COCs do not need to be

modified. The amendment does not require any changes to the mitigation measures in PAL 1-7 of the COC.

3.9 Public Health

3.9.1 Introduction

The following paragraphs discuss whether there will be any new significant public health impacts associated with each of the proposed project modifications.

3.9.2 Affected Environment and Environmental Analysis

3.9.2.1 Rapid Response Combined Cycle (R2C2) Technology

As discussed in Section 2.0, the proposed project includes a change from two General Electric 7FA combined cycle gas turbines to two Siemens SGT6-5000F rapid response combined cycle gas turbines. In addition, the proposed project no longer includes the use of duct burners, or the installation/operation of an emergency firepump Diesel engine.

The emissions of non-criteria pollutants for the gas turbines are a function of maximum heat input levels and maximum expected operating hours. As shown in Section 3.1, the proposed change to the R2C2 technology is expected to result in a net decrease in both of these operating factors. This along with the proposed elimination of the Diesel firepump engine is expected to result in a net decrease in overall project non-criteria pollutant emission levels. Therefore, this project modification is not expected to result in any new significant public health impacts.

3.9.2.2 Oversize Equipment Delivery

As part of the construction air quality impact analysis in the AFC for the ESPR project, the emissions associated with truck deliveries to the project site were quantified. This amendment proposes the use of barges to deliver some of the equipment and construction materials to the project site that would have been delivered using trucks. Both the truck delivery and beach delivery options result in the emissions of Diesel particulate emissions which is both a criteria and non-criteria pollutant. However, as shown in Section 3.1 both equipment delivery methods result in particulate emissions below significance levels. Accordingly, this project modification is also not expected to result in any new significant public health impacts.

3.9.2.3 Offsite Laydown and Parking Areas

As discussed in Section 2.0, the proposed project includes the possible use of new offsite laydown/parking areas. As discussed in Section 3.1, this project modification is not expected to affect the emission levels or air quality impacts previously analyzed for this phase of the project. Accordingly, this project modification is also not expected to result in any new significant public health impacts.

3.9.2.4 Plant Entrance Modifications

The proposed project includes some modifications to the plant entrance to improve the material delivery options available to the project site. As discussed in Section 3.1, this project modification is not expected to affect the emission levels or air quality impacts previously analyzed for the construction phase of the project. Accordingly, this project modification is also not expected to result in any new significant public health impacts.

3.9.3 Laws, Ordinances, Regulations, and Standards (LORS)

The Final Commission Decision approving the ESPR project found the project to be in compliance with applicable LORS. As described in this Amendment, the modifications proposed for this project are consistent with all applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the Commission Decision for the ESPR project.

3.9.4 Cumulative Impacts

The proposed project changes will not result any significant cumulative impacts associate with public health beyond those addressed in the CEC's Final Commission Decision for ESPR.

3.9.5 Conditions of Certification

There are no proposed changes to the public health Conditions of Certification associated with this project modification.

3.10 Socioeconomics

This section discusses the socioeconomic environment and potential effects on these resources due to the proposed modifications to the El Segundo Power Redevelopment Project.

3.10.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to specific Conditions of Certification. The proposed project modifications include: 1) the plant's design to Rapid Response Combined Cycle technology; 2) the method of delivery for oversize equipment; 3) the addition of one offsite laydown area and the removal of one offsite laydown area; and 4) the modification of the plant entrance road. This section describes and evaluates potential effects that the proposed project modification may have on socioeconomics.

The proposed change to R2C2 technology will have an effect on estimated construction labor costs, but will not significantly change the total project capital costs, projected tax revenues, or estimated operations payroll. The projected capital improvement value of the proposed modified project is comparable to that of the previously permitted project. Eliminating once-through cooling with the use of R2C2 technology ensures the long-term regulatory feasibility of the project and thus its long-term economic viability.

Beach delivery of oversize equipment will not have an adverse economic impact. There are no local businesses that will be significantly impacted due to the temporary disruption of access to limited sections of the bike path and the public beach area. The beach delivery will be coordinated so as to not impact any charitable or community events at El Segundo Beach, including annual beach clean-up and fun run/walk events that use the bike path. Other proposed project modifications do not present any change in socioeconomic impact.

Overall, the Amendment will have a de minimus impact on employment, housing, or schools, as the required construction labor force will be reduced by approximately 12% and projected permanent employee numbers remain unchanged from estimates in the previously approved project. In addition, utilities and public services will not be significantly impacted by the proposed project modifications.

This Amendment will not present any Environmental Justice impacts, because the proposed project modifications do not result in any significant unmitigated adverse environmental or public health impacts. Any potential air quality, public health, and hazardous materials handling

impacts to the public will continue to be mitigated to less than significant levels through existing and proposed Conditions of Certification.

3.10.2 Affected Environment and Environmental Analysis

3.10.2.1 Rapid Response Combined Cycle (R2C2) Technology

Project Capital Costs and Tax Revenue

The previously permitted project capital cost was estimated to be approximately $350 to $400 million. The cost of the proposed project is approximately 20 to 25% higher due to increases in labor and the cost of materials since the original AFC was filed in 2000. However, the cost increases are consistent with project cost escalations throughout the United States.

In the Final Commission Decision, it was estimated that the project would result in a net property improvement value of $250 million. The improvement value of the proposed project, as modified, will be comparable to the estimated improvement value of the permitted project. The proposed R2C2 design will have a net decrease in power delivery capacity, from 630 MW to 560 MW. The nominal change in capacity will not directly result in a reduced improvement value. Overall, the proposed change to highly efficient R2C2 technology presents an economic benefit in comparison to the previously permitted project. The sustained improvement value of the proposed project is intrinsically related its long-term financial viability. Financial viability will be strengthened when regulatory risks in the previously permitted project, such as the continued use of once-through cooling, are eliminated. The air-cooled R2C2 design ensures the long-term viability of this project, enhancing its improvement value. As with the previously approved project, the City of El Segundo, Los Angeles County, and the El Segundo Unified School District will likely receive increased tax revenues based on the reassessed property value.

Franchise fess to the City of El Segundo for natural gas will be comparable to those projected for the previously permitted project, based on similar projected volumes of gas usage.

Construction and Operations

The conversion to the R2C2 technology will reduce the volume of local labor required for construction. The previously permitted project projected a peak of 422 construction workers, over 20 months, with an estimated total labor requirement of 4,995 man-months. The proposed project will have a peak of 337 construction workers over an 18-month period. With the proposed project modifications, a total construction labor requirement of 4,364 man-months is estimated. The projected net reduction in construction labor is 631 man-months, representing a 12% labor reduction as compared to the previously permitted project. The reduction in labor is primarily related to delivery of pre-assembled primary components.

The construction payroll of the previously permitted project was estimated to be between $60 and $65 million. This estimated range was developed in calendar year 2000 and labor needs were

projected for the period between calendar years 2002 and 2003. Based on a nominal rate of escalation of 3.5% per annum the original construction payroll range would equate to approximately $74 to $80 million. The estimated construction payroll of the proposed project is between $65 and $70 million. This labor is projected for calendar years 2008 through 2010.

The project as modified will have the same temporary benefits as the previously permitted project, providing the City of El Segundo and adjacent areas with an increase in local jobs and commercial activity during the construction of the facility.

Payroll for operations was originally estimated at approximately $1.6 million per year. The originally projected first year of operation was 2004. The anticipated first full year of operation is now projected to be 2011. Adjusting for inflation the estimated payroll is projected to be approximately $2.0 million per year.

Utilities and Public Services

The Amendment will not have an increased impact on utilities or public services associated with the change in technology. The proposed R2C2 technology will require an increase in reclaimed water from West Basin Municipal Water District, but West Basin has stated it will be able to provide the project with sufficient supplies. Potable water supply from the City of El Segundo and sanitary sewer service by City of Manhattan Beach will remain unchanged from the previously proposed project. The Amendment will not have an increased impact on fire protection, police protection, or hospital services, as the scale of project construction and operation remains unchanged, or is decreased, in the case of labor needs and duration of the construction phase.

3.10.2.2 Beach Delivery

Economic impacts associated with the intermittent disruption to the bike path and recreational use of the beach are not projected to be significant. The disruptions for beach delivery of equipment will be temporary and will not impede the ability of the public to use beach property around the impacted area. The beach delivery site will occupy a small portion of the beach adjacent to ESGS, and public access to beach and park areas in close proximity to the site, such as Dockweiler Beach State Beach and Manhattan Beach State Park, will be maintained.

No impact to local business is foreseen as a result of the disruption of the bike path and impacted beach area. There are no businesses, such as restaurants, beach rentals, or retail stores that are located in or adjacent to the portions of the beach and bike path which will be impacted.

3.10.2.3 Offsite Laydown and Parking Areas

ESPR proposes to use one additional offsite property located at 777 W. 190th Street to stage construction equipment and materials and to eliminate the use of the previously approved FedEx

laydown site. The addition of the 190th Street site does not present an additional socioeconomic impact nor will the removal of the FedEx site have socioeconomic impacts. The proposed offsite laydown location at W. 190th Street is located within the same general geographic area which was analyzed for potential socioeconomic impacts in the previously permitted project. Use of this additional proposed laydown area will involve the same types of activity, on the same scale, as the approved use of the previously permitted offsite locations.

3.10.2.4 Plant Entrance Modifications

The proposed modifications to the entrance road present no material change to the socioeconomics of the project.

3.10.3 Cumulative Impacts

The proposed project changes will not result in any significant cumulative impacts to socioeconomics beyond those addressed in the CEC's Final Commission Decision for ESPR.

3.10.4 Laws, Ordinances, Regulations, and Standards (LORS)

The Final Commission Decision certifying ESPR found the project to be in compliance with applicable LORS. As described in this Amendment, the modifications proposed are consistent with all applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the CEC's Final Commission Decision.

3.10.5 Conditions of Certifications

There are no additional proposed or amended changes to the approved Conditions of Certification.

3.11 Traffic and Transportation

3.11.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to specific Conditions of Certification. The proposed project modifications are limited in scope and center around the proposed changes in 1) the plant's design to Rapid Response Combined Cycle technology; 2) the method of delivery for oversize equipment; 3) the addition of an offsite laydown and parking area for equipment staging and construction employee parking; and 4) the modification of the plant entrance road. This section describes potential effects that the proposed changes may have on traffic and transportation and evaluates the potential impacts to these resources as a result of the proposed project modifications.

3.11.2 Affected Environment and Environmental Analysis

The El Segundo Power Redevelopment project (ESPR) is located at 301 Vista Del Mar in the City of El Segundo. Principal access to the plant site is provided by Vista Del Mar at the southern end of the facility. In addition, there is emergency ingress/egress through a Chevron gate located on the northern boundary of the ESPR site. The project traffic study area is bounded by the Pacific Ocean to the west, Interstate 105 to the north, Aviation Boulevard to the east, and Rosecrans Avenue to the south. Land uses in the project vicinity are a mixture of industrial and open space, with some residential and commercial uses. The nearest port facilities are the Ports of Los Angeles and Long Beach, approximately 10 miles to the south. Commercial and passenger rail facilities are located approximately two miles east of the project site.

Freeways

Interstate 405 (I-405) (San Diego Freeway). I-405, located about 4 miles east of the project site, is a north-south freeway providing regional access to the coastal communities on the west side of Los Angeles. I-405 has four lanes in each direction, not including the auxiliary lanes. A High Occupancy Vehicle (HOV) lane is currently provided between Century Boulevard and Vermont Avenue.

Interstate 105 (I-105) (Glenn M. Anderson Freeway). I-105, located about 2 miles north of the project site, is an east-west freeway extending from Sepulveda Boulevard on the west to the San Gabriel Freeway (I-605) on the east. I-105 provides three mixed flow lanes and one HOV lane in each direction, for a total of eight lanes. The Los Angeles County Metropolitan Transportation Authority (LAMTA) operates the Metro Green Line commuter rail service, located in the center median of the freeway. The Green Line's airport station is located at Aviation Boulevard.

Roadways

Aviation Boulevard. Aviation Boulevard is a major arterial, four-lane divided roadway, providing north-south access through the cities of El Segundo and Manhattan Beach.

El Segundo Boulevard. El Segundo Boulevard is an east-west secondary arterial from Vista Del Mar on the west to Sepulveda Boulevard on the east. It is considered a major arterial east of Sepulveda Boulevard. El Segundo Boulevard is approximately one mile from the project site, and connects traffic from collector streets on the west side of El Segundo to the I-405 and the regional freeway system. The City of El Segundo General Plan identifies El Segundo Boulevard as truck route.

Grand Avenue. Grand Avenue is an east-west secondary arterial, four-lane undivided roadway from Vista Del Mar on the west to Sepulveda Boulevard. East of Sepulveda Boulevard, Grand Avenue is a six-lane divided roadway.

Imperial Highway. Imperial Highway is an east-west secondary arterial, four-lane divided roadway from Main Street on the west to Sepulveda Boulevard. East of Sepulveda Boulevard, Imperial Highway is a six-lane divided roadway.

Main Street. Main Street is a north-south collector road, four-lane undivided roadway from north of Grand Avenue to El Segundo Boulevard.

Rosecrans Avenue. Rosecrans Avenue is an east-west major arterial, five-lane divided roadway with three westbound lanes and two eastbound lanes from the westerly boundary of Manhattan Beach to Sepulveda Boulevard. East of Sepulveda Boulevard, Rosecrans Avenue is a six-lane divided roadway. Rosecrans Avenue borders the southerly perimeter of the Chevron Refinery.

Sepulveda Boulevard. Sepulveda Boulevard is a north-south, eight-lane divided major arterial providing connections to I-405 north of Los Angeles International Airport (LAX) via Howard Hughes Parkway, and to I-105 south of LAX. Sepulveda Boulevard provides access to communities north of LAX (such as Culver City and Westchester) as well as the South Bay communities. Sepulveda Boulevard is designated State Route 1 (SR-1) from Lincoln Boulevard on the north to Pacific Coast Highway on the south.

Vista Del Mar. Vista Del Mar is a north-south secondary arterial, four-lane undivided roadway, and is designated a truck route. Vista Del Mar bounds the easterly perimeter of the project site.

Analysis Methodology

Level of service (LOS) is commonly used as a qualitative description of intersection operation and is based on the type of traffic control and experienced delay at the intersection. The *2000 Highway Capacity Manual (HCM)* analysis methodology for *Signalized Intersections* and

Unsignalized Intersections is utilized in this analysis to determine the operating LOS of the study intersections.

The *2000 HCM* analysis methodology describes the operation of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on the corresponding average stopped delay per vehicle for signalized and unsignalized intersections shown in Table 3.11-1 (LOS and Delay Ranges).

Table 3.11-1
LOS And Delay Ranges

LOS	Delay (in seconds)	
	Signalized Intersections	**Unsignalized Intersections**
A	≤ 10.0	≤ 10.0
B	10.0 to ≤ 20.0	10.0 to ≤ 15.0
C	20.0 to ≤ 35.0	15.0 to ≤ 25.0
D	35.0 to ≤ 55.0	25.0 to ≤ 35.0
E	55.0 to ≤ 80.0	35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source:
Transportation Research Board, *Highway Capacity Manual, HCM 2000 Edition* 2000.

LOS is based on the average stopped delay per vehicle for all movements of signalized intersections and all-way stop-controlled intersections; for one-way or two-way stop-controlled intersections, LOS is based on the worst stop-controlled approach.

Intersection Performance Criteria

The City of El Segundo and California Department of Transportation (Caltrans) goal for peak hour intersection operation is LOS D or better. Based on the approved AFC, the following intersections were analyzed:

- Vista Del Mar/Imperial Highway;
- Vista Del Mar/Grand Avenue;
- Vista Del Mar/45th Street;
- Vista Del Mar/Rosecrans Avenue;
- Pershing Drive/Imperial Highway;
- Sepulveda Boulevard/Imperial Highway;
- Sepulveda Boulevard/El Segundo Boulevard;
- Sepulveda Boulevard/Rosecrans Avenue;
- Aviation Boulevard/El Segundo Boulevard; and
- Aviation Boulevard/Rosecrans Avenue.

In addition to the intersections previously approved for study in the AFC, the following intersections were chosen for further analysis in order to further refine the level of detail within the existing study area:

- Vista Del Mar/El Segundo Generating Station Driveway;
- Main Street/Grand Avenue;
- Main Street/El Segundo Boulevard; and
- Sepulveda Boulevard/Grand Avenue.

Refer to Figure 3.11-1 (Study Intersection Locations) for a detailed mapping of all intersections analyzed. Table 3.11-2 (Existing Conditions AM and PM Peak Hour LOS) summarizes the existing LOS at each of the study area intersections. The following three intersections currently operate at deficient LOS (LOS E or LOS F) during the PM Peak Hour period:

- Sepulveda Boulevard/El Segundo Boulevard (LOS F);
- Sepulveda Boulevard/Rosecrans Avenue (LOS E); and
- Aviation Boulevard/El Segundo Boulevard (LOS E).

Table 3.11-2
Existing Conditions AM and PM Peak Hour LOS

Study Intersection	AM Peak Hour	PM Peak Hour
	Delay[1] – LOS	Delay[1] – LOS
Vista Del Mar/Grand Avenue	9.7 – A	7.6 – A
Vista Del Mar/El Segundo Generating Station Driveway	9.9 – A	58.0 – F
Vista Del Mar/45th Street	5.1 – A	4.5 – A
Vista Del Mar/Rosecrans Avenue	28.9 – C	28.9 – C
Pershing Drive/Imperial Highway	22.3 – C	15.7 – B
Main Street/Grand Avenue	14.4 – B	13.9 – B
Main Street/El Segundo Boulevard	10.1 – B	11.4 – B
Sepulveda Boulevard/Imperial Highway	25.6 – C	28.1 – C
Sepulveda Boulevard/Grand Avenue	34.3 – C	29.7 – C
Sepulveda Boulevard/El Segundo Boulevard	35.2 – D	136.2 – F
Sepulveda Boulevard/Rosecrans Avenue	27.2 – C	75.3 – E
Aviation Boulevard/El Segundo Boulevard	53.8 – D	79.9 – E
Aviation Boulevard/Rosecrans Avenue	24.9 – C	28.0 – C

Note:
1. Delay shown in seconds.

Source:
Traffic counts by National Data Services, May 2007

Other Transportation Facilities

Bus Routes. The existing bus routes, commuter and freight rail lines, airports, bike lanes, truck routes, and pedestrian walking streets exist within the project area, similar to that depicted in the approved AFC. Bus service in the El Segundo area is provided by: Los Angeles County Metropolitan Transportation Authority (LACMTA or MTA), Torrance Transit System, Santa Monica Municipal Bus Line, Municipal Area Express, and Westchester Shuttle System. Access to the project site via public transit service is provided through the following bus routes:

- I-105 (Bus Routes 220 and 439) to Vista Del Mar;
- Grand Avenue (Bus routes 124, 125 and 439) to Highland Avenue;
- Highland Avenue (Bus routes 438, 125 and 439) connecting Grand Avenue and Rosecrans Avenue; and
- Rosecrans Avenue (Bus route 125) connecting to Aviation Boulevard.

Fixed bus routes are assigned along these routes and are operated by the Southern California Rapid Transit District (SCRTD) and a Dial-a-Ride service operated by the City of El Segundo. Bus route 438 along Vista Del Mar and Highland Avenue is a privately operated line.

Additional bus routes within the project study area include Routes 225, 226, 232, 1, 2, 3, and 8. None of these routes pass directly by ESPR, but each contributes to the regional public access to the project vicinity.

Commercial Rail. The Burlington Northern-Santa Fe (BNSF) and Union Pacific railroads operate active freight spur tracks in the project vicinity. The BNSF line joins the Union Pacific line approximately 1.5 miles from the project site. The westerly terminus of the Union Pacific line is approximately 0.5 mile northeast of the project site within the Chevron Refinery. The BNSF and Union Pacific lines may be utilized for transporting construction materials during project construction.

Passenger Rail.

Amtrak – Amtrak's intercity passenger rail system serves Los Angeles Union Station, in downtown Los Angeles, with statewide and nationwide service. Commuter rail and rapid transit services other than Amtrak that operate within the region are the Metro Blue and Green Lines.

MTA Metro Green Line – The MTA's Metro Green Line is a light rail line, running east-west through Los Angeles County, serving the communities of Norwalk, Downey, Lynwood, Watts, Inglewood, Lennox, El Segundo, Manhattan Beach, and Redondo Beach. The Metro Green Line proceeds westerly near Studebaker Road in Norwalk and travels for about 17 miles along the median of the I-105 Freeway. The line transitions

southerly from the freeway structure after the Aviation station. The Green Line continues south along an exclusive elevated right-of-way, ending its run at Marine Avenue in northeastern Redondo Beach.

A Park and Ride facility, located approximately 2.5 miles east of the project site at El Segundo Boulevard and Nash Street, serves commuters utilizing the Metro Green Line.

MTA Metro Blue Line – The MTA's Metro Blue Line, a light rail transit system, runs from 7th Street in downtown Los Angeles, through the communities of Vernon, Huntington Park, South Gate, Watts, Compton, Carson, and Long Beach. At the Imperial/Wilmington station, passengers may transfer to the Metro Green Line, which continues toward Norwalk or El Segundo.

Bicycle and Pedestrian Circulation. The following bicycle route definitions are recognized statewide per Caltrans standards. Table 3.11-3 (Area Bike Routes) summarizes bike routes in the area.

Bicycle Route – A bicycle way designated within a public right-of-way. The purpose of the bike route is primarily that of transportation, allowing the bicyclist to travel from one point in the city to another. A "shared bicycle route" is a street identified as a bicycle facility by "bike route" signing only. No special markings on the pavement are provided. Per Caltrans standards, these routes are referred to as Class III.

Bicycle Lane – A bicycle facility where a portion of the paved area is marked as a lane for use of bicycles. It is identified by "bike lane" signs, pavement marking and lane line markings. Usually, special ordinances are necessary to legally define the exclusive use of bicycle traffic and to exclude mopeds and infringement by motor vehicles. Per Caltrans standards, these routes are referred to as Class II.

Bicycle Path – This facility is a special path for exclusive use of bicycles that is completely separated from the motor vehicle traffic by space or a physical barrier. Per Caltrans standards these routes are referred to as Class I.

Table 3.11-3 Area Bike Routes	
Adjacent to/on	**Class**
Imperial Highway (Vista Del Mar to Hillcrest)	I
Imperial Highway (Hillcrest to Sepulveda)	II or III
Imperial Highway (Sepulveda to I-405)	II
Vista Del Mar (along beach)	I
Grand Avenue (Vista Del Mar to Loma Vista)	I
Grand Avenue (Loma Vista to Douglas)	III
El Segundo Boulevard (Vista Del Mar to Loma Vista)	I
El Segundo Boulevard (Loma Vista to Aviation)	II or III
Rosecrans (Vista Del Mar to Sepulveda)	II or III
Rosecrans (Sepulveda to I-405)	III
Sepulveda (Rosecrans to Grand)	I or III
Sepulveda (Grand to Imperial Hwy)	III
Source: City of El Segundo, *General Plan*, 1992.	

Los Angeles International Airport. Los Angeles International Airport encompasses a total of almost 3,500 acres. Approximately 1,257 acres of the property is utilized for landing, takeoff, and ground maneuvering. The remaining acreage is used for the terminal complex, automobile parking facilities, airline maintenance facilities, fuel storage systems, industrial purposes, air cargo complex, and related facilities. The ESPR project is located approximately 2.5 miles southwest of LAX, including the West Imperial Terminal and Imperial Cargo Complex, which are located on Imperial Highway.

Circulation within and around LAX is by automobile, bus, and parking lot trams. For the general public, surface traffic circulation between major facilities is on public streets. Ground access to LAX is predominantly by means of motor vehicles via the I-105 and I-405 freeways. The major access route from the I-405 freeway to the central terminal area is Century Boulevard, a major east/west thoroughfare. The I-105 freeway provides access directly to the airport via Sepulveda Boulevard at Imperial Highway. Alternative access routes are Imperial Highway and Lincoln Boulevard. The west end of the airport is served via City of Los Angeles streets, Vista Del Mar, and Pershing Drive. To the south, Vista Del Mar services the Playa Del Rey, El Segundo Manhattan, and Hermosa Beach communities.

Movement of Goods. The City of El Segundo has designated truck routes on streets where vehicles in excess of three tons may travel. Existing truck routes are provided with appropriate

signage to guide truck traffic through the City. Truck routes that provide access to and from the project site include Vista Del Mar and Imperial Highway. The City's truck routes follow the arterial street system.

Road Features Affecting Public Safety. Construction of the proposed pipelines would require trenching in City streets. The proposed pipelines would be laid within the street rights-of-way in the Cities of El Segundo and Manhattan Beach, and the community of Playa del Rey (City of Los Angeles). The majority of roadway intersections in the project vicinity are controlled with traffic signals.

3.11.2.1 Rapid Response Combined Cycle (R2C2) Technology

The use of R2C2 technology in the proposed project would result in changes to construction related traffic, requiring a lower peak construction workforce compared to the previously permitted project (337 for the proposed project versus 422 for the previously permitted project). The use of R2C2 technology also results in a slight increase in construction truck trips per day (32 truck trips versus 29 truck trips for the previously permitted project).

Workforce Traffic Impacts. As previously identified in the AFC, most of the traffic produced during AM and PM peak hours would be from the construction workers arriving and leaving the designated parking lots. By the thirteenth month, a peak of 337 workers is expected. They would work a regular weekday single-shift.

The distribution of the peak 337-person construction workforce for the PTA was assumed as:

- 20 percent from north of the airport (68 employees);
- 25 percent from northeast of the airport (85 employees);
- 25 percent from the east (85 employees);
- percent from El Segundo (17 employees); and
- 25 percent from south of the project site (85 employees).

Impacts of Workforce Traffic on Roads. Based on a worst-case scenario, it is assumed that each of the 337 workers would drive a separate vehicle to a designated parking lot, making two trips per day (one round trip from home to the site and back). Therefore, construction of the project could result in a total of approximately 674 vehicle trips per day on average for the peak one-month period. This total is less than the total of 844 total vehicle trips previously estimated under the previously permitted project. If all employees drove the same route, the analysis within the previously permitted project anticipated that the percent change in average daily traffic (ADT) would vary from 7 percent (Grand Avenue) to 1 percent (Sepulveda Boulevard). However, it should be noted that the PTA anticipates less traffic from the peak workforce than was assumed for the previously permitted project (337 workers versus 422 workers,

respectively). The traffic associated with the previously permitted project would not exceed the daily and peak assumptions that were utilized in the previously approved project.

3.11.2.2 Oversize Equipment Delivery

Beach Delivery of Equipment. The previously permitted project anticipated that equipment and material deliveries would access the project site via the project entrance along Vista Del Mar. However, the proposed project may use beach delivery as an alternative to overland delivery of oversize equipment.

Plant equipment, including two HRSG units, two GTGs, two steam turbines, partial pipe rack assemblies, two air cooled condensers, and other equipment may be delivered to the facility from barges via a ramp system across the beach. Up to 6 barge deliveries over a six month period has been estimated. Construction activities associated with the beach delivery option of the PTA would create additional short-term impacts with regard to periodic bike path closure; however, if implemented, beach delivery would also provide several advantages including reduction of the number of transport vehicle trips that would be required if overland transport was used. The use of beach delivery would allow some components to be partially fabricated off-site and delivered to the facility. This modularization would reduce the amount of construction performed at the facility.

Construction Equipment and Material Deliveries. The proposed addition of the beach delivery method for oversize equipment would result in a reduction of deliveries to the site via truck delivery, compared to that depicted in the previously permitted project. This would greatly reduce the impacts to the project entrance that were analyzed previously. As a result the influx of construction vehicles and delivery trucks on the roadways is minimal compared to existing truck traffic and would represent a negligible increase in truck traffic along the proposed routes of travel. As stated in the previously permitted project, the impact of construction-related truck traffic would not be significant. The addition of the beach delivery method for oversize equipment would result in a net benefit to previously identified traffic impacts.

Pedestrian and Bicycle Circulation. The beach delivery method would result in the temporary construction of a ramp structure on the beach from the delivery barge to the project site. This ramp structure would traverse an existing pedestrian and bicycle path along the beach (located to the west of the project site).

To protect the public during the beach delivery operations, the ramp would include an access ramp constructed across the existing bike path to allow a minimum of interruption by users of the path when deliveries are not scheduled. The access ramp would include users of the path when deliveries are not scheduled. The access ramp would include closure gates across the bike path to prevent public access to the beach ramp during deliveries. Perimeter fencing (security barrier)

would also be installed around the work zone to prevent public access to the barge, ramp, and the area surrounding the work zone would be posted with signage. Signage would also be posted along the bike path to identify the crossing and the times the bike path would be closed.

The schedule for bike path closures would be published via local print media and direct mailings. Local law enforcement would be informed of the schedule for bike path closures. In addition, security personnel would also be on-site before, during, and after any scheduled crossing since it is anticipated that the unique delivery method may attract public attention.

New Overland Route. The originally proposed truck route is unsuitable for oversize equipment related to the new R2C2 technology due to height restrictions from an overhead walkway located at the Hyperion Wastewater Treatment Plant. The new proposed truck route continues on El Segundo Boulevard (west) past Sepulveda to Main Street (north) to Grand Avenue (west), returning to the original route at Vista Del Mar Boulevard, avoiding the Hyperion Wastewater Treatment Plant height restriction. It should be noted that under a conservative scenario, the overland delivery of heavy/oversize equipment would occur for up to four months, with up to 16 trips per month. Additionally, heavy equipment would only be transported during nighttime hours and off-peak hours. As these changes are slight, the overall resulting traffic impact resulting from the new overland route is considered less than significant.

3.11.2.3 Offsite Laydown and Parking Areas

The previously permitted project proposed nine laydown and parking areas to service the project during construction. However, one laydown area (FedEx) that was analyzed in the previously permitted project is no longer available for laydown and parking. Therefore, the proposed project would add one additional parking and laydown area to those already included in the previously permitted project. The new laydown and parking area would be located at 777 W. 190th Street, adjacent to the I-110/I-405 interchange. A description of the proposed W.190th Street area is as follows:

- W. 190th Street (10) – Access to this site is fair from 190th Street directly onto I-405/I-105. No entrance gate exists on-site and congestion is present as a result of both pedestrian and vehicle traffic in the area. Access to the project site may also be available from W. 190th Street utilizing designated arterial street truck routes (i.e., 190th Street, Hawthorne, Imperial Highway, and Vista Del Mar).

Upon removal of the FedEx laydown area and the incorporation of the W. 190th Street area, preferred routes of travel by workers would not change. Overall construction worker travel would remain the same as that described in the previously permitted project. Construction vehicles and equipment would also follow previously proposed truck routes.

3.11.2.4 Plant Entrance Modifications

The PTA proposes the alteration of the entrance road into the project site. The roadway will be realigned to improve roadway curvature, thus allowing large trucks to better enter and exit the project site. Implementation of the proposed roadway feature would better facilitate heavy truck traffic ingress/egress from the project site. Therefore, the proposed modifications would result in fewer traffic impacts at this entry area than that determined in the previously permitted project.

3.11.3 Cumulative Impacts

The proposed project changes will not result in any significant cumulative impacts to traffic and transportation beyond those addressed in the CEC's Final Commission Decision for ESPR. The modifications will result in less impacts to traffic and transportation as a result of a reduction in peak construction workforce.

3.11.4 Laws, Ordinances, Regulations, and Standards (LORS)

The Final Commission Decision certifying the ESPR found the project to be in compliance with applicable LORS. As described in this Amendment, the modifications proposed are consistent with applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the CEC's Final Commission Decision for the ESPR.

3.11.5 Conditions of Certification

The analysis concludes that no modifications to the Conditions of Certification set forth in the previously permitted project are necessary and no new Conditions of Certification are required.

References

California Energy Commission. 2000. Rules of Practice and Procedure & Power Plant Site Certification Regulations, August 2000.

2002a. EFS & EPD Traffic and Transportation, December 17, 2000

2002b. *Final Staff Assessment, El Segundo Power Redevelopment Project*, 00-AFC-14, September 2002.

2002c. *Commission Decision, El Segundo Power Redevelopment Project*, 00-AFC-14, February 2005.

City of El Segundo. El Segundo Circulation Element Update, Draft Environmental Impact Report. 2000.

Devresh, Bellur, *City Engineer, City of El Segundo*, December 4, 2000. Telephone conversation with Ian Forrest URS Corp.

3.12 Visual Resources

3.12.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to the ESPR project that necessitate evaluation of environmental impacts and potential amendments to specific Conditions of Certification. The proposed project modifications are limited in scope and center around the proposed changes in 1) the plant's design to Rapid Response Combined Cycle technology; 2) the method of delivery for oversize equipment; 3) the addition of an offsite laydown and parking area for equipment staging and construction employee parking; and, 4) the modification of the plant entrance road.

This section examines whether the proposed project changes set forth in this Petition to Amend (PTA) may result in additional environmental impacts to visual resources. The environmental analysis below concludes that the proposed modifications will have limited impact on visual resources and the proposed project will comply with all applicable Laws, Ordinances, Regulations, and Standards (LORS). Proposed changes to certain Conditions of Certification will ensure that any potential impacts to visual resources associated with this Amendment are managed and mitigated.

3.12.2 Affected Environment

This assessment analyzes the change in visual impacts between the previously permitted project and the proposed modified project. The four changes proposed include: 1) use of a Rapid Response Combined Cycle system, 2) beach delivery of major plant equipment during the construction phase; 3) one additional off-site laydown area and the removal of one previously analyzed off-site laydown area; and 4) modifications to the plant entrance road and entry gate area.

3.12.2.1 Rapid Response Combined Cycle (R2C2) Technology

The proposed R2C2 design will replace the previously permitted vertical Heat Recovery Steam Generators (HRSGs) with horizontal HRSGs. The units incorporate two air locked condensers (i.e., steam turbine fin/fan cooler) for steam turbine exhaust steam rejection. Additionally, two Siemens SGT6-5000F gas turbine generators (GTG) will replace the two General Electric 7FA GTGs approved in the Final Commission Decision. The new technology design will shift the HRSGs slightly to the west, as compared with the HRSG locations in the previously permitted project. Refer to Table 3.12-1 (Equipment Dimensions) for the differences in the major equipment dimensions between the previously permitted project and this PTA.

Additionally, to support the R2C2 units, new water storage tanks will be installed. A fire/service water storage tank will store water for fire hazards and plant sanitary uses. A raw water storage tank will be installed to store first pass reverse osmosis (RO) quality reclaimed water supplied by

West Basin Municipal Water District (WBMWD). A third tank will be installed to store demineralized water generated from the first pass RO water that ultimately will be used in the plant steam cycle. The proposed tanks will be located within the central portion of the project site, to the south of the HRSGs.

Table 3.12-1
Equipment Dimensions

Quantity	Description	Previously Permitted Project Dimensions (feet)			ESPR PTA Dimensions (feet)		
		Length	Width	Height	Length	Width	Height
2	CT air inlet filter with air cooling	57	20	35	75	47	76
2	CT generator with enclosure	40	20	25	47	35	32
2	HRSG	130	34	145	*86*	*12*	*115*
2	HRSG stack	NA	20[1]	215	*NA*	13[1]	*140*
2	Steam Turbine Fin Fan Cooler	NA	NA	NA	132	84	22
HRSG = Heat Recovery Steam Generator; CT = Combustion Turbine; NA = Not Applicable							
1 – HRSG stack diameter							

3.12.2.2 Oversize Equipment Delivery

Oversize plant equipment, including two HRSGs, two GTGs, two steam turbines, partial pipe rack assemblies, two air cooled condensers, and other equipment may be delivered to the facility from barges via a ramp system across the beach. Beach delivery will allow some equipment to be partially fabricated off-site, reducing the amount of construction performed at the facility. Beach delivery will require the temporary placement of a ramp structure on the beach, spanning a 60-foot wide corridor from the delivery barge to the project site. Beach delivery will likely expose sensitive viewers to additional construction-related activities associated with placing the ramp on the beach and moving equipment over it from the barges.

Mobilization, construction of the beach ramp, and up to six barge deliveries will take place over approximately six months. During mobilization of the beach delivery site, a construction barge will be pulled onto the beach at high tide with two D-6 dozers and secured via sea fastening from the barge to the dozers staged on the beach. The construction barge will then be ballasted to a grounded position.

The beach ramp will consist of geo-tech fiber, wood matting and sandbags, with a temporary access ramp constructed over the bike path to allow transport of the equipment from the beach into the facility. The access ramp will include closure gates across the bike path to prevent public access to the beach ramp during deliveries. Perimeter fencing (security barrier) will also be installed around the work zone to prevent public access to the barge, ramp, and the area surrounding the work zone. The construction barge and ramp materials will be removed immediately following the last delivery and the beach will be restored to pre-project conditions.

3.12.2.3 Offsite Laydown and Parking Areas

This Amendment proposes the use of one new offsite laydown location, in addition to those already discussed in the previously permitted project. Additionally, one previously analyzed laydown area, the Fed Ex site, is no longer available for staging and will be removed from the project. The new offsite laydown area is located at 777 W. 190th Street, adjacent to the Interstate 110 – Interstate 405 interchange. This approximate 12.1-acre property (of which 10 acres are usable) is largely paved with asphalt, includes a 5,500 square foot structure, and is utilized for light industrial purposes, as well as parking and storage uses. Opaque fencing material is located along the perimeter of the property.

3.12.2.4 Plant Entrance Modifications

Improvements to the entrance road and gate area will include straightening and widening the road and reducing the grade.

3.12.3 Environmental Analysis

The proposed project modifications will have some different visual impacts, as compared with the previously permitted project; though, the proposed changes will not result in an overall increased impact to visual resources.

The new R2C2 equipment has a slightly different size and shape, compared to the previously permitted power blocks; the use of horizontal, rather than vertical, HRSGs, reduced stack height, the increased mass of the GTG inlet filters, and the introduction of fin/fan coolers will alter views. The footprint and overall size of the new units will not substantially change, however, as compared with the previously permitted project. Additionally, the location of fire/service water tanks will be shifted to the central portion of the project site.

The proposed beach delivery during the construction phase will create only short-term visual impacts, while onsite construction activity and its associated effect on visual resources will be reduced.

The proposed additional offsite staging area at 190th Street and plant entrance modifications will result in minimal visual impacts.

Viewshed

The previously permitted project depicts the approximate region from which the power plant site may be seen, (i.e., the project viewshed). The viewshed analyzed in the AFC is larger than the viewshed of the project, as modified, since the highest proposed structures (the HRSG stacks) for the PTA will be approximately 140 feet high, while the HRSG stacks permitted in the previous project are 215 feet. Thus, the highest feature of the proposed modified project will be visible from fewer offsite areas.

Sensitive uses surrounding the project site have not changed since the project was permitted. Therefore, for the purposes of this comparative analysis, the same Key Observation Points (KOPs) that were used in the AFC will also be used here, to determine any change in visual impacts between the previously permitted project and the project proposed in this Amendment; refer to Figure 3.12-1 (KOP Location Map).

As in the previously permitted project, the painting scheme for the proposed units will be flat gray, to blend in with existing structures and surrounding uses. The proposed new equipment will use a flat finish to reduce the reflectivity of the surfaces, and use color tones that will reduce the visual contrast of the plant to the middleground and background views.

To reduce the offsite impacts associated with nighttime and security lights, lights will be directed toward the middle of the property and away from the outer site boundaries, to reduce light and glare. Lighting fixtures will be a non-glare type.

The most prominent features of the proposed equipment are the HRSG stacks, 215 feet high and 20 feet in diameter in the previously permitted project, and 140 feet high and 13 feet in diameter in the proposed project modifications, and the HRSGs, which were 34 feet wide, 130 feet long, and 145 feet high in the previously permitted project, and will be 26 feet wide, 123 feet long, and 88 feet high with the proposed project changes. Other major features of the R2C2 units do not have significant visual impacts, as compared with the previously permitted project, because of their reduced dimensions, their orientation, and screening provided by the proposed modified seawall, which will be approximately 10 feet high. The following analysis describes the change in visual impacts at each KOP location which are associated with the proposed changes in technology in the Amendment, as compared with the visual impacts of the technology which was previously permitted.

KOP #1 - Dockweiler Beach State Park

This KOP represents views to the south from the beach, bike path, and parking lots, which are located approximately 0.25 to 0.5 mile north of the project site; refer to Figure 3.12-2a (Existing View). Simulations were rendered to represent the view of the completed project (both the previously permitted project and the proposed modified project), as it will appear from KOP 1; refer to Figure 3.12-2b (Final View). Significant features include the HRSGs and associated stacks.

Contrast with Existing Structures. Although the proposed horizontal HRSGs are located slightly closer to this KOP, compared with the vertical HRSGs of the previously permitted project, there is decreased visibility in the hardscape features of the horizontal HRSGs, as compared with the vertical layout of the HRSGs in the previously permitted project and there will be reduced stack heights in the proposed design. The proposed project modifications will

also introduce larger combustion turbine air inlet filters to the east of the HRSGs. These inlet filters will be approximately 76 feet high. However, the introduced line pattern associated with the inlet filters will follow the horizontal features of the proposed HRSGs. The heights of the proposed structures will appear similar in massing and scale to the previously permitted structures, though the structures in the previously permitted project have more vertical massing, and result in a sharper contrast than the structures proposed in this Amendment. Therefore, the change in visual contrast resulting from the proposed project modifications is considered Low.

Contrast with Vegetation. Vegetation in this view consists of scattered trees in the foreground. The contrast with vegetation of the proposed units will remain minimal, as the landscape concept plan and the color scheme of the new units will remain unchanged. Therefore, the contrast with vegetation of the new structures, as compared with previously permitted structures, is considered Low.

Contrast with Land and Water. Existing units contrast with the flat, open beaches and waterways surrounding the plant. The units in the previously permitted project and this Amendment are similar, such that the modified units proposed in the PTA will not add to the contrast. Therefore, the change in contrast with land and water is Low.

Scale/Spatial Dominance. The scale/spatial dominance of the modified units will be less dominant than the previously permitted units, because the HRSG profiles will change from vertical to horizontal, and there will be a reduction in stack height by 75 feet.

View Blockage. Similarly, the severity of the view blockage associated with the proposed project changes is low due to the minimal amount of view blockage to the skyline and existing ESGS structures which are not altered with this project. The proposed horizontal HRSGs and stacks are at lower heights (approximately 35 and 75 feet lower, respectively) than those described in the approved project. However, the proposed air inlet features associated with the PTA will be approximately 41 feet higher than those described in the previously permitted project. The proposed air inlet filters will follow the visible skyline, similar to the existing surrounding structures, including the Chevron tanks located to the east and Units 3 and 4 located to the south. No significant views or vistas will be screened by the proposed structures.

Visual Impact Severity. Similar to the previously permitted project, the resulting impact severity of this Amendment is Low due to the presence of Units 3 and 4. Additionally, glare impacts will remain negligible due to the color and materials used. Therefore, no significant visual impacts are expected from this view. There will be no significant change in the overall impact severity of the proposed modifications.

Key Observation Point #2 – Manhattan Beach State Park

This KOP represents views to the north from the beach, bike path, parking lots, and adjacent residences, which are located approximately 0.25 to 0.5 mile south of the project site; refer to Figure 3.12-3a (Existing View). The two large oil storage tanks visible in this KOP will be demolished, as provided in the previously permitted project and impacts to visual resources associated with the removal of the tanks do not represent a change in this Amendment. Simulations were rendered to represent the view of the completed project (both the previously permitted project and the proposed modifications) as it will appear from KOP 2; refer to Figure 3.12-3b (Final View).

Contrast with Existing Structures. The proposed HRSG stacks, at 140 feet, are less visible from this KOP than the previously permitted stacks, 215 feet high, due to screening provided by existing stack structures, the relocation of the HRSGs to the west, and the overall reduction in stack heights proposed in the Amendment. As in the previously permitted project, Units 3 and 4 will screen most of the new equipment. Thus, there will be no change in contrast between the proposed HRSGs and stacks and those in the previously permitted project.

Contrast with Vegetation. Similarly, the proposed new units will only add incrementally to the contrast with vegetation caused by the existing structures. The proposed landscaping will reduce the contrast of the beach environment to the power plant structures. Furthermore, there will be no change from the previously permitted project providing for the removal of the two large oil storage tanks located within the southern portion of the project site. Therefore, to the change in contrast with vegetation between the previously permitted project and the PTA is considered Low.

Contrast with Land and Water. The proposed new units will contrast with the flat, open beaches and waterways surrounding the plant in the same manner as the previously permitted structures would. For both the permitted and proposed project, the structures will only add incrementally to the contrast with the surrounding land caused by the existing structures. Also, with the addition of the new landscaping materials, which remains unchanged in this Amendment, the contrast of the land and water will be reduced. Therefore, the change in contrast with land and water associated with the proposed modifications is Low.

Scale/Spatial Dominance. The proposed R2C2 units will have reduced spatial dominance, compared with the previously permitted units (including stacks) due to screening by existing equipment, the relocation of the HRSGs to the west, and the reduction in stack height proposed by the PTA. Therefore, the proposed changes are insignificant with regard to both scale and spatial dominance from this KOP.

View Blockage. The proposed new units will not change the impact with regard to view blockage as most of the proposed structures will be screened from this KOP, as in the permitted project, and the two large storage tanks will be removed, significantly reducing existing view blockage. Further, the PTA proposes reduced stack heights and the relocation of the HRSGs further west, which will allow for additional screening by Units 3 and 4.

Visual Impact Severity. With the proposed R2C2 design, the change in overall impact severity in this view is Low due to the presence of the existing structures, the reduced stack heights of the proposed new units, and relocation of the HRSGs. The visible project features will be screened further at this KOP with implementation of the proposed changes. Therefore no significant visual impacts are expected from this view with this Amendment to the permitted project.

Key Observation Point #3 – Views from Manhattan Beach

This KOP represents northward views from residences (first and second story within the El Porto community), as well as Vista Del Mar near its intersection with Shell Street; refer to Figure 3.12-4a (Existing View). Views of the proposed project are within 0.25 mile and range from being primarily open to partially screened by adjacent vegetation and structures. Simulations were rendered to represent the view of the completed project (both the previously permitted project and the proposed modified project) as it will appear from KOP 3; refer to Figure 3.12-4b (Final View).

Contrast with Existing Structures. The modified project will have a reduced contrast with existing structures, compared to the previously permitted project, due to the screening of proposed structures by the existing Units 3 and 4. This PTA will reduce the proposed stack heights as well as move them further west, allowing for further screening by existing on-site structures. Therefore, implementation of the proposed R2C2 units and their orientation will reduce the contrast with existing structures to a Low contrast, rather than a Low to Moderate contrast, as described in the previously permitted project.

Contrast with Vegetation. Minimal vegetation along Vista Del Mar is visible in this view, e.g., ornamental streetscape vegetation of limited quality. As the proposed units are similar to the previously permit project, the contrast with vegetation remains Low. Note that the replacement of landscaping in the previously permitted project remains unchanged in this Amendment and will take place along the eastern property line, along Vista Del Mar, and will reduce the contrast of the existing power plant structures to the beach landscape.

Contrast with Land and Water. Minimal views to the water features are visible in the background. Proposed project structures will not obstruct views to the water from this KOP. As in the previously permitted project, the proposed equipment for the PTA will be screened by

Units 3 and 4, resulting in no change in this view. Therefore, contrast with land and water with the proposed changes of this Amendment is considered Low.

Scale/Spatial Dominance. The proposed HRSGs will be screened by existing structures. Additionally, the proposed stack heights will be reduced. Similar to the previously permitted project, the scale dominance of the modified project at this KOP will be insignificant, so there is no change in scale/spatial dominance.

View Blockage. The severity of the view blockage for the previously permitted project is Low to Moderate from this viewpoint, because of the slight change in appearance with the previously permitted project, the visual dominance of transmission lines in comparison to the stacks, and the existing stacks, which partially block the views. In addition, with the proposed project changes, the HRSGs will be relocated such that most of the new equipment will be screened by existing structures. Additionally, the PTA proposes to reduce the stack height by 75 feet, compared with the previously permitted project. Therefore the project change visual impact will be Low with regard to view blockage.

Visual Impact Severity. The overall severity of the previously permitted project at this KOP is Low based upon screening of project features provided by the existing HRSG units 3 and 4. The portions of the previously permitted project equipment that will be visible from this KOP are the stacks and HRSG units. The proposed project equipment visible from this KOP is the top-most portions of the stacks. The HRSG units will not be visible. Therefore, no significant visual impacts are expected from this view for either the previously permitted project or the PTA.

Key Observation Point #4 – Manhattan Beach State Park Pier

This KOP represents northward views from the pier; refer to Figure 3.12-5a (Existing View). The two oil storage tanks are visible south of the ESPR site. Simulations were rendered to represent the view of the completed project (both the previously permitted project and the proposed modified project) as it will appear from KOP 4; refer to Figure 3.12-5b (Final View). Significant features include the existing Units 3 and 4 stacks and boilers. The two oil storage tanks, which appear immediately south of the ESPR site, will be removed, as provided in the previously permitted project.

Contrast with Existing Structures. The proposed HRSG stacks will be visible in the background view, however, the proposed stacks are 75 feet lower in height than the permitted stacks. In addition, the HRSGs will be screened by the existing stacks and HRSGs. The proposed R2C2 units appear similar in line, form, color and texture to the existing ancillary facilities of the power plant, as were the units in the previously permitted project. Therefore, the proposed stacks not change the project's Low contrast with existing structures.

Contrast with Vegetation. Vegetation in this view consists of shrubs and grasses along the coastline. No vegetation is visible immediately surrounding the power block in this view. The proposed structures in the previously permitted project will only add incrementally to the contrast with vegetation caused by existing structures and this impact remains unchanged in the proposed modified project. Therefore the contrast with vegetation is considered Low for the PTA.

Contrast with Land and Water. The existing structures contrast with the flat, open beaches and waterways surrounding the project site. The proposed structures for both the previously permitted project and PTA will only add incrementally to the contrast with the surrounding land caused by the existing structures. Therefore, the contrast with land and water remains Low with the proposed project modifications.

Scale/Spatial Dominance. The scale dominance of the R2C2 units will be insignificant, as compared with the previously permitted units. The proposed stacks will result in reduced contrast in spatial dominance due to the relocation and reduction in stack height. The spatial dominance of the proposed structures will be insignificant due to the distance from this KOP and the similarity in shape and size to the existing structures, which remains unchanged with this Amendment.

View Blockage. Similar to the previously permitted project, the severity of the view blockage remains Low with the proposed project changes due to the proposed stacks appearing to be of similar size and shape to the permitted stacks. View blockage of the background mountains is similar to that of the previously permitted project. The two storage tanks, which are a major source of view blockage, will be removed as part of the previously permitted project, which remains unchanged with this Amendment. This area will temporarily be used for construction staging.

Visual Impact Severity. The overall impact severity of both the previously permitted project and proposed structures in this view is Low due to the proximity of the project site from this KOP and the reduction in stack heights in the modified project. Therefore, similar to the previously permitted project, no significant visual impacts are expected with implementation of the Amendment (from this KOP).

Key Observation Point #5 – Vista Del Mar

This KOP represents southbound views along Vista Del Mar; refer to Figure 3.12-6a (Existing View). The most sensitive views of the proposed project range from approximately 500 feet to 0.25 mile and are partially screened by vegetation, utility lines, and fencing. The project site is visible to the south from Santa Monica Bay. Simulations were rendered to represent the view of

the completed project (both the previously permitted project and the proposed modified project) as it will appear from KOP 5; refer to Figure 3.12-6b (Final View).

Contrast with Existing Structures. The proposed HRSGs appear smaller in scale than those associated with the previously permitted project; however, they are located at a closer proximity to this KOP. The proposed stacks have vertical lines similar to the existing power pole structures. Additionally, the topmost portion of the northernmost inlet filter is visible; however, landscaping located in the foreground screens the majority of this structure. Overall, due to the reduced dominance of proposed structures, the proposed changes will have less contrast than the structures analyzed in the previously permitted project.

Contrast with Vegetation. Trees and shrubs visible in this view form a horizontal line pattern. The vertical forms of the previously permitted HRSGs will create a vertical element in the horizontal line pattern of the vegetation. However, compared with the previously permitted project, the proposed structures will appear more horizontal and will more closely match the form of the existing vegetation. Therefore, the proposed structures will result in less contrast with vegetation than that described in the previously permitted project.

Contrast with Land and Water. Water is slightly visible in the background of this view; however, existing trees and shrubs located along the roadway screen the majority of views to the water. Unlike the previously permitted project structures, the proposed units appear more horizontal in nature, similar to Vista Del Mar. Therefore, the proposed project modifications will have less contrast with land features than those described for the previously permitted project structures.

Scale/Spatial Dominance. The scale dominance of the previously permitted project structures is Moderate due to the wide configuration of the proposed vertical HRSG structures. On the other hand, the proposed structures are similar in mass and scale to Units 3 and 4 and the roadway along this KOP. Therefore, the proposed project changes will be Low in scale/spatial dominance at this KOP.

View Blockage. The severity of the view blockage with the modified is Low from this KOP due to the horizontal HRSG profile, which will allow more views toward the coastal skyline than the previously permitted project. Additionally, the Amendment will reduce proposed stack heights compared to those approved in the CEC's Final Commission Decision for ESPR.

Visual Impact Severity. The PTA will result in a Low visual impact severity compared to that of the previously permitted project as a result of fewer contrasting features associated with structural scale, dominance, and view blockage, as the proposed HRSG units and associated stacks have a lower form and profile than that described in the previously permitted project.

Key Observation Point #6 – Plume Analysis of Manhattan Beach State Park

This KOP represents views to the north from the beach, bike path, parking lots, and adjacent residences, which are located approximately 0.25 to 0.5 mile south of the proposed project site; refer to Figure 3.12-7a (Existing View). The two storage tanks visible in this KOP will be demolished, as originally proposed and analyzed in the previously permitted project. Simulations were rendered to represent the view of the completed project (both the previously permitted project and the proposed modified project) as it will appear from KOP 6; refer to Figure 3.12-7b (Final View). This KOP analyzed the effects of the vapor plumes emitted from the power plants stacks.

Contrast with Existing Structures. The proposed stacks are slightly more screened due to the reduced stack height. Similar to the previously permitted project, the majority of the new equipment will be screened by Units 3 and 4. Thus, the HRSGs and stacks will have Low contrast with existing structures in both the previously permitted project and this Amendment. The vapor plumes emanating from both the previously permitted and the proposed stacks will be of the same degree and scale, thus there is no changes with this Amendment in contrast with existing structures.

Contrast with Vegetation. Similarly, the proposed structures will only add incrementally to the contrast with vegetation. The vegetation in the area is not of the same scale and height as the top of the stacks in both the previously permitted project and the PTA; therefore, the vapor plumes will not interfere with existing vegetation. Consequently, the contrast with vegetation remains Low for the proposed modifications.

Contrast with Land and Water. The proposed structures will only add incrementally to the contrast with the surrounding land as compared with the previously permitted project. The water itself adds to the visible blockage of the site by creating fog, reducing the contrast with land and water. For these reasons, contrast with land and water remain Low with the proposed project changes.

Scale/Spatial Dominance. The proposed project will have reduced visibility, compared with the previously permitted project, of proposed structures (including stacks) due to screening from existing Units 3 and 4. The vapor plumes from the proposed equipment will be of the same size and scale as the plumes emitted from the previously permitted project. However, the PTA proposed stack heights will be lower than those in the previously permitted equipment; therefore, the plumes emitted from the PTA will be visible at a slightly lower elevation than the existing plumes. The spatial dominance of the previously permitted project and proposed structures will be insignificant in relation to the composition of the view because they are similar in shape and size to existing structures.

View Blockage. The severity of the view blockage is Low for the Amendment due to the proposed stacks appearing to be of similar size, shape, and line pattern as the existing stacks of Units 3 & 4. Since the vapor plumes are emitted through the top of the stacks and dissipate in a horizontal or upward direction, they will not present any visible degree of blockage as a result of the previously permitted project or the proposed modified project. Note that the plumes of the proposed project will be located at a slightly lower elevation than the plumes of the previously permitted stacks; however, they will appear similar in nature. The proposed previously permitted project and PTA stacks do not block any viewpoints from this vantage point and this impact remains unchanged.

Visual Impact Severity. The overall impact severity of the proposed structures in this view is Low due to the presence of Units 3 and 4 and the vapor plumes being of the same size and scale as the existing vapor plumes. Although, the plumes emitted from the proposed stacks will be visible at a slightly lower elevation compared with plumes from the previously permitted project, no significant visual impacts are expected from this view as a result of the PTA due to the coastal nature of the site and the high incidence of fog.

KOP #7 – Dockweiler Beach State Park

This KOP is a view directly east towards the project site from Dockweiler Beach State Park; refer to Figure 3.12-8a (Existing View). The two oil storage tanks are located within the southern portion of the project site. Simulations were rendered to represent the view of the completed project (both the previously permitted project and the proposed modified project) as it will appear from KOP # 7; refer to Figure 3.12-8b (Final View). The previously permitted project and proposed new equipment will not contrast highly with the existing equipment. The primary source of view blockage associated with the proposed equipment is the HRSGs, the HRSG stacks, and the combustion turbine air inlet filters (approximately 76 feet in height). The previously permitted HRSGs appear more vertical in form, compared to the proposed HRSGs, which are in a horizontal layout.

Contrast with Existing Structures. The proposed HRSGs will appear slightly shorter and longer than those described in the previously permitted project. The smaller scale of the proposed HRSGs slightly contrasts with Units 3 and 4; whereas, the vertical HRSGs depicted in the previously permitted project are larger in massing and scale. The proposed modified project will also introduce visible steam turbine fin fan coolers (approximately 22 feet in height) and air inlet filters (approximately 76 feet in height) at this KOP. The 10-foot seawall located in the foreground will screen the majority of the fin fan coolers. The proposed HRSGs will also screen portions of the air inlet filters. Although the PTA HRSG units slightly contrast with Units 3 and 4, as did the previously permitted HRSGs the proposed structures will result in Low to Moderate contrast with the existing structures due to the screening produced by ancillary facilities.

Contrast with Vegetation. Similar to the previously permitted project, the PTA structures will only add incrementally to the contrast with vegetation caused by the existing structures. Therefore, the contrast with vegetation remains Low for the PTA.

Contrast with Land and Water. The existing structures contrast with the flat, open beaches and waterways surrounding the plant. The proposed structures will only add incrementally to the contrast with the surrounding land having similar impacts as the previously permitted project. Additionally, to the previously permitted project, the proposed sea wall and landscaping will soften the transition from the open beaches and waterways to the project structures. The landscape plans for the modified project remain unchanged. Therefore, the contrast with land and water remains Low for the PTA.

Scale/Spatial Dominance. The scale dominance of the proposed structures will be insignificant due to the lower structural features and horizontal appearance. The previously permitted units differ from the proposed units in scale and spatial dominance in that the previously permitted HRSGs appear vertical in profile, whereas the proposed HRSGs have a horizontal profile. The height and massing of proposed structures will appear slightly smaller in scale and dominance compared to the previously permitted HRSGs. The spatial dominance of the PTA structures will be insignificant, as the HRSGs will complete a line pattern of vertical stack structures in a horizontal line sequence. Therefore, the Scale/Spatial Dominance value for the proposed project change is Insignificant.

View Blockage. The severity of the view blockage is considered Low for the proposed modified project since the proposed equipment will have a reduced bulk and not result in an increase in dominance compared to the previously permitted equipment.

Visual Impact Severity. Similar to the previously permitted project, the overall impact severity of the proposed structures in this view is considered Low due to the presence of Units 3 and 4. Additionally, although the proposed HRSGs will be smaller in mass and scale than the previously permitted HRSG units, the spatial dominance of the proposed structures compared to the existing structures will be Low and they will complete a line pattern of vertical stack structures in a horizontal line sequence. Therefore, no significant visual impacts are expected from this view as compared with the previously permitted project.

Key Observation Point #8 – Vista Del Mar

This KOP represents southbound views along Vista Del Mar heading towards the project site; refer to Figure 3.12-9a (Existing View). Simulations were rendered to represent the view of the completed project (both the previously permitted project and the proposed modified project) as it will appear from KOP 8; refer to Figure 3.12-9b (Final View).

Contrast with Existing Structures. The proposed HRSGs appear smaller in scale than those associated with the previously permitted project; however, they are located at a closer proximity to this KOP. The previously permitted project HRSGs and associated stacks appear to be a more prominent source of view blockage compared to the proposed structures. The PTA proposes to introduce inlet filter features as an additional structure; however, only the topmost portion of the northernmost inlet filter is visible due to screening provided by landscaping located in the foreground. The proposed HRSGs and stacks will have a horizontal line pattern and will more closely blend with the form of Vista Del Mar and the adjacent fence line. Additionally, the vertical line pattern of the proposed HRSG stacks remain similar to the existing power poles. Therefore, the contrast with existing structures remains Low for the proposed project changes from this KOP.

Contrast with Vegetation. There is little vegetation visible surrounding the existing power plant structures. Unlike the previously permitted project, the PTA structures will appear more horizontal in line similar to that in the existing roadway and proposed vegetation. Therefore, the proposed structures will result in less contrast with the existing vegetation along the western property boundary as compared to the previously permitted project.

Contrast with Land and Water. Water is partially visible in the background of this view, and is mostly screened by existing trees and shrubs located along the roadway. Unlike the previously permitted structures, the structures proposed in this Amendment appear more horizontal in nature, similar to the horizontal line of both the ocean skyline and the curvilinear roadway. Therefore, the proposed structures will result in less contrast with land and water features than those in the previously permitted project.

Scale/Spatial Dominance. The scale dominance of the previously permitted project structures will be Moderate due to the wider configuration of the HRSG structures. In contrast, the proposed structures appear lower and closer in proximity at this KOP resulting in a Low to Moderate impact for scale/spatial dominance.

View Blockage. Unlike the previously permitted project, the severity of the view blockage for the proposed modified project is Low from this KOP due to the horizontal HRSG profile, which will maintain more views toward the coastal skyline than that proposed in the previously permitted project.

Visual Impact Severity. Unlike the previously permitted project, the visual impact severity resulting from the Amendment is Low. Proposed structures will appear smaller in structural scale and dominance and will have less view blockage than those in the previously permitted project. Additionally, PTA structural features will appear horizontal in line and form, which will appear similar to the existing roadway, whereas, the vertical nature of the previously permitted

structures contrasts to the horizontal line pattern associated with the roadway and vegetation in the foreground.

Plumes

The proposed new units will require shorter stack heights than the previously permitted project. The proposed plant will operate at higher exhaust temperatures for the turbine condition, for all operating modes compared to the gas turbines (GE 7FA) analyzed in the previously permitted project. Thus, it is anticipated that there will be similar, if not fewer, visual impacts resulting from visible plume conditions compared to those described for the previously permitted project. Therefore, the plume impacts will not have an overall significant effect due to the existing plumes from the neighboring Los Angeles Department of Water and Power (LADWP) Scattergood plant and the fog and haze generated by coastal climate conditions.

3.12.4 Cumulative Impacts

The proposed project changes will not result in any significant cumulative impacts to land use beyond those addressed in the CEC's Final Decision for ESPR. In general, the proposed project modifications will result in reduced long-term visual impacts as opposed to the design associated with the previously permitted project; refer to Table 3.12-2 (Resultant Change in Visual Impact Severity). The PTA proposes to reorient the new structures so that more views are afforded beyond those currently provided. The PTA will result in reduced contrast with existing structures, and will have reduced stack heights, scale, and dominance due to the horizontal profile of the HRSG units. Additionally, the proposed HRSGs will not require architectural treatments to cover up operational equipment/piping, as analyzed in the previously permitted project due to the use of the horizontal HRSGs rather than vertical HRSGs. However, as compared with the previously permitted project, the proposed HRSGs will have a slightly increased contrast with Units 3 and 4 due to the reduced scale, massing, and visible auxiliary features of the structures proposed in this Amendment.

3.12.4.1 Beach Delivery

Short-Term Construction Impacts

Construction activities will create some new short-term impacts. The proposed beach delivery will include the delivery of oversize equipment on barges sized up to approximately 300 feet long by 100 feet wide. A ramp structure will be constructed from a barge secured to the shoreline, across the beach from the Project site. Therefore, surrounding uses will be exposed to project construction activities across the western project area, including views from recreational beach users. This activity will not require the excavation in the surf zone. Materials used to construct the beach ramp will be temporarily stockpiled along the ESGS fence line, in the northwest corner visible from the beach area and bike path adjacent to the fenceline.

It is estimated that total construction of the proposed modified project will require 18 to 20 months, which reflects a slightly shorter schedule than for the previously approved project. Within that time period, beach delivery would require up to 6 months to complete.

As with the previously permitted project, demolition operations, graded surfaces, construction materials, and equipment associated with construction activities will be visible in this proposed modified project. However, anticipated truck traffic will be reduced under modified project because much of the major equipment will be delivered via barge. Both the previously approved project and proposed modified project will require soil to be stockpiled and equipment for grading activities to be staged at various locations within the area.

As construction of the beach ramp may occur during night hours, surrounding uses may be exposed to light and glare. However, the proposed lighting design will ensure that lighting is the minimum brightness necessary for operational safety, and that lights are shielded and directed downward. The lighting plan will also include a "lighting complaint resolution form" to document and respond to complaints from nearby residents. Therefore, temporary light and glare impacts associated with construction activities will be less than significant.

3.12.4.2 Offsite Laydown and Parking Areas

The PTA adds the use of one additional offsite laydown and removes one offsite laydown area that is no longer available. This proposed laydown area will be used to store equipment and construction materials. The majority of stored materials will not be visible due to screening provided by opaque perimeter fencing. Additionally, the property is currently used for light industrial and storage/parking uses; therefore, project features will appear similar to existing conditions. Use of this property will be temporary, as the property will only be used for construction purposes over approximately 18 to 20 months.

3.12.4.3 Plant Entrance Modifications

The PTA proposes the alteration of the plant entrance road and gate entry area. The roadway will be realigned to improved roadway curvature, to facilitate large trucks entering and exiting the project site. Views of this roadway are limited as a result of onsite topography and screening provided by both existing and proposed on site structures. Limited views to the roadway exist from public beach areas or from Vista Del Mar. The proposed road modification will appear similar to the existing onsite roadway. Visual impacts associated with the proposed road modification are thus considered to be low.

Conclusion

In general, the proposed project modifications will result in reduced long-term visual impacts as opposed to the design associated with the previously permitted project; refer to Table 3.12-2 (Resultant Change in Visual Impact Severity). The PTA proposes to reorient the new structures

so that more views are afforded beyond those currently provided. The PTA will result in reduced contrast with existing structures, and will have reduced stack heights, scale, and dominance due to the horizontal profile of the HRSG units. Additionally, the proposed HRSGs will not require architectural treatments to cover up operational equipment/piping, as analyzed in the previously permitted project due to the use of the horizontal HRSGs rather than vertical HRSGs. However, as compared with the previously permitted project, the proposed HRSGs will have a slightly increased contrast with Units 3 and 4 due to the reduced scale, massing, and visible auxiliary features of the structures proposed in this Amendment.

Table 3.12-2
Resultant Change In Visual Impact Severity

KOP	Scenario	Contrast w/ Existing Structures	Contrast w/ Existing vegetation	Contrast w/ Land & Water	Scale Dominance	Spatial Dominance	View Blockage	Overall Visual Impact Severity
KOP 1	Previously Permitted Project	Low	Low	Low	Insignificant	Insignificant	Low	Low
	PTA	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged	Reduced Impact	Unchanged
KOP 2	Previously Permitted Project	Low	Low	Low	Insignificant	Insignificant	Low	Low
	PTA	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged	Reduced Impact	Unchanged
KOP 3	Previously Permitted Project	Low to Moderate	Low	Low	Insignificant	Insignificant	Low to Moderate	Low
	PTA	Reduced Impact	Unchanged	Unchanged	Unchanged	Unchanged	Reduced Impact	Unchanged
KOP 4	Previously Permitted Project	Low	Low	Low	Insignificant	Insignificant	Low	Low
	PTA	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged
KOP 5	Previously Permitted Project	Low	Low to Moderate	Low	Moderate	Moderate	Moderate	Low to Moderate
	PTA	Unchanged	Reduced Impact	Unchanged	Reduced Impact	Reduced Impact	Reduced Impact	Reduced Impact
KOP 6	Previously Permitted Project	Low	Low	Low	Insignificant	Insignificant	Low	Low
	PTA	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged	Reduced Impact	Unchanged
KOP 7	Previously Permitted Project	Low	Low	Low	Insignificant	Insignificant	Low	Low
	PTA	Low to moderate	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged
KOP 8	Previously Permitted Project	Low	Low to moderate	Low	Moderate	Moderate	Moderate	Low to Moderate
	PTA	Unchanged	Reduced Impact	Unchanged	Reduced Impact	Reduced Impact	Reduced Impact	Reduced Impact

3.12.5 Laws, Ordinances, Regulations, and Standards (LORS)

The Final Commission Decision certifying ESPR found the project to be in compliance with applicable LORS. As described in this PTA, the modifications proposed are consistent with all applicable LORS, and the PTA will not alter the assumptions or conclusions made in the CEC's Final Commission Decision for ESPR.

3.12.6 Conditions of Certification

The Conditions of Certification, VIS-2, VIS-3 and VIS-5 through VIS-9, will remain the same. The following changes to VIS-1, VIS-4, will be required for this Amendment because the R2C2 HRSGs will no longer require architectural treatments (note that deletions are depicted in strike out text and additions are depicted as bold, italicized text):

VIS-1: Facility Visual Enhancement Plan. Before starting construction, the project owner shall complete a comprehensive visual enhancement plan that includes, landscaping, painting, lighting, and other measures that result in an overall enhancement of views of the facility (i.e., the power plant site) from areas accessible to the public. The plan shall be made available for review and comment by the Executive Director of the California Coastal Commission for review and approve by the CPM. The plan shall include:

> ~~Architectural screening: All industrial equipment below elevation 125' (i.e., below the elevation of the outlet dampers on the facility's exhaust stacks) and visible from the beach, coastal waters, Vista Del Mar Avenue, and other areas accessible by the public shall be screened using panels, wire mesh, louvers or other forms of architectural screening. The screening shall be opaque or semi-transparent and have a non-glare finish, and the color shall be harmonious with the facility's setting on a public beach. If the project owner proposes, and the Energy Commission concurs, that it is infeasible to shield portions of the facility using architectural screening, the project owner may instead propose other measures such as landscaping, berms, or fencing to provide the necessary screening. Any such proposal must be based on the definition of feasibility in California Coastal Act (Public Resources Code Section 30108) and is subject to review and comment by the Executive Director of the Coastal Commission, and review and approval by the Energy Commission.~~

Landscaping: Where used to screen the facility, vegetation shall be selected and maintained to provide year-round screening (e.g., evergreen species). Preference shall be given to native species and/or species requiring little or no irrigation, or at a minimum, non-invasive species. Soils shall be tested, amended as needed or replaced to ensure plant survival.

Other structural screening: Where berms, fencing, or other structural elements are selected as the primary method to screen the facility, the structures shall harmonize with the facility's setting on a public beach. If berms are used, they shall be vegetated and maintained with evergreen, native, and/or species requiring little or no irrigation. If fencing is used, it shall include a non-

glare finish and be painted in a neutral color. The Facility Visual Enhancement Plan shall include photographs showing existing conditions and simulated post-construction conditions from Key Observation Points (KOPs) around the facility (these may be the same KOPs that were used to develop the Staff Assessment). The plan shall also include anticipated costs for completing and maintaining the various visual enhancement measures and a detailed schedule for completing construction of these components.

Conceptual Seawall Design Plan. Before starting construction, the project owner shall complete a conceptual plan of the seawall design for review and comment by the Executive Director of the Coastal Commission, the City of Manhattan Beach, and the City of El Segundo, and review and approval by the CPM. This plan shall include:

Final design: The seawall along the west side of the facility shall be textured and finished in a neutral color harmonious with its location adjacent to a public bike path and beach. If painted, graffiti-resistant paint shall be used.

Landscaping: Where used to enhance the seawall design, vegetation chosen shall be selected or maintained to provide year-round screening (e.g., evergreen species).

Preference shall be given to native species and/or species requiring little or no irrigation.

This conceptual seawall design plan shall include photographs showing the existing conditions and simulated post-construction conditions from observation points along the bike path adjacent to the seawall, from the beach, and from other points where the seawall is highly visible. The plan shall also include anticipated costs for completing and maintaining the seawall and a schedule for construction.

Verification: At least 120 days prior to ground disturbance, the project owner shall submit the required Facility Visual Enhancement Plan and Conceptual Seawall Design Plan to the Executive Director of the Coastal Commission and the Cities of Manhattan Beach and El Segundo for comment, and to the CPM for review and approval. If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, the project owner shall prepare and submit to the Coastal Commission staff, the Cities, and CPM a revised submittal.

~~**VIS-4: Architectural screening of power plant.** The project owner shall install architectural screening to cover the outer framework of the HRSG structures of the new proposed Units 5 through 7 and reduce visibility of the mechanical equipment at elevations between 10 and 125 feet of the superstructures, except where infeasible due to excessive loading on support structures or where operation or safety requirements do not allow covering of a surface area. Such screening shall conform to the requirements of the Energy Commission's decision. Such~~

~~screening shall use as a baseline the Applicant's Visual Enhancement Proposals as of June 24, 2002, and preferably minimize or avoid gaps between banners.~~

~~The Project Owner shall have the burden to show infeasibility or incapability of screening by submittal of such information in the Architectural Screening Plan.~~

~~Prior to the start of construction, the project owner shall submit an architectural screening plan to the Executive Director of the California Coastal Commission (as a part of the facility Visual Enhancement Plan described in Condition **VIS-1**), and the Cities of El Segundo and Manhattan Beach for review and comment, and to the CPM for review and approval. The screening plan shall include:~~

1) ~~Detailed plans and specifications sufficient to enable the CPM and Chief Building Official (CBO) to determine adequacy and performance of the proposed screening. Determination of adequacy includes confirmation of consistency with the terms of the Energy Commission's decision. Determination of adequacy also requires sufficient evidence that the screening can be installed to be stable, uniform, able to withstand anticipated wind loads, and attractively mounted, without sagging, tearing, unsightly discoloration, or adverse visual effects from the mounting system itself; and with sufficient durability to allow good performance between maintenance cycles. Required performance data shall include design information of sufficient detail and specificity to establish confidence in the design's ability to perform as desired, or to clearly establish limitations on the feasibility of particular measures.~~

2) ~~Sufficient information to fully document and explain any areas where screening is infeasible or not possible. The information shall further include supporting engineering drawings analysis and calculations or specific safety or operational constraints or regulations.~~

3) ~~11" x 17" color simulations at life-size scale of the treatment proposed for use on project structures.~~

4) ~~A detailed schedule for completion of the treatment.~~

5) ~~A procedure to ensure proper treatment maintenance for the life of the project.~~

~~**Verification:** Not later than 120 days prior to start of construction, the project owner shall submit the final architectural screening plan and details to the Executive Director of the Coastal Commission and the Cities of El Segundo and Manhattan Beach for review and comment, and to the CPM for review and approval.~~

~~If the CPM notifies the project owner of any needed revisions before the CPM will approve the plan, the project owner shall submit a revised plan to the CPM.~~

~~Not less than thirty 30 days prior to the start of commercial operation, the project owner shall notify the CPM that the architectural screening is ready for inspection.~~

~~The project owner shall provide a status report regarding screening maintenance in the Annual Compliance Report.~~

References

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3.13 Waste Management

This section discusses the potential effects of the proposed modifications from the El Segundo Power Redevelopment Project on waste management.

3.13.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to specific Conditions of Certification. The proposed project modifications are limited in scope and center around the proposed changes in 1) the plant's design to Rapid Response Combined Cycle (R2C2) technology; 2) the method of delivery for oversize equipment; 3) the addition of an offsite laydown and parking area for equipment staging and construction employee parking; and 4) the modification of the plant entrance road. This section describes potential effects that the proposed changes may have on the management of wastes and evaluates the potential impacts to these resources as a result of the proposed project modifications.

Onsite construction of the R2C2 design will not generate any new or additional wastes evaluated by the previously permitted project. Such wastes would be managed following an approved waste management plan in accordance with existing Condition of Certification WASTE-3.

The proposed project's use of beach delivery for oversize equipment and the management of wastes potentially associated with this method of delivery was not analyzed in connection with the previously permitted project and is analyzed herein.

3.13.2 Affected Environment and Environmental Analysis

3.13.2.1 Rapid Response Combined Cycle (R2C2) Technology

As discussed in detail in Section 2 of this Amendment, a modification to the approved ESPR is to change the plant design to R2C2 technology (Figure 2.1-4). The anticipated impacts from the generation and management of wastes as a result of converting from the previously permitted 2x2x1 (two GTGs, two HRSGs, one STG) power block configuration to R2C2 technology will be, in general, reduced as a consequence of the proposed plant design modifications. Since the oxygenated chemistry requirements for the R2C2 water/steam cycle is limited to ammonia for pH control of the feedwater and dosing with a peroxide solution to maintain oxygen concentrations in the condensate and feedwater, there is no longer a need for the plant to rely on hydrazine, amines, sodium phosphate, or chlorine, as was previously permitted. The R2C2 technology therefore greatly reduces the number of hazardous wastes at the site that will require management.

R2C2 Water/Steam Cycle Wastewater

As discussed in more detail Section 15: Water Resources, the R2C2 technology's air-cooled system replaces the previously approved once-through cooling water system. Application of the R2C2 technology will result in a reduction of 206 million gallons per day (MGD) of cooling water discharge.

Plant Wastestreams

The previously permitted project anticipated the use of potable water at the site to serve the needs of construction workers and construction activities. Average use of construction water was anticipated to be approximately 5,000 gpd. During hydrotesting of pipelines and tanks, water usage was estimated at 20,000 gpd. Demolition and construction phases of dewatering were anticipated to take 30 to 45 days each (up to 90 days total) with a total volume range of groundwater to be extracted was 13 to 65 million gallons, assuming a pumping rates of 300 to 500 gpm. The duration and extent (depth and width) of dewatering required for the R2C2 is anticipated to be significantly less than the previous estimates due to reduced depths of excavation for demolition and construction for the new plant design. This will be achieved by the reduction in below water table construction that had been associated with reconstruction of the once-through cooling water tunnels and deep foundations required to support the tunnels.

Dewatering wastewaters will be managed as previously permitted, through the implementation of General NPDES Permit No. CAG994004 for discharge of groundwater from construction and project dewatering to surface waters in coastal watersheds of Los Angeles.

Low volume, non-routine wastestreams (e.g. equipment cleaning washwaters) will continue to be captured, containerized and managed in accordance with the El Segundo Generating Station's current waste management programs and procedures. As previously permitted, the applicant will continue to perform chemical cleaning of the power block equipment, but on a less frequent, as-needed basis. Routinely scheduled HRSG or compressor chemical cleaning is not part of Siemens' recommended preventive maintenance tasks.

A low hazard, non-solvent, aqueous-based detergent will continue to be used to chemically clean the compressor. Generated waste washwater and rinsate will be contained in tanks and profiled for offsite treatment or disposal in accordance with the facility's current hazardous waste management procedures and the existing ESPR Waste Management Plan.

R2C2 Chemistry-Related Wastes

The new plant will require less frequent equipment chemical cleaning events to maintain plant efficiencies. The reduction in hazardous materials usage translates directly into a corresponding reduction in hazardous wastes generated.

Stormwater

Stormwater from yard drains outside of the power blocks' footprint areas will drain to a relocated oil water separator as previously permitted. Discharge from the oil water separator will then be routed to the forebay of Outfall 002 and discharged to the ocean as an NPDES permitted discharge.

Stormwater and surface drainage conveyances within the power blocks' footprint areas (i.e., in-plant drains) will be engineered to allow for segregation of stormwater discharges from non-stormwater discharges. Non-stormwater discharges will be routed to a pre-treatment system to remove oils, greases and solids from the wastestream then returned to the raw water tank for reuse in the power generating process**.** The in-plant drainage system will provide the capability to capture and contain non-stormwater discharges for management and offsite disposal/recycling as a regulated wastestream in the event of a process upset and/or unauthorized hazardous materials release.

Construction and installation of the new stormwater drainage system to the forebay of Outfall 002 may encounter potentially contaminated soils. Appropriate measures needed to protect stormwater runoff and to address discharge of waste associated with the installation of the stormwater drainage system will be adequately addressed and mitigated pursuant to existing COCs, including WASTE-5 and WASTE-6.

3.13.2.2 Beach Delivery

The City of El Segundo's Local Coastal Plan identifies the onshore portion of the coastal zone within the City of El Segundo of consisting of a narrow ribbon of land approximately 200 yards in width and 0.8 mile in length. The total land zone is approximately 50 acres. The coastal zone in El Segundo is bounded inland by Vista Del Mar Boulevard, on the north by the City of Los Angeles, on the south by the community of El Porto, and to the west by the Pacific Ocean.

As discussed in detail in Section 2 of this Amendment document, a modification to the approved ESPR Project is to transport HRSGs and other oversize plant equipment (i.e., steam turbines, pipe racks, etc) to the project site by barge. A total of up to six (6) barges will be used, one construction barge and five (5) delivery barges. Each barge will be transported to the El Segundo Beach landing site by tug. The construction barge will be pulled onto the beach by, and moored to, two D-6 dozers during high tide.

Operation of the Beach Delivery equipment will require the use of fuels (gasoline and diesel) motor vehicle fluids (motor oils, transmission and brake system fluids); coolants/antifreeze; hydraulic fluids; and lubricants, and will also generate oil contaminated debris (rags, absorbents) and spent lead-acid batteries. Use of these types of hazardous materials can result in adverse impacts to the ocean and shoreline in the event of a spill or release.

To ensure that the use of hazardous materials associated with the Beach Delivery operation do not adversely impact the environment, the applicant will develop and implement the following spill prevention measures:

1. An Emergency Response and Contingency Plan to ensure timely and effective spill response and cleanup of any spill or release of a hazardous material;
2. A Site Security Plan to minimize and control public access to the beach delivery corridor to prevent an accidental spill or release of a hazardous material as a result of vandalism or misuse;
3. To ensure that all Beach Delivery equipment is in proper working order at all times during the Beach Delivery operation, the applicant shall provide an Equipment Maintenance Plan detailing maintenance schedules, inspection protocols and maintenance and repair procedures for each piece of major equipment to be utilized during the Beach Delivery operation.

Trash and Debris (Non-Hazardous Wastes)

Non-hazardous wastes expected to be generated as a consequence of the Beach Delivery operations are limited to wood wastes, trash, and debris. To ensure that non-hazardous wastes are not allowed to accumulate within the Beach Delivery site and/or migrate via wind or tide action to adjacent beaches or into Santa Monica Bay, ESP II will maintain a Site Maintenance/Housekeeping Plan detailing housekeeping inspection schedules and cleanup procedures.

The quantity of non-hazardous wastes expected to be generated as a result of the Beach Delivery operations are expected to be minimal and will not adversely impact local landfill capacities or recycling capabilities. Beach Delivery wastes will be managed in accordance with existing ESGS non-hazardous waste management practices and the ESPR Waste Management Plan.

Ballast Water

To secure and stabilize the barges at the El Segundo Beach site, the barges will need to be ballasted to the grounded position. To ensure that ballast water that may be discharged nearshore is not contaminated, the following mitigation measures shall be employed:

1. The ESP II will ensure that the ballast water holding tanks are certified clean and uncontaminated prior to taking on local ballast water; and
2. The ESP II will ensure that each barge operator develops a Ballast Water Management Plan in accordance with CCR Title 2, Division 3, Chapter 1: Article 4.6: Ballast Water Regulations for Vessels Arriving at California Ports or Places after Departing From Ports or Places within the Pacific Coast Region. (Refer to Section 3.14 Water Quality for the corresponding proposed Conditions of Certification).

Ramp Construction Materials

Construction materials such as steel ramps, wooden mats, steel plates, dura-mats and beach sand will be used to construct a temporary and level platform from the bow of the construction barge to the bike path. To ensure that the beachfront, tidelands, and submerged lands are not exposed to potentially contaminated ramp construction materials, the following mitigation measures will be implemented:

1. An impervious fiber matting will be placed between the constructed ramp and beach surface;
2. Fill sand will be of beach nourishment quality with a medium, or larger, grain size;
3. Fill sand will be analyzed in accordance with the Inland Testing Manual (ITM);
4. Only untreated, unused wood mats shall be used for the construction of the beach landing ramp; and
5. All metal ramps, plates and/or any other metal material that may come in contract with the surf/tide shall be clean of all chemical residues, oils, greases and rust residues prior to use at the project site.

Erosion Waste Control

To minimize the acceleration of sand erosion along the El Segundo Beach as a consequence of the beach delivery operation, the following mitigation measures shall be employed:

1. Loose sand used to construct and stabilize the beach landing ramp will be contained, whether by placing the sand within bags or by containing the sand fill within an impervious barricade or structure;

2. The construction barge will be pulled offshore during periods of non-delivery. The maximum length of time that the construction barge will be grounded will be no more than approximately 1 ½ days per delivery;

3. The beach delivery corridor will be located as near to the groin to minimize longshore tide activity; and

4. ESP II will develop an Erosion and Sediment Control Plan detailing practices to be implemented during the beach delivery operation to minimize sand erosion along the shoreline and near-shore areas. (Refer to Section 3.14 Water Quality for the corresponding proposed Condition of Certification).

Stormwater

To minimize stormwater contamination, the following mitigation measures shall be implemented and maintained prior to and during the beach delivery operation:

1. The applicant shall prepare a Notice of Intent Application to comply with the State of California's General Permit for Stormwater Discharges Associated with Construction Activity (Construction General Permit).

2. The applicant shall develop an operation-specific Stormwater Pollution Prevention Plan in accordance with the Construction General Permit upon notice of coverage under the General Permit by the State Board.

3.13.2.3 Offsite Laydown and Parking Areas

The additional proposed offsite laydown area is located at 777 W. 190th Street in the City of Gardena, near the 405 and 110 freeway interchange, less than ten miles southeast of El Segundo Generating Station (ESGS). The site is easily accessible to the 405 north and 110 north freeways from Vermont Avenue and 190th Street and readily accessible to approved traffic routes to the ESGS.

The site, zoned M2 commercial, is approximately 12.1 acres (~10 acres usable) and includes a 5,500 square-foot industrial building. The site is relatively flat, paved with asphalt, lighted and includes a perimeter security fence.

No site preparation other than minor grading is proposed for the 177 W. 190th Street laydown area prior to use. Staging or storing hazardous materials, or equipment containing hazardous materials, will not be permitted, eliminating the opportunity for hazardous waste generation.

During the construction phase, the types of wastes that may be used or encountered at the 177 W. 190th Street laydown area are expected to be limited to inert trash and debris, and leaks of automotive fluids from vehicle parking. The existing Conditions of Certification ensure that

construction-related activities conducted at 777 W. 190th Street laydown area comply with the appropriate waste management procedures and plans.

3.13.2.4 Plant Entrance Modifications

Modifications to the plant entrance and access road are planned to enable delivery of oversize equipment to the plant during the construction-phase of the ESPR and to improve future equipment and material deliveries into the plant.

The proposed road modifications will reduce existing entrance and in-plant road hazards, during both construction and operation of the new power block, by widening the road, and straightening and reducing the grade at the road's curves. The proposed plant entrance modifications will provide safer transport and delivery of hazardous materials to the facility, reducing the opportunity of hazardous waste generation from spills.

During the construction phase, hazardous materials typical of liner roadway construction operations are anticipated, and may involve fuels, oils, greases and asphalt slurry and concrete. Compliance with the existing ESPR Waste Management Plan will ensure the roadway construction related activities will comply with the appropriate hazardous materials procedures and plans.

During the construction phase, inert wastes and hazardous wastes typical of liner roadway construction operations are anticipated, and may involve trash, construction debris and spills and leaks of fuels, oils, greases and asphalt slurry and concrete. The existing Conditions of Certification will ensure the roadway construction related activities will comply with the appropriate waste management procedures and plans.

3.13.3 Cumulative Impacts

The proposed project changes will not result any significant cumulative impacts to waste management beyond those addressed in the CEC's Final Commission Decision for ESPR.

3.13.4 Laws, Ordinances, Regulations, and Standards (LORS)

The Final Commission Decision certifying the ESPR found the project to be in compliance with applicable LORS. As described in this Amendment, the modifications proposed are consistent with all applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the CEC's Final Commission Decision for the ESPR. Additional LORS associated with the proposed oversize equipment delivery method include the following:

- The United States Coast Guard administers and enforces federal regulations affecting commercial vessel safety, port safety and security, and marine safety and environmental protection, in accordance with the following:

- CFR Title 33: Navigation & Navigable Waters
- CFR Title 46: Shipping
- CFR Title 49: Transportation- Subpart B

- The US Department of Labor, Occupational Safety & Administration (OSHA) administers and enforces federal regulations affecting worker safety at marine terminals and for longshoring operations, in accordance with the following regulations:

  - CFR Title 29, Part 1917: Marine Terminals
  - CFR Title 29, Part 1918: Safety and Health Regulations for Longshoring
  - CFR Title 29, Part 1919: Gear Certification

California Coastal Act provisions related to containment and cleanup of oil, petroleum, hazardous substances, or other wastes in the marine environment.

3.13.5 Conditions of Certification

There are no additional proposed or amended changes to the approved Conditions of Certification (COC) for Waste Management. While the previously approved COCs for Waste Management are sufficient in addressing the generation, use, and management of non-hazardous and hazardous waste anticipated for this amendment, additional COCs are required to address both water quality and waste impacts associated with Beach Delivery. Such proposed additions to the Water Quality COCs are addressed in the Water Quality section of the Amendment.

3.14 Water Quality

This section discusses potential effects of the proposed modifications from the El Segundo Power Redevelopment (ESPR) Project on water quality.

3.14.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to the Conditions of Certification. The modifications are limited in scope and center around proposed changes in the plant design: (1) Rapid Response Combined Cycle technology; (2) delivery of oversize equipment; (3) offsite laydown and parking areas; and (4) plant entrance road modifications. This section describes the potential effects that the proposed changes may have on water quality and evaluates the potential impacts water quality as a result of the proposed modifications. Compliance with all applicable LORS is also discussed.

3.14.2 Affected Environment and Environmental Analysis

The ESPR project may affect water quality of nearby waterbodies. The nearest waterbody is the Santa Monica Bay. The Santa Monica Bay extends between Point Dume and the rocky headlands of the Palos Verdes Peninsula, and offshore to depths of approximately 1,600 feet (ft). The surface area of the Santa Monica Bay is approximately 266 miles (MBC 1988). The Santa Monica Bay is an open embayment, characterized by a gently sloping continental shelf, which extends seaward to the shelf break at water depths of approximately 265 ft (Terry et al. 1956).

Tides are mixed semi-diurnal, with two unequal highs and two unequal lows during each 25-hr period. Tide waves in the North Pacific Ocean rotate in a counterclockwise direction resulting in flood tide currents flowing up coast and ebb tide currents flowing down coast.

The Los Angeles Regional Water Quality Control Board has characterized the existing beneficial uses of the Santa Monica Bay (Nearshore and Offshore Zones) as: industrial service supply; navigation; water contact recreation; non-contact water recreation; commercial and sport fishing; marine habitat; wildlife habitat; preservation of biological habitats; rare, threatened, or endangered species; migration of aquatic organisms; spawning, reproduction, and/or early development of fish; and, shellfish harvesting.

On October 26, 2006, the State Water Resources Control Board adopted Resolution No. 2006-0079 approving the 2006 California Section 303(d) list of waters not meeting California's water quality standards. The 303(d) list names each impaired water by reach, the pollutant/stressor, the source of the pollutant/stressor, the size of each impaired reach and the priority for remediation. The Santa Monica Bay Nearshore and Offshore Zones have been designated as impaired for DDT, Debris, Fish Consumption Advisory, PCBs, and Sediment Toxicity.

3.14.2.1 Rapid Response Combined Cycle (R2C2) Technology

Water will be supplied for the ESPR project from two sources: potable water from the City of El Segundo (Metropolitan Water District of Southern California) and reclaimed water from the West Basin Municipal Water District that meets California Code of Regulations Title 22 requirements. These two sources are identical to those identified in the previously permitted project. The new equipment and design using Rapid Response Combined Cycle (R2C2) technology will, however, utilize the source waters more efficiently and in a more environmentally favorable manner than the previously permitted project.

The facility will utilize City water for potable use and fire emergencies. Title 22 reclaimed, single-pass reverse osmosis (RO) product water will be used as the supply to the cycle make-up treatment system, and Title 22 reclaimed irrigation-quality water will be used to support both GTG inlet evaporative coolers. The proposed plant design will utilize two air-to-air heat exchangers for thermal cycle heat rejection. Seawater will no longer be used for heat rejection. The seawater intake and Outfall will be abandoned.

Reclaimed single-pass RO product water will be treated on-site by potable cycle make-up treatment equipment, which will be regenerated offsite, to supply demineralized make-up water to the steam cycle, and the combustion turbines for steam injection power augmentation. Wastewater generated during operation of R2C2 powerblock will be limited to the HRSG and inlet evaporative cooler blowdowns. The two wastewater streams will be recycled back to the single-pass RO water storage tank, partly for reprocessing by the mobile demineralizers and partly for reuse as make-up to the evaporative coolers. The recycling of wastewater from the HRSG cycle and inlet evaporative cooler blowdown to the raw water tank will eliminate the offsite discharge of process waste streams from the plant to the Santa Monica Bay.

The proposed modification in design to the R2C2 technology will have significant environmental advantages. The proposed plant design will utilize two air-to-air heat exchangers for thermal cycle heat rejection. Seawater will no longer be used for heat rejection. This equates to a reduction of 206 million gallons per day (MGD) of seawater previously used for cooling. The seawater intake and Outfall 001 will no longer be utilized for intake water or discharge of wastewater associated with the new design.

No process wastewater will be discharged from the facility through the existing Outfall 001 structures, thereby reducing process wastewater discharge by 80,750 gallons per day (GPD). All water/steam cycle wastewaters will be recycled through the raw water tank and reused either as make-up to the evaporative cooler, or reprocessed by the demineralizer for use as make-up to the steam cycle.

During construction phases of the ESPR project, stormwater will be retained and tested and discharged via Outfall 002 pursuant to the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity (the same as previously permitted). The ESPR project has already filed the Notice of Intent with the Los Angeles Regional Water Quality Control Board (LARWQCB) for coverage under the General NPDES Permit for Construction Stormwater Discharges and is successfully monitoring and reporting under the General Permit for Water Quality Order No. 99-08-DWQ. ESPR reports to both the LARWQCB and the CEC on stormwater activities.

During operations stormwater will be routed from yard drains to a relocated oil water separator as previously permitted. Discharge from the oil water separator will be routed to the forebay of Outfall 002 and discharged to the ocean. The existing NPDES characterizes the stormwater discharge from the whole site as negligible. The preliminary stormwater flow design for the ESPR project assumed a flow from a 25-year rain event to be 3,100 GPD. The Outfall 002 is design to carry a capacity in excess of 398 MGD. Thus, the additional flow from the new plant area will also be characterized as negligible. Stormwater will be sampled in accordance with the existing monitoring and reporting program to ensure that the chemistry of the process waste is within the limits of the discharge permits.

At the south end of the ESGS site, a City of El Segundo municipal stormwater sewer line picks up stormwater off of Vista Del Mar and conveys the street stormwater drainage beneath the facility and discharges the municipal stormwater onto El Segundo Beach. Currently, a small area located at the southwest end of the tank farm is discharged into the City's stormwater drainage line and is co-mingled with the municipal stormwater prior to discharge at the beach. As part of the previously approved road improvements along the west end of the tank farm, this stormwater discharge into the City's municipal stormwater drainage system will be eliminated. All site stormwater will be directed to Outfall 002 for discharge to Santa Monica Bay.

Sanitary, emergency eye-wash, and shower drains will be discharged to the City of Manhattan Beach sewer system in accordance with the city's discharge requirements. Utilizing the Title 22 single-pass RO water via recycling and reprocessing as part of the R2C2 technology should reduce the wastewater discharge for the R2C2 configuration to zero (i.e., zero liquid discharge [ZLD]), which is substantially less as compared to the previously permitted project.

None of the afore-described modifications will have any greater impact on water quality than the previously permitted project. In fact, the proposed changes have less impact than the previously permitted project and present greater benefits to the water quality of Santa Monica Bay due to the ZLD for the R2C2 configuration, resulting in no industrial water/steam cycle wastewater discharge to the ocean via Outfall 001.

3.14.2.2 Beach Delivery

El Segundo Beach

The City of El Segundo's Local Coastal Plan identifies the onshore portion of the costal zone within the City of El Segundo as consisting of a narrow ribbon of land approximately 200 yards in width and 0.8 miles in length. The total land zone is approximately 50 acres. The coastal zone in El Segundo is bounded inland to the east by Vista Del Mar Boulevard, to the north by the City of Los Angeles, to the south by the community of El Porto, and to the west by the Pacific Ocean.

Although the narrow 3-acre sandy beach seaward of the Chevron and ESGS facilities is owned by the State Lands Commission (SLC), ESP II leases a portion of the beach from the SLC. In addition, unimpeded lateral access along the narrow sandy shoreline is available to the public. A portion of the beach is leased by the County of Los Angeles for a right-of-way for a county bike path.

The proposed beach delivery may have temporary water quality impacts to the beach environment and coastal zone. Analysis of beach delivery as it pertains to the California Coastal Act is addressed in the Land Use section of this Amendment. Potential water quality impacts associated with beach delivery are evaluated below.

Impacts may be experienced from erosion and sediment pollutants; import soils of dissimilar quality sand than the beach; heavy equipment spills leaks and drips; fueling or repairing equipment on the beach; treated or contaminated matting or wood planking; and improper staging of equipment or materials in the beach area In order to ensure that no pollutant discharges occur, the project includes measures to avoid, prevent, and/or minimize discharge of pollutants to Santa Monica Bay associated with the beach delivery operation. Such mitigation measures are discussed in the LORS and Conditions of Certification sections below.

3.14.2.3 Offsite Laydown and Parking Areas

The additional proposed offsite laydown area is located at 777 W. 190th Street in Gardena, near the 405 and 110 freeway interchange. The site, zoned M2 commercial, is less than ten miles southeast of ESGS and is readily accessible to approved traffic routes to the ESGS (from the 405 north and 110 north freeways from Vermont Avenue and 190th Street). The area is approximately 12.1 acres (~10 acres usable) of level, paved land that is currently used for storage of cargo containers and trucks. Stormwater from the site is currently directed offsite via sheet flow to the street and nearby storm drains.

The offsite laydown area will involve temporary use during construction and no new construction will be required offsite. The use of the property for laydown and storage during construction will not significantly impact stormwater. To ensure water quality, stormwater will be managed under the guidelines established under the NPDES General Permit for Stormwater

Discharges Associated with Construction Activity and the Notice of Intent for coverage under the General Permit will include the offsite laydown area.

3.14.2.4 Plant Entrance Modifications

The proposed modifications to the plant entrance and roadway will affect an area of approximately less than one acre. The area will be affected during construction by removal of asphalt and shallow grading activity on sloped areas. The anticipated extent of soil disturbing activities is limited to up to 313 yards of cut and up to 8,464 cubic yards of fill for the proposed roadway work. It is anticipated that 8,150 cubic yards of fill will be required to complete the road. The roadway modifications will occur in the same general area as the previously proposed administration building and this modification will encounter the same stormwater issues addressed in the previously permitted project. Landscaping work will be required to stabilize the cut-fill slopes. It is anticipated that the duration of the entrance and roadway construction will be less than one month.

The addition of the entrance and roadway modifications will not have a significant impact on water quality from erosion or operation of equipment. To ensure that any potential impacts are managed and avoided, the entrance and roadway construction should be incorporated into the Notice of Intent for coverage under the Construction General NPDES Permit and therefore included in the Construction Storm Water Pollution Prevention Plan (SWPPP) currently active at the site.

3.14.3 Cumulative Impacts

The proposed project changes will not result in any significant cumulative impacts to water quality beyond those addressed in the CEC's Final Commission Decision for ESPR. There will be less industrial wastewater discharge with the R2C2 technology than with the previously permitted project and, although there is a potential for water quality impacts associated with beach delivery of oversize equipment, adequate mitigation and compliance measures exist such that the proposed project will not result in significant cumulative impacts to water quality.

3.14.4 Laws, Ordinances, Regulations, and Standards (LORS)

As described in this Amendment, the modifications proposed are consistent with applicable LORS. The following discussion is focused on specific laws, ordinances, regulations or standards that apply to the above-described modifications and to which the herein referenced modifications comply. The CEC's Final Commission Decision for ESPR found the project to be in compliance with all applicable LORS. The Amendment will not alter such assumptions or conclusions.

Discharge of Pollutants into Impaired Water Bodies

On October 26, 2006, the State Water Resources Control Board adopted Resolution No. 2006-0079 approving the 2006 California Section 303(d) list of waters not meeting California's water quality standards. The Santa Monica Bay Nearshore and Offshore Zones have been designated as impaired for DDT, Debris, Fish Consumption Advisory, PCBs, and Sediment Toxicity.

The Federal Clean Water Act, 33 U.S.C. §§ 1251, *et seq.*, and California's Porter-Cologne Water Quality Control Act, Water Code §§ 13000 *et seq.*, prohibit discharges that cause or contribute to the impairment of a receiving waterbody's designated beneficial uses. The discharge of a pollutant listed as causing impairment to a waterbody in quantities greater than de minimus is considered "contributing" to the impairment and is prohibited. Moreover, the California Coastal Act, Section 30231, prescribes for water quality in marine environments.

Construction and operation of ESPR will comply with the Federal Clean Water Act, the Porter-Cologne Water Quality Control Act, and the Coastal Act through implementation and adherence to the NPDES General Permit for Stormwater Discharges Associated with Construction Activity, the Individual Industrial NPDES Permit No. CA0001147, CI 4667, and other applicable federal and state required permits as outlined below.

Water Quality Permitting Obligations

ESPR has made pre-submittal consultation with the following agencies or city entities to ensure that the proposed modifications are well-planned, thoroughly permitted, and will comply with all applicable LORS:

1. California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Regional Board)
2. Army Corps of Engineers – Los Angeles District
3. California Coastal Commission
4. City of El Segundo
5. City of Manhattan Beach
6. National Marine Fisheries Agency
7. United States Fish and Wildlife Service
8. California Department of Fish and Game
9. California Energy Commission
10. Los Angeles County Beaches and Harbors
11. California States Lands Commission

Based on a review of these agencies' permitting requirements, the following potential water quality permits and regulatory compliance obligations have been identified as a consequence of the proposed modifications:

- Nationwide Permit No. 33 (Clean Water Act section 404 permit): Temporary Construction, Access & Dewatering
- Coastal Zone Development Permit
- 401 Water Quality Certification
- Stormwater Construction Permit
- Grading Permit

As a Condition of Certification, all required water quality permits will be obtained prior to execution of the beach delivery operations to ensure compliance with related LORS.

In order to ensure that no pollutant discharges occur, the project includes measures to avoid, prevent, and/or minimize discharge of pollutants to Santa Monica Bay associated with the beach delivery operation. Such mitigation measures shall be implemented prior to, and during execution of the beach delivery operation, and include the following:

Mitigation measures will include the implementation of Best Management Practices to address pollutants and pollutant source identification, including erosion and sediment pollutants, evaluation of routes of stormwater exposure to identified pollutants and pollutant sources; pollutant mode of transportation identification. Mitigation measures to avoid pollutant release and erosion control will include staging heavy equipment in contained areas, placement of beach nourishment quality sand bags in and around construction areas, impervious fiber matting will be placed between the constructed ramp and beach surface, untreated, unused wood mats shall be used for the construction of the beach landing ramp, and all equipment will be clean of chemical residues prior to use at the project site. These mitigation measures are incorporated into the Changed Conditions of Compliance section below.

Hazardous Wastes

The types of hazardous wastes expected to be generated as a consequence of the Beach Delivery operations are limited to equipment operation and maintenance, including:

- Waste engine oils and lubricants
- Waste oil filters
- Spent antifreeze/coolants
- Waste hydraulic oils and fluids
- Oil contaminated debris (rags, absorbents)
- Spent lead-acid batteries

These waste streams are the same or similar to the waste streams addressed in the previously permitted project. The management of hazardous wastes generated as a consequence of the Beach Delivery operation will be incorporated into and in accordance with the following currently approved hazardous waste management Conditions of Certification.

No additional LORS apply to the operation of the new R2C2 design. The proposed changes will greatly reduce the impacts anticipated from the previously permitted project due to the elimination of one-through cooling, and in-plant water discharges Santa Monica Bay. Although the site will maintain the NPDES permit for existing operations the elimination of once-through cooling and in-plant waste streams from Outfall 001 will reduce the thermal and industrial discharges to the Santa Monica Bay by 206 million gallons per day. The use of R2C2 technology will greatly reduce the amount of wastewater discharge associated with the plant compared to the previously permitted project.

In addition, the proposed offsite laydown area located at 777 W. 190th Street in Gardena and the entrance and roadway modifications are also consistent with all applicable LORS and will not alter any assumptions or conclusions made in the CEC's Final Commission Decision for ESPR.

3.14.5 Conditions of Certification

Several new Conditions of Certification are proposed to protect water quality and the integrity of the beach. As part of the proposed changes, development and implementation of a beach repair and mitigation plan will be necessary.

Federal Permits Compliance

WQ-7: Prior to construction and/or use of the Beach Delivery Site, the applicant shall obtain authorization from the United States Army Corps of Engineers for placement of fill materials (section 404 Permit) and/or structures (Rivers and Harbors Act, section 10 Permit) within waters of the United States.

Verification: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of either a Letter of Permission, a Nation Wide Permit (NWP-33), or and Individual Section 404/Section 10 Permit authorizing the applicant to place fill materials and structures in the El Segundo Beach's tidelands and submerged lands.

Section 401 Water Quality Certification

WQ-8: Prior to construction and/or use of the Beach Delivery Site, the applicant shall obtain from the State of California Regional Water Quality Control Board, Los Angeles Region, and a Section 401 Water Quality Certification verifying that the Beach Delivery Project is in compliance with state water quality standards.

Verification: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of the Los Angeles Regional Board's Section 401 Water Quality Certification.

State of California Notice of Intent (NOI) Application for Coverage Under the NPDES General Permit for Stormwater Discharges Associated with Construction Activity

WQ-9: The applicant shall prepare and submit to the State Water Resources Control Board a Notice of Intent (NOI) Application to comply with the State of California's General Permit for Stormwater Discharges Associated with Construction Activity (Construction General Permit) prior to commencement of construction related to the Beach Delivery site. The applicant may request coverage concurrent with its existing permit coverage. The applicant shall also notify the State Board in its Application that it will amend its existing Construction SWPPP to reflect the additional acreage and construction activities associated with Beach Delivery.

Verification: At least 30 days prior to construction of the beach landing ramp, the applicant shall provide to the CPM for review and approval a copy of the Beach Delivery NOI and confirmation by the State Water Resources Control Board that the proposed construction is covered by the General Permit.

Beach Delivery Stormwater Pollution Prevention Plan (SWPPP) and Monitoring & Reporting Plan (M&RP)

WQ-10: The Applicant shall amend its existing Construction SWPPP to include the Beach Delivery task. The SWPPP will include, but is not limited to:

1. Pollutant and Pollutant Source Identification, including erosion and sediment pollutants;
2. Evaluations of routes of Stormwater Exposure to identified pollutants and pollutant sources;
3. Pollutant Mode of Transportation identification;
4. Identification of Effective Best Management Practices (BMPs) designed to,
    a) Eliminate stormwater exposure to potential pollutants and/or pollutant sources; and/or,
    b) Remove the pollutant from the stormwater runoff prior to offsite discharge;
    c) BMPs shall be developed and implemented to ensure that the following mitigation measures are adhered to,
        i. An impervious fiber matting will be placed between the constructed ramp and beach surface;

ii. Fill sand shall be of beach nourishment quality with a medium, or larger, grain size;

iii. Fill sand shall be analyzed in accordance with the Inland Testing Manual (ITM);

iv. Only untreated, unused wood mats shall be used for the construction of the beach landing ramp; and,

v. All metal ramps, plates and/or any other metal material that may come in contract with the surf/tide shall be certified clean of all chemical residues, oils, greases and rust residues prior to use at the project site.

vi. Provide an Equipment Maintenance Plan detailing maintenance schedules, inspection protocols and maintenance and repair procedures for each piece of major equipment to be utilized during the Beach Delivery operation.

vii. Provide a Site Maintenance/Housekeeping Plan detailing housekeeping inspection schedules and cleanup procedures.

viii. Development of procedures to evaluate the effectiveness of BMPs to minimize stormwater pollution.

Verification: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of Beach Delivery SWPPP, Beach Delivery Repair and Enhancement Mitigation Plan, and Monitoring and Reporting Plan.

Beach Delivery Erosion and Sediment Control Plan

WQ-11: To minimize the acceleration of sand erosion along the El Segundo beach as a consequence of the Beach Delivery operation, the following mitigation measures shall be employed:

1. Loose sand used to construct and stabilize the beach landing ramp will be contained, either by placing the sand within bags or by containing the sand fill within an impervious barricade or structure;

2. The construction barge will be pulled off shore during periods of non-delivery. The maximum length of time that the construction barge will be grounded will be no more than 32 hours;

3. The Beach Delivery Site will be located as near as possible to the groin to minimize longshore tide activity; and,

4. The applicant will develop an Erosion and Sediment Control Plan (ESCP) detailing practices to be implemented during the Beach Delivery operation to minimize sand erosion along the shoreline and near-shore areas.

Verification: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of the Beach Delivery ESCP.

Beach Delivery Repair and Enhancement Mitigation Plan (Mitigation Plan)

WQ-12: A Beach Repair and Enhancement Mitigation Plan (Mitigation Plan) shall be prepared by either a registered geologist or coastal engineer. The Mitigation Plan will describe, at the minimum, the following:

a. Ramp Construction engineering and performance design criteria, materials (type and quantity) of construction and construction schedules;

b. Measures to be implemented to minimize impacts to the Beach Delivery Site during use of the Site, including stockpiling of excess or excavated fill or sand material;

c. Demobilization and ramp disassembly procedures;

d. Pre-construction and post-construction surveys:

    1. A survey of proposed Beach Delivery Site and adjacent beach areas, not affected by the Beach Delivery operation, will be conducted no more than 60 days prior to construction of the Site and ramp system;

    2. At the conclusion of the Beach Delivery operation the Site and adjacent beach area shall be resurveyed within 15 days;

    3. The sand used to construction the beach delivery ramp shall only be beach nourishment quality san of a grain size equal to, or larger, than the native sand;

    4. Within 30 days of conclusion of the Beach Delivery operation, the beach landing ramp shall be disassembled and the Beach Delivery Site area returned to preconstruction conditions using the beach nourishment ramp sand; and,

    5. Alternatively, if the pre-construction and post-construction surveys of the adjacent beach areas indicate a significant change in the adjacent beaches' topographic conditions, the Beach Delivery Site area will be repaired and enhanced to reflect the adjacent beaches' topographic conditions at the conclusion of the Beach Delivery operations.

e. The final Mitigation Plan shall include the post-construction surveys and final engineer plans showing post-construction beach repair and enhancement elements; and,

f. Beach repairs and enhancements will be in accordance with guidance provided by the NOAA Coastal Service Center guidelines available at the time at that time.

Verification: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of the initial Mitigation Plan. No more than 30 days after completion of the beach repair and enhancement activities the applicant shall provide a copy of the Final Mitigation Plan to the CPM for review and approval.

Ballast Management Plan

WQ-13: The applicant shall ensure that each barge operator develops a Ballast Water Management Plan in accordance with CCR Title 2, Division 3, Chapter 1, Article 4.6, (Ballast Water Regulations for Vessels Arriving at California Ports or Places after Departing from Ports or Places within the Pacific Coast Region). The applicant will ensure that the ballast water holding tanks are certified clean and uncontaminated prior to taking on local ballast water.

Verification: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of the Ballast Water Management Plan.

3.15 Water Resources

This section discusses the water resources environment and potential effects of the proposed modifications from the El Segundo Power Redevelopment (ESPR) Project.

3.15.1 Introduction

As discussed in the Project Description, this amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to the Conditions of Certification. The modifications are limited in scope and center around (1) proposed changes in the plant design to Rapid Response Combined Cycle Technology (R2C2); (2) revised delivery method of equipment; (3) a new offsite laydown and parking area; and (4) plant entrance road modifications. This section describes the proposed changes on water resources and evaluates the potential impacts on these resources posed by these specific changes. LORS applicable to the proposed changes and suggested edits to the existing Conditions of Certification are also discussed.

3.15.2 Affected Environment And Environmental Analysis

The El Segundo Generating Station (ESGS) site is located at 301 Vista Del Mar, situated approximately 2.5 miles southwest of the Los Angeles International Airport and west of the San Diego Freeway (I-405) on the eastern shore of Santa Monica Bay.

Santa Monica Bay

The Santa Monica Bay extends between Point Dume and the rocky headlands of the Palos Verdes Peninsula, and offshore to depths of approximately 1,600 feet (ft). The surface area of the Santa Monica Bay is approximately 266 miles (MBC 1988). The Santa Monica Bay is an open embayment, characterized by a gently sloping continental shelf, which extends seaward to the shelf break at water depths of approximately 265 ft (Terry et al. 1956).

The Los Angeles Regional Water Quality Control Board has characterized the existing beneficial uses of the Santa Monica Bay (Nearshore and Offshore Zones) as: industrial service supply; navigation; water contact recreation; non-contact water recreation; commercial and sport fishing; marine habitat; wildlife habitat; preservation of biological habitats; rare, threatened, or endangered species; migration of aquatic organisms; spawning, reproduction, and/or early development of fish; and shellfish harvesting.

Surface Waters

On October 26, 2006, the State Board adopted Resolution No. 2006-0079 approving the 2006 California Section 303(d) list of waters not meeting California's water quality standards. The 303(d) list names each impaired water by reach, the pollutant/stressor, the source of the pollutant/stressor, the size of each impaired reach and the priority for remediation. The Santa

Monica Bay Nearshore and Offshore Zones have been designated as impaired for DDT, Debris, Fish Consumption Advisory, PCBs, and Sediment Toxicity.

There are no lakes, ponds, or streams in the vicinity of any of areas affected by the proposed modifications. Although the new proposed plant footprint will be slightly different than the previously permitted plant design, the method of managing stormwater runoff will be the same. Stormwater will be directed to drop inlets and routed to an oil water separator. The only change to stormwater management will be the routing of stormwater to Outfall 002; for the previously permitted project, stormwater in the vicinity of the power block would have been directed to Outfall 001. This change is discussed in more detail in the Water Quality section of this Amendment.

Groundwater

The groundwater environment remains the same as described in the previously permitted project. Groundwater was encountered in the upper unconfined Old Dune/Gage Sand Aquifer generally at 11 to 14 feet below ground surface under unconfined conditions during 2005. This would correspond to approximate elevations of 6.0 to 7.0 MLLW. Groundwater elevations monitored in the Old Dune/Gage Sand Aquifer indicate that the water levels are tidally influenced. A general decrease in elevation of the upper aquifer from south to north of approximately 1.0 foot was observed on October 17, 2005, during annual groundwater monitoring reported for the Chevron Products Refinery by URS on February 15, 2006 (Appendix 3.15-A).

Reclaimed Water Supply

Reclaimed water will be supplied to ESPR by West Basin Municipal Water District (WBMWD) via the City of El Segundo (COES). The proposed project will require irrigation and first pass reverse osmosis (RO) quality water, both of which will be supplied by WBMWD via COES. WBMWD operates a recycling facility at 1935 Hughes Way, El Segundo, California. The WBMWD facility provides tertiary treatment to a portion of the secondary-treated wastewater from the City of Los Angeles Hyperion Wastewater Treatment Plant and produces up to 30 million gallons per day (MGD) of disinfected tertiary recycled water that meets Title 22 California Code of Regulations standards for industrial uses and landscape irrigation. The WBMWD is regulated by the California Regional Water Quality Control Board, Los Angeles Region (LARWQCB) pursuant to Title 22 of the California Code of Regulations, Water Recycling Requirements, under an Individual, Non-subchapter 15 Program - Reclamation Requirements permit.

3.15.2.1 Rapid Response Combined Cycle (R2C2) Technology

Water will be supplied to ESPR from two sources: potable water from the City of El Segundo (Metropolitan Water District of Southern California) and California State Title 22 reclaimed water from the West Basin Municipal Water District (WBMWD) via COES. California Water

Code section 13550 *et seq.*, and SWRCB 75-58 requires power projects to evaluate alternative sources of water for power plant cooling. In addition, reclaimed water is required to be evaluated for all in-plant process waters by the Condition of Certification Water Res-1 which states:

"The project owner shall use reclaimed water for all in-plant process water needs, except those specifically excluded uses, unless it can be demonstrated that its use is not compatible with any particular application"

The R2C2 project has been designed considering water supply with the quality listed in Table 3.15-1. The design maximizes the use of reclaimed water sources.

Table 3.15-1
Expected Water Supply Quality
(mg/L As Ions, Except As Noted)

Constituent	Potable	City of El Segundo[1] Title 22, Reclaimed, Irrigation Quality (Avg. for 2005)	City of El Segundo[1], Title 22, Reclaimed First Pass R.O. Quality (Avg. for 2006)
Calcium, mg/l	46	NR	0.03
Magnesium, mg/l	19	NR	0.02
Sodium, mg/l	59	NR	5.4
Potassium, mg/l	3	NR	0.53
M-Alkalinity (as CaCO3) mg/l	100	NR	15.3
Bicarbonate (as CaCO3), mg/l	NR	NR	15.2
Carbonate (as CaCO3), mg/l	NR	NR	ND
Hydroxide (as CaCO3), mg/l	NR	NR	ND
Hardness (as CaCO3), mg/l	NR	NR	0.13
Sulfate, mg/l	129	129	NR
O&G, mg/l	NR	0.0	NR
Coliforms (total), MPN / 100 ml	NR	9.1	NR
Turbidity, NTU	NR	2.08	NR
Chloride, mg/l	60	165	NR
Nitrate (as N), mg/l	0	0.3	NR
Fluoride, mg/l	0.20	NR	NR
Aluminum, mg/l	0.08	NR	NR
Silica, mg/l	NR	NR	0.39
TDS, mg/l	440	631	17.5
pH, Units	8.2	7.0	7.0
Conductivity, micros/cm	NR	NR	40.8

Table 3.15-1 (continued) Expected Water Supply Quality (mg/L As Ions, Except As Noted)			
TSS, mg/l	NR	4.4	NR
BOD_5, mg/l	NR	0.4	NR
TOC, mg/l	NR	13	NR
Chlorine Residual (max.), mg/l	NR	5.7	NR

Notes:
1 = Source is West Basin Municipal Water District
NR = Not Reported
ND = Not Detected

Seawater

The R2C2 technology will utilize two air-to-air heat exchangers for thermal cycle heat rejection, and air coolers for auxiliary cooling systems such as lube and GTG rotor air. Seawater will no longer be used for heat rejection. The previously permitted project utilized seawater for heat rejection with a once-through cooling system via a non-contact condenser unit. This is a reduction from the previously permitted project of 206 million gallons per day of seawater used for cooling.

System Design

The Title 22 reclaimed, single-pass RO product water will be used as the supply to the HRSG makeup treatment system. The Title 22 reclaimed, irrigation quality water will be blended with the single pass RO product water for use as make-up to support both of the GTG inlet evaporative coolers.

Reclaimed single-pass RO water will be supplied by WBMWD via a previously permitted ten-inch line to raw water storage tank prior to the cycle makeup treatment system as previously permitted. Reclaimed single-pass RO product water will be treated onsite by portable cycle make-up equipment, which will be regenerated offsite, to supply demineralized make-up water to the steam cycle.

The average and peak daily use for each process utilizing city potable or reclaimed water supply is provided in Table 3.15-2, and is compared therein to the previously permitted project.

Table 3.15-2 Daily Water Supply Requirements				
Water Source	**Daily Average Usage**		**Daily Maximum Usage**	
	Previously Permitted [1]	**Proposed [3]**	**Previously Permitted [2]**	**Proposed [4]**
City of El Segundo (Metropolitan Water District of Southern California)				
Potable Water – Sanitary[5]	750	750	750	750
Plant and Equipment Drains	25,000	0	25,000	0
Makeup to Evaporative Cooler	44,000	0	85,000	0
Quench	23,000	0	33,000	0
Total City Water (Potable)	92,750	750	143,750	750
West Basin Municipal Water District Title 22 Reclaim Water				
First Pass RO Quality Water				
First pass RO Makeup to HRSGs and Evaporative Coolers, and Misc. Steam Losses	64,000	15,360	440,000	529,920
Irrigation Quality				
Makeup to Evaporative Cooler[6]	0	19,200	0	48,000
Total Title 22 West Basin Water Demand (RO and Irrigation Quality)	64,000	34,560	440,000	577,920
Seawater				
Once-Through Cooling Water	206,000,000	0	206,000,000	0

Units = Gallons per day

1 Daily average based on 59 °F average annual ambient temperature, not firing the HRSGs, no steam injection to the GTGs, evaporative coolers on, assumed for 24-hours of operation per day.

2 Daily maximum load operation based on 83 °F ambient temperature, the HRSGs fired, 12 hours of steam injection to the GTGs, evaporative coolers on, assumed for 24 hour day.

3 Daily average usage is based on 62 °F DBT, 70% RH, HRSGs in use; no power augmentation steam injection, and evaporative coolers on, 16-hour/day operation.

4 Daily maximum usage is based on 83 °F DBT, 47% RH, HRSGs in use; power augmentation steam, injection to GTGs, and evaporative coolers on, 16 hour/day operation.

5 Daily potable water consumption is based on 24 hours @ 0.52 gpm.

6 Make up to evaporative coolers is mixed Reclaimed First Pass RO water and Irrigation Quality water.

The existing six-inch line at the site supplying Title 22 irrigation water will be used for supplying ESPR irrigation and evaporative cooling requirements. No proposed changes are needed to the planned reclaimed or potable water line interconnections.

In order to maximize use of available reclaimed water sources, a blend of single-pass RO and irrigation quality water is planned for use in the evaporator cooling systems. The blend is required to comply with the original equipment manufacturer's specifications for system water quality. Single pass RO quality water alone is not acceptable for the system due to the corrosive characteristics caused by its concentration of low total dissolved solids (TDS) concentration. By adding irrigation quality water to the single-pass RO quality water, the TDS concentrations are increased to the manufacturer's acceptable range.

The water/steam cycle wastewaters from the generating facility will consist of HRSG and inlet evaporative cooler blowdowns. The R2C2 design is a zero liquid discharge technology wherein water/steam cycle wastewaters are recycled back to the single-pass RO water storage tank where they will be diluted for reuse as evaporative cooler make-up or reprocessed by mobile demineralizers. With the zero liquid discharge system, water/steam cycle wastewaters will be recycled and reused, to the extent practicable, and there will no longer be a discharge of water/steam cycle wastewaters to the ocean via Outfall 001. The zero liquid discharge system does not include stormwater discharge which will be directed to Outfall 002.

The new R2C2 units will not discharge any water/steam cycle wastewater effluent to the existing facility retention basin nor to the Pacific Ocean via an existing outfall. The new in-plant wastewaters will be routed to temporary tanks where it will be evaluated for suitability for recycling through the raw water storage tank. If not suitable, this waste will be transported offsite for treatment. Plant drain waste will likely include intermittent flows such as process equipment leaks or spills and contact stormwater.

Stormwater from paved areas in the new plant footprint will be collected by yard drains and then directed to an oil water separator as previously permitted. Discharge of the stormwater from the oil water separator will then be directed to the forebay of Outfall 002.

A key benefit of the revised wastewater design is the removal of sanitary wastewater discharge from Outfall 001 and 002. ESPR will redirect sanitary wastewater to the City of Manhattan Beach Municipal Sanitary Sewer in accordance with the City Public Works Department's discharge requirements and the existing Land-4 Condition of Certification. This is a project benefit from the original permitted project that will continue with the revised project.

Expected average flow rates for the facility based on annual average ambient temperature operating conditions are shown on the water mass balance diagram provided in Figure 3.15-1. The expected maximum flow rates for the facility based on summer ambient conditions are shown on the water mass balance diagram provided in Figure 3.15-2. Estimated volumes of the facility's liquid wastewater discharge are shown in Table 3.15-3.

Table 3.15-3
Estimated Liquid Process Wastewater Volumes To Discharge[1]

Waste Stream	Source	Qty/Day[2]	
		Previously Permitted	Proposed[1]
Circulating Water Return	Condenser	206,000,000	0
Stormwater Oil Water Separators Effluent	Plant and equipment drains, area precipitation runoff	3,100	3,100
Existing Retention Basin	Effluent HRSG, oil water separator effluent	80,000	0
Total Effluent to Outfall 001	Circulating water and oil water separator effluent	207,000,000	0
Total Sanitary Effluent to City Sewer[1]	Sanitary drains system	750	750

Notes:
Units = Gallons per day
[1] Assumes 0.52 gallons per minute, 24 hour day.
[2] All numbers are approximate based on peak discharge conditions.

Construction

The method of construction will be similar to the previously permitted project. No additional water resources will be required to construct the R2C2 plant. The previously permitted project anticipated the use of potable water at the site to serve the needs of construction workers and construction activities. Average use of construction water was anticipated to be approximately 5,000 GPD. Construction of the R2C2 design is anticipated to require less below grade demolition and construction due to the elimination of once-through cooling water. The once-through tunnel will be abandoned and the extensive reconstruction of the tunnels will not be necessary. The R2C2 design involves more equipment and foundation work above the anticipated groundwater table and will reduce the need for previously anticipated dewatering. Dewatering will still be required for some below grade demolition, abandonment of the once-through cooling water tunnels and some foundation construction. However, dewatering duration

and extent will be reduced, placing less demand on groundwater resources, reducing the potential for discharge of potentially impacted groundwater, and reducing the amount of energy required for pumping.

Reclaimed Water

The proposed new ESPR design maximizes use of reclaimed water for all in-plant process water uses. The new ESPR design will utilize an average of 34,560 gallons per day of reclaimed water during average daily operations and up to 577,920 gallons per day during peak operations. This is a decrease of reclaimed water use of 29,440 gallons per day under average use and an increase of 137,920 gallons per day under peak usage.

Potable Water

The proposed project will continue to use potable water for drinking and sanitary functions in the plant, and for fire emergencies. Potable water will also be used as an emergency backup water supply to the raw water tank. However, due to the increased use of reclaimed water, the proposed project will use 92,000 gallons per day less potable water during average operations and 143,000 gallons per day less potable water during maximum usage.

Wastewater

No water/steam cycle wastewater will be discharged from the facility. This is a reduction of 80,750 gallons per day of wastewater discharge to Outfall 001 as previously permitted.

Summary

Due to the elimination of once-through cooling, the use of seawater will be eliminated, the use of potable water will be reduced by a minimum of 99 percent, yet the use of reclaimed water will increase. Utilizing the Title 22, single-pass RO water via recycling and reprocessing by way of the R2C2 technology will, however, greatly reduce the amount of wastewater discharge associated with the power generation compared to the previously permitted project. A water balance for the entire facility, based on maximum daily usage, is provided in Figure 3.15-3.

3.15.2.2 Beach Delivery

The City of El Segundo's Local Coastal Plan identifies the onshore portion of the coastal zone within the City of El Segundo as consisting of a narrow ribbon of land approximately 200 yards in width and 0.8 mile in length. The total land zone is approximately 50 acres. The coastal zone in El Segundo is bounded inland by Vista Del Mar Boulevard, on the north by the City of Los Angeles, on the south by the community of El Porto, and to the west by the Pacific Ocean.

Although the narrow three-acre sandy beach seaward of the Chevron and ESGS facilities is owned by the California State Lands Commission, ESP II leases a portion of the beach from the State Lands Commission. In addition, unimpeded lateral access along the narrow sandy

shoreline is available to the public. A portion of the beach is leased by the County of Los Angeles for a right-of-way for a county bike path.

The proposed delivery of oversize equipment will be accomplished from barges via a ramp system across the El Segundo Beach. The beach delivery will require construction of a ramp that will consist of a barge secured to the beach with a system of moorings and ballast tanks. The equipment will be delivered to the barge ramp from transport barges to be stage off shore accompanied by tug boats.

The beach delivery will cross the beach directly west of the existing El Segundo Generating Station. The beach delivery is anticipated to be six months, including site preparation and restoration. Six barge deliveries of equipment are anticipated. During delivery, barges and tug boats will be staged offshore and will be subject to jurisdiction of the United States Coast Guard. During the actual staging and delivery of equipment, the nearshore and offshore zone will be restricted from navigation; water contact recreation; non-contact water recreation; and commercial and sport fishing.

Navigation and recreational uses of the Santa Monica Bay will only be impacted during actual delivery cycles. The delivery cycles will be brief and will occur during two-day shifts. The delivery cycles will be highly dependent on weather and wave action. Impacts to the Santa Monica Bay environment and habitats during off shore staging are anticipated to be minimal due to the short durations of activity, limited number of vessels. Offshore navigation and staging will be coordinated with the United States Coast Guard,

Impacts from the beach delivery process are more likely to occur from the beach preparation or onshore activities. Potential impacts and mitigation measures developed to minimize impacts to the Santa Monica Bay area discussed in detail in the Biological Resources and Water Quality sections of this Amendment.

3.15.2.3 Offsite Laydown and Parking Areas

The additional proposed offsite laydown area is located at 777 W. 190th Street in Gardena, near the 405 and 110 freeway interchange. The area is approximately 12.1 acres (~10 acres usable) of level, paved land zone as M2 commercial. The proposed use of the offsite storage area will consist of parking and storage of equipment to be used during the construction phase of the project. The site is currently utilized for storage of vehicles and truck trailers.

The site setting for the 190th Street laydown is the same as those for other offsite laydown areas discussed in the previously permitted project. The offsite laydown area will involve temporary use during construction and no new construction will be required offsite. The use of their offsite

laydown area was considered because of the site's availability, commercial zoning, and current developed features. The use of this property will have no affect on water resources.

3.15.2.4 Plant Entrance Modifications

The proposed modifications to the plant entrance and roadway will be affected during construction by removal of asphalt and shallow grading activity on sloped areas. The durations of the ground disturbance activities area anticipated to be up to 313 cubic yards of cut and up to 8,464 cubic yards of fill for roadway work. It is anticipated that 8,150 cubic yards of fill will be required to complete the road. Landscaping work will be required to stabilize the cut-fill slopes.

The completed alterations to the entrance and roadway will consist of paved and landscaped areas. The final roadway will have a 9 percent maximum grade for all tangent sections, and a 4.5 percent maximum grade on any curves. The roadway modifications will occur in the same general area as the previously proposed administration building and this modification will encounter the same stormwater issues addressed in the previously permitted project.

The proposed modifications to the plant entrance and roadway will require ground disturbance activities including removal of asphalt and shallow grading activity on sloped areas. These ground disturbances will expose soils on sloped grades to erosion. The construction of the entrance and roadway modifications will require minor amounts of water for dust suppression and soil moisture conditioning during grading. Mitigation measures to minimize erosion during ground disturbance and protect the Santa Monica Bay from uncontrolled runoff are similar to mitigation measures required in the final AFC. Post construction landscaping work will be required to stabilize the cut-fill slopes. It is anticipated that the duration of the entrance and roadway construction will be less than one month.

3.15.3 Cumulative Impacts

The proposed project changes will not result any significant cumulative impacts to water resources beyond those addressed in the CEC's Final Commission Decision for ESPR.

3.15.4 Laws, Ordinances, Regulations, and Standards (LORS)

The Final Commission Decision certifying the ESPR found the project to be in compliance with applicable LORS. As described in this Amendment, the modifications proposed are consistent with applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the CEC's Final Commission Decision for the ESPR.

3.15.4.1 Rapid Response Combined Cycle (R2C2) Technology

The significant environmental advantages on the water supply and resources presented by the R2C2 and water recycling design should be received as a progressive move toward environmentally responsible power generation. The R2C2 design will eliminate the necessity for

compliance with the following: Clean Water Act (CWA) section 316(a); 33 USC §1321; 40 CFR Part 401, and the State Water Resources Control Board's Thermal Plan California regulating the thermal component of industrial discharges; the CWA Section 316(b); 33 USC § 1326(b); 40 CFR Part 401 regulating the location, design, construction, and capacity of cooling water intake structures reflect the best available technology for minimizing environmental impact; and an Industrial NPDES permit regulating discharges of wastewater from an industrial facility due to the elimination of water/steam cycle wastewater discharge. The only permitted discharge and compliance necessitated by ESPR will be the discharge of stormwater. The ESPR project will comply with all the applicable discharge limits as previously permitted.

3.15.4.2 Beach Delivery

Construction and operation of the proposed beach delivery system will comply with the Federal Clean Water Act and the Porter-Cologne Water Quality Control Act through implementation and adherence to the NPDES General Permit for Stormwater Discharges Associated with Construction Activity, Industrial NPDES Permit No. CA0001147, CI 4667, and other applicable federal and state required permits that include:

- Nationwide Permit No. 33 (Clean Water Act section 404 permit): Temporary Construction, Access & Dewatering
- Coastal Zone Development Permit
- 401 Water Quality Certification
- Stormwater Construction Permit
- Grading Permit

The proposed beach delivery could result in the potential discharge to Santa Monica Bay's Nearshore and Offshore Zones. The Santa Monica Bay Nearshore and Offshore Zones have been designated by the State of California as impaired for DDT, Debris, Fish Consumption Advisory, PCBs, and Sediment Toxicity. The Federal Clean Water Act, 33 U.S.C. §§ 1251, *et seq.*, and California's Porter-Cologne Water Quality Control Act, Water Code §§ 13000 *et seq.*, prohibit discharges that cause or contribute to the impairment of a receiving waterbody's designated beneficial uses.

In order to ensure that no pollutant discharges occur, the project includes measures to avoid, prevent, and/or minimize discharge of pollutants to Santa Monica Bay associated with the beach delivery operation. Such mitigation measures shall be implemented prior to, and during execution of the beach delivery operation, and include the following:

- Mitigation measures will include the implementation of Best Management Practices to address pollutants and pollutant source identification, including erosion and sediment

pollutants; evaluation of routes of stormwater exposure to identified pollutants and pollutant sources; and pollutant mode of transportation identification. Mitigation measures to avoid pollutant release and erosion control will include staging heavy equipment in contained areas; beach nourishment quality sand bags in and around construction areas; impervious fiber matting placed between the constructed ramp and beach surface; untreated, unused wood mats used for the construction of the beach landing ramp. In addition, BMPs must be developed to address equipment maintenance, fueling or repairs within the Beach Delivery Site, and equipment storage and staging within the Beach Delivery Site. These mitigation measures are incorporated into the Conditions of Certification section included in the Water Quality section of this Amendment.

3.15.4.3 Offsite Laydown and Parking Areas

The use of the new offsite location at 777 W. 190th Street in Gardena is consistent with applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the CEC's Final Commission Decision for the ESPR.

3.15.4.4 Plant Entrance Modifications

The proposed entrance and road modifications are consistent with applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the CEC's Final Commission Decision for the ESPR. Additional grading plans and permits will need to be submitted and approved by the local agencies and the CBO.

3.15.5 Conditions of Certification

Proposed revisions to the Conditions of Certification from the previously permitted project are below. These revisions are minor and are associated with the elimination of once-through cooling and the change of water resources for evaporative cooling from City potable water to reclaimed water. No new Conditions of Certification are proposed for Water Resources.

Water Resources

WATER RES-1: The project owner shall use reclaimed water for all in-plant process water needs, except those specifically excluded uses, unless it can be demonstrated that its use is not compatible with any particular application. Specifically excepted from using reclaimed water are fire control water, sanitary water, potable water ~~and once-through cooling water~~. The project owner shall submit a Reclaimed Water Use Plan (RWUP) that includes a detailed revised project design, operational plan, water balance, and heat balance for the use of reclaimed water for review and approval by the CPM prior to the start of any site mobilization activities for the project or any linear element. This RWUP shall be consistent with all applicable LORS, including Title 22 California Code of Regulations.

All in-plant water needs that the project owner claims cannot be met using reclaimed water, other those excepted, shall be identified and a discussion of the infeasibility of reclaimed water use for

these needs shall be included in the RWUP for review and approval by the CPM. Site mobilization activities shall not begin without a CPM approved RWUP.

Verification: The project owner shall submit the RWUP to the CPM for review and approval sixty day prior to the start of any site mobilization activities associated with the project or any linear elements. The RWUP must be approved by the CPM before the start of site mobilization.

WATER RES-2: Only potable water and irrigation quality reclaimed water from the City of El Segundo or reclaimed water from the West Basin Municipal Water District shall be used by the project, ~~for uses other than once through cooling~~. The process water supply shall be reclaimed water. A backup water supply has not been included in the project design or operational plan, and the project shall not operate during periods when reclaimed or potable water is not available in sufficient quantities from the primary supply sources. The project owner shall report the periods of non-operation due to unavailability of water from any source in the Annual Compliance Report.

The project owner shall install on-site metering and recording devices and record on a monthly basis all water used by the ESPR, except water used for once-through cooling, including the amount of reclaimed, and non-reclaimed water used by the project, with the source and amount of all reclaimed and non-reclaimed water identified. The annual summary shall include the monthly range, monthly average, and total amounts of reclaimed and non-reclaimed water identified by amount and source used by the project in both gallons-per-minute and acre-feet. Following the first year of operation, the annual summary shall also include the yearly range and yearly average of reclaimed and non-reclaimed water identified by amount and source used by the project. This information shall be supplied to the CPM in the Annual Compliance Report for review and approval for the life of the project.

Verification: No less than 60 days prior to the start of operation of ESPR, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the pipelines serving and within the project. These metering devices shall be capable of differentiating between uses of these supplies by ESPR in order to report water demand. The project owner shall provide a report on the servicing, testing and calibration of the metering devices and operation in the annual compliance report. The project owner shall submit the required water use summary to the CPM for review as part of the Annual Compliance Report for the life of the project.

3.16 Worker Health and Safety

This section discusses the worker health and safety environment and potential effects on these resources due to the proposed modifications to the El Segundo Power Redevelopment Project.

3.16.1 Introduction

As discussed in detail in the Project Description section, this Amendment proposes four modifications to ESPR that necessitate evaluation of environmental impacts and potential amendments to specific Conditions of Certification. The proposed project modifications include: (1) new equipment and design using Rapid Response Combined Cycle technology; (2) method of delivery of oversize; (3) the addition of one new offsite laydown and parking area and elimination of one previously approved laydown area; (4) and plant entrance road modifications. This section describes and evaluates potential effects the proposed changes may have on worker health and safety. Compliance with applicable LORS is also discussed.

3.16.2 Affected Environment and Environmental Analysis

3.16.2.1 Rapid Response Combined Cycle (R2C2) Technology

Worker health and safety impacts associated with converting from the approved 2x1x1 power block configuration to the proposed R2C2 technology and design will remain substantially unchanged as a consequence of the proposed plant design modifications. However, changes in hazardous materials, hazardous wastes, noise, high hazard equipment, construction, and fire protection will each be examined in detail to determine potential impacts to worker health and safety. The Safety and Health Program required under approved Conditions of Certification WORKER SAFETY-1 and WORKER SAFETY-2 will address any new potential impacts.

Hazardous Materials

As discussed in Section 3.5: Hazardous Materials, proposed treatment of make-up water for power/steam turbine production using a mixed-bed ion-exchange demineralization process is unchanged. However, the operating chemistry requirements for the R2C2 system's steam cycle is limited to ammonia for pH control of the feedwater and dosing with a peroxide solution to maintain oxygen concentrations in the condensate and feedwater. The prior need for an oxygen scavenger chemical and neutralizing amine (hydrazine) to control dissolved oxygen and pH in the feedwater, as well as the use of sodium phosphate in the HRSG boiler water to control pH, is eliminated.

Because Siemens, the equipment manufacturer, recommends that chemical additives not be used to treat the evaporative cooler's water system, the STGs utilized in the R2C2 technology are air-cooled, eliminating the use of hydrogen for STG cooling as proposed in the previously permitted project.

The R2C2 system's two air-cooled condensers, used for steam turbine exhaust steam heat rejection, eliminates the need for the previously approved once-through cooling water system. Elimination of the once-through system eliminates the need to use chlorine to control biological growth. The discontinuation of hydrazine, hydrogen, and chlorine in the R2C2 system represents a reduced potential impact on worker health and safety.

Thus, overall, the proposed R2C2 technology and design changes result in lower potential impacts to worker health and safety associated with hazardous materials.

Hazardous Wastes

As discussed in Section 14: Water Resources, the R2C2 technology's air-cooled system replaces the previously approved once-through cooling water system. This process, in conjunction with the proposed wastewater discharge process, in which blowdown from the HRSG boiler and evaporative cooler is reclaimed for reuse in the power-generating process, virtually eliminates the generation of wastewater from the R2C2 system. Waste washwater generated from off-line chemical cleaning of the HRSGs, combustion turbines, and compressors will continue to be collected and stored in holding tanks, profiled in accordance with the facility's hazardous waste management program and shipped offsite to a properly permitted facility for treatment and disposal or recycling. There is thus no change from the previously permitted project in the potential impacts to worker health and safety associated with hazardous wastes.

Noise

As discussed in Section 3.7: Noise, the R2C2 technology's air-cooled system will result in an increase in the noise levels workers will be exposed to. Condition of Certification NOISE-7 requires ESP II to conduct an occupational noise survey to identify potential noise hazardous areas and, if necessary, prepare mitigation measures in consultation with Cal/OSHA to reduce noise to prescribed limits. This Condition of Certification will serve to mitigate the increased impact on worker health and safety associated with the increased noise levels of the R2C2 air-cooled system.

Egress, Access and Worker Exposure to High Hazard Equipment

The R2C2 system will occupy a slightly larger footprint than the previously permitted units, but worker access and egress in the production area of the proposed new units is not substantially restricted, as compared with the previous design. An access road between the R2C2 power blocks improves worker access compared with the permitted power block configuration.

The R2C2 technology will utilize one additional steam turbine generator than the previously permitted project. This additional high hazard equipment does not substantially increase the risk of worker exposure to an upset event, given the relative similarities in the previously permitted and the proposed generator technology. In addition, risks to worker safety from high hazard

equipment will continue to be mitigated by the Operations and Maintenance Safety and Health Program provided for under Condition of Certification WORKER SAFETY-2.

Construction

The previously permitted power block design proposed the use of vertically orientated HRSGs, whereas the R2C2 configuration utilizes horizontal HRSGs, reducing the extent of excavation required to construct the proposed R2C2 power block foundation. By reducing the extent and depth of excavation, the level of risk of worker exposure to contaminated soils and groundwater necessitating dewatering is significantly reduced from the previously permitted project.

Construction and installation of the new stormwater drainage system to the forebay of Outfall 002 may encounter potentially contaminated soils. Earthwork in this area could result in worker exposure to contaminated soils. The proposed installation of additional stormwater drain lines are, however, linked to the beneficial elimination of the use of Outfall 001 for once-through cooling and stormwater discharge. Any additional risk posed by potential exposure to contaminated soils during the proposed project is mitigated by Condition of Certification WASTE-5, regarding contaminated soils excavation.

Fire Protection

The proposed R2C2 system includes dedicated fire protection equipment and systems that will be operated in accordance with National Fire Protection Association (NFPA) standards. The previously approved interim fire system and incorporation of the firewater distribution system for the new units into the facility's existing firewater distribution system remains unchanged. Therefore, there is no impact posed by the proposed project changes.

3.16.2.2 Beach Delivery

As discussed in detail in the Project Description of this Amendment, one modification to the previously permitted project is delivery of oversize equipment to the project site by barge. Equipment loads will be transported to the beach area adjacent to ESGS and delivered to the project site over a beach ramp system from the delivery barges to the facility. The ramp will be constructed as described in Section 2.2.1. Refer to Figure 2.2-2: Beach Ramp and Delivery Rendering for details.

During construction of the beach-landing ramp and beach delivery of the HRSGs and other plant equipment, workers may be exposed to hazards typical of marine shipping. This proposed delivery method may also expose workers to other potential hazards such as slip/trip/fall, lacerations, hazardous materials and hazardous wastes, heavy construction equipment and vehicles, fire, noise, and elevated and overhead work.

- The United States Coast Guard administers and enforces federal regulations affecting commercial vessel safety, port safety and security, and marine safety and environmental protection.
- The U.S. Department of Labor, Occupational Health & Safety Administration (OSHA) administers and enforces federal regulations affecting worker safety at marine terminals and for longshoring operations.

During construction of the ramp and loading, transport and offloading of the delivery barges, the project activities will comply with all applicable OSHA and U.S. Coast Guard rules and regulations relative to worker safety. The potential risks to workers posed by beach delivery are in part different than those in the previously permitted project; these impacts will be mitigated by new Conditions of Certification WORKER SAFETY-4 and WORKER SAFETY-5, which will ensure that the beach delivery activities comply with appropriate safety regulations.

3.16.2.3 Offsite Laydown and Parking Areas

The Amendment adds one offsite laydown area, located at 777 W. 190th Street in the City of Gardena. The site is relatively flat, paved with asphalt, lighted and includes a perimeter security fence. No site preparation is necessary for use of this offsite laydown and parking area. Current site conditions do not pose a safety hazard to workers during parking or equipment staging and storage. During the construction phase, workers will be exposed to hazards typical of equipment staging and heavy-haul transportation operations, including worker exposure to potential hazards such as slip/trip/fall, lacerations, hazardous materials and hazardous wastes, heavy construction equipment and vehicles, fire, noise, elevated and overhead work. The potential hazards associated with this new laydown area are not different in type or scope than the hazards associated with previously permitted offsite laydown areas. Therefore, this proposed project modification will not change impacts on worker health or safety associated with laydown areas. Existing Condition of Certification WORKER SAFETY-1 will ensure construction related activities conducted at the 777 W. 190th Street laydown area comply with all appropriate safety programs and plans.

3.16.2.4 Plant Entrance Modifications

Modifications to the plant entrance road are proposed in this Amendment to enable delivery of oversize equipment to the plant during the construction phase of ESPR and to facilitate future equipment and material deliveries into the plant. Proposed entrance road modifications include widening the road, straightening the road to eliminate sharp turns, and reducing the grade. Landscaping work is required to stabilize the cut-fill slopes.

Previous soil analysis shows that the soils within the proposed entrance road corridor did not reveal soil contamination that would require management. Geotechnical reports and slope stabilization analysis conducted subsequent to the Final Commission Decision support the

conclusion that the road can be constructed in the proposed location with little to no risk from geologic hazards related to the soils. The proposed road modifications will reduce existing entrance road hazards, during both construction and operation of the new power block, by widening the road, and straightening and reducing the grade at the road's curves.

During the construction phase, workers will be exposed to hazards typical of liner roadway construction operations, including worker exposure to potential hazards such as slip/trip/fall, lacerations, hazardous materials and hazardous wastes, heavy construction equipment and vehicles, fire, noise, elevated and overhead work. The potential worker safety hazards associated with the proposed entrance road construction are not different in scope or type from the potential hazards associated with other construction activities. Therefore, this proposed project modification will not change potential impacts on worker health or safety associated with construction activities. Existing Condition of Certification WORKER SAFETY-1 will ensure the roadway construction related activities comply with all appropriate safety programs and plans.

3.16.3 Cumulative Impacts

The proposed project changes will not result in any significant cumulative impacts to worker health and safety beyond those addressed in the CEC's Final Commission Decision for ESPR. Although the risks associated with worker safety will differ from the previously permitted project due to the addition of beach delivery operations, adherence to existing and proposed new COCs will minimize and mitigate such risks.

3.16.4 Laws, Ordinances, Regulations, and Standards (LORS)

The Final Commission Decision certifying ESPR found the project to be in compliance with all applicable LORS. As described in this Amendment, the modifications proposed are consistent with applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the CEC's Final Commission Decision. Additional LORS associated with the proposed beach delivery of oversize equipment include the following:

U.S. Coast Guard regulations regarding commercial vessel safety, port safety and security, and marine safety and environmental protection:

- CFR Title 33: Navigation & Navigable Waters
- CFR Title 46: Shipping
- CFR Title 49: Transportation- Subpart B

U.S. Department of Labor, Occupational Safety & Health Administration (OSHA) regulations regarding worker safety at marine terminals and for longshoring operations:

- CFR Title 29, Part 1917: Marine Terminals
- CFR Title 29, Part 1918: Safety and Health Regulations for Longshoring
- CFR Title 29, Part 1919: Gear Certification

3.16.5 Conditions of Certification

Approved Conditions of Certification WORKER SAFETY-1, WORKER SAFETY-2, and WORKER SAFETY-3 will not be changed. WORKER SAFETY-1 is sufficient to mitigate worker heath and safety hazards associated with construction of the entrance road and power plant. WORKER SAFETY-2 includes an occupational noise control program to reduce worker exposure to high levels of noise, sufficient to mitigate risk and ensure adequate worker safety during operation of the new power plant. Two new Conditions of Certification, WORKER SAFETY-4 and WORKER SAFETY-5 are proposed in this Amendment to mitigate and manage worker health and safety hazards associated with beach delivery of heavy equipment.

WORKER SAFETY-4: The project owner shall submit to the Compliance Project Manager (CPM) for approval, a copy of the Beach Delivery Safety Program containing detailed safety procedures for the following:

- Risk Identification, Assessment and Treatment
- Responsibilities
- Documentation Management
- Emergency Preparedness
- Incident Management
- Employee Training
- Safe Work Practices, including but not limited to:
  - Mobile Equipment
  - Fire Prevention
  - Fueling Operations
  - Fall Protection
  - Personal Protective Equipment
  - Barricades, Flagging & Hazards Signs
  - Welding & Cutting

Verification: At least 30 days prior to the initial barge delivery the project owner shall submit to the CPM a copy of the Beach Delivery Safety Program.

WORKER SAFETY-5: The project owner shall submit to the Compliance Project Manager (CPM) for approval, a copy of the project-specific Beach Delivery Injury and Illness Prevention Program containing the detailed safe work practices for the following:

- Mobile Equipment Operations

- Heavy Equipment Operations
- Fire Prevention
- Fueling Operations
- Fall Protection
- Personal Protective Equipment
- Barricades, Flagging & Hazards Signs
- Welding & Cutting
- Emergency Action
- Hearing Protection
- Reparatory Protection
- Hazards Identification and Communication
- Hazardous Substances Management
- Crain and Hoist Operations

Verification: At least 30 days prior to the initial barge delivery the project owner shall submit to the CPM a copy of the Beach Delivery Injury and Illness Prevention Program.

4.0 El Segundo Power Redevelopment Project Conditions of Certification

Conditions of Certification (COCs) adopted by the Commission in the Final Commission Decision for ESPR, ensured that the facility was constructed, operated, and closed in compliance with air and water quality, public health and safety, environmental, and other regulations, and guidelines established by the California Energy Commission and other state and federal agencies. The modifications set forth in this Petition to Amend require some changes to the COCs set forth in the Final Commission Decision. Changes to such COCs are designed to maintain the Commission's assurance that the facility is constructed, operated, and closed in compliance with air and water quality, public health and safety, environmental, and other regulation and guidelines established by the California Energy Commission, and other state and federal agencies.

For ease of review, ESP II has set forth ALL COCs identified in the Final Commission Decision. Unchanged text remains in clear formatting. All proposed changes are identified either by ~~strikethrough~~ for deleted text or ***bold, italicized*** for new text. Environmental areas are separated into single sections and set forth in alphabetical order within this section.

Air Quality

Proposed changes to Air Quality Conditions of Certification are forthcoming, as changes to such conditions are predicated on determinations made by the South Coast Air Quality Management District. ESP II anticipates receiving these conditions soon and will forward to the Commission upon receipt thereof.

Biological Resources

~~**BIO-1:** The project owner shall place $5,000,000 in trust for the Santa Monica Bay Restoration Commission (SMBRC) to assess the ecological condition of the Santa Monica Bay and to develop and implement actions to improve the ecological health of the Bay. At least $250,000 shall be provided within 30 days after this Decision becomes final, and an additional sum of at least $250,000 shall be provided every 90 days thereafter until $1 million has been provided. At that time, the SMBRC in consultation with the project owner, shall propose a schedule for the payment of the remaining funds; within 30 days after submittal of the proposed schedule to the CPM, the CPM shall approve a schedule, which may be the SMBRC's schedule or a modification thereof. The project owner shall comply with the approved schedule. The funds shall be spent as directed by the SMBRC, after consultation with the CPM and the Los Angeles Regional Water Quality Control Board, for the purposes of assessing the ecological condition of the Santa Monica Bay and developing and implementing actions to improve the ecological health of the Bay. To the maximum extent feasible in keeping with those purposes, the studies conducted shall be designed to assist the LARWQCB in carrying out its responsibilities under section 316(b) of the Clean Water Act, for this project and other activities affecting Santa Monica Bay. If any funds remain unspent upon beginning of commercial operation, the project owner may petition the Energy Commission for return of those unspent funds to the project owner.~~

~~**Verification:** The project owner shall submit to the CPM a copy of the receipt transferring funds as required by this Condition. The project owner shall provide to the CPM a copy of any studies carried out under this Condition.~~

~~**BIO-2:** In consultation with the LARWQCB, the project owner shall conduct a study to determine the feasibility of constructing, deploying, and operating an aquatic filter barrier at intake #1 at ESGS. The feasibility study shall also determine expected benefits and potential impacts of the aquatic filter barrier if deployed and operated at intake #1. The feasibility study shall be submitted to the LARWQCB for possible use in implementing regulations under 316(b) of the Clean Water Act. If the LARWQCB finds that it is feasible to construct and operate an aquatic filter barrier and that the ESGS intake #1 site is suitable for a demonstration and orders the project owner to install an aquatic filter barrier on intake #1 in compliance with applicable 316(b) regulations, the project owner shall construct and operate the aquatic filter barrier.~~

~~**Verification:** The project owner shall submit to CPM and the LARWQCB a complete analysis and all results of the feasibility study as part of the evaluation involved in implementing applicable 316(b) regulations.~~

~~**BIO-3:** Upon the commencement of commercial operations of Units 5, 6, and 7, water flows for intakes #1 and #2 combined shall not exceed 126.78 billion gallons per year and shall also be~~

~~subject to monthly flow volumes not to exceed 7.961 billion gallons in February, 8.313 billion gallons in March, and 8.524 billion gallons in April of any year.~~

~~**Verification:** Project owner shall send to the CPM copies of the project's quarterly reports to the LARWQCB, including: (1) daily cooling water flows calculated from the measured capacity of each pump; (2) each pump's daily hours of operation; (3) each pump's annual average volume; and (4) average hourly effluent temperature data. The data shall be presented graphically to illustrate the daily pump volume totals over time.~~

~~**BIO-4:** Project owner shall provide information demonstrating that a valid NPDES permit has been issued prior to operation of the project. The valid NPDES permit and its terms and conditions shall be incorporated into this Decision, except for flow cap provisions, unless those in the NPDES permit are stricter than the flow caps required under **BIO-3**.~~

~~**Verification:** Project owner shall report to the CPM all communication efforts with the LARWQCB regarding NPDES permit renewal or compliance. Project owner shall provide to the CPM all data and analysis supporting any 316(b) study performed. Project owner shall consult with the LARWQCB, the Coastal Commission, Energy Commission staff, Santa Monica Bay Restoration Commission, and the Santa Monica Bay Keepers to develop the appropriate design for any 316(b) study.~~

~~**BIO-5**: Prior to commencement of operation, the project owner shall achieve compliance with section 316(b) of the Clean Water Act and regulations thereunder as directed and required by the LARWQCB. If the LARWQCB requires that a study be conducted under section 316(b), then the project owner shall consult, with the facilitation of the CPM, with the National Marine Fisheries Service, the California Coastal Commission, the California Department of Fish and Game, and the Santa Monica Bay Restoration Commission in the development and implementation of the 316(b) study design, subject to all applicable authority of the LARWQCB.~~

~~**Verification:** Project owner shall submit to the CPM copies of all correspondence and submittals to the LARWQCB related to the implementation of section 316(b) regulations. Project owner shall inform the CPM of all 316(b) related decisions by the LARWQCB and steps taken by the project owner pursuant to LARWQCB direction.~~

Cultural Resources

DESIGNATED CULTURAL RESOURCES SPECIALIST

CUL-1 Prior to the start of ground disturbance, the project owner shall submit the resume of the proposed Cultural Resources Specialist (CRS), and one alternate CRS, if an alternate is proposed, to the CPM for review and approval. The CRS will be responsible for implementation of all cultural resources conditions of certification and may obtain qualified cultural resource monitors (Corms) to monitor as necessary on the project.

The resume for the CRS and alternate, shall include information that demonstrates that the minimum qualifications specified in the U.S. Secretary of Interior Guidelines, as published by the CFR 36, CFR Part 61 are met. In addition, the CRS shall have the following qualifications:

a. The technical specialty of the CRS shall be appropriate to the needs of the project and shall include, a background in anthropology, archaeology, history, architectural history or a related field;
b. At least three years of archaeological or historic, as appropriate, resource mitigation and field experience in California; and

The resume shall include the names and phone numbers of contacts familiar with the work of the CRS on referenced projects and demonstrate that the CRS has the appropriate education and experience to accomplish the cultural resource tasks that must be addressed during ground disturbance, grading, construction and operation. In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, that the proposed CRS or alternate has the appropriate training and background to effectively implement the conditions of certification.

CRMs shall meet the following qualifications:

a. A BS or BA degree in anthropology, archaeology, historic archaeology or a related field and one year experience monitoring in California; or
b. An AS or AA in anthropology, archaeology, historic archaeology or a related field and four years experience monitoring in California; or
c. Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historic archaeology or a related field and two years of monitoring experience in California.

The project owner shall ensure that the CRS completes any monitoring, mitigation and curation activities necessary; fulfills all the requirements of these conditions of certification; ensures that the CRS obtains technical specialists, and CRMs, if needed; and that the CRS evaluates any cultural resources that are newly discovered or that may be affected in an unanticipated manner for eligibility to the California Register of Historic Resources (CRHR).

45 days prior to the start of ground disturbance. At least 10 days prior to a termination or release of the CRS, the project owner shall submit the resume of the proposed replacement CRS. At least 20 days prior to ground disturbance, the CRS shall submit written notification identifying anticipated CRMs for the project stating they meet the minimum qualifications required by this condition. If additional CRMs are needed later, the CRS shall submit written notice one week prior to any new CRMs beginning work.

PROJECT MAPS SHOWING GROUND DISTURBANCE

CUL-2: Prior to the start of ground disturbance, the project owner shall provide the CRS and the CPM with maps and drawings showing the footprint of the power plant and all linear facilities. Maps will include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:2000 or 1" = 200') for plotting individual artifacts. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM.

If the footprint of the power plant or linear facilities changes, the project owner shall provide maps and drawings reflecting these changes, to the CRS and the CPM for approval. Maps shall identify all areas of the project where ground disturbance is anticipated.

If construction of the project will proceed in phases, maps and drawings, not previously submitted, shall be submitted prior to the start of each phase. Written notification identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

At a minimum, the CRS shall consult weekly with the project construction manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

Verification: The project owner shall submit the subject maps and drawings at least 40 days prior to the start of ground disturbance.

If there are changes to any project related footprint, revised maps and drawings shall be provided at least 15 days prior to start of ground disturbance for those changes.

If project construction is phased, the project owner shall submit the subject maps and drawings 15 days prior to each phase.

A current schedule of anticipated project activity shall be provided to the CRS on a weekly basis during ground disturbance and also provided in each Monthly Compliance Report (MCR).

The project owner shall provide written notice of any changes to scheduling of construction phases within 5 days of identifying the changes. A copy of the current schedule of anticipated project activities shall be submitted in each MCR.

CULTURAL RESOURCES MONITORING AND MITIGATION PLAN

CUL- 3 Prior to the start of ground disturbance, the project owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by the CRS, to the CPM for approval. The CRMMP shall identify general and specific measures to minimize potential impacts to sensitive cultural resources. Copies of the CRMMP shall reside with the CRS, alternate CRS, each monitor, and the project owner's on-site manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless specifically approved by the CPM.

The CRMMP shall include, but not be limited to, the following elements and measures.

1. The following statement shall be added to the Introduction: Any discussion, summary, or paraphrasing of the conditions in this CRMMP is intended as general guidance and as an aid to the user in understanding the conditions and their implementation. If there appears to be a discrepancy between the conditions and the way in which they have been summarized described, or interpreted in the CRMMP, the conditions, as written in the Final Commission Decision, supersede any interpretation of the Conditions in the CRMMP. The cultural resources conditions of certification are attached as an appendix to this CRMMP.

2. A proposed general research design that includes a discussion of research questions and testable hypotheses applicable to the project area. A refined research design will be prepared for any resource where data recovery is required.

3. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during ground disturbance, construction, and post-construction analysis phases of the project.

4. Identification of the person(s) expected to perform each of the tasks, their responsibilities; and the reporting relationships between project construction management and the mitigation and monitoring team.

5. A discussion of the inclusion of Native American observers or monitors, the procedures to be used to select them, and their role and responsibilities.

6. A discussion of all avoidance measures such as flagging or fencing, to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during construction and/or operation, and identification of areas where these measures are to be implemented. The discussion shall address how these measures will be implemented prior to the start of construction and how long they will be needed to protect the resources from project-related effects.

7. A discussion of the requirement that all cultural resources encountered will be recorded on a DPR form 523 and mapped (may include photos). In addition, all

archaeological materials collected as a result of the archaeological investigations (survey, testing, data recovery) shall be curated in accordance with The State Historical Resources Commission's "Guidelines for the Curation of Archaeological Collections," into a retrievable storage collection in a public repository or museum. The public repository or museum must meet the standards and requirements for the curation of cultural resources set forth at Title 36 of the Federal Code of Regulations, Part 79.

8. A discussion of any requirements, specifications, or funding needed for curation of the materials to be delivered for curation and how requirements, specifications and funding will be met. The name and phone number of the contact person at the institution. Include a statement in the discussion of requirements that the project owner will pay all curation fees and that any agreements concerning curation will be retained and available for audit for the life of the project.

9. A discussion of the availability and the designated specialist's access to equipment and supplies necessary for site mapping, photographing, and recovering any cultural resource materials encountered during construction.

10. A discussion of the proposed Cultural Resource Report (CRR) which shall be prepared according to Archaeological Resource Management Report (ARMR) Guidelines.

Verification: The project owner shall submit the subject CRMMP at least 30 days prior to the start of ground disturbance. Per ARMR Guidelines the author's name shall appear on the title page of the CRMMP. Ground disturbance activities may not commence until the CRMMP is approved. At least 30 days prior to ground disturbance, a letter shall be provided to the CPM indicating that the project owner will pay curation fees for any materials collected as a result of the archaeological investigations (survey, testing, data recovery).

CULTURAL RESOURCES REPORT

CUL-4 The project owner shall submit the Cultural Resources Report (CRR) to the CPM for approval. The CRR shall report on all field activities including dates, times and locations, findings, samplings and analysis. All survey reports, DPR 523 forms and additional research reports not previously submitted to the California Historic Resource

Information System (CHRIS) shall be included as an appendix to the CRR.

Verification: The project owner shall submit the subject CRR within 90 days after completion of ground disturbance (including landscaping). Within 10 days after CPM approval, the project owner shall provide documentation to the CPM that copies of the CRR have been provided to the curating institution (if archaeological materials were collected), the State Historic Preservation Officer (SHPO) and the CHRIS.

WORKER ENVIRONMENTAL AWARENESS PROGRAM

CUL-5 Worker Environmental Awareness Program (WEAP) shall be provided, on a weekly basis, to all new employees starting prior to and for the duration of, ground disturbance.

The training may be presented in the form of a video. The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Samples or visuals of artifacts that might be found in the project vicinity;
3. Information that the CRS, alternate CRS, and CRMs have the authority to halt construction to the degree necessary, as determined by the CRS, in the event of a discovery or unanticipated impact to a cultural resource;
4. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources find, and shall contact their supervisor and the CRS or CRM; redirection of work will be determined by the construction supervisor and the CRS;
5. An informational brochure that identifies reporting procedures in the event of a discovery;
6. An acknowledgement form signed by each worker indicating that they have received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification: The project owner shall provide in the Monthly Compliance Report the WEAP Certification of Completion form of persons who have completed the training in the prior month and a running total of all persons who have completed training to date.

CULTURAL RESOURCES MONITORING

CUL-6: The CRS, alternate CRS, or monitors shall monitor ground disturbance full time in the vicinity of the project site, linear facilities and ground disturbance at laydown areas or other ancillary areas to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner. In the event that the CRS determines that full-time monitoring is not necessary in certain locations, a letter or e-mail providing a detailed justification for the decision to reduce the level of monitoring shall be provided to the CPM for review and approval prior to any reduction in monitoring.

CRMs shall keep a daily log of any monitoring or cultural resource activities and the CRS shall prepare a weekly summary report on the progress or status of cultural resources-related activities. The CRS may informally discuss cultural resource monitoring and mitigation activities with Energy Commission technical staff.

The CRS shall notify the project owner and the CPM, by telephone or e-mail, of any incidents of non-compliance with any cultural resources conditions of certification within 24 hours of becoming aware of the situation. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the conditions of certification. Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these conditions of certification.

A Native American monitor shall be obtained to monitor ground disturbance in areas where Native American artifacts may be discovered. Informational lists of concerned Native Americans and Guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that will be monitored.

Verification:

1. During the ground disturbance phases of the project, if the CRS wishes to reduce the level of monitoring occurring at the project, a letter identifying the area(s) where the CRS recommends the reduction and justifying the reductions in monitoring shall be submitted to the CPM for review and approval.

2. During the ground disturbance phases of the project, the project owner shall include in the MCR to the CPM copies of the weekly summary reports prepared by the CRS regarding project-related cultural resources monitoring. Copies of daily logs shall be retained onsite and made available for audit by the CPM.

3. Within 24 hours of recognition of a non-compliance issue, the CRS shall notify the CPM by telephone of the problem and of steps being taken to resolve the problem. The telephone call shall be followed by an e-mail or fax detailing the non-compliance issue and the measures necessary to achieve resolution of the issue. Daily logs shall include forms detailing any instances of non-compliance with conditions of certification. In the event of a non-compliance issue, a report written no sooner than two weeks after resolution of the issue that describes the issue, resolution of the issue and the effectiveness or the resolution measures, shall be provided in the next MCR.

4. One week prior to ground disturbance in areas where there is a potential to discover Native American artifacts, the project owner shall send notification to the CPM identifying the person(s) retained to conduct Native American monitoring. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM who will initiate a resolution process.

DESIGNATED CULTURAL RESOURCE SPECIALIST AUTHORITY

CUL-7 The CRS, alternate CRS and the CRMs shall have the authority to halt construction if previously unknown cultural resource sites or materials are encountered, or if known resources may be impacted in a previously unanticipated manner. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor.

If such resources are found or impacts can be anticipated, the halting or redirection of construction shall remain in effect until all of the following have occurred:

1. the CRS has notified the project owner, and the CPM has been notified within 24 hours of the find description and the work stoppage.;
2. The CRS, the project owner, and the CPM have conferred and determined what, if any, data recovery or other mitigation is needed;
3. Any necessary data recovery and mitigation has been completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM with a letter confirming that the CRS, alternate CRS and CRMs have the authority to halt construction activities in the vicinity of a cultural resource find, and that the CRS or project owner will notify the CPM immediately (no later than the following morning of the incident or Monday morning in the case of a weekend) of any halt of construction activities, including the circumstance and proposed mitigation measures. The project owner shall provide the CRS with a copy of the letter granting the authority to halt.

WATER PIPELINE REALIGNMENT

CUL-8 The route for the water lines shall extend down Grand Avenue to Eucalyptus St. to El Segundo Blvd, which is within the water pipeline study area, bordered by El Segundo Blvd., Loma Vista St., Grand Ave. and Eucalyptus St. (Applicant has conducted a cultural resources assessment in the pipeline study area and within the area defined as the proposed project). If the water lines and associated pipelines are to be located anywhere but in an area originally defined as part of the proposed project, a cultural resource assessment shall be conducted prior to any ground disturbance. The cultural resource assessment shall consist of a records search and a pedestrian survey. This approach gives equal emphasis to prehistoric and historic resources and an evaluation of significance. A Native American monitor from a group with historic ties to the affected area shall be retained as part of the cultural resources team during any surveys or subsurface investigation.

Verification: Forty days prior to the start of any ground disturbance or project site preparation at the newly identified location of the waterlines and associated pipelines, the project owner shall submit the following for approval by the CPM: (1) the results of the records search and the results of the survey; (2) an evaluation, including site records, of all cultural resources within or

adjacent to the project Area of Potential Effects; and (3) the information shall also include the name and tribal affiliation of the Native American monitor.

Facility Design

GEN-1: The project owner shall design, construct and inspect the project in accordance with the 2001 edition of the California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations), which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable LORS in effect at the time initial design plans are submitted to the CBO for review and approval. (The CBSC in effect is that edition that has been adopted by the California Building Standards Commission and published at least 180 days previously.) All transmission facilities (lines, switchyards, switching stations, and substations) are covered by the **Transmission System Engineering** Conditions of Certification.

> In the event that the initial engineering designs are submitted to the CBO when a successor to the 2001 CBSC is in effect, the 2001 CBSC provisions identified herein shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction, or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern

Verification: Within 30 days after receipt of the Certificate of Occupancy, the project owner shall submit to the California Energy Commission Compliance Project Manager (CPM) a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation and inspection requirements of the applicable LORS and the Energy Commission's Decision have been met in the area of facility design. The project owner shall provide the CPM a copy of the Certificate of Occupancy within 30 days of receipt from the CBO [2001 CBC, Section 109 – Certificate of Occupancy].

GEN-2: Prior to submittal of the initial engineering designs for CBO review, the project owner shall furnish to the CPM and to the CBO a schedule of facility design submittals, a Master Drawing List, and a Master Specifications List. The schedule shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM when requested.

Verification: At least 60 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the

CBO and to the CPM the schedule, the Master Drawing List, and the Master Specifications List of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in Table 1 below. Major structures and equipment shall be added to or deleted from the Table only with CPM approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

Table 1: Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Combustion Turbine (CT) Foundation and Connections	2
HP/IP Steam Turbine (ST) Foundation and Connections	1
LP Steam Turbine (ST) Foundation and Connections	1
Combustion Turbine Generator Foundation and Connections	2
Steam Turbine Generator Foundation and Connections	1
Heat Recovery Steam Generator (HRSG) Structure, Foundation and Connections	2
Auxiliary Transformer Foundation and Connections	2
CT Inlet Air Plenum Structure, Foundation and Connections	2
Inlet Air Evaporative Cooler Structure, Foundation and Connections	2
HRSG Exhaust Stack, Foundation and Connections	2
Isolated Phase Bus Duct	2
HRSG Transition Duct from CTG — Structure	2
Secondary Unit Substation/Transformer	2
Electrical/Control Center	2
Condenser Structure, Foundation and Connections	1
Feed Water Pump Foundation and Connections	4
Condensate Pump Foundation and Connections	2
Feed Water Heater Foundation and Connections	2
Air Compressor Foundation and Connections	2
CT Water Injection Skid Foundation and Connections	2
CT Static Starter Skid Foundation and Connections	2
CT Mechanical Accessory Compartment Foundation and Connections	2
Switchgear Equipment Building Structure, Foundation and Connections	2
CT Generator Step-up Transformer Foundation and Connections	2
ST Generator Step-up Transformer Foundation and Connections	1
HRSG Blowdown Tank Foundation and Connections	2
Boiler Circulating Pump Connections	8
Condensate Circulating Pump Foundation and Connections	4
Fuel Gas Heater Foundation and Connections	2
ST Lube Oil Package Foundation and Connections	1
Drain Cooler Foundation and Connections	1

Table 1: Major Structures and Equipment List	
Equipment	**Quantity**
Gas Turbine Enclosure	**2**
Gas Turbine Inlet Filter	**2**
Electrical Package	**2**
Lube Oil Cooler	**2**
Rotor Air Cooler (Fin-Fan)	**2**
Heat Recovery Steam Generator	**2**
HRSG Stack	**2**
Boiler Blow Down	**2**
Boiler Feedwater Pumps	**2**
Sampling Panel	**2**
Continuous Emissions Monitoring	**2**
SCR Skid	**2**
MV Switchgear	**2**
Generator Circuit Breaker	**2**
Auxiliary Transformer	**2**
Generator Transformer - Gas Turbine	**2**
Generator Transformer - Steam Turbine	**2**
Oil/Water Separator	**2**
Steam Turbine PCC	**2**
Gland Steam Condensers	**2**
Steam Turbine	**2**
ST Lube Oil Cooler	**2**
Steam Turbine Fin Fan Cooler	**2**
Condensate Polishing Fin Fan Cooler	**2**
Air Compressor Area	**2**
Balance of Plant PCC	**2**
Chemical Dosing Equipment	**2**
Deaerator / Drain Tanks / Condensate Pumps	**2**
Fuel Gas Conditioning/metering	**1**
Fuel Gas Compressors	**2**
Raw Water Water Tank	**1**
Demineralized Water Tank	**1**
Raw Water Forwarding Pumps	**2**
Electric Fire Water Pumps	**1**
Demineralized Water Forwarding Pumps	**2**
Fire Water Tank	**1**

GEN-3: The project owner shall make payments to the CBO for design review, plan check and construction inspection based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 2001 CBC [Chapter 1, Section 107 and Table 1-A, Building Permit Fees; Appendix Chapter 33, Section 3310 and Table A-33-A, Grading Plan Review Fees; and Table A-33-B, Grading Permit Fees], adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be as otherwise agreed by the project owner and the CBO.

Verification: The project owner shall make the required payments to the CBO in accordance with the agreement between the project owner and the CBO. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next Monthly Compliance Report indicating that the applicable fees have been paid.

GEN-4: Prior to the start of rough grading, the project owner shall assign a California registered architect, structural engineer or civil engineer, as a resident engineer (RE), to be in general responsible charge of the project [Building Standards Administrative Code (Cal. Code Regs., tit. 24, § 4-209, Designation of Responsibilities).] All transmission facilities (lines, switchyards, switching stations, and substations) are covered by the **Transmission System Engineering** Conditions of Certification.

> The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project respectively. A project may be divided into parts, provided each part is clearly defined as a distinct unit. Separate assignment of general responsible charge may be made for each designated part.

The RE shall:

1. Monitor construction progress of work requiring CBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all the facilities subject to CBO design review and inspection conforms in every material respect to the applicable LORS, these Conditions of Certification, approved plans, and specifications;
3. Prepare documents to initiate changes in the approved drawings and specifications when directed by the project owner or as required by conditions on the project;
4. Be responsible for providing the project inspectors and testing agency(ies) with complete and up-to-date set(s) of stamped drawings, plans, specifications and any other required documents;

5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and

6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests as not conforming to the approved plans and specifications.

The RE shall have the authority to halt construction and to require changes or remedial work, if the work does not conform to applicable requirements.

If the RE or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the name, qualifications and registration number of the RE and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the RE and other delegated engineer(s) within five days of the approval.

If the RE or the delegated engineer(s) are subsequently reassigned or replaced, the project owner has five days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

GEN-5: Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: A) a civil engineer; B) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; C) a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; D) a mechanical engineer; and E) an electrical engineer. [California Business and Professions Code section 6704 et seq., and sections 6730 and 6736 requires state registration to practice as a civil engineer or structural engineer in California.] All transmission facilities (lines, switchyards, switching stations, and substations) are covered by the **Transmission System Engineering** Conditions of Certification.

The tasks performed by the civil, mechanical, electrical or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (e.g., proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one

responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

The project owner shall submit to the CBO for review and approval, the names, qualifications and registration numbers of all responsible engineers assigned to the project [1998 CBC, Section 104.2, Powers and Duties of Building Official].

If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned responsible engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

A. The civil engineer shall:

1. Design, or be responsible for design, stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads, and sanitary sewer systems; and

2. Provide consultation to the RE during the construction phase of the project, and recommend changes in the design of the civil works facilities and changes in the construction procedures.

B. The geotechnical engineer or civil engineer, experienced and knowledgeable in the practice of soils engineering, shall:

1. Review all the engineering geology reports, and prepare final soils grading report;

2. Prepare the soils engineering reports required by the 1998 CBC, Appendix Chapter 33, Section 3309.5 – Soils Engineering Report, and Section 3309.6 – Engineering Geology Report;

3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 1998 CBC, Appendix Chapter 33, section 3317, Grading Inspections;

4. Recommend field changes to the civil engineer and RE;

5. Review the geotechnical report, field exploration report, laboratory tests, and engineering analyses detailing the nature and extent of the site soils that may

be susceptible to liquefaction, rapid settlement or collapse when saturated under load; and

6. Prepare reports on foundation investigation to comply with the 1998 CBC, Chapter 18 section 1804, Foundation Investigations. This engineer shall be authorized to halt earthwork and to require changes; if site conditions are unsafe or do not conform with predicted conditions used as a basis for design of earthwork or foundations [1998 CBC, section 104.2.4, Stop orders].

C. The design engineer shall:

1. Be directly responsible for the design of the proposed structures and equipment supports;

2. Provide consultation to the RE during design and construction of the project;

3. Monitor construction progress to ensure compliance with LORS;

4. Evaluate and recommend necessary changes in design; and

5. Prepare and sign all major building plans, specifications and calculations.

D. The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the CBO, stating that the proposed final design plans, specifications, and calculations conform with all of the mechanical engineering design requirements set forth in the Energy Commission's Decision.

E. The electrical engineer shall:

1. Be responsible for the electrical design of the project; and

2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the names, qualifications and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the engineers within five days of the approval. If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

GEN-6: Prior to the start of an activity requiring special inspection, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 1998 CBC, Chapter 17, Section 1701, Special Inspections, Section, 1701.5 Type of Work (requiring special inspection), and Section 106.3.5, Inspection and observation program. All transmission facilities (lines, switchyards, switching stations, and substations) are covered by the **Transmission System Engineering** Conditions of Certification.

The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;

2. Observe the work assigned for conformance with the approved design drawings and specifications;

3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the CBO and the CPM for corrective action; and

4. Submit a final signed report to the RE, CBO, and CPM, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable provisions of the applicable edition of the CBC.

A certified weld inspector, certified by the American Welding Society (AWS), and/or American Society of Mechanical Engineers (ASME) as applicable, shall inspect welding performed on-site requiring special inspection (including structural, piping, tanks and pressure vessels).

Verification: At least 15 days prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next Monthly Compliance Report.

If the special inspector is subsequently reassigned or replaced, the project owner has five days in which to submit the name and qualifications of the newly assigned special inspector to the CBO for approval. The project owner shall notify the CPM of the CBO's approval of the newly assigned inspector within five days of the approval.

GEN-7: The project owner shall keep the CBO informed regarding the status of engineering and construction. If any discrepancy in design and/or construction is discovered in any work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend the corrective action required. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this Condition of Certification and, if appropriate, the applicable sections of the CBC and/or other LORS.

Verification: The project owner shall transmit a copy of the CBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next Monthly Compliance Report. If any corrective action is disapproved, the project owner shall advise the CPM, within five days, of the reason for disapproval, and the revised corrective action to obtain CBO's approval.

GEN-8: The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. When the work and the "as-built" and "as graded" plans conform to the approved final plans, the project owner shall notify the CPM regarding the CBO's final approval. The marked up "as-built" drawings for the construction of structural and architectural work shall be submitted to the CBO. Changes approved by the CBO shall be identified on the "as-built" drawings [1998 CBC, Section 108, Inspections]. The project owner shall retain one set of approved engineering plans, specifications and calculations at the project site or at another accessible location during the operating life of the project [1998 CBC, Section 106.4.2, Retention of plans].

Verification: Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM in the next Monthly Compliance Report, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work conforms to the final approved plans. After storing final approved engineering plans, specifications and calculations as described above, the project owner shall submit to the CPM a letter stating that the above documents have been stored and indicate the storage location of such documents.

GEN-9: Deleted. See General Conditions of Compliance.

CIVIL-1: Prior to the start of site grading, the project owner shall submit to the CBO for review and approval the following:

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;

3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and

4. Soils report as required by the 1998 CBC [Appendix Chapter 33, Section 3309.5, Soils Engineering Report and Section 3309.6, Engineering Geology Report].

Verification: At least 15 days prior to the start of site grading (or a lesser number of days mutually agreed to by the project owner and the CBO), the project owner shall submit the documents described above to the CBO for design review and approval. In the next Monthly Compliance Report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.

CIVIL-2: The resident engineer shall, if appropriate, stop all earthworks and construction in the affected areas when the responsible geotechnical engineer or civil engineer experienced and knowledgeable in the practice of soils engineering identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications and calculations to the CBO based on these new conditions. The project owner shall obtain approval from the CBO before resuming earthwork and construction in the affected area [1998 CBC, Section 104.2.4, Stop orders].

Verification: The project owner shall notify the CPM, within five days, when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. Within five days of the CBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the CBO's approval.

CIVIL-3: The project owner shall perform inspections in accordance with the 1998 CBC, Chapter 1, Section 108, Inspections; Chapter 17, Section 1701.6, Continuous and

Periodic Special Inspection; and Appendix Chapter 33, Section 3317, Grading Inspection. All plant site-grading operations for which a grading permit is required shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO, and the CPM. The project owner shall prepare a written report detailing all discrepancies and non-compliance items, and the proposed corrective action, and send copies to the CBO and the CPM.

Verification: Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the CBO and the CPM a Non-Conformance Report (NCR), and the proposed corrective action. Within five days of resolution of the NCR, the project owner shall submit the details of the corrective action to the CBO and the CPM. A list of

NCRs, for the reporting month, shall also be included in the following Monthly Compliance Report.

CIVIL-4: After completion of finished grading and erosion and sedimentation control and drainage facilities, the project owner shall obtain the CBO's approval of the final "as graded" grading plans, and final "as-built" plans for the erosion and sedimentation control facilities [1998 CBC, Section 109, Certificate of Occupancy].

Verification: Within 30 days of the completion of the erosion and sediment control mitigation and drainage facilities, the project owner shall submit to the CBO the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their intended purposes. The project owner shall submit a copy of this report to the CPM in the next Monthly Compliance Report.

STRUC-1: Prior to the start of any increment of construction of any major structure or component listed in **Table 1** of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans and drawings for project structures. Proposed lateral force procedures, designs, plans and drawings shall be those for the following items (from **Table 1**, above):

1. Major project structures;
2. Major foundations, equipment supports and anchorage;
3. Large field fabricated tanks;
4. Turbine/generator pedestal; and
5. Switchyard structures.

Construction of any structure or component shall not commence until the CBO has approved the lateral force procedures to be employed in designing that structure or component.

The project owner shall:

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;

2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (i.e., highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications [1998 CBC, Section 108.4, Approval Required];

3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the designated major structures at least 60 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation [1998 CBC, Section 106.4.2, Retention of plans and Section 106.3.2, Submittal documents]; and

4. Ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations and specifications shall be signed and stamped by the responsible design engineer [1998 CBC, Section 106.3.4, Architect or Engineer of Record].

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of any increment of construction of any structure or component listed in Table 1 of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO, with a copy to the CPM, the responsible design engineer's signed statement that the final design plans, specifications and calculations conform with all of the requirements set forth in the Energy Commission's Decision.

If the CBO discovers non-conformance with the stated requirements, the project owner shall correct and resubmit the plans to the CBO within 20 days of receipt of the nonconforming submittal with a copy of the transmittal letter to the CPM.

The project owner shall submit to the CPM a copy of a statement from the CBO that the proposed structural plans, specifications, and calculations have been approved and are in conformance with the requirements set forth in the applicable LORS.

STRUC-2: The project owner shall submit to the CBO the required number of sets of the following documents related to work that has undergone CBO design review and approval:

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);

2. Concrete pour sign-off sheets;

3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);

4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and

5. Reports covering other structural activities requiring special inspections shall be in accordance with the 1998 CBC, Chapter 17, Section 1701, Special Inspections, Section 1701.5, Type of Work (requiring special inspection), Section 1702, Structural Observation and Section 1703, Nondestructive Testing.

Verification: If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies to the CBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the Condition(s) of Certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

The project owner shall transmit a copy of the CBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall advise the CPM, within five days, the reason for disapproval, and the revised corrective action to obtain the CBO's approval.

STRUC-3: The project owner shall submit to the CBO design changes to the final plans required by the 1998 CBC, Chapter 1, Section 106.3.2, Submittal documents, and Section 106.3.3, Information on plans and specifications, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give the CBO prior notice of the intended filing.

Verification: On a schedule suitable to the CBO, the project owner shall notify the CBO of the intended filing of design changes, and shall submit the required number of sets of revised drawings and the required number of copies of the other above-mentioned documents to the CBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the Monthly Compliance Report, when the CBO has approved the revised plans.

STRUC-4: Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in Chapter 3, Table 3-E of the 1998 CBC shall, at a minimum, be designed to comply with Occupancy Category 2 of the 1998 CBC.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous materials, the project owner shall submit to the CBO for design review and approval final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

The project owner shall send copies of the CBO approvals of plan checks to the CPM in the following Monthly Compliance Report. The project owner shall also transmit a copy of the

CBO's inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

MECH-1: Prior to the start of any increment of major piping or plumbing construction, the project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in Table 1, Condition of Certification GEN 2, above. Physical layout drawings and drawings not related to code compliance and life safety need not be submitted. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of said construction [1998 CBC, Section 106.3.2, Submittal Documents, Section 108.3, Inspection Requests, Section 108.4, Approval Required; 1998 California Plumbing Code, Section 103.5.4, Inspection Request, Section 301.1.1, Approval].

The responsible mechanical engineer shall stamp and sign all plans, drawings and calculations for the major piping and plumbing systems subject to the CBO design review and approval, and submit a signed statement to the CBO when the said proposed piping and plumbing systems have been designed, fabricated and installed in accordance with all of the applicable laws, ordinances, regulations and industry standards [Section 106.3.4, Architect or Engineer of Record], which may include, but not be limited to:

American National Standards Institute (ANSI) B31.1 (Power Piping Code);

ANSI B31.2 (Fuel Gas Piping Code);

ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);

ANSI B31.8 (Gas Transmission and Distribution Piping Code);

Title 24, California Code of Regulations, Part 5 (California Plumbing Code);

Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems);

Title 24, California Code of Regulations, Part 2 (California Building Code); and Specific City/County code.

The CBO may deputize inspectors to carry out the functions of the code enforcement agency [1998 CBC, Section 104.2.2, Deputies].

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of any increment of major piping or plumbing construction

listed in Table 1, Condition of Certification GEN-2 above, the project owner shall submit to the CBO for design review and approval the final plans, specifications and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

The project owner shall transmit to the CPM, in the Monthly Compliance Report following completion of any inspection, a copy of the transmittal letter conveying the CBO's inspection approvals.

MECH-2: For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal-OSHA), prior to operation, the code certification papers and other documents required by the applicable LORS. Upon completion of the installation of any pressure vessel, the project owner shall request the appropriate CBO and/or Cal-OSHA inspection of said installation [1998 CBC, Section 108.3 – Inspection Requests].

The project owner shall:

1. Ensure that all boilers and fired and unfired pressure vessels are designed, fabricated and installed in accordance with the appropriate section of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, or other applicable code. Vendor certification, with identification of applicable code, shall be submitted for prefabricated vessels and tanks; and

2. Have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications and calculations conform to all of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of on-site fabrication or installation of any

pressure vessel, the project owner shall submit to the CBO for design review and approval, the above listed documents, including a copy of the signed and stamped engineer's certification, with a copy of the transmittal letter to the CPM.

The project owner shall transmit to the CPM, in the Monthly Compliance Report following completion of any inspection, a copy of the transmittal letter conveying the CBO's and/or Cal-OSHA inspection approvals.

MECH-3: Prior to the start of construction of any heating, ventilating, air conditioning (HVAC) or refrigeration system, the project owner shall submit to the CBO for design review and

approval the design plans, specifications, calculations and quality control procedures for that system. Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets.

The project owner shall design and install all HVAC and refrigeration systems within

buildings and related structures in accordance with the CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the CBO's inspection and approval of said construction. The final plans, specifications and calculations shall include approved criteria, assumptions and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications and calculations conform with the applicable LORS [1998 CBC, Section 108.7, Other Inspections; Section 106.3.4, Architect or Engineer of Record].

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required HVAC and refrigeration calculations, plans and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the CBC and other applicable codes, with a copy of the transmittal letter to the CPM.

ELEC-1: Prior to the start of any increment of electrical construction for electrical equipment and systems 480 volts and higher, listed below, with the exception of underground duct work and any physical layout drawings and drawings not related to

code compliance and life safety, the project owner shall submit, for CBO design review

and approval, the proposed final design, specifications and calculations [CBC 1998, Section 106.3.2, Submittal documents]. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS [1998 CBC, Section 108.4, Approval Required, and Section 108.3, Inspection Requests]. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

A. Final plant design plans to include:

1. one-line diagrams for the 13.8 kV, 4.16 kV and 480 V systems; and

2. system grounding drawings.

B. Final plant calculations to establish:

1. short-circuit ratings of plant equipment;
2. ampacity of feeder cables;
3. voltage drop in feeder cables;
4. system grounding requirements;
5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 480 V systems;
6. system grounding requirements; and
7. lighting energy calculations.

C. The following activities shall be reported to the CPM in the Monthly Compliance Report:

1. receipt or delay of major electrical equipment;
2. testing or energizing of major electrical equipment; and
3. a signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission Decision.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for design review and approval the above listed documents. The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

Geology and Paleontolgical Resources

GEO-1: Prior to the start of construction, the project owner shall assign to the project an engineering geologist(s) and a geotechnical engineer(s) certified by the State of California, to carry out the duties required by the 2001 edition of the California Building Code (CBC) Appendix Chapter 33, Section 3309.4. The certified engineering geologist(s) and geotechnical engineer(s) assigned must be approved by the CBO and submitted to the Compliance Project Manager (CPM) for concurrence.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CPM) prior to the start of construction, the project owner shall submit to the CBO for approval the resume and license number(s) of the certified engineering geologist(s) and geotechnical engineer(s) assigned to the project. The submittal should include a statement that CPM concurrence is needed. The CBO and CPM will approve or disapprove of the engineering geologist(s) and geotechnical engineer(s) and will notify the project owner of its findings within 15 days of receipt of the submittal. If the engineering geologist(s) and geotechnical engineer(s) are subsequently replaced, the project owner shall submit for approval the resume(s) and license number(s) of the newly assigned individual(s) to the CBO and CPM. The CBO and CPM will approve or disapprove of the engineering geologist(s) and geotechnical engineer(s) and will notify the project owner of the findings within 15 days of receipt of the notice of personnel change.

GEO-2: Prior to the initiation of ground disturbance, the owner shall have a liquefaction analysis conducted for the power plant site and adjacent existing cut slope to the east. The liquefaction analysis shall be implemented by following the recommended procedures contained in *Recommended Procedures for Implementation of California Division of Mines and Geology Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California* dated March 1999. (The document is available through the Southern California Earthquake Center at the University of Southern California.)

Verification: The project owner shall include in the application for a grading permit (see Condition of Certification **GEO-5**) a report of the liquefaction analysis and a summary of how the results of this analysis were incorporated into the project foundation and grading plan design for the CBO's review and comment. A copy of the liquefaction analysis and summary of incorporated results shall be sent to the CPM prior to grading.

GEO-3: Prior to completion of the final design of the project, the owner shall have a slope stability analysis conducted for the existing cut slope east of Units 1 and 2. The analysis shall consider both static and earthquake conditions, as well as the effects of any liquefaction of the foundation soils. Since cohesionless soils may be present, the proposed 1.5:1 perimeter excavation should also be evaluated for stability, but only for static conditions.

Verification: The project owner shall include in the application for a grading permit (see Condition of Certification **GEO-5** below) a report of the slope stability analysis and a summary of how the results of this analysis were incorporated into the project foundation and grading plan for the CBO's review and comment. A copy of the CBO's comments shall be sent to the CPM prior to grading.

GEO-4: Applicant shall designate and use a Coastal or Geotechnical Engineer, or geologist familiar with geomorphology, to conduct a shoreline monitoring program and assess erosion on the beach area and at the foot of the revetment on an annual basis for at least ten years. Applicant shall report such results to the CPM and California Coastal Commission annually.

A detailed baseline survey is required, along with some historical research including air photos, a summary of past beach nourishment and shoreline damage. Sand sampling and testing shall be conducted. A series of onshore/offshore shore-normal transects every few hundred feet shall be conducted 4 times per year. Annually, photos from set positions can be taken (e.g. from the groin and from a high elevation in the plant). Shoreline response during and after a major storm will be documented.

After ten continuous years of monitoring, the owner shall prepare and submit a final report. The final report will serve as the annual report for year ten and will include a summary of findings over the 10-year period. Based on the ten-year summary report, the final report will include recommendations for either:

- continued monitoring on an annual basis in accordance with the established protocol if there is evidence of an adverse shoreline erosion condition;
- modifications to the monitoring program and continuation of the program, if modifications are warranted to increase, decrease, otherwise adjust the type and frequency of data collected; or,
- suspension of monitoring due to absence of an adverse shoreline erosion condition related to construction and operation of the ESPR.

Verification: At least thirty days prior to commencing construction, the Applicant shall designate the geologist and submit for approval the resumes of the engineer or geologist to the CBO and CPM. The engineer or geologist shall be experienced in shoreline monitoring, and understand coastal processes. Applicant shall submit as part of its annual compliance report the results of the assessment. Applicant shall also, at that time, forward the results to the California Coastal Commission and the City of El Segundo with a copy of the transmittal letter to the CPM. During the first 3 years following commencement of construction, the Applicant shall submit the above mentioned quarterly reports. The tenth annual report shall contain the final report.

GEO-5: The assigned engineering geologist(s) shall carry out the duties required by the 1998 CBC, Appendix Chapter 33, Section 3309.4 Engineered Grading Requirements, and Section 3318.1 – Final Reports. Those duties are:

- Prepare the Engineering Geology Report. This report shall accompany the Plans and Specifications when applying to the CBO for the grading permit.
- Monitor geologic conditions during construction.
- Prepare the Final Engineering Geology Report.

The Engineering Geology Report required by the 1998 CBC Appendix Chapter 33, Section 3309.3 Grading Designation, shall include an adequate description of the geology of the site, conclusions, and recommendations regarding the effect of geologic conditions on the proposed development, and an opinion on the adequacy of the site for the intended use as affected by geologic factors.

The Final Engineering Geology Report to be completed after completion of grading, as required by the 1998 CBC Appendix Chapter 33, Section 3318.1, shall contain the following: A final description of the geology of the site and any new information disclosed during grading; and the effect of same on recommendations incorporated in the approved grading plan. The engineering geologist shall submit a statement that, to the best of his or her knowledge, the work within their area of responsibility is in accordance with the approved Engineering Geology Report and applicable provisions of this chapter.

Verification:

(1) Within 15 days after submittal of the application(s) for grading permit(s) to the CBO, the project owner shall submit a signed statement to the CPM stating that the Engineering Geology Report has been submitted to the CBO as a supplement to the plans and specifications and that the recommendations contained in the report are incorporated into the plans and specifications.

(2) Within 90 days following completion of the final grading, the project owner shall submit copies of the Final Engineering Geology Report required by the 1998 CBC Appendix Chapter 33, Section 3318 Completion of Work, to the CBO and to the CPM.

GEO-6: The design for additional seawall or perimeter wall, including any necessary modifications to the existing seawall, shall be performed by a coastal engineer, geotechnical engineer, or engineering geologist, familiar with coastal processes and in accordance with the requirements of the California Coastal Commission Procedural

Memo #19 (July 29, 1992).

> If additional seawall is installed, performance of the seawall, with respect to shoreline erosion, will need to be addressed and verified in the shoreline monitoring program described under **GEO-4**. The wall should be textured and colored appropriately to minimize visual impacts.

Verification: Once a seawall design plan is available, the Applicant shall obtain approval of the design and construction methods from the CBO who will forward all approved plans and comments to the CPM. The CPM shall then forward this information to the Coastal Commission and the City of El Segundo.

Paleontological Resources

PAL-1: The project owner shall provide the CPM with the resume and qualifications of its Paleontological Resource Specialist (PRS) and Paleontological Resource Monitors (PRMs) for review and approval. If the approved PRS or one of the PRMs is replaced prior to completion of project mitigation and report, the project owner shall obtain CPM approval of the replacement.

> The resume shall include the names and phone numbers of contacts. The resume shall also demonstrate to the satisfaction of the CPM, the appropriate education and experience to accomplish the required paleontological resource tasks.
>
> As determined by the CPM, the PRS shall meet the minimum qualifications for a vertebrate paleontologist as described in the Society of Vertebrate Paleontologists (SVP) guidelines of 1995. The experience of the PRS shall include the following:
>
> 1. institutional affiliations or appropriate credentials and college degree;
> 2. ability to recognize and recover fossils in the field;
> 3. local geological and biostratigraphic expertise;
> 4. proficiency in identifying vertebrate and invertebrate fossils;
> 5. publications in scientific journals; and
> 6. the PRS shall have at least three years of paleontological resource mitigation and field experience in California, and at least one year of experience leading paleontological resource mitigation and field activities.
>
> The PRS shall obtain qualified paleontological resource monitors to monitor as necessary on the project. Paleontologic resource monitors (PRMs) shall have the equivalent of the following qualifications:

1. BS or BA degree in geology or paleontology and one year experience monitoring in California; or

2. AS or AA in geology, paleontology or biology and four years experience monitoring in California; or

3. Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.

Verification:

1. At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work.

2. At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project and stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM for approval. The letter shall be provided to the CPM no later than one week prior to the monitor beginning on-site duties.

3. Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PROJECT MAPS

PAL-2: The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant and all linear facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and the plan and profile drawings for the utility lines would normally be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and can be 1 inch = 40 feet to 1 inch = 100 feet range. If the footprint of the power plant or linear facility changes, the project owner shall provide maps and drawings reflecting these changes to the PRS and CPM.

If construction of the project will proceed in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Prior to work commencing on affected phases, the project owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the PRS shall consult weekly with the project superintendent or construction field manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

Verification:

1. At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings.
2. If there are changes to the footprint of the project, revised maps and drawings shall be provided at least 15 days prior to the start of ground disturbance.
3. If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within 5 days of identifying the changes.

PAL-3: The PRS shall prepare, and the project owner shall submit to the CPM for review and approval, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting and sampling activities and may be modified with CPM approval.

This document shall be used as a basis for discussion in the event that on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the Society of the Vertebrate Paleontologists (SVP, 1995) and shall include, but not be limited to, the following:

1. Assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking; construction monitoring; mapping and data recovery; fossil preparation and recovery; identification and inventory; preparation of final reports; and transmittal of materials for curation will be performed according to the PRMMP procedures;
2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and all conditions for certification;
3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units;
4. An explanation of why, how, and how much sampling is expected to take place and in what units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained beds;
5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed schedule for the monitoring;

6. A discussion of the procedures to be followed in the event of a significant fossil discovery, including notifications;

7. A discussion of equipment and supplies necessary for recovery of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;

8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meets the Society of Vertebrate Paleontologists standards and requirements for the curation of paleontological resources; and

9. Identification of the institution that has agreed to receive any data and fossil materials recovered, requirements or specifications for materials delivered for curation and how they will be met, and the name and phone number of the contact person at the institution; and,

10. A copy of the paleontological conditions of certification.

Verification: At least thirty (30) days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM. The PRMMP shall include an affidavit of authorship by the PRS, and acceptance of the project owner evidenced by a signature.

EMPLOYEE AWARENESS TRAINING PROGRAM

PAL-4: Prior to ground disturbance and for the duration of construction, the project owner and the PRS shall prepare and conduct weekly CPM-approved training for all project managers, construction supervisors and workers who operate ground disturbing equipment or tools. Workers to be involved in ground disturbing activities in sensitive units shall not operate equipment prior to receiving worker training. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern.

The Worker Environmental Awareness Program (WEAP) shall address the potential to encounter paleontological resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources. In-person training shall be provided for each new employee involved with ground disturbing activities, while these activities are occurring in highly sensitive geologic units, as detailed in the PRMMP. The in-person training shall occur within four days following a new hire for highly sensitive sites and as established by the PRMMP for sites of moderate, low, and zero sensitivity. Provisions will be made to provide the WEAP training to workers not fluent in English.

The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. For training in locations of high sensitivity, the PRS shall provide good quality photographs or physical examples of vertebrate fossils that may be expected in the area;
3. Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;
4. Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;
5. An informational brochure that identifies reporting procedures in the event of a discovery;
6. A Certification of Completion of WEAP form signed by each worker indicating that they have received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification:

1. At least 30 days prior to ground disturbance, the project owner shall submit the proposed WEAP including the brochure with the set of reporting procedures the workers are to follow.
2. At least 30 days prior to ground disturbance, the project owner shall submit the script and final video to the CPM for approval if the project owner is planning on using a video for interim training.
3. If an alternate paleontological trainer is requested by the owner, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval. Alternate trainers shall not conduct training prior to CPM authorization.
4. The project owner shall provide in the Monthly Compliance Report the WEAP copies of the Certification of Completion forms with the names of those trained and the trainer for each training offered that month. The Monthly Compliance Report shall also include a running total of all persons who have completed the training to date.

PAL-5: The PRS and PRM(s) shall monitor consistent with the PRMMP, all construction related grading, excavation, trenching, and auguring in areas where potentially fossil bearing materials have been identified. In the event that the PRS determines full time monitoring is not necessary in locations that were identified as potentially fossil-bearing in the PRMMP, the PRS shall notify and seek the concurrence of the CPM.

The PRS and PRM(s) shall have the authority to halt or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

1. Any change of monitoring different from the accepted schedule presented in the PRMMP shall be proposed in a letter from the PRS and the project owner to the CPM prior to the change in monitoring. The letter shall include the justification for the change in monitoring and submitted to the CPM for review and approval.

2. PRM(s) shall keep a daily log of monitoring of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.

3. The PRS shall immediately notify the project owner and the CPM of any incidents of non-compliance with any paleontological resources conditions of certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the conditions of certification.

4. For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM immediately (no later than the following morning after the find, or Monday morning in the case of a weekend) of any halt of construction activities.

Verification: The PRS shall prepare a summary of the monitoring and other paleontological activities that will be placed in the Monthly Compliance Reports. The summary will include the name(s) of PRS or monitor(s) active during the month; general descriptions of training and construction activities and general locations of excavations, grading, etc. A section of the report will include the geologic units or subunits encountered; descriptions of sampling within each unit; and a list of fossils identified in the field. A final section of the report will address any issues or concerns about the project relating to paleontologic monitoring including any incidents of non-compliance and any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place during the month, the project shall include a justification in summary as to why monitoring was not conducted.

The PRS shall submit the summary of monitoring and paleontological activities in the Monthly Compliance Report.

PAL-6: The project owner, through the designated PRS, shall ensure the recovery, preparation for analysis, analysis, identification and inventory, the preparation for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during the monitoring, data recovery, mapping, and mitigation activities related to the project.

Verification: The project owner shall maintain in their compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a period of three years after completion and approval of the CPM-approved PRR. The project owner shall be responsible to pay curation fees for fossils collected and curated as a result of paleontological monitoring and mitigation.

PAL-7: The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of the ground disturbing activities. The PRR shall include an analysis of the recovered fossil materials and related information and submitted to the CPM for review and approval.

> The report shall include, but not be limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the PRS that project impacts to paleontological resources have been mitigated.

Verification: Within ninety (90) days after completion of ground disturbing activities, including landscaping, the project owner shall submit the Paleontological Resources Report under confidential cover.

Certification of Completion of Worker Environmental Awareness Program
EL SEGUNDO POWER REDEVELOPMENT PROJECT (00-AFC-14)

This is to certify these individuals have completed a mandatory California Energy Commission approved Worker Environmental Awareness Program (WEAP). The WEAP includes pertinent information on Cultural, Paleontology & Biology Resources for all personnel (i.e. construction supervisors, crews and plant operators) working on-site or at related facilities. By signing below, the participant indicates that they understand and shall abide by the guidelines set forth in the Program materials. Please include this completed form in your Monthly Compliance Report.

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Cul Trainer: _____ Signature:_____ Date: ___/___/__
PaleoTrainer: _____ Signature:_____ Date: ___/___/__
Bio Trainer: _____ Signature:_____ Date: ___/___/__

Hazardous Materials

HAZARDOUS MATERIALS INVENTORY

HAZ-1 The project owner shall obtain the advance approval of the CPM if the facility intends to store, handle, use or move (or combination of these activities) a material, in quantities that exceed those specified in Title 40, CFR Part 355, Subpart J section 355.50.

Verification: The project owner shall provide to the CPM, in the Annual Compliance Report, a list of those hazardous materials designated as regulated substances as set forth in Title 40, CFR Part 355, Subpart J section 355.50. The list shall also include maximum quantities of these substances at the facility. Copies of the list should also be provided to the City of El Segundo Fire Department (CESFD) and the City of Manhattan Beach Fire Department (CMBFD).

BUSINESS PLAN REVISION

HAZ-2 The project owner shall update its existing Business Plan.

Verification: At least 45 days prior to the start-up of the ESPR project Units 5, 6 and 7, the owner shall undertake a hazardous materials floor plan exercise for each shift at the plant with the CESFD and provide a copy of the revised Business Plan, commented on by the CESFD, to the CPM. A copy of the revised Plan shall also be provided to the CMBFD.

RISK MANAGEMENT PLAN REVISION

HAZ-3 The project owner shall revise the existing CalARP Program Risk Management Plan (RMP). Similarly, the project owner shall also revise its existing RMP pursuant to the USEPA RMP Program. Both RMPs shall be expanded to include discussions to prevent and control the accidental release of ammonia from the pipeline. Those discussions shall elaborate on the various safety devices selected for the pipeline including double sleeve construction, provisions for backup safety devices, protective shut-in actions, emergency support systems, monitoring programs and personnel training, as a minimum. The shut-in actions shall include responses to pipeline overpressures and also leaks. Backup safety devices to be considered for the pipeline shall include sprinklers, sprays, deluge systems or equivalent systems. Special emphasis shall be placed on the deployment of such devices in the vicinity of the overpass at Vista Del Mar Boulevard in order to eliminate any vulnerabilities at that location.

Verification: At least 45 days prior to start-up of Units 5, 6, and 7, the project owner shall furnish a final copy of each updated RMP to the CPM, CESFD and CMBFD. An initial draft of the CalARP RMP shall be provided to the CPM and the CESFD for review and comments. The final CalARP RMP shall be approved by the CPM. Similarly, an initial draft of the USEPA RMP shall be provided to the CPM and the CESFD for review and comments, at the time it is submitted to the USEPA for review. The final copy of the USEPA RMP shall reflect recommendations of the CPM and the CESFD.

~~**HYDRAZINE ALTERNATIVES FEASIBILITY STUDY**~~

~~**HAZ-4** The project owner shall undertake a feasibility study for the substitution of the 35% hydrazine with a less hazardous chemical. Should the study conclude that substitution is infeasible or the project owner elects to continue the use of the 35% hydrazine, then the project owner shall develop and prepare a safety management plan focusing on the storage and handling of the hydrazine and the associated protective equipment requirements, handling techniques, personnel training, spill response procedures, detectors and alarms, as a minimum.~~

~~**Verification:** At least 45 days prior to start-up of Units 5, 6, and 7, the project owner shall furnish a final copy of either the feasibility study or the hydrazine storage and handling management plan, as appropriate, to the CPM, CESFD and CMBFD. All initial drafts shall be reviewed and commented upon by the CPM and CESFD. All final copies shall be approved by the CPM.~~

Land Use

LAND-1: The project owner shall ensure that the project and its associated facilities are in compliance with the affected local jurisdiction's applicable adopted county or municipal code requirements for the project site's development (e.g., setbacks, zone district requirements, design criteria, height, sign requirements, etc.).

The project owner shall submit to the applicable city/county planning department for review and comment, a development plan showing site dimensions, design and exterior elevation(s) and any other item(s) that may be required by the local jurisdiction's planning department to conduct a ministerial review of the project and its associated facilities in accordance with the jurisdiction's site development requirements. The city/county planning department shall have 60 calendar days to review the plan(s) and provide written comments to the project owner. The project owner shall provide a copy of the city/county planning department's written comments and a copy of the development plan to the CPM.

Verification: At least 90 calendar days prior to the site mobilization on the power plant project site and its associated facilities, the project owner shall submit the proposed development plan to the affected jurisdiction for review and comment. The project owner shall provide any comment letters received from the local jurisdiction along with the proposed development plan to the CPM for review and approval.

LAND-2: The project owner shall identify the secured lay down/staging area(s) for the project prior to site mobilization. The project owner shall provide a plot plan and location map showing the lay down/staging area(s) to the affected local jurisdiction(s) planning department(s) (i.e. County of Los Angeles, the City of El Segundo, City of Manhattan Beach, etc.) and to the Executive Director of the California Coastal Commission if located within the State designated

Coastal Zone for review and comment. The local jurisdiction(s) and the Executive Director (if applicable) shall have 60 calendar days to review the lay down/staging area(s) and provide written comments to the project owner. The project owner shall provide a copy of the local jurisdiction's and the Executive Director's (if applicable) written comments and a copy of the secure lay down/staging area(s) to the CPM for review and approval.

Verification: The project owner shall provide a copy of the lay down/staging area(s) to the affected local jurisdiction and the Executive Director of the California Coastal Commission (if applicable) for written comment. At least 30 days prior to the start of site mobilization, the project owner shall provide any plan(s), map(s) showing the secured laydown and staging area(s) along with any comment letters from the local jurisdiction and the California Coastal Commission to the CPM for review and approval.

LAND-3 The project owner shall provide appropriate evidence of compliance with Federal Aviation Administration (FAA) regulations regarding the marking and/or lighting of the project's new exhaust stacks.

Verification: Pursuant to the schedule contained in Condition of Certification **TRANS-6,** the project owner shall submit copies of the FAA Form 7460-1 with copies of the FAA response to Form 7460-1 to the CPM.

LAND-4: The project owner shall either bore the proposed sewer line under 45th Street in the City of Manhattan Beach or use conventional excavation techniques using steel cover plates to allow traffic to have access to the Strand parking lot at all times. The time period necessary to complete the 45th Street sewer excavation/trenching and connection shall be kept to a minimum. The Applicant shall obtain the required encroachment permit(s) from the local government of jurisdiction(s). The sewer line shall be constructed during the off-peak season of September to May.

Verification: The project owner shall submit to the City of Manhattan Beach Public Works Department an encroachment permit application for their review and approval and to the CPM for final approval. The permit application shall include a description of the method that would be used to complete any excavations in 45th Street. The application shall include the proposed time to begin and complete the sewer line connection. Also, the permit application shall illustrate how the construction crew and traffic control will ensure that access to the parking lot is not disrupted.

The project owner shall monitor the construction of the sewer line in the 45th Street right-of way at all times and promptly notify the City of Manhattan Beach Public Works Department and CPM of any difficulties experienced.

Prior to any ground disturbance within the 45th Street public right-of-way a copy of the City of Manhattan Beach approved/issued encroachment permit shall be submitted to the CPM. The CPM or City of Manhattan Beach designated representative may conduct random site visits to verify compliance, and the CPM may temporarily stop construction to ensure access is maintained.

LAND-5: The project owner shall provide written notification to the CPM when any plans for use of the abandoned fuel tank farm area (Parcel 2) are developed and indicate whether the project owner believes such plans are subject to the Energy Commission's permitting authority in accordance to the Warren-Alquist Act. The written notification shall include a description of the development and an analysis of which agency has proper jurisdiction over the development according to the enacted laws, ordinances and standards in effect at the time such development is to be proposed.

Verification: The project owner shall provide written notification to the planning departments of the City of El Segundo and the City of Manhattan Beach and to the Executive Director of the California Coastal Commission who shall have 30 calendar days to provide written comments to the CPM to review. At least 60 days prior to submitting any applications to any other agency for development of the abandoned fuel tank farm area (Parcel 2); the project owner shall provide a copy of the written notification to the CPM. The project owner shall also provide copies of the written notification sent to the Cities of El Segundo, Manhattan Beach and to the Executive Director of the California Coastal Commission to the CPM.

LAND–6: The abandoned fuel storage tanks on Parcel 2 shall be removed prior to the start of commercial operation of the new generating units. Any site remediation and/or soil restoration activities required by appropriate authorities shall be completed following tank removal.

Following site remediation, the tank farm area shall be paved and landscaped in accordance with the landscape plan submitted and approved pursuant to condition of certification, VIS-2. The tank farm uses will be restricted to parking in the designated parking areas and approved uses in the paved area south of the designated parking area. Approved uses include temporary equipment staging and overflow parking during maintenance evolutions. The paved area shall not be used for permanent storage of vehicles, equipment or materials.

Verification: The project owner shall submit a detailed schedule for the removal of the fuel storage tanks, site remediation and/or soil restoration to the CPM for review and approval prior to the start of construction.

LAND-7: The project owner shall provide copies of final grading and drainage plans to the planning departments of the Cities of El Segundo and Manhattan Beach.

Verification: Pursuant to the schedule contained in Condition of Certification **CIVIL-1** the project owner shall also submit copies of the proposed drainage structures and grading plan to the City of El Segundo planning department and the City of Manhattan Beach planning department concurrent with their submittal to the Chief Building Official (CBO) and CPM.

LAND–8: The project owner shall maintain lease rights for the tideland and submerged land owned by the State of California leased via the California State Lands Commission.

Project owner shall provide copies to the CPM of all new or amended leases and all relevant correspondence between the project owner and the State Lands Commission regarding lease terms.

Verification: The project owner shall provide the CPM with a copy of submitted lease applications filed with the State Lands Commission and other relevant correspondence. The project owner shall submit to the CPM a copy of all new or amended lease agreements with the California State Lands Commission.

LAND–9: The project owner shall provide copies of the final perimeter landscape plan(s) to the CPM. The landscape plans shall identify the area to be designated for public use, subject to restrictions for security and public safety as determined by the CPM. The project owner shall install public park-type benches within the public use area along the west property line of the ESGS property.

Verification: The public park-type benches shall be installed pursuant to the schedule contained in Condition of Certification **VIS-2**. Within 14 days after completion of the public use area, the project owner shall contact the CPM to request a final inspection.

~~**LAND-10:** Project pre-construction and construction activity shall not prevent public use of the County maintained Class 1 bicycle path. The project owner shall maintain public access along the bicycle path that borders the El Segundo Generating Station. The project owner shall repair any damage to the bicycle path that is caused by preconstruction and construction activities conducted for the project.~~

~~**Verification:** The project owner shall complete any repair to the bicycle path pursuant to the schedule contained in Visual Resources Condition of Certification **VIS-3**.~~

~~The CPM, the designated representative of the affected local jurisdiction(s) and the designated representative of the Coastal Commission may conduct random site visits to verify compliance. Also, the CPM will investigate filed complaints to ensure compliance.~~

LAND 10: Construction of beach delivery ramp requiring dredging of beach and temporary construction of ramp In addition, ramp construction will require temporary grading of the beach and introduction of sand to support construction of the temporary delivery ramp.

ESPR will prepare and deliver a Pre-Construction notification to the Army Corps of Engineers, Los Angeles office.

Verification: The project owner will comply with the Nationwide Permit #33 requirements for dredging of the beach and surf zone areas and construction of the ramp.

The CPM, the designated representative of the State Lands Commission and the designated representative of the Army Corps of Engineers may conduct random site visits to verify compliance. Also, the CPM will investigate filed complaints to ensure compliance.

LAND-11: Project pre-construction and construction activity will temporarily prevent public use of the County maintained Class 1 bicycle path.

The County of LA has provided the following Bicycle Trail Special Provisions:

If the existing bicycle trail width must be reduced to perform necessary work, access around the construction site shall be maintained with a minimum of eight feet of bicycle trail width to the greatest extent possible. In that case, construction signs warning "CONSTRUCTION AHEAD" and "BIKEWAY NARROWS" must be posted in advance of the site on all approaches along with delineators and barricades for channelization. If at least eight feet of bicycle trail cannot be provided, construction signs warning "CONSTRUCTION AHEAD" and "WALK BIKE" must be posted in advance of the site on all approaches. Where bicyclists are instructed to walk their bikes, flagmen must be present at all approaches. Delineators or barricades must also be placed to channelize pedestrians past the work site.

If the existing bicycle trail must be closed to perform the necessary work, LA County recommends that the bicyclists use existing access ramps/gate at <u>LOCATION N</u> and at <u>LOCATION S</u> as a detour around construction site. The bicycle trail must be adequately barricaded immediately south of the access ramps/gates at LOCATION N and immediately north of the access ramps/gates at LOCATION S to keep bicycles out of the construction site. Signing advising of the closure should be posted north of LOCATION N for southbound bicyclists and south of LOCATION S for northbound Bicyclists. Signage advising of the closure shall be posted at the entrance of each of the access gates at <u>LOCATION A</u>, <u>LOCATION B</u>, etc. The signage shall read "BIKE PATH SUBJECT TO CLOSURE FROM LOCATION N TO LOCATION S FROM DATE TO DATE" and shall include laminated location maps depicting the projects limits and the location of the sign relative to the project limits.

The Los Angeles County Beach and Harbor Division Department's Bikeway Coordinator must be contacted at (626) 458-3940 at least one month in advance to advise him/her of the anticipated move-in date. The above mentioned signs must be posted at least two weeks in advance of the start of construction. The Bikeway Coordinator must be contacted within one working day after placement of the required signing and within one working day after reopening of the bicycle trail. Any other details on the signing and barricading requirements can be found in the appropriate section within the project specifications.

If feasible, the contractor must make the bicycle trail operable on weekends and holidays by removing barricades. The bicycle trail at the project site must be completely free of obstructions, swept clean, and have a minimum of eight-foot vertical clearance, although ten feet is desired. If two-foot-wide shoulder cannot be maintained, adequate warning devices should be installed.

After project construction is completed and prior to the field acceptance of the project the bicycle trail pavement and striping shall be restored to its preconstruction condition.

The project-specific text, which is underline and in capital letters, will be provided by this Division upon review of final plans.

Verification: The project owner will comply with signage, schedule, barricade and detouring requirements (as provided by the County of L.A.) associated with the construction and delivery activities that will interrupt or re-route the bicycle path. The project owner shall complete any repair to the bicycle path pursuant to the schedule contained in Visual Resources Condition of Certification VIS-3.

The CPM, the designated representative of the affected local jurisdiction(s) and the designated representative of the Coastal Commission may conduct random site visits to verify compliance. Also, the CPM will investigate filed complaints to ensure compliance.

LAND 12:

Project pre-construction and construction activity will temporarily prevent public use of the beach property fronting the ESRP project.

Verification: The project owner will comply with local beach use ordinances as applicable to construction activities.

The CPM, the designated representative of the affected local jurisdiction(s) to verify compliance. Also, the CPM will investigate filed complaints to ensure compliance.

Noise

NOISE-1: At least 15 days prior to site mobilization, the project owner shall notify all residents, property owners, and business owners within one-half mile of the site, and the City of Manhattan Beach, the City of El Segundo, and L.A. County Lifeguard Headquarters, by mail and/or other effective means, of the commencement of project construction. At the same time, the project owner shall establish and disseminate a 24-hour "hotline" telephone number for use by the public to report any undesirable noise conditions associated with the construction of the project. This telephone number shall also be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year. The telephone shall be located in an area that is likely to be staffed, and, if the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended.

Verification: The project owner shall transmit to the CPM in the first Monthly Construction Report following site mobilization, a statement, signed by the project manager, attesting that the above notification has been performed, and describing the method of that notification. This statement shall also attest that the telephone number has been established and posted at the site.

NOISE-2: Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints as soon as possible.

- The project owner shall establish and disseminate a 24-hour "hotline" telephone number for use by the public to report any undesirable noise conditions associated with the project. The telephone shall be located in an area that is likely to be staffed, and, if the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended.

- The project owner shall designate a noise monitoring officer for each construction shift, and for the daytime shift after the plant is placed into service. The noise monitoring officer shall be trained in the use of a sound level meter, and shall be empowered to halt any construction activities causing or likely to cause a violation of the Conditions of Certification herein. The noise monitoring officer shall carry at all times an operable portable electronic device (such as telephone or pager) to receive any incoming "hotline" call.

- The noise monitoring officer shall log each noise complaint on a CPM-approved complaint form and shall attempt to resolve the complaint.

- For construction noise complaints received outside of the construction hours and days allowed as described by Condition of Certification **NOISE-8**, the noise monitoring officer shall take immediate steps to determine whether power plant construction is

causing the noise and, if so, to reduce the noise level of that activity or take other appropriate action to remedy the complaint as quickly as possible (not to exceed one hour) in order to comply with the Conditions of Certification.

- For construction noise complaints, the noise monitoring officer shall contact the complainant within the hour, if requested by the complainant, with information on the status and resolution of the complaint.
- In the event of construction noise complaints for two consecutive periods outside of which construction is specifically allowed by **NOISE-8**, either from a single affected residence, from multiple residences, or businesses, the project owner shall monitor noise levels at the receptor(s) for no less than the following two consecutive periods.
- The noise monitoring officer, as appropriate, shall measure site fence-line noise levels, and/or measure noise levels at the complainant's property line, to assure compliance.
- The project owner shall attempt to contact the person(s) making a plant operations noise complaint within 24 hours, and shall conduct an investigation to determine the source of noise related to the complaint.
- If the noise is related to plant operations, the project owner shall take all feasible measures to reduce the noise at its source as soon as possible.
- If the noise complaint is not resolved to the satisfaction of the complainant, including the time frame for resolution, the noise monitoring officer shall provide the Commission's toll free compliance telephone number (1-800-858-0784 unless otherwise specified by the CPM).
- Within 24 hours of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form, or similar instrument approved by the CPM, with the City of El Segundo and City of Manhattan Beach, and with the CPM, documenting the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 3-day period, the project owner shall submit a progress report and a proposed mitigation schedule, subject to the approval of the CPM, to the CPM and the affected City within 5 days of receiving the complaint.
- Following resolution of the noise complaint, the project owner shall submit an updated Noise Complaint Resolution Form and a report to the CPM and the affected City documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts; and if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant’s satisfaction.

Verification: The project owner shall provide to the CPM, in the applicable Monthly and/or Annual Compliance Report, a listing of noise complaints received in that time period, and the status of resolution of each complaint, including all those which have not yet been resolved.

NOISE-3: Prior to site mobilization, the project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal-OSHA standards**.**

Verification: At least 30 days prior to site mobilization, the project owner shall submit to the CPM the above referenced program for review and approval. The project owner shall make the program available to OSHA upon request.

NOISE-4: A low-pressure continuous steam blow or other equivalent low-pressure process shall be employed. Prior to site mobilization, the project owner shall submit a

description of this process, with expected noise levels and projected hours of execution, to the CPM, who shall review the proposal with the objective of ensuring that the resulting noise level does not exceed the nighttime ambient hourly L50 value determined in **NOISE-6** plus 5 decibels at the nearest residential property line. Project owner shall strive to avoid nighttime steam blows. If nighttime low pressure steam blows are unavoidable, these low pressure steam blows shall not exceed nighttime ambient hourly L50 value determined in **NOISE-6** plus 2 decibels at the nearest residential property line during the hours 6:00 p.m. to 7:30 a.m. Copies of the process description and predicted noise levels shall be provided to the Cities of Manhattan Beach and El Segundo.

Verification: At least 15 days prior to any low-pressure continuous steam blow, the project owner shall submit to the CPM drawings or other information describing the steam blow process, including the noise levels expected and the projected time schedule for execution of the process.

NOISE-5: At least 15 days prior to the first steam blow(s), the project owner shall notify the Cities of El Segundo and Manhattan Beach, L.A. County Lifeguard Headquarters, and all residents, property owners and business owners within one mile of the site of the planned steam blow activity, and shall make the notification available to other area residents in an appropriate manner. The notification may be in the form of letters to the area residences, telephone calls, fliers and/or other effective means. The notification shall include a description of the purpose and nature of the steam blow(s), the proposed schedule, the expected noise levels and potential hazards associated with them, the “hotline” phone number where people register complaints, and the explanation that it is a one-time operation and not a part of normal plant operations.

Verification: Within 5 days of notifying these entities, the project owner shall send a letter to the CPM confirming that there has been appropriate notification to the residents, property owners, Cities and businesses of the planned steam blow activities, including a description of the method(s) of that notification.

NOISE-6: The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the project will not cause resultant noise levels to exceed the ambient median noise level (L50) at residential receivers by 2 decibels or more, and that the noise due to plant operations will otherwise comply with the noise standards of the El Segundo and Manhattan Beach Municipal Codes. No new pure tone components may be introduced. No single piece of equipment shall be allowed to stand out as a source of noise. Steam relief valves shall be adequately muffled.

A. Determine the ambient noise level (L50) at Residential Receivers. Prior to site mobilization , the project owner shall prepare and submit to the City of El Segundo and City of Manhattan Beach for review and comment, and to the CPM for review and approval, a Pre-Construction Noise Survey Plan. This plan will indicate the survey procedure and methodology for establishing the ambient noise level at nearby residential receivers. At a minimum, the plan will include the following:

- The project owner will conduct a 30-day continuous community noise survey at a residential receptor (on 45th Street in Manhattan Beach), selected by the CPM in cooperation with the City of Manhattan Beach. This pre-construction survey shall be conducted during the period of June 1 to September 30. Hourly Leq, L50 and L90 values shall be measured.

- Existing ESGS Units 3 and 4 shall be operating normally during the course of the survey, and the levels of plant operation will be documented during the survey. The plan will establish a range of acceptable ("normal") operating conditions suitable for the purposes of these studies.

- A simultaneous control measurement will be conducted within the project boundary. The site shall be selected to ensure that the dominant noise source will be the surf, requiring a clear line of sight to the surf. A location near the southwest project site corner is preferred to minimize the potential for noise from the existing power plant to influence the surf noise measurements. Wave height and other surf conditions, and any unusual environmental conditions occurring during the survey period shall be documented.

- For each of the days of noise data collected at each receptor, the arithmetic average median noise level (L50) shall be computed for the quietest consecutive 4-hour period. The resultant average median noise levels shall then be averaged arithmetically to calculate the relationship between surf noise levels and ambient noise levels along the northern side of the El Porto Community.

- If the initial 30-day measurement data, in the judgment of the CPM in consultation with the City of Manhattan Beach, fail to demonstrate a consistent relationship of surf and ambient noise levels, the measurement will be repeated until a consistent relationship can be established.

Following approval of the Survey Plan, and prior to site mobilization, the project owner shall implement the survey and present the results in a Pre-Construction Noise Survey Report to the Cities of El Segundo and Manhattan Beach and to the CPM. The Report will include a discussion of the ambient noise level taking into consideration all relevant factors, such as plant operating conditions, surf and wind conditions.

B. Conduct post-construction survey. As soon as feasible, within the time frame described below and after Units 5, 6 and 7 first achieve a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct short-term survey noise measurements at monitoring sites ST-1, ST-2, ST-3 and ST-12 (as described in the AFC, Section 5.12, Figure 5.12-3, as amended May 4, 2001). "In addition, the Applicant shall conduct a 30-day community noise survey at the same receptor locations used for the 30-day noise measurement cited in Section A above."

   The post-project community noise survey shall be conducted between June 1 and September 30, using the methods described in Item A. above. The post construction survey shall also include measurement of one-third octave band sound pressure levels at each of the above locations to ensure that no new pure tone noise components have been introduced. If environmental conditions prevent completion of the post-construction community noise survey in a timely manner, then the survey shall be completed as soon as conditions allow.

   Following the post-construction survey, the project owner shall present the results in a Post-Construction Noise Survey Report to the Cities of El Segundo and Manhattan Beach and to the CPM. The Report will include a discussion of the relationships between surf and ambient noise levels.

C. Implement Tank Removal Noise Mitigation if Required. Mitigation measures shall be implemented to reduce noise levels to a level of compliance if the results from the post-construction noise survey at the residential receptor location indicate that the ambient median noise level (L50) has increased by 2 decibels or more due to facility operation, as determined by the relationship between surf and ambient noise levels obtained from the pre-construction survey. The project owner shall present the proposed mitigation measures to the Cities of El Segundo and Manhattan Beach and to the CPM.

D. Implement Pure Tone Mitigation if Required. If a facility-related pure tone is found to be present at any of the above monitoring sites, mitigation measures shall be implemented to eliminate the pure tone. For the purpose of this condition, the State of California's Model Community Noise Control Ordinance defines a pure tone. The project owner shall present the proposed mitigation measures to the Cities of El Segundo and Manhattan Beach and to the CPM.

E. Implement Plant Noise Mitigation if Required. If the results of noise measurements at ST-1, or ST-12 indicate that the ambient noise level has increased by more than 5 decibels due to facility operation, as compared with the baseline noise measurements

conducted on July 20 and 21, 2000, the owner will implement mitigation measures to reduce the noise at those locations to comply with the Municipal Code of the City of El Segundo. The project owner shall present the proposed mitigation measures to the Cities of El Segundo and Manhattan Beach and to the CPM.

Verification:
1. Pre-Construction Survey and Determination of Ambient Noise Level.

a) At least 60 days prior to site mobilization, the project owner shall provide the Pre-Construction Noise Monitoring Survey Plan to the CPM for review and approval.
b) Within 30 days of completion of the survey, the project owner shall provide to the CPM for review and approval the results of the pre-construction noise survey.

2. Post-construction Survey. Within 45 days after completing the post-construction surveys, the project owner shall submit a summary report of the survey to the CPM. Included in the report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures.

3. Mitigation Implementation. If mitigation is required, then upon completion of installation of these measures, the project owner shall submit to the CPM a summary report of a new noise survey, performed as described in paragraph B and showing compliance with this condition.

NOISE-7: Within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility. The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal

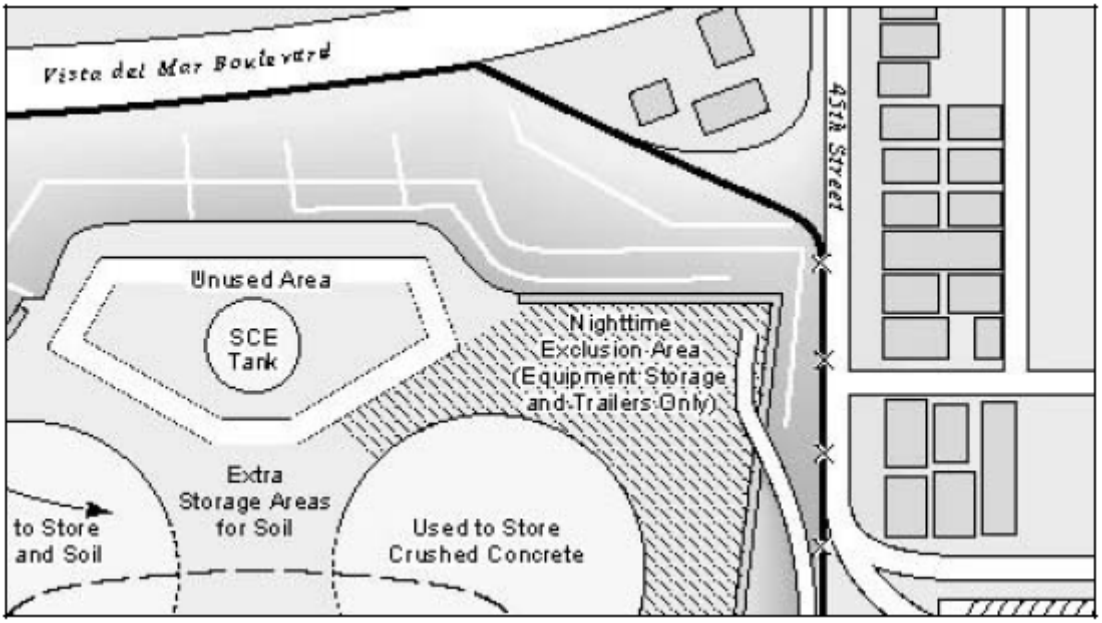
Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure. The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

Verification: Within 30 days after completing the survey, the project owner shall submit the noise survey report, including proposed mitigation measures, to the CPM for review and approval. The project owner shall make the report available to OSHA and Cal-OSHA upon request.

NOISE-8: Heavy equipment operation and noisy construction or demolition work shall be restricted beginning at site mobilization as described below. No pure tones are allowed outside of the hours of 7:30 A.M. to 6:00 P.M. Monday-Friday, and 9:00 A.M. to 6:00 P.M. Saturday. Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul

trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

Tank Farm Area: Noise levels at any residential property line due to tank farm construction or demolition shall be limited to the average daytime hourly ambient L50 value plus 5 dBA, or 65 dBA L50, whichever is lower for continuous noise. For intermittent noise (up to 30 minutes in one hour) the maximum noise levels shall be ambient L50 plus 10 dBA). Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies. The use of the tank farm area is divided into four phases. For each phase the following restrictions shall be observed. Construction activity outside the hours described will not be allowed in the area south of the southern tank, which shall be termed the nighttime exclusion area, shown below:



Phase I: Prepare the tank farm for use during demolition and construction: cutting openings into the sides of the tanks, use of grader, backhoe and small trucks, a few truck trips to remove material, some welding, installation of landscaping and irrigation. All demolition and construction will occur during daytime hours of 7:30 AM to 6:00 PM Monday - Friday and 9:00 AM to 6:00 PM on Saturdays. No demolition or construction shall occur on Sundays or holidays.

Phase II: Demolition period: Entering and exiting the site, hauling material. Construction activities shall avoid the southerly end of the tank farm. All construction activities will be restricted to 7:30 AM to 6:00 PM. During the hours 5:00PM to 9:00AM, the nighttime exclusion

area may be accessed by passenger vehicles or pedestrians to inspect tanks. . Except as further restricted above, all demolition and construction shall occur between 7:30 AM to 6:00 PM Monday - Friday and 9:00 AM to 6:00 PM on Saturdays. No demolition or construction shall occur on Sundays or holidays.

Phase III: Construction period: Haul material into and out of the area; remove the north tank. Daytime activities will be shielded from 45th street residents by the use of the south tank as a dome and as a shield. All demolition and construction shall occur between 7:30 AM to 6:00 PM Monday - Friday and between 9:00 AM to 6:00 PM on Saturdays. No demolition or construction shall occur on Sundays or holidays.

Phase IV: Operations period: Remove the south tank, and limit the traffic on the tank farm area. During daytime only, metal cutting will be allowed from 9:00 AM to 5:00 PM Monday through Friday, except holidays. During daytime only, trucks may be used to remove tank material and to remove soil. Bulldozers, graders etc. may be used during daytime hours only to move, excavate and replace soil. All demolition and construction shall only occur between 7:30 AM and 6:00 PM Monday-Friday. No demolition or construction shall occur on Saturdays, Sundays or holidays.

Other Areas of the Project Site: The noise standards for construction and demolition occurring at the rest of the project site (with the exception of the tank farm area) shall be:

- 65 dBA hourly L50 at any residential receptor during the hours of 7:30 A.M. to 6:00 P.M. Monday-Friday, and 9:00 A.M. to 6:00 P.M. Saturday.
- The ambient hourly L50 value plus 2 dBA at any residential receptor at any other time.

Ambient noise levels shall be determined from the pre-construction survey conducted pursuant to **NOISE-6**.

Verification: The project owner shall transmit to the CPM in the first Monthly Construction Report a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

NOISE-9: The project design and implementation shall ensure that site mobilization, demolition, construction, or operation of the power plant will not cause vibration at any sensitive receptor to exceed a peak particle velocity of 0.003 in/sec, or to cause vibration which is perceptible without use of instruments to any reasonable person of normal sensitivity.

The noise monitoring officer designated pursuant to Condition of Certification **NOISE-1** shall log each construction vibration complaint on a CPM-approved complaint form and

attempt to resolve the complaint. For construction vibration complaints received outside of the construction hours or days allowed as described by Condition of Certification **NOISE-8**, the noise monitoring officer shall take immediate steps to determine whether power plant construction is causing the vibration and, if so, to reduce the vibration level of that activity as quickly as possible (not to exceed one hour) in order to comply with the Conditions of Certification. The noise monitoring officer, as appropriate, shall measure site fence-line vibration levels to assure compliance. If the vibration complaint is not resolved to the satisfaction of the complainant, including a time frame for resolution, the noise monitoring officer shall provide the Commission's toll free compliance telephone number (1-800-858-0784, unless otherwise specified by the CPM).

In the event of construction-related vibration complaints either from a single affected residence, from multiple residences, or businesses, the project owner shall monitor vibration at the receptor(s) for no less than the following two days of construction.

Within 24 hours of receiving a complaint for vibration, the project owner shall file a copy of the Noise Complaint Resolution Form, or similar instrument approved by the CPM, with the City of El Segundo and/or City of Manhattan Beach, and with the CPM.

If mitigation is required to resolve a complaint, and the complaint is not resolved within a 3-day period, the project owner shall submit a progress report and a proposed mitigation schedule, subject to the approval of the CPM, to the CPM and the affected City within 5 days of receiving the complaint. The project owner shall submit an updated Noise Complaint Resolution Form to the CPM and the affected City when the mitigation is finally implemented.

Verification: The project owner shall provide, in the applicable Monthly and/or Annual Compliance Report, a listing of vibration complaints received in that time period, and the status of resolution of each complaint, including all those which have not yet been resolved.

NOISE-10: The loudspeaker system shall be used only for testing and emergencies.

Verification: The project owner shall transmit to the CPM in the first Monthly Construction Report a statement acknowledging that the above restrictions will be observed throughout the construction and operation of the project.

Socioeconomics

SOCIO-1 Prior to the start of commercial operations, the project owner shall pay the City of El Segundo the following one-time fees:

- Police service mitigation fee of $0.11 per gross square foot of building area;
- Fire service mitigation fee of $0.14 per gross square foot of building area;
- Library service mitigation fee of $0.03 per gross square foot of building area;
- Traffic mitigation fee for new development, in an amount to be determined by the City of El Segundo Public Works Director upon receipt of a Traffic Mitigation Fee Determination Form.

The gross square foot of building area and the amount of the one-time fees shall be determined by the City of El Segundo at the time the project owner submits the site plans.

Verification: Prior to the start of commercial operation, the project owner shall submit verification to the CPM that payment of any required public service mitigation fees have been submitted to the City of El Segundo. The project owner shall provide proof of payment of the Traffic Mitigation Fee in the next Monthly Compliance Report following payment.

NOTE: The Applicant and the City of El Segundo have reached a side agreement for the

Applicant to perform the following analysis and request the Commission's inclusion of the agreement as a Condition of Certification.

SOCIO-2 Prior to any ground disturbance activities, the project owner shall prepare a fiscal impact analysis for the project that includes analysis of the actual revenues and costs associated with the project. The revenue analysis shall include an analysis of the total property tax, franchise tax, utility user tax, sales and use tax, business license fees, building permit fees, and other revenues generated by the facility as identified in the

City of El Segundo's Fiscal Impact Model. The cost analysis shall include a discussion of the cost to City services (i.e., police, fire, public works) for ongoing service to the project. The fiscal impact analysis shall compare the revenue and costs over a minimum period of five years following the start of commercial operations.

Verification: At least 30 days prior to any ground disturbance activities, the project owner shall transmit the analysis to the City of El Segundo for review and comment and to the Energy Commission Compliance Project Manager (CPM) for review and approval.

Traffic & Transportation

OVERWEIGHT & OVERSIZE VEHICLES

TRANS-1 The project owner shall comply with Caltrans and other relevant jurisdictions limitations on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.

Verification: In the Monthly Compliance Reports, the project owner shall submit copies of any permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

ENCROACHMENT PERMITS

TRANS-2 The project owner or its contractor shall comply with Caltrans and other relevant jurisdictions limitations for encroachment into public rights-of-way and shall obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.

Verification: In Monthly Compliance Reports, the project owner shall submit copies of permits received during the reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

LICENSED HAZARDOUS MATERIALS HAULERS

TRANS-3 The project owner shall ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of hazardous materials.

Verification: The project owner shall include in its Monthly Compliance Reports, copies of all permits/licenses acquired by the project owner and/or subcontractors concerning the transport of hazardous substances.

OFF-SITE PARKING AND STAGING PLAN

TRANS-4 During construction of the power plant and all related facilities, the project shall develop a parking and staging plan for all phases of project construction to enforce a policy that all project-related parking occurs on-site or in designated off-site parking areas.

Verification: At least 60 days prior to start of site mobilization, the project owner shall submit the plan to the City of El Segundo and other jurisdictions affected by site selection, such as the City and/or County of Los Angeles for review and comment, and to the CPM for review and approval.

TRAFFIC CONTROL PLAN

TRANS-5 The project owner shall consult with the Cities of El Segundo, Manhattan Beach and Los Angeles, and prepare and submit to the CPM for approval a construction traffic control plan and implementation program which addresses the following issues:

- Timing of heavy equipment and building materials deliveries;
- Redirecting construction traffic with a flag person;
- Signing, lighting, and traffic control device placement if required;
- Need for construction work hours and arrival/departure times outside of peak traffic periods;
- Ensure access for emergency vehicles to the project site;
- Temporary travel lane closure;
- Access to adjacent residential and commercial property during the construction of all pipelines;
- Specify construction related haul routes; and
- Identify safety procedures for exiting and entering the site access gate.

Verification: At least 30 days prior to site mobilization, the project owner shall provide to the CPM a copy of the referenced documents.

AIRCRAFT HAZARD MARKINGS

TRANS-6 The HRSG stacks shall have all the lighting and marking required by the

Federal Aviation Authority (FAA) so that the stacks do not create a hazard to air navigation. The project owner shall submit to the FAA Form 7460-1, Notice of

Proposed Construction or Alteration and supporting documents on how the project plans to comply with stack lighting and marking requirements imposed by the FAA.

Verification: At least 30 days prior to the start of construction, the project owner shall provide copies of the FAA Form 7460-1 with copies of the FAA response to Form 7460-1, to the CPM and the City of El Segundo Planning Department.

ROADWAY REPAIRS

TRANS-7 Following completion of project construction, the project owner shall repair any damage to the segment of Vista Del Mar and other roadways affected by construction activity along with the primary roadways identified in the traffic control plan for construction traffic to the road's pre-project construction condition. Prior to the start of construction, the project owner

shall photograph, videotape or digitally record images of Vista Del Mar and the roadways that will be affected by pipeline construction and heavy construction traffic. The project owner shall provide the Compliance Project Manager (CPM), and the Cities of El Segundo, Manhattan Beach and Los Angeles with a copy of the images for the roadway segments under their jurisdiction. Also prior to start of construction, the project owner shall notify those cities about the schedule for project construction. The purpose of this notification is to postpone any planned roadway resurfacing and/or improvement projects until after the project construction has taken place and to coordinate construction related activities associated with other projects.

Verification: Within 30 days after completion of the redevelopment project, the project owner shall meet with the CPM and the Cities of El Segundo, Manhattan Beach, and Los Angeles to determine and receive approval for the actions necessary and schedule to complete the repair of identified sections of public roadways to original or as near original condition as possible. Following completion of any regional road improvements, the project owner shall provide to the CPM a letter from the Cities of El Segundo, Manhattan Beach and Los Angeles if work occurred within their jurisdictional public right of way stating their satisfaction with the road improvements.

Transmission Line Safety & Nuisance

TLSN-1: The project owner shall ensure that the proposed on-site replacement lines (associated with Units, 5, 6, and 7) are designed and constructed in compliance with CPUC's GO-95, GO-52, Title 8, Section 2700 Sections 2700 through 2974 of the California Code of Regulations and SCE's EMF-reduction guidelines arising from CPUC Decision 93-11-013.

Verification: Thirty days before the start of line construction, the project owner shall submit to the Commission's Compliance Project Manager (CPM) evidence of their intention to comply with the above requirements.

TLSN-2: The project owner shall ensure that a qualified individual is engaged to measure the strengths of the project-related electric and magnetic in the post-modification period. Measurements should be made at the same points along the perimeter of the SCE Switchyard, within the route of the on-site replacement lines, and the route of the existing off-site SCE lines, for which field strength values were presented by the Applicant.

Verification: The project owner shall ensure that the post-modification measurements are tabulated together with the pre-modification measurements presented by the Applicant. A copy of these measurement results shall be filed with the CPM within 60 days after completion of the measurements.

TLSN-3: Thirty days prior to the start of commercial operations**,** the project owner shall send written notice to all property owners and residents in the City of Manhattan Beach within 1,000 feet of transmission lines between the El Segundo Generating Station and the El Nido Substation of the possible interference impacts associated with the project and procedures for reporting complaints. The project owner shall make every reasonable effort to identify and correct, on a case-specific basis, all complaints of interference with radio or television signals from operation of transmission lines and related facilities. In addition to any transmission repairs, the relevant corrective actions should include, but shall not be limited to, adjusting or modifying receivers, adjusting or repairing, replacing or adding antennas, antenna signal amplifiers, filters, or lead-in cable.

> The project owner shall maintain written records for a period of five years, of all complaints of radio or television interference attributable to operation together with the corrective action taken in response to each compliant. All complaints shall be recorded to include notations on the corrective action taken. Complaints not leading to a specific action or for which there was no resolution should be noted and explained. The record shall be signed by the project owner and also the complaint, if possible, to indicate concurrence with the corrective action or agreement with the justification for a lack of action.

Verification: All reports of line-related complaints shall be summarized and included in the Annual Compliance Report to the CPM.

Transmission System Engineering

TSE-1: The project owner shall furnish to the CPM, and to the CBO, a schedule of transmission facility design submittals, a Master Drawing List, a Master Specifications List, and a Major Equipment and Structure List. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide designated packages to the CPM when requested.

Verification: At least 60 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of construction, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the CBO and to the CPM. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major equipment in **Table 1: Major Equipment List** below). Additions and deletions shall be made to the table only with CPM and CBO approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

Table 1: Major Equipment List
Breakers
Step-up Transformer
Switchyard
Busses
Surge Arrestors
Disconnects
Take off facilities
Electrical Control Building
Switchyard Control Building
Transmission Pole/Tower
Grounding System

TSE-2: Prior to the start of construction, the project owner shall assign an electrical engineer and at least one of each of the following to the project: A) a civil engineer; B) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; C) a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; or D) a mechanical engineer. (Business and Professions Code Sections 6704 et seq., require state registration to practice as a civil engineer or structural engineer in California.)

The tasks performed by the civil, mechanical, electrical or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (e.g., proposed earthwork, civil structures, power plant structures, equipment

support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer. The civil, geotechnical or civil and design engineer assigned in conformance with Facility Design condition **GEN-5**, may be responsible for design and review of the TSE facilities.

The project owner shall submit to the CBO for review and approval, the names, qualifications and registration numbers of all engineers assigned to the project. If any one of the designated engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer. This engineer shall be authorized to halt earthwork and to require changes; if site conditions are unsafe or do not conform with predicted conditions used as a basis for design of earthwork or foundations.

The electrical engineer shall:

1. Be responsible for the electrical design of the power plant switchyard, outlet and termination facilities; and
2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the names, qualifications and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the engineers within five days of the approval.

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

TSE-3: If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend corrective action. (1998 CBC, Chapter 1, Section 108.4, Approval Required; Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector; Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The discrepancy documentation shall become a controlled document and shall be submitted to the CBO for review and approval and shall reference this condition of certification.

Verification: The project owner shall submit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If disapproved, the project owner shall advise the CPM, within five days, the reason for disapproval, and the revised corrective action required to obtain the CBO's approval.

TSE-4: For the power plant switchyard, outlet line and termination, the project owner shall not begin any increment of construction until plans for that increment have been approved by the CBO. These plans, together with design changes and design change notices, shall remain on the site for one year after completion of construction. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. The following activities shall be reported in the Monthly Compliance Report:

a) receipt or delay of major electrical equipment;
b) testing or energizing of major electrical equipment; and
c) the number of electrical drawings approved, submitted for approval, and still to be submitted.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of construction, the project owner shall submit to the CBO for review and approval the final design plans, specifications and calculations for equipment and systems of the power plant switchyard, outlet line and termination, including a copy of the signed and stamped statement from the responsible electrical engineer attesting to compliance with the applicable LORS, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

TSE-5: The project owner shall ensure that the design, construction and operation of the proposed transmission facilities will conform to all applicable LORS, including the requirements listed below. The substitution of CPM and CBO approved "equivalent" equipment and equivalent substation configurations is acceptable. The project owner shall submit the required number of copies of the design drawings and calculations as determined by the CBO.

a) The power plant switchyard and outlet line shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC), Title 8 of the California Code and Regulations (Title 8), Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", National Electric Code (NEC) and related industry standards.
b) Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.
c) Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards.
d) The project conductors shall be sized to accommodate the full output from the project.
e) Termination facilities shall comply with applicable SCE interconnection standards.

f) The project owner shall provide:
i) The final Detailed Facility Study (DFS) including a description of facility upgrades, operational mitigation measures, and/or Special Protection System (SPS) sequencing and timing if applicable,
ii) Executed Facility Interconnection Agreement
iii) Verification of Cal-ISO Notice of Synchronization.

Verification: At least 60 days prior to the start of construction of transmission facilities (or a lesser number of days mutually agree to by the project owner and CBO), the project owner shall submit to the CBO for approval:

a) Design drawings, specifications and calculations conforming with CPUC General Order 95 or NESC, Title 8, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", NEC, applicable interconnection standards and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems and major switchyard equipment.
b) For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions"2 and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", NEC, applicable interconnection standards, and related industry standards.
c) Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in responsible charge, a route map, and an engineering description of equipment and the configurations covered by requirements **TSE-5** a) through f) above.
d) The DFS operational mitigation measures, SPS, and executed Facility Interconnection Agreement shall be provided concurrently to the CPM and CBO. Substitution of equipment and substation configurations shall be identified and justified by the project owner for CBO approval.

TSE-6: The project owner shall inform the CPM and CBO of any impending changes, which may not conform to the requirements **TSE-5** a) through f), and have not received CPM and CBO approval, and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change shall accompany the request. Construction involving changed equipment or substation configurations shall not begin without prior written approval of the changes by the CBO and the CPM.

Verification: At least 60 days prior to the construction of transmission facilities, the project owner shall inform the CBO and the CPM of any impending changes which may not conform to requirements of **TSE-5** and request approval to implement such changes.

TSE-7: The project owner shall provide the following Notice to the California Independent System Operator (Cal-ISO) prior to synchronizing the facility with the California Transmission system:

1. At least one week prior to synchronizing the facility with the grid for testing, provide the Cal-ISO a letter stating the proposed date of synchronization; and
2. At least one business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the ISO Outage Coordination Department.

Verification: The project owner shall provide copies of the Cal-ISO letter to the CPM when it is sent to the Cal-ISO one week prior to initial synchronization with the grid. The project owner shall contact the Cal-ISO Outage Coordination Department, Monday through Friday, between the hours of 0700 and 1530 at (916) 351-2300 at least one business day prior to synchronizing the facility with the grid for testing. A report of conversation with the Cal-ISO shall be provided electronically to the CPM one day before synchronizing the facility with the California transmission system for the first time.

TSE-8: The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with CPUC GO-95 or NESC, Title 8, CCR, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", applicable interconnection standards, NEC and related industry standards. In case of nonconformance, the project owner shall inform the CPM and CBO in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

Verification: Within 60 days after first synchronization of the project, the project owner shall transmit to the CPM and CBO:

a) "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC GO-95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", and applicable interconnection standards, NEC, related industry standards, and these conditions shall be provided concurrently.

b) An "as built" engineering description of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in responsible charge or acceptable alternative verification. "As built" drawings of the mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made available, if requested, for CPM audit as set forth in the "Compliance Monitoring Plan".

c) A summary of inspections of the completed transmission facilities, and identification of any nonconforming work and corrective actions taken, signed and sealed by the registered engineer in charge.

Visual Resources

VIS-1: Facility Visual Enhancement Plan. Before starting construction, the project owner shall complete a comprehensive visual enhancement plan that includes architectural screening, landscaping, painting, lighting, and other measures that result in an overall enhancement of views of the facility (i.e. the power plant site) from areas accessible to the public. The plan shall be made available for review and comment by the plan shall include:

> ~~Architectural screening: All industrial equipment below elevation 125' (i.e., below the elevation of the outlet dampers on the facility's exhaust stacks) and visible from the beach, coastal waters, Vista Del Mar Avenue, and other areas accessible by the public shall be screened using panels, wire mesh, louvers or other forms of architectural screening. The screening shall be opaque or semi-transparent and have a non-glare finish, and the color shall be harmonious with the facility's setting on a public beach. If the project owner proposes, and the Energy Commission concurs, that it is infeasible to shield portions of the facility using architectural screening, the project owner may instead propose other measures such as landscaping, berms, or fencing to provide the necessary screening. Any such proposal must be based on the definition of feasibility in California Coastal Act (Public Resources Code Section 30108) and is subject to review and comment by the Executive Director of the Coastal Commission, and review and approval by the Energy Commission.~~
>
> Landscaping: Where used to screen the facility, vegetation shall be selected and maintained to provide year-round screening (e.g., evergreen species). Preference shall be given to native species and/or species requiring little or no irrigation, or at a minimum, non-invasive species. Soils shall be tested, amended as needed or replaced to ensure plant survival.
>
> Other structural screening: Where berms, fencing, or other structural elements are selected as the primary method to screen the facility, the structures shall harmonize with the facility's setting on a public beach. If berms are used, they shall be vegetated and maintained with evergreen, native, and/or species requiring little or no irrigation. If fencing is used, it shall include a non-glare finish and be painted in a neutral color. The Facility Visual Enhancement Plan shall include photographs showing existing conditions and simulated post-construction conditions from Key Observation Points (KOPs) around the facility (these may be the same KOPs that were used to develop the Staff Assessment). The plan shall also include anticipated costs for completing and maintaining the various visual enhancement measures and a detailed schedule for completing construction of these components.

Seawall Design Plan. Before starting construction, the project owner shall complete a plan of the seawall design for review and comment by the Executive Director of the Coastal Commission, the City of Manhattan Beach, and the City of El Segundo, and review and approval by the CPM. This plan shall include:

> Final design: The seawall along the west side of the facility shall be textured and finished in a neutral color harmonious with its location adjacent to a public bike path and beach. If painted, graffiti-resistant paint shall be used.
>
> Landscaping: Where used to enhance the seawall design, vegetation chosen shall be selected or maintained to provide year-round screening (e.g., evergreen species).
>
> Preference shall be given to native species and/or species requiring little or no irrigation.
>
> This seawall design plan shall include photographs showing the existing conditions and simulated post-construction conditions from observation points along the bike path adjacent to the seawall, from the beach, and from other points where the seawall is highly visible. The plan shall also include anticipated costs for completing and maintaining the seawall and a schedule for construction.

Verification: At least 120 days prior to ground disturbance, the project owner shall submit the required Facility Visual Enhancement Plan and Seawall Design Plan to the Executive Director of the Coastal Commission and the Cities of Manhattan Beach and El Segundo for comment, and to the CPM for review and approval. If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, the project owner shall prepare and submit to the Coastal Commission staff, the Cities, and CPM a revised submittal.

VIS-2: Perimeter screening and on-site landscaping. The project owner shall prepare and implement an approved perimeter screening and on-site landscape plan.

> Trees and landscaping along the eastern edge of the project site shall be designed to balance view corridors to the ocean with screening of the facility. The landscape plan shall be provided to the CPM for review and approval, and to the Executive Director of the California Coastal Commission, the City of El Segundo and the City of Manhattan Beach for review and comment. The CPM will consider timely comments from these parties, especially those regarding the balance struck in the landscape plan between view corridor preservation and screening of project components, in determining whether to approve the plan.
>
> The project owner shall establish a Landscape Committee to develop the final landscape plan that will be submitted to the CPM for review and approval, and other parties for

review and comment. The Landscape Committee will be comprised of two voting members from the City of El Segundo, two voting members from the City of Manhattan Beach, and two members (one vote) representing the project owner. Energy Commission and Coastal Commission staff will participate on the Committee in an advisory role. The project owner shall submit to the CPM for review and approval a detailed schedule for the Landscape Committee meetings that will ensure that the final landscape plan is provided to the CPM in accordance with the timeline established in the condition.

The screening shall, at a minimum, utilize landscape opportunities on all four boundaries of the project site. Landscape screening shall include: (a) continuous tree canopies on the eastern roadside perimeter to enhance visual unity of the Vista del Mar road corridor, compatibility of the ESPR project with its coastal setting, and at least partial long-term screening of upper portions of the HRSGs; (b) tree and shrub plantings along Vista del Mar to screen views of the structures, while preserving view corridors to the Bay; (c) plantings along 45th Street to provide long-term screening of the tank farm site; and (d) tree planting on the western site perimeter to screen upper planting on the path (west) side of all new concrete walls constructed along the existing bike path. The plan shall comply with City of El Segundo Zoning codes (Title 15, Chapter 2, Sec. 15-2-14) pertaining to on-site landscaping. The final landscape plan shall reflect the agreed upon removal of existing urea tanks on the west side of the project site.

Final plant selection shall be made in consultation with the Compliance Project Manager (CPM), Coastal Commission staff, and the Cities of Manhattan Beach and El Segundo. Suitable irrigation shall be installed to ensure survival and desired rate of growth. The landscape screening and irrigation system shall be monitored for a period of five years to ensure survival. During this period all dead plant material shall be replaced.

To achieve year-round screening, evergreen species shall be used. Spacing of trees shall be sufficiently dense to ensure substantial screening by the tree canopy at maturity.

Prior to the start of construction, the project owner shall submit a landscape plan to the representatives of California Exotic Pest Plant Council, The Executive Director of the California Coastal Commission and the Cities of Manhattan Beach and El Segundo for review and comment, and to the CPM for review and approval. The plan shall include, but not be limited to:

1. A detailed landscape, grading, and irrigation plan, at a reasonable scale, which includes a list of proposed tree, plant, and shrub species and installation sizes, and a discussion of both the suitability of the plants for the site conditions and mitigation objectives, and conformance with the specific provisions of the Coastal Commission decision, including its 1b and 2b specifying preference for native, non-invasive, and

drought tolerant species. A list of potential plant species that would be both viable and non-invasive in this location shall be prepared by a qualified professional landscape architect familiar with local growing conditions, with the objective of providing the widest possible range of species from which to choose. The final planting plan shall include an all inclusive list of plants to be used in order to ensure exclusion of potentially invasive species.

2. A demonstration of how the screening conditions shall be met, including:

    a) evidence provided by a qualified landscape architect that the specified species are both viable and available;
    b) graphic documentation on the plan and through digital photo simulations of Bay view corridors and power plant screening which would exist from Vista del Mar and the residential area east of Highland that has views of the project site after project construction; and
    c) a description of tall and short shrub planting zones along Vista del Mar, such that screening of the existing and proposed power plants is maximized, while the aforementioned Bay view corridors are retained.

3. Elevation views or visual simulations of the landscape screening at maturity, in order to show the extent of screening that the landscaping is expected to achieve from the west side of the project, from 45th Street and from Vista del Mar.

4. A detailed schedule for completion of the installation.

5. Maintenance procedures for the entire project site, including any needed irrigation and a plan for routine and regular debris removal as needed to preserve a neat and well-maintained appearance, for the life of the project.

6. A procedure for monitoring and replacement of all unsuccessful plantings for the life of the project.

7. A chart and key plan showing conformance with City of El Segundo landscape regulations.

8. Soil tests shall be performed on both on-site and imported soil where landscaping is to take place. Soil shall be amended on the basis of those tests if needed to ensure long-term viability of plantings.

The property owner shall meet the City of El Segundo's requirements for Vehicle Use Area (VUA) landscaping in the tank farm area by providing the required trees on the existing containment berm and other areas immediately adjacent to the portion of the tank farm area to be used for paved staging, not including the area to be striped for vehicle parking.

The Landscape Plan shall be consistent with the Landscape Concept Plan presented at Evidentiary Hearings, with modifications for VUA landscaping, revisions to depict the 45th Street landscape berm, and modifications to accord with item #2, above.

The project owner shall not implement the plan until the project owner receives written approval of the plan from the CPM.

Verification: At least 30 days prior to the first scheduled Landscape Committee meeting, the project owner shall submit the Committee schedule to the CPM for review and approval. At least 120 days prior to ground disturbance, the project owner shall submit the perimeter screening and onsite landscape plan to the Executive Director of the Coastal Commission and the Cities of Manhattan Beach and El Segundo for comment, and the CPM for review and approval. If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, the project owner shall prepare and submit to the Coastal Commission staff, the Cities, and the CPM a revised submittal.

The project owner shall implement the landscape plan prior to start of commercial operation. The project owner shall notify the CPM within seven days after completing installation of the landscape plan that the planting and irrigation system are ready for inspection.

The project owner shall report landscape maintenance activities, including replacement of dead vegetation, for the previous year of operation in the Annual Compliance Report.

VIS-3: Design treatment of seawall. The project owner shall construct the proposed seawall with architectural design treatment to reduce visual monotony, enhance design quality and interest, and discourage graffiti. Techniques may include pre-cast or cast- in place texturing, split-faced concrete block, or other methods feasible to produce a textured surface.

Prior to the start of construction, the project owner shall submit a design plan for the seawall, consistent with the Landscape Concept Plan, to the Executive Director of the Coastal Commission and City of El Segundo for review and comment, and to the CPM for review and approval. The treatment plan shall include:

1) Specification, and 11” x 17” color elevations, of the treatment proposed for use on the seawall;
2) A detailed schedule for completion of construction; and,
3) A procedure to ensure proper maintenance, including graffiti removal, for the life of the project.

Seawall construction shall not commence until the design plan has been approved by the CPM.

Verification: At least 120 days prior to start of construction, the project owner shall submit the seawall design plan to the Executive Director of the Coastal Commission and City of El Segundo for review and comment and to the CPM for review and approval.

If the CPM notifies the project owner of any revisions that are needed before the CPM will approve the plan, the project owner shall submit a revised plan to the CPM.

Not less than 30 days prior to start of commercial operation, the project owner shall notify the CPM that the seawall is ready for inspection.

The project owner shall provide a status report regarding wall maintenance in the Annual Compliance Report.

~~**VIS-4: Architectural screening of power plant.** The project owner shall install architectural screening to cover the outer framework of the HRSG structures of the new proposed Units 5 through 7 and reduce visibility of the mechanical equipment at elevations between 10 and 125 feet of the superstructures, except where infeasible due to excessive loading on support structures or where operation or safety requirements do not allow covering of a surface area. Such screening shall conform to the requirements of the Energy Commission's decision. Such screening shall use as a baseline the Applicant's Visual Enhancement Proposals as of June 24, 2002, and preferably minimize or avoid gaps between banners.~~

~~The Project Owner shall have the burden to show infeasibility or incapability of screening by submittal of such information in the Architectural Screening Plan.~~

~~Prior to the start of construction, the project owner shall submit an architectural screening plan to the Executive Director of the California Coastal Commission (as a part of the facility Visual Enhancement Plan described in Condition **VIS-1**), and the Cities of El Segundo and Manhattan Beach for review and comment, and to the CPM for review and approval. The screening plan shall include:~~

1. ~~Detailed plans and specifications sufficient to enable the CPM and Chief Building Official (CBO) to determine adequacy and performance of the proposed screening. Determination of adequacy includes confirmation of consistency with the terms of the Energy Commission's decision. Determination of adequacy also requires sufficient evidence that the screening can be installed to be stable, uniform, able to withstand anticipated wind loads, and attractively mounted, without sagging, tearing, unsightly discoloration, or adverse visual effects from the mounting system itself; and with sufficient durability to allow good performance between maintenance cycles. Required performance data shall include design information of sufficient detail and specificity to establish confidence in the design's ability to perform as desired, or to clearly establish limitations on the feasibility of particular measures.~~

2. ~~Sufficient information to fully document and explain any areas where screening is infeasible or not possible. The information shall further include supporting engineering drawings analysis and calculations or specific safety or operational constraints or regulations.~~

~~3. 11" x 17" color simulations at life-size scale of the treatment proposed for use on project structures.~~

~~4. A detailed schedule for completion of the treatment.~~

~~5. A procedure to ensure proper treatment maintenance for the life of the project.~~

~~**Verification:** Not later than 120 days prior to start of construction, the project owner shall submit the final architectural screening plan and details to the Executive Director of the Coastal Commission and the Cities of El Segundo and Manhattan Beach for review and comment, and to the CPM for review and approval.~~

~~If the CPM notifies the project owner of any needed revisions before the CPM will approve the plan, the project owner shall submit a revised plan to the CPM.~~

~~Not less than thirty 30 days prior to the start of commercial operation, the project owner shall notify the CPM that the architectural screening is ready for inspection.~~

~~The project owner shall provide a status report regarding screening maintenance in the Annual Compliance Report.~~

VIS-5: Structure surface painting and treatment. Prior to the start of commercial operation, the project owner shall paint or treat project structures visible to the public, such that their colors minimize visual intrusion and contrast by blending with the landscape; their surfaces do not create glare; and they are consistent with local laws, ordinances, regulations, and standards.

The project owner shall consult with representatives of the Cities of El Segundo and Manhattan Beach to determine if specific treatment or painting options that may improve the aesthetic appearance of the project are desired, and provide a report to the CPM.

Prior to the start of construction, the project owner shall submit to the Executive Director of the Coastal Commission and the Cities of El Segundo and Manhattan Beach for review and comment, and to the CPM for review and approval, a specific treatment plan whose proper implementation will satisfy these requirements. The treatment plan shall include:

a) Specification, and 11" x 17" color simulations at life size scale, of the treatment proposed for use on project structures, including structures treated during manufacture;
b) A list of each major project structure, building, tank, transmission line tower and/or pole, and fencing/walls specifying the color(s) and finish proposed for each (colors must be identified by name and by vendor brand or a universal designation);
c) Two sets of brochures and/or color chips for each proposed color;
d) Samples of each proposed treatment and color on each material to which they would be applied that would be visible to the public;
e) A detailed schedule for completion of the treatment; and

f) A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated on-site, until the project owner receives notification of approval of the treatment plan by the CPM.

Verification: The project owner shall submit its proposed treatment plan at least 90 (ninety) days prior to ordering the first structures that are color treated during manufacture.

If revisions are required, the project owner shall provide the CPM with a revised plan within 30 (thirty) days of receiving notification that revisions are needed.

Prior to commercial operation, the project owner shall notify the CPM that all buildings and structures are ready for inspection.

The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.

VIS-6: Project lighting. Prior to the start of commercial operation, the project owner shall design and install new permanent lighting for Units 5, 6 and 7, such that light bulbs and reflectors are not visible from public viewing areas; lighting does not cause reflected glare; and illumination of the project, the vicinity, and the nighttime sky is minimized. To meet these requirements the project owner shall ensure that:

a) Lighting shall be designed so exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated and so that backscatter to the nighttime sky is minimized. The design of the lighting shall be such that the luminescence or light source is shielded to prevent light trespass outside the project boundary;
b) All lighting shall be of minimum necessary brightness consistent with worker safety;
c) Wherever feasible and safe, lighting shall be kept off when not in use; and
d) A lighting complaint resolution form shall be used by plant operations to record all lighting complaints received and document the resolution of those complaints. All records of lighting complaints shall be kept in the on-site compliance file.

Verification: At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and comment written documentation describing the lighting control measures and fixtures, hoods, shields proposed for use, and incorporate the CPM's comments in lighting equipment orders.

Prior to the first turbine roll, the project owner shall notify the CPM that the lighting has been completed and is ready for inspection. If the CPM notifies the project owner that modifications

to the lighting are needed to minimize impacts, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed.

The project owner shall report any lighting complaints and documentation of resolution in the Annual Compliance Report, accompanied by any lighting complaint resolution forms or that year.

VIS-7: Site lighting. Prior to demolition of existing storage tanks, the project owner shall modify Unit 3 and 4 permanent lighting, such that light bulbs and reflectors are not visible from public viewing areas; lighting does not cause reflected glare; and illumination of the project, the vicinity, and the nighttime sky is minimized. To meet these requirements the project owner shall ensure that:

a) Lighting shall be designed so exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated and so that backscatter to the nighttime sky is minimized. The design of the lighting shall be such that the luminescence or light source is shielded to prevent light trespass outside the project boundary;
b) All lighting shall be of minimum necessary brightness consistent with worker safety;
c) The project owner shall implement where feasible and practical modifications of circuits in order to allow turning off specific lights when not in use; and
d) A lighting complaint resolution form shall be used by plant operations to record all lighting complaints received and document the resolution of those complaints. All records of lighting complaints shall be kept in the on-site compliance file.

Verification: At least 60 days prior to ordering of any new permanent exterior lighting for Units 3 and 4, the project owner shall submit to the CPM for review and comment written documentation describing the lighting control measures and fixtures, hoods, shields proposed for use, and incorporate the CPM's comments in lighting equipment orders.

Prior to demolition of the tanks, the project owner shall notify the CPM that the lighting modifications to Unit 3 and 4 have been completed and are ready for inspection. If the PM notifies the project owner that modifications to the lighting are needed to minimize impacts, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed.

The project owner shall report any complaints about permanent lighting and provide documentation of resolution in the Annual Compliance Report, accompanied by any lighting complaint resolution forms for that year.

VIS-8: Construction Lighting. Prior to site mobilization, the project owner shall ensure that lighting for construction of the power plant is used in a manner that minimizes potential night lighting impacts, as follows:

a) All lighting shall be of minimum necessary brightness consistent with worker safety.
b) All fixed position lighting shall be shielded, hooded, and directed downward to minimize backscatter to the night sky and prevent light trespass (direct lighting extending outside the boundaries of the construction area).
c) Wherever feasible and safe, lighting shall be kept off when not in use and motion detectors shall be employed.
d) A lighting complaint resolution form shall be maintained by plant construction management, to record all lighting complaints received and to document the resolution of that complaint.
e) All construction-related lighting shall be completely shielded or screened so as not to be visible to residents of 45th Street in Manhattan Beach. Construction lighting in the tank farm area shall be limited to the hours of 7:30 a.m. to 6:00 p.m. Monday through Friday and 9:00 a.m. to 6:00 p.m. Saturday, except as necessary for safety or security purposes.

Verification: Within seven days after the first use of construction lighting, the project owner shall notify the City of Manhattan Beach and the CPM that the lighting is ready for inspection.

If the CPM notifies the project owner that modifications to the lighting are needed to minimize impacts, within 15 days of receiving that notification the project owner shall implement the necessary modifications and notify the CPM that the modifications have been completed.

The project owner shall report any lighting complaints and documentation of resolution in the Monthly Compliance Report, accompanied by any lighting complaint resolution forms for that month.

VIS-9: Temporary landscaping and 45th Street Berm. Temporary landscaping shall be installed prior to the start of ground disturbing activities at the site in those opportunity areas that do not create a hindrance to construction activities. Soils shall be tested, amended as needed or replaced to ensure plant survival. Temporary landscaping shall be maintained for the duration of construction, and shall be designed to the extent feasible to be retained permanently as part of the perimeter landscaping plan required in Condition of Certification **VIS-2**. Installation of the 45th Street berm shall be initiated concurrent with construction of the new tank farm access road.

Prior to start of ground disturbance, the project owner shall submit a temporary perimeter landscape plan and final berm plan to the Cities of Manhattan Beach and El Segundo and the Executive Director of the Coastal Commission for review and comment, and to the CPM for review and approval. The plans shall include, but not be limited to:

a) A detailed landscape, grading and irrigation plan, at a reasonable scale, which includes an all-inclusive list of proposed tree, plant, and shrub species and installation sizes, and a discussion of the suitability of the plants for the site conditions and mitigation objectives. A list of potential plant species that would be viable and non-invasive in this location shall be prepared by a qualified professional landscape architect familiar with local growing conditions, with the objective of providing the widest possible range of species from which to choose. The plan shall demonstrate how the screening shall be met, including:

b) Elevation views or visual simulations of the landscape screening at one year's growth in order to show the extent of screening that the landscaping is expected to achieve from the west side of the project, 45th Street and from Vista del Mar.

c) A detailed schedule for completion of the installation.

d) Maintenance procedures for the entire project site, including any needed irrigation and a plan for routine and regular debris removal as needed to preserve a neat and well-maintained appearance, for the life of the project; and

e) A procedure for monitoring and replacement of unsuccessful plantings.

The project owner shall not implement the plan until the project owner receives written approval from the CPM

Verification: At least 60 days prior to start of ground disturbance, the project owner shall submit the temporary perimeter landscape plan and final berm plan to representatives of California Exotic Pest Plant Council, the Executive Director of the Coastal Commission and Cities of Manhattan Beach and El Segundo for comment, and to the CPM for review and approval. If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, the project owner shall prepare and submit to the CPM a revised plan.

The project owner shall notify the CPM within seven days after completing installation of the 45th Street berm that the berm is ready for inspection. The project owner shall notify the CPM within seven days after completing installation of the temporary landscape screening that the planting and irrigation system are ready for inspection.

The project owner shall report landscape maintenance activities, including replacement of dead vegetation, for the previous month of construction in the Monthly Compliance Report.

Waste Management

WASTE GENERATOR IDENTIFICATION NUMBER

WASTE-1: The project owner and, if necessary, its construction contractor, shall each obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste.

Verification: The project owner shall notify the CPM via the monthly compliance report of its receipt and keep a copy of the identification number on file at the project site.

WASTE MANAGEMENT ENFORCEMENT ACTION

WASTE-2: Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed to be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

Verification: The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the manner in which project-related wastes are managed.

WASTE MANAGEMENT PLAN

WASTE-3: Prior to the start of both site mobilization and project operation, the project owner shall prepare and submit to the CPM for review and approval, and to local agencies, if applicable, for review and comment, a waste management plan for all wastes generated during construction and operation of the facility, respectively. The plans shall contain, at a minimum, the following:

> A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and
>
> Methods of managing each waste, including storage, treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

Verification: No less than 30 days prior to the start of site mobilization, the project owner shall submit the demolition and construction waste management plan to and to local agencies, if applicable, for review and comment, and the CPM. The operation waste management plan shall be submitted no less than 30 days prior to the start of project operation. The project owner shall submit any required revisions within 20 days of notification by the CPM (or mutually agreed upon date). In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to planned management methods.

REGISTERED PROFESSIONAL ENGINEER/GEOLOGIST

WASTE-4: The project owner shall have a Registered Professional Engineer or Geologist, with experience in remedial investigation and feasibility studies, available for consultation during soil excavation and grading activities. The Registered Professional Engineer or Geologist shall be given full authority to oversee any earth moving activities that have the potential to disturb contaminated soil.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit the qualifications and experience of the Registered Professional Engineer or Geologist to the CPM for approval.

CONTAMINATED SOIL EXCAVATION

WASTE-5: If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the Registered Professional Engineer or Geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and file a written report to the project owner and CPM stating the recommended course of action. Depending on the nature and extent of contamination, the Registered Professional Engineer or Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the Registered Professional Engineer or Geologist, significant remediation may be required, the project owner shall contact representatives of the Los Angeles Regional Water Quality Control Board, the Glendale Regional Office of the California Department of Toxic Substances Control the CPM, and other local agencies, if applicable, for guidance and possible oversight.

Verification: The project owner shall submit any reports filed by the Registered Professional Engineer or Geologist to the CPM and the City of El Segundo Fire Department within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

REMEDIAL INVESTIGATION WORKPLAN

WASTE-6: Before demolition of either the fuel oil tanks or the existing generator buildings and any other building, respectively, the project owner shall prepare a Remedial Investigation Workplan (RI Workplan). This plan shall include a detailed site characterization plan with soil and groundwater sampling and analysis to determine the extent and nature of contamination existing beneath these structures. The RI Workplan shall be provided to the Glendale Regional Office of the California Department of Toxic Substances Control, the Los Angeles Regional Water Quality Control, and the City of El Segundo Fire Department, and other local agencies, if applicable, for review and comment, and to the CEC CPM for review and approval. If contaminated soil or groundwater is found to exist, the project owner shall contact

representatives of the above-named agencies for further guidance and possible oversight. In no event shall the project owner proceed with site preparation or construction activities at any location on the site where hazardous waste contamination is found to be present until that location is either remediated or shown to pose an insignificant risk to humans and the environment as demonstrated to the satisfaction of the LARWQCB, DTSC, and the CPM.

Verification: At least sixty (60) days prior to commencement of fuel tank demolition or structure demolition, respectively, the project owner shall provide the RI Workplan to the Glendale Regional Office of the California Department of Toxic Substances Control, the Los Angeles Regional Water Quality Control Board, the City of El Segundo Fire Department, other agencies, if applicable, and the CEC CPM. Within thirty (30) days of completion of the sampling and analysis and prior to the initiation of any construction activities, the project owner shall provide the results of the sampling and analysis to the Glendale Regional Office of the California Department of Toxic Substances Control, the Los Angeles Regional Water Quality Control Board, the City of El Segundo Fire Department, other agencies, if applicable, and the CPM for review and guidance on possible remediation.

RUNOFF CONTAINMENT

WASTE-7 Before demolition of the fuel oil tanks, the existing generator buildings and any other building, the project owner shall ensure that the appropriate portion of the site is surrounded by a berm or other solid structures capable of containing any runoff from that portion of the site and preventing this runoff from leaving the site. In no event shall the project owner proceed with site preparation or construction activities at any location on the site where hazardous waste contamination is found to be present until that location has such containment in place to the satisfaction of the CPM.

Verification: At least thirty (30) days prior to commencement of site preparation activities, the project owner shall provide written plans on containment to the CPM for review and approval.

HAZARDOUS WASTE SURVEY

WASTE-8 Prior to modification or demolition of existing structures, the project owner shall complete and submit a survey of all Asbestos-Containing Materials (ACM) and Regulated Building Materials (RBM) that contain lead-based paint to the El Segundo

Fire Department for review and comment and to the CPM for approval. After receiving approval, the project owner shall remove all ACM and RBM from the site prior to demolition.

Verification: No less than sixty (60) days prior to commencement of structure demolition, the project owner shall provide the survey to the El Segundo Fire Department for review and comment, and to the CPM for review and approval. The project owner shall inform the CPM, via the monthly compliance report, of the data when all ACM and RBM were removed from the site.

Water Quality & Soils

WATER QUALITY-1: Prior to site mobilization, demolition, and/or construction related ground disturbance activities, including linear facilities, the project owner shall develop a Storm Water Pollution Prevention Plan (SWPPP) for the project as required under the NPDES General Stormwater Construction Activity Permit. A copy of the SWPPP and the Notice of Intent (NOI) submitted to the LARWQCB as required under the NPDES General Stormwater Construction Activity Permit regulations shall be provided to the CPM for review and approval. The SWPPP shall include the actual drainage and facility design for all on- and off-site ESPR project facilities for construction, and shall be designed according to the most recent applicable guidelines and checklists set forth by the State Water Resources Control Board Division of Water Quality. The SWPPP shall demonstrate compliance with all applicable Standard Urban Stormwater Mitigation Plan (SUSUMP) requirements. The project owner shall submit the construction SWPPP to the City of El Segundo for review and comment, and provide the CPM with a copy of a transmittal letter that requests the City provide copies of their comments to both the project owner and to the CPM.

Verification: Sixty days prior to the start of any site mobilization activities and/or ground disturbing activities associated with demolition or construction of the project (including demolition of tanks or Units 1 and 2) or any linear element, the project owner shall submit copies of the construction SWPPP, the NOI, and the transmittal letter to the CPM for review and approval. The SWPPP must be approved, and the transmittal letter and NOI copies received by the CPM prior to the start of site mobilization activities**.**

WATER QUALITY-2: Prior to site mobilization, demolition, and/or construction related ground disturbance activities, including linear facilities, the project owner shall develop an Erosion and Sedimentation Control Plan (ESCP) for the construction phase of the project. A copy of the ESCP for construction shall be provided to the CPM for review and approval. The ESCP shall address the actual drainage and facility design for all on- and off-site ESPR project facilities for construction, and shall address all issues detailed in the Staff Recommended Mitigation section of this FSA. The ESCP shall demonstrate compliance will all applicable SUSUMP requirements. The project owner shall submit the construction ESCP to the City of El Segundo for review and comment, and provide the CPM with a copy of a transmittal letter that requests the City provide copies of their comments to both ESPR and to the CPM.

Verification: Sixty days prior to the start of any site mobilization activities and/or ground disturbing activities associated with demolition or construction of the project or any linear element, the project owner shall submit the ESCP and a copy of the transmittal letter to the CPM for review and approval. The ESCP must be approved, and the transmittal letter received by the CPM prior to the start of site mobilization activities**.**

WATER QUALITY-3: Prior to power plant operation, the owner shall develop a SWPPP as required under the NPDES stormwater discharge permit for operation of the project. The SWPPP shall include the actual drainage and facility design for all on- and off-site ESPR project and linear facilities showing the details of the stormwater and sediment run-off and run-on to the ESPR project facilities during operation. The SWPPP shall be designed according to most recent guidelines and checklists set forth by the State Water Resources Control Board Division of Water Quality. This plan shall document that the existing and proposed project stormwater facilities have adequate capacity as required by the City of El Segundo. The SWPPP shall be consistent with all other permit and design documents, and shall demonstrate compliance with all applicable SUSUMP requirements. The project owner shall include in this plan the installation of secondary containment for the entire site, excluding off-site and linear facilities. The containment design shall have design documentation and specifications for the berms or other walled structures. The project owner shall submit the operational SWPPP to the City of El Segundo for review and comment, and provide the CPM with a copy of a transmittal letter that requests the City provide copies of their comments to both the project owner and to the CPM. The operational SWPPP shall be approved, and the transmittal letter received by the CPM prior to the start of operation.

Verification: Sixty days prior to the start of operation, the project owner shall submit copies of the SWPPP and the transmittal letter to the CPM for review and approval. The SWPPP must be approved, and the transmittal letter received by the CPM prior to power plant operation.

WATER QUALITY-4: Prior to power plant operation, the owner shall develop an Erosion and Sedimentation Control Plan (ESCP) for the operational phase of the project. The ESCP shall include the actual drainage and facility design for all on- and off-site ESPR project and linear facilities showing all of the details of stormwater and sediment runoff and run-on to the ESPR project facilities during operation. The ESCP shall address all issues detailed in the Staff Recommended Mitigation section of this FSA. The ESCP shall be consistent with all other permit and design documents, and shall demonstrate compliance with all applicable SUSUMP requirements. The project owner shall include in this plan the installation of secondary containment for the entire site, excluding off-site and linear facilities. The containment design shall have design documentation and specifications for the berms or other walled structures. The project owner shall submit the operational ESCP to the City of El Segundo for review and comment, and provide the CPM with a copy of a transmittal letter that requests the City provide copies of their comments to both ESPR and to the CPM. The operational ESCP shall be approved, and the transmittal letter received by the CPM prior to the start of operation.

Verification: Sixty days prior to the start of operation, the project owner shall submit a copies of the ESCP and the transmittal letter to the CPM for review and approval. The ESCP must be approved, and the transmittal letter received by the CPM prior to power plant operation.

WATER QUALITY-5: The project owner shall maintain in effect the National Pollutant Discharge Elimination System (NPDES) Permit from the LARWQCB for the life of the ESPR project. The project owner shall comply with all provisions of the NPDES Permit, and shall notify the CPM of any proposed or actual changes made to this permit and provide copies of materials related to permit amendment, modification, and renewal, and of any changes to the project design or operational plan necessary to comply with the NPDES permit changes. All exceedences, permit violations, and enforcement actions shall be reported and discussed in the annual Compliance Report to the CPM. All NPDES enforcement actions against the project shall be reported to the CPM by letter within 30 days of the project being notified by LARWQCB. The project shall not operate without the NPDES permit in place.

Verification: Within 30 days following receipt of a new, amended, or modified NPDES Permit from the LARWQCB, the project owner shall submit a copy of the new permit to the CPM. The Annual Compliance report shall include a copy of NPDES compliance monitoring reports submitted to the LARWQCB, reporting NPDES permit exceedences, violations, and enforcement actions taken against the project owner, and a discussion of the measures taken by the project owner to bring the project into compliance with the NPDES permit. The CPM shall be notified by letter of NPDES permit enforcement actions within 30-days of the project being notified by the LARWQCB. The project owner shall notify the CPM in writing of any changes made to this permit, and of any changes to the project design or operational plan necessary to comply with NPDES permit revisions.

WATER QUALITY-6: The project owner shall perform quarterly sampling of the retention pond and provide analytical data summary reports consistent with those required by the NPDES permit in the Annual Compliance Report to the CPM. These samples shall be collected and analyzed for parameters consistent with the NPDES permit monitoring requirements for the retention pond, and all exceedences and violations, and actions taken to avoid their reoccurrence shall be discussed in detail.

Verification: The quarterly reporting and discussion shall be included in the Annual Compliance Report to the CPM for the life of the project.

FEDERAL PERMITS COMPLIANCE

WQ-7: Prior to construction and/or use of the Beach Delivery Site, the applicant shall obtain authorization from the United States Army Corps of Engineers for placement of fill materials (section 404 Permit) and/or structures (section 10 Permit) within waters of the United States.

VERIFICATION: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of either a Letter of

Permission, a Nation Wide Permit (NWP-33), or and Individual Section 404/Section 10 Permit authorizing the applicant to place fill materials and structures in the El Segundo Beach's tidelands and submerged lands.

SECTION 401 WATER QUALITY CERTIFICATION

WQ-8: Prior to construction and/or use of the Beach Delivery Site, the applicant shall obtain from the State of California Regional Water Quality Control Board, Los Angeles Region, a Section 401 Water Quality Certification verifying that the Beach Delivery Project is in compliance with state water quality standards.

VERIFICATION: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of the Los Angeles Regional Board's Section 401 Water Quality Certification.

STATE OF CALIFORNIA NOTICE OF INTENT (NOI) APPLICATION FOR COVERAGE UNDER THE NPDES GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY

WQ-9: The applicant shall prepare and submit to the State Water Resources Control Board a Notice of Intent Application to comply with the State of California's General Permit for Stormwater Discharges Associated with Construction Activity (Construction General Permit) prior to commencement of construction related to the Beach Delivery site.

VERIFICATION: At least 30 days prior to construction of the beach landing ramp, the applicant shall provide to the CPM for review and approval a copy of Beach Delivery NOI and confirmation by the State Water Resources Control Board that the construction is covered by the General Permit.

BEACH DELIVERY STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND MONITORING & REPORTING PLAN (M&RP)

WQ-10: The applicant shall develop an operation-specific Stormwater Pollution Prevention Plan in accordance with the Construction General Permit, including, but not limited to:

1. Pollutant and Pollutant Source Identification, including erosion and sediment pollutants;

2. Evaluations of routes of Stormwater Exposure to identified pollutants and pollutant sources;

3. Pollutant Mode of Transportation identification;

4. Identification of Effective Best Management Practices (BMPs) designed to:

a. Eliminate stormwater exposure to potential pollutants and/or pollutant sources; and/or,

b. Remove the pollutant from the stormwater runoff prior to offsite discharge;

c. BMPs shall be developed and implemented to ensure that the following mitigation measures are adhered to:

1. An impervious fiber matting will be placed between the constructed ramp and beach surface;

2. Fill sand shall be of beach nourishment quality with a medium, or larger, grain size;

3. Fill sand shall be analyzed in accordance with the Inland Testing Manual (ITM);

4. Only untreated, unused wood mats shall be used for the construction of the beach landing ramp; and,

5. All metal ramps, plates and/or any other metal material that may come in contract with the surf/tide shall be certified clean of all chemical residues, oils, greases and rust residues prior to use at the project site.

6. Equipment shall not be stored or staged within the Beach Delivery Site, unless in use.

7. Provide an Equipment Maintenance Plan detailing maintenance schedules, inspection protocols and maintenance and repair procedures for each piece of major equipment to be utilized during the Beach Delivery operation.

8. Provide a Site Maintenance/Housekeeping Plan detailing housekeeping inspection schedules and cleanup procedures.

VERIFICATION: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of Beach Delivery SWPPP, Beach Delivery Repair and Enhancement Mitigation Plan, and Monitoring and Reporting Plan.

BEACH DELIVERY EROSION AND SEDIMENT CONTROL PLAN

WQ-11: To minimize the acceleration of sand erosion along the El Segundo beach as a consequence of the Beach Delivery operation, the following ***mitigation measures shall be employed:***

1. ***Loose sand used to construct and stabilize the beach landing ramp will be contained, either by placing the sand within bags or by containing the sand fill within an impervious barricade or structure;***

2. ***The construction barge will be pulled off shore during periods of non-delivery. The maximum length of time that the construction barge will be grounded will be no more than 32 hours;***

3. ***The Beach Delivery Site will be located as near as possible to the groin to minimize longshore tide activity; and,***

4. ***The applicant will develop an Erosion and Sediment Control Plan (ESCP) detailing practices to be implemented during the Beach Delivery operation to minimize sand erosion along the shoreline and near-shore areas.***

VERIFICATION: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of the Beach Delivery ESCP.

BEACH DELIVERY REPAIR AND ENHANCEMENT MITIGATION PLAN (MITIGATION PLAN)

WQ-12: A Beach Repair and Enhancement Mitigation Plan (Mitigation Plan) shall be prepared by either a registered geologist or coastal engineer. The Mitigation Plan will describe, at the minimum, the following:

g. ***Ramp Construction engineering and performance design criteria, materials (type and quantity) of construction and construction schedules;***

h. ***Measures to be implemented to minimize impacts to the Beach Delivery Site during use of the Site, including stockpiling of excess or excavated fill or sand material;***

i. ***Demobilization and ramp disassembly procedures;***

j. ***Pre-construction and post-construction surveys:***

1. ***A survey of proposed Beach Delivery Site and adjacent beach areas, not affected by the Beach Delivery operation, will be conducted no more than 60 days prior to construction of the Site and ramp system;***

2. ***At the conclusion of the Beach Delivery operation the Site and adjacent beach area shall be resurveyed within 15 days;***

3. ***The sand used to construction the beach delivery ramp shall only be beach nourishment quality san of a grain size equal to, or larger, than the native sand;***

4. ***Within 30 days of conclusion of the Beach Delivery operation, the beach landing ramp shall be disassembled and the Beach Delivery Site area returned to preconstruction conditions using the beach nourishment ramp sand; and,***

5. ***Alternatively, if the pre-construction and post-construction surveys of the adjacent beach areas indicate a significant change in the adjacent beaches' topographic conditions, the Beach Delivery Site area will be repaired and enhanced to reflect the adjacent beaches' topographic conditions at the conclusion of the Beach Delivery operations.***

k. ***The final Mitigation Plan shall include the post-construction surveys and final engineer plans showing post-construction beach repair and enhancement elements; and,***

l. ***Beach repairs and enhancements will be in accordance with guidance provided by the NOAA Coastal Service Center guidelines available at the time at that time.***

VERIFICATION: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of the initial Mitigation Plan. No more than 30 days after completion of the beach repair and enhancement activities the applicant shall provide a copy of the Final Mitigation Plan to the CPM for review and approval.

BALLAST MANAGEMENT PLAN

WQ-13: The applicant shall ensure that each barge operator develops a Ballast Water Management Plan in accordance with CCR Title 2, Division 3, Chapter 1, Article 4.6, (Ballast Water Regulations for Vessels Arriving at California Ports or Places after Departing from Ports or Places within the Pacific Coast Region). The applicant will ensure that the ballast water holding tanks are certified clean and uncontaminated prior to taking on local ballast water.

VERIFICATION: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of the Ballast Water Management Plan.

Water Resources

WATER RES-1: The project owner shall use reclaimed water for all in-plant process water needs, except those specifically excluded uses, unless it can be demonstrated that its use is not compatible with any particular application. Specifically excepted from using reclaimed water are fire control water, sanitary water, and potable water~~, and once-through cooling water~~. The project owner shall submit a Reclaimed Water Use Plan (RWUP) that includes a detailed revised project design, operational plan, water balance, and heat balance for the use of reclaimed water for review and approval by the CPM prior to the start of any site mobilization activities for the project or any linear element. This RWUP shall be consistent with all applicable LORS, including Title 22 California Code of Regulations.

> All in-plant water needs that the project owner claims cannot be met using reclaimed water, other those excepted, shall be identified and a discussion of the infeasibility of reclaimed water use for these needs shall be included in the RWUP for review and approval by the CPM. Site mobilization activities shall not begin without a CPM approved RWUP.

Verification: The project owner shall submit the RWUP to the CPM for review and approval sixty day prior to the start of any site mobilization activities associated with the project or any linear elements. The RWUP must be approved by the CPM before the start of site mobilization.

WATER RES-2: Only potable water and irrigation quality reclaimed water from the City of El Segundo or reclaimed water from the West Basin Municipal Water District shall be used by the project~~ for uses other than once-through cooling~~. The process water supply shall be reclaimed water. A backup water supply has not been included in the project design or operational plan, and the project shall not operate during periods when reclaimed or potable water is not available in sufficient quantities from the primary supply sources. The project owner shall report the periods of non-operation due to unavailability of water from any source in the Annual Compliance Report.

> The project owner shall install on-site metering and recording devices and record on a monthly basis all water used by the ESPR, except water used for once-through cooling, including the amount of reclaimed, and non-reclaimed water used by the project, with the source and amount of all reclaimed and non-reclaimed water identified. The annual summary shall include the monthly range, monthly average, and total amounts of reclaimed and non-reclaimed water identified by amount and source used by the project in both gallons-per-minute and acre-feet. Following the first year of operation, the annual summary shall also include the yearly range and yearly average of reclaimed and non-reclaimed water identified by amount and source used by the project. This information

shall be supplied to the CPM in the Annual Compliance Report for review and approval for the life of the project.

Verification: No less than 60 days prior to the start of operation of ESPR, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the pipelines serving and within the project. These metering devices shall be capable of differentiating between uses of these supplies by ESPR in order to report water demand. The project owner shall provide a report on the servicing, testing and calibration of the metering devices and operation in the annual compliance report. The project owner shall submit the required water use summary to the CPM for review as part of the Annual Compliance Report for the life of the project.

Worker Safety

WORKER SAFETY-1: The project owner shall submit to the Compliance Project Manager (CPM) for approval, a copy of the Project Demolition and Construction Safety and Health Program containing the following:

- A Demolition and Construction Safety Program;
- A Demolition and Construction Personal Protective Equipment Program;
- A Demolition and Construction Exposure Monitoring Program;
- A Demolition and Construction Emergency Action Plan; and
- A Demolition and Construction Fire Protection and Prevention Plan.

The Safety Program, the Personal Protective Equipment Program, and the Exposure Monitoring Program shall be submitted to the CPM for review and comment concerning compliance of the program with all applicable Safety Orders. The Demolition and Construction Fire Protection and Prevention Plan and Emergency Action Plan shall be submitted to the City of El Segundo Fire Department for review and comment prior to submittal to the CPM.

The Demolition and Construction Fire Protection and Prevention Plan and Emergency Action Plan shall include the following:

1. Methods to maintain fire access roadways and submittal of a fire access layout plan for review by the El Segundo Fire Department and approval by the CPM.
2. Provision of a suitable replacement for the existing fire suppression water reservoir prior to demolishing the existing reservoir.
3. Provision of fire flow calculations to verify that the available water supply proposed will be adequate for emergency operations.
4. A requirement that all temporary fire mains and hydrants shall be adequately braced and tied-down to anticipate the effects of water hammer and that protection from vehicular impact is provided as necessary.

Verification: At least 30 days prior to site mobilization, the project owner shall submit to the CPM for review and approval a copy of the Project Demolition and Construction Safety and Health Program. The project owner shall provide a letter from the City of El Segundo Fire Department stating that they have reviewed and commented on the Demolition and Construction Fire Protection and Prevention Plan and Emergency Action Plan.

WORKER SAFETY-2: The project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program containing the following:

- An Operation Injury and Illness Prevention Plan;

- An Emergency Action Plan;
- Hazardous Materials Management Program;
- Operations and Maintenance Safety Program;
- Fire Protection and Prevention Program (8 CCR § 3221); and;
- Personal Protective Equipment Program (8 CCR §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the Cal/OSHA Consultation Service, for review and comment concerning compliance of the program with all applicable Safety Orders. The Operation Fire Protection Plan and the Emergency Action Plan shall also be submitted to the City of El Segundo Fire Department for review and comment.

The Project Operations Fire Protection and Prevention Plan and Emergency Action Plan shall address:

1. Provision of remote annunciation for all fire alarm and automatic suppression devices and the placement of remote annunciation at the security station on Vista Del Mar.

2. Provision of a complete fire alarm system and automatic fire sprinklers for the new administration building and any new control buildings.

3. A secondary entrance point for Fire Department operations along the northern boundary of the property.

Verification: At least 30 days prior to the start of operation, the project owner shall submit to the CPM and the City of El Segundo Fire Department a copy of the Project Operations and Maintenance Safety & Health Program.

WORKER SAFETY-3: Before using one of the fuel oil storage tanks as a clean soils storage area, the project owner shall ensure that the integrity of the floor has not been compromised by cracks or holes, the tanks have been thoroughly cleaned, no airborne hydrocarbons are present above the method detection level of a hand-held PID hydrocarbon vapor detector, and that the earth-moving vehicles used are equipped with environmental cabs.

Verification: At least 30 days prior to the start of using the tanks as a storage area, the project owner shall submit to the CPM a report verifying the integrity of the floor, describing the results of the PID monitoring, and a statement that all earth-moving vehicles used are equipped with properly functioning environmental cabs.

WORKER SAFETY-4: The project owner shall submit to the Compliance Project Manager (CPM) for approval, a copy of the Beach Delivery Safety Program containing the detailed safety procedures for the following:

- ***Risk Identification, Assessment and Treatment***
- ***Responsibilities***
- ***Documentation Management***
- ***Emergency Preparedness***
- ***Incident Management***
- ***Employee Training***
- ***Safe Work Practices, including but not limited to:***
    - ***Mobile Equipment***
    - ***Fire Prevention***
    - ***Fueling Operations***
    - ***Fall Protection***
    - ***Personal Protective Equipment***
    - ***Barricades, Flagging & Hazards Signs***
    - ***Welding & Cutting***

Verification: At least 30 days prior to the initial barge delivery the project owner shall submit to the CPM a copy of the Beach Delivery Safety Program

WORKER SAFETY-5: The project owner shall submit to the Compliance Project Manager (CPM) for approval, a copy of the project-specific Beach Delivery Injury and Illness Prevention Program containing the detailed safe work practices for the following:

- ***Mobile Equipment Operations***
- ***Heavy Equipment Operations***
- ***Fire Prevention***
- ***Fueling Operations***
- ***Fall Protection***
- ***Personal Protective Equipment***
- ***Barricades, Flagging & Hazards Signs***
- ***Welding & Cutting***
- ***Emergency Action***
- ***Hearing Protection***
- ***Reparatory Protection***
- ***Hazards Identification and Communication***
- ***Hazardous Substances Management***
- ***Crain and Hoist Operations***

Verification: At least 30 days prior to the initial barge delivery the project owner shall submit to the CPM a copy of the Beach Delivery injury and Illness Prevention Program.

General Conditions, Including Compliance Monitoring & Closure Plan

INTRODUCTION

The project General Conditions Including Compliance Monitoring and Closure Plan (Compliance Plan) have been established as required by Public Resources Code section 25532. The plan provides a means for assuring that the facility is constructed, operated, and closed in compliance with air and water quality, public health and safety, environmental and other applicable regulations, guidelines, and conditions adopted or established by the California Energy Commission (Energy Commission) and specified in the written decision on the AFC or otherwise required by law.

The Compliance Plan is composed of elements that:

1. set forth the duties and responsibilities of the Compliance Project Manager (CPM), the project owner, delegate agencies, and others;
2. set forth the requirements for handling confidential records and maintaining the compliance record;
3. state procedures for settling disputes and making post-certification changes;
4. state the requirements for periodic compliance reports and other administrative procedures that are necessary to verify the compliance status for all Energy Commission approved conditions;
5. establish requirements for facility closure plans; and
6. specify conditions of certification that follow each technical area that contain the measures required to mitigate any and all potential adverse project impacts associated with construction, operation, and closure to an insignificant level. Each specific condition of certification also includes a verification provision that describes the method of assuring that the condition has been satisfied.

GENERAL CONDITIONS OF CERTIFICATION

DEFINITIONS

To ensure consistency, continuity, and efficiency, the following terms, as defined, apply to all technical areas, including Conditions of Certification:

SITE MOBILIZATION

Site mobilization is defined as moving trailers and related equipment onto the site, usually accompanied by min or ground disturbance, grading for the trailers and limited vehicle parking, trenching for construction utilities, installing utilities, grading for an access corridor, and other related activities. Ground disturbance, grading, etc. for site mobilization are limited to the portion of the site necessary for placing the trailers and providing access and parking for the

occupants. Site mobilization is for temporary facilities and is, therefore, not considered construction.

GROUND DISTURBANCE
Ground disturbance is an onsite activity that results in the removal of soil or vegetation, boring, trenching, or alteration of the site surface. This does not include driving or parking a passenger vehicle, pickup truck, or other light vehicle, or walking on the site.

GRADING
Grading is an onsite activity conducted with earth-moving equipment that results in alteration of the topographical features of the site such as leveling, removal of hills or high spots, or moving of soil from one area to another.

CONSTRUCTION
Construction is onsite work to install permanent equipment or structures for any facility.

[Warren-Alquist Act section 25105] Construction does **not** include the following:

a. the installation of environmental monitoring equipment;
b. a soil or geological investigation;
c. a topographical survey;
d. any other study or investigation to determine the environmental acceptability or feasibility of the use of the site for any particular facility; or
e. any work to provide access to the site for any of the purposes specified in a., b., c., or d.

START OF COMMERCIAL OPERATION5
For compliance monitoring purposes, "commercial operation" is that phase of project development which begins after the completion of start-up and commissioning, where the power plant has reached steady-state production of electricity with reliability at the rated capacity.

COMPLIANCE PROJECT MANAGER RESPONSIBILITIES
A Compliance Project Manager (CPM) will oversee the compliance monitoring and shall be responsible for:

1. ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and conditions of the Energy Commission Decision;

2. resolving complaints;

5 A different definition of "Start of Commercial Operation," may be included in the Air Quality (AQ) section (per District Rules or Federal Regulations). In that event, the definition included in the AQ section would only apply to that section.

3. processing post-certification changes to the conditions of certification, project description, and ownership or operational control;
4. documenting and tracking compliance filings; and
5. ensuring that the compliance files are maintained and accessible.

The CPM is the contact person for the Energy Commission and will consult with appropriate responsible agencies and the Energy Commission when handling disputes, complaints, and amendments.

All project compliance submittals are submitted to the CPM for processing. Where a submittal required by a condition of certification requires CPM approval, the approval will involve all appropriate staff and management.

The Energy Commission has established a toll free compliance telephone number of **1-800- 858-0784** for the public to contact the Energy Commission about power plant construction or operation-related questions, complaints or concerns.

Pre-Construction and Pre-Operation Compliance Meeting

The CPM may schedule pre-construction and pre-operation compliance meetings prior to the projected start-dates of construction, plant operation, or both. The purpose of these meetings will be to assemble both the Energy Commission's and the project owner's technical staff to review the status of all pre-construction or pre-operation requirements contained in the Energy Commission's conditions of certification to confirm that they have been met. In addition, these meetings shall ensure, to the extent possible, that Energy Commission conditions will not delay the construction and operation of the plant due to oversight and to preclude any last minute, unforeseen issues from arising. Pre-construction meetings held during the certification process must be publicly noticed unless they are confined to administrative issues and processes.

Energy Commission Record

The Energy Commission shall maintain as a public record, in either the Compliance file or Docket file, for the life of the project (or other period as required):

- all documents demonstrating compliance with any legal requirements relating to the construction and operation of the facility;
- all monthly and annual compliance reports filed by the project owner;
- all complaints of noncompliance filed with the Energy Commission; and
- all petitions for project or condition changes and the resulting staff or Energy Commission action.

PROJECT OWNER RESPONSIBILITIES

It is the responsibility of the project owner to ensure that the general compliance conditions and the conditions of certification are satisfied. The general compliance conditions regarding post-certification changes specify measures that the project owner must take when requesting changes in the project design, compliance conditions, or ownership. Failure to comply with any of the conditions of certification or the general compliance conditions may result in reopening of the case and revocation of Energy Commission certification, an administrative fine, or other action as appropriate.

COM-1, Unrestricted Access

The CPM, responsible Energy Commission staff, and delegate agencies or consultants, shall be guaranteed and granted unrestricted access to the power plant site, related facilities, project-related staff, and the files and records maintained on site, for the purpose of conducting audits, surveys, inspections, or general site visits. Although the CPM will normally right to make unannounced visits at any time. All visitors must follow the Owner's standard safety requirements such as wearing appropriate equipment and observing safety rules when inspecting the site.

COM-2, Compliance Record

The project owner shall maintain project files onsite, or at an alternative site approved by the CPM, for the life of the project unless a lesser period of time is specified by the conditions of certification. The files shall contain copies of all "as-built" drawings, all documents submitted as verification for conditions, and all other project-related documents.

COM-3, Compliance Verification Submittals

Each condition of certification is followed by a means of verification. The verification describes the Energy Commission's procedure(s) to ensure post-certification compliance with adopted conditions.

Verification of compliance with the conditions of certification can be accomplished by:

1. reporting on the work done and providing the pertinent documentation in monthly and/or annual compliance reports filed by the project owner or authorized agent as required by the specific conditions of certification;
2. providing appropriate letters from delegate agencies verifying compliance;
3. Energy Commission staff audits of project records; and/or
4. Energy Commission staff inspections of mitigation or other evidence of mitigation.

A cover letter from the project owner or authorized agent is required for all compliance submittals and correspondence pertaining to compliance matters. The cover letter subject line

shall identify the involved condition(s) of certification by condition number and include a brief description of the subject of the submittal. The project owner shall also identify those submittals **not** required by a condition of certification with a statement such as: "This submittal is for information only and is not required by a specific condition of certification."

When submitting supplementary or corrected information, the project owner shall reference the date of the previous submittal.

The project owner is responsible for the delivery and content of all verification submittals to the CPM, whether such condition was satisfied by work performed by the project owner or an agent of the project owner.

All submittals shall be addressed as follows:
Compliance Project Manager
Docket Number
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

If the project owner desires Energy Commission staff action by a specific date, they shall so state in their submittal and include a detailed explanation of the effects on the project if this date is not met.

COM-4, Pre-Construction Matrix and Tasks Prior to Start of Construction
The project owner shall submit to the CPM, prior to commencing construction, a compliance matrix addressing only those conditions that must be fulfilled before the start of construction.

This matrix shall be included with the project owner's **first** compliance submittal, and shall be submitted prior to the first pre-construction meeting, if one is held. It will be in the same format as the compliance matrix referenced below.

Construction shall not commence until the pre-construction matrix is submitted, all preconstruction conditions have been complied with, and the CPM has issued a letter to the project owner authorizing construction. Various lead times (e.g., 30, 60, 90 days) for submittal of compliance verification documents to the CPM for conditions of certification are established to allow sufficient staff time to review and comment and, if necessary, allow the project owner to revise the submittal in a timely manner. This will ensure that project construction may proceed according to schedule.

Failure to submit compliance documents within the specified lead-time may result in delays in authorization to commence various stages of project construction.

Verification lead times (e.g., 90, 60 and 30-days) associated with start of construction may require the project owner to file submittals during the certification process, particularly if construction is planned to commence shortly after certification.

It is important that the project owner understand that the submittal of compliance documents prior to project certification is at the owner's own risk. In such a situation, any approval by Energy Commission staff is subject to change based upon the Commission Decision.

COMPLIANCE REPORTING

There are two different compliance reports that the project owner must submit to assist the CPM in tracking activities and monitoring compliance with the terms and conditions of the Commission Decision. During construction, the project owner or authorized agent shall submit Monthly Compliance Reports. During operation, an Annual Compliance Report must be submitted. These reports, and the requirement for an accompanying compliance matrix, are described below. The majority of the conditions of certification require that compliance submittals be submitted to the CPM in the monthly or annual compliance reports.

COM-5, Compliance Matrix

A compliance matrix shall be submitted to the CPM with each monthly and annual compliance report. The compliance matrix is intended to provide the CPM with the current status of all compliance conditions in a spreadsheet format. The compliance matrix must identify:

1. the technical area;
2. the condition number;
3. a brief description of the verification action or submittal required by the condition;
4. the date the submittal is required (e.g., 60 days prior to construction, after final inspection, etc.);
5. the expected or actual submittal date;
6. the date a submittal or action was approved by the Chief Building Official (CBO), CPM, or delegate agency, if applicable;
7. the compliance status of each condition (e.g., "not started," "in progress" or "completed" (include the date); and
8. the project's preconstruction and construction milestones, including dates and status (if milestones are required).

Satisfied conditions do not need to be included in the compliance matrix after they have been identified as satisfied in at least one monthly or annual compliance report.

COM-6, Monthly Compliance Report

The first Monthly Compliance Report is due one month following the Energy Commission business meeting date on which the project was approved, unless otherwise agreed to by the CPM. The first Monthly Compliance Report shall include an initial list of dates for each of the events identified on the **Key Events List. The Key Events List form is found at the end of this section.**

During pre-construction and construction of the project, the project owner or authorized agent shall submit an original and five copies (or amount specified by Compliance Project Manager) of the Monthly Compliance Report within 10 working days after the end of each reporting month. Monthly Compliance Reports shall be clearly identified for the month being reported.

The reports shall contain, at a minimum:

1. a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;
2. documents required by specific conditions to be submitted along with the Monthly Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Monthly Compliance Report;
3. an initial, and thereafter updated, compliance matrix which shows the status of all conditions of certification;
4. a list of conditions that have been satisfied during the reporting period, and a description or reference to the actions which satisfied the condition;
5. a list of any submittal deadlines that were missed accompanied by an explanation and an estimate of when the information will be provided;
6. a cumulative listing of any approved changes to conditions of certification;
7. a listing of any filings with, or permits issued by, other governmental agencies during the month;
8. a projection of project compliance activities scheduled during the next two months. The project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with conditions of certification;
9. a listing of the month's additions to the on-site compliance file;
10. any requests, with justification, to dispose of items that are required to be maintained in the project owner's compliance file; and

11. a listing of complaints, notices of violation, official warnings, and citations received during the month, a description of the resolutions of any resolved complaints, and the status of any unresolved complaints.

COM-7, Annual Compliance Report

After construction is complete, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports. The reports are for each year of commercial operation and are due to the CPM each year at a date agreed to by the CPM. Annual Compliance Reports shall be submitted over the life of the project unless otherwise specified by the CPM. Each Annual Compliance Report shall identify the reporting period and shall contain the following:

1. an updated compliance matrix which shows the status of all conditions of certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed);
2. a summary of the current project operating status and an explanation of any significant changes to facility operations during the year;
3. documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Annual Compliance Report;
4. a cumulative listing of all post-certification changes approved by the Energy Commission or cleared by the CPM;
5. an explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;
6. a listing of filings made to, or permits issued by, other governmental agencies during the year;
7. a projection of project compliance activities scheduled during the next year;
8. a listing of the year's additions to the on-site compliance file;
9. an evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date [see General Conditions for Facility Closure addressed later in this section]; and
10. a listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved complaints, and the status of any unresolved complaints.

COM-8, Construction and Operation Security Plan

At least 14 days prior to commencing construction, a site-specific Security Plan for the construction phase shall be submitted to the CPM for review and approval. At least 30 days prior to the initial receipt of hazardous materials on-site, a site-specific Security Plan for the operational phase shall be submitted to the CPM for review and approval.

Construction Security Plan
The Construction Security Plan shall include the following:

1. site fencing enclosing the construction area;
2. use of security guards;
3. check-in procedure or tag system for construction personnel and visitors;
4. protocol for contacting law enforcement and the CPM in the event of conduct endangering the facility, its employees, its contractors, or public, conduct which is a pre-incident indicator of endangering the facility, its employees, its contractors, or public, or an emergency; and
5. evacuation procedures.

Operations Security Plan
The Operations Security Plan shall include the following:

1. permanent site fencing and security gate;
2. evacuation procedures;
3. protocol for contacting law enforcement and the CPM in the event of conduct endangering the facility, its employees, its contractors, or public, conduct which is a pre-incident indicator of endangering the facility, its employees, its contractors, or public, or emergency;
4. fire alarm monitoring system;
5. site personnel background checks, including employee and routine on-site contractors [Site personnel background checks are limited to ascertaining that the employee's claims of identity and employment history are accurate]. All site personnel background checks shall be consistent with state and federal law regarding security and privacy;
6. site access for vendors; and
7. requirements for Hazardous Materials vendors to prepare and implement security plans as per 49 CFR 172.800 and to ensure that all hazardous materials drivers are in compliance with personnel background security checks as per 49 CFR Part 1572, Subparts A and B.
8. In addition, the Operations Security Plan shall include one or more of the following in order to ensure adequate perimeter security:

    a) security guards;
    b) security alarm for critical structures;
    c) perimeter breach detectors and on-site motion detectors; and

d) video or still camera monitoring system.

Verification: The Project Owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to the Security Plan. The CPM may authorize modifications to these measures, or may recommend additional measures depending on circumstances unique to the facility, and in response to industry-related security concerns.

COM-9, Confidential Information

Any information that the project owner deems confidential shall be submitted to the Energy Commission's Docket with an application for confidentiality pursuant to Title 20, California Code of Regulations, section 2505(a). Any information, that is determined to be confidential shall be kept confidential as provided for in Title 20, California Code of Regulations, section 2501 et. seq.

COM-10, Department of Fish and Game Filing Fee

Pursuant to the provisions of Fish and Game Code Section 711.4, the project owner shall pay a filing fee in the amount of $850. The payment instrument shall be provided to the Energy Commission's Project Manager (PM), not the CPM, at the time of project certification and shall be made payable to the California Department of Fish and Game. The PM will submit the payment to the Office of Planning and Research at the time of filing of the notice of decision pursuant to Public Resources Code Section 21080.5.

COM-11, Reporting of Complaints, Notices, and Citations

Prior to the start of construction, the project owner must provide notification in accordance with **NOISE-1** notifying property owners of a telephone number to contact project representatives with questions, complaints, or concerns. If the telephone is not staffed 24 hours per day, it shall include automatic answering system with date and time stamp recording. All recorded inquiries shall be responded to within 24 hours. The telephone number shall be posted at the project site and made easily visible to passersby during construction and operation. The telephone number shall be provided to the CPM who will post it on the Energy Commission's web page at: **http://www.energy.ca.gov/sitingcases/power_plants_contacts.html**

Any changes to the telephone number shall be submitted immediately to the CPM who will update the web page. In addition to the monthly and annual compliance reporting requirements described above, the project owner shall report and provide copies of all complaint forms, notices of violation, notices of fines, official warnings, and citations, within 10 days of receipt, to the CPM.

Complaints shall be logged and numbered. All complaints shall be recorded on the complaint form, such as Attachment A.

Facility Closure

At some point in the future, the project will cease operation and close down. At that time, it will be necessary to ensure that the closure occurs in such a way that public health and safety and the environment are protected from adverse impacts. Although the project setting for this project does not appear, at this time, to present any special or unusual closure problems, it is impossible to foresee what the situation will be in 30 years or more when the project ceases operation. Therefore, provisions must be made that provide the flexibility to deal with the specific situation and project setting that exist at the time of closure. Laws, Ordinances, Regulations and Standards (LORS) pertaining to facility closure are identified in the sections dealing with each technical area. Facility closure will be consistent with LORS in effect at the time of closure.

There are at least three circumstances in which a facility closure can take place, planned closure, unplanned temporary closure and unplanned permanent closure**.**

Closure Definitions

Planned Closure

A planned closure occurs at the end of a project's life, when the facility is closed in an anticipated, orderly manner, at the end of its useful economic or mechanical life, or due to gradual obsolescence.

Unplanned Temporary Closure

An unplanned temporary closure occurs when the facility is closed suddenly and/or unexpectedly, on a short-term basis, due to unforeseen circumstances such as a natural disaster or an emergency.

Unplanned Permanent Closure

An unplanned permanent closure occurs if the project owner closes the facility suddenly and/or unexpectedly, on a permanent basis. This includes unplanned closure where the owner remains accountable for implementing the on-site contingency plan. It can also include unplanned closure where the project owner is unable to implement the contingency plan, and the project is essentially abandoned.

General Conditions for Facility Closure

COM-12, Planned Closure

In order to ensure that a planned facility closure does not create adverse impacts, a closure process that provides for careful consideration of available options and applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure, will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a proposed facility closure plan to the Energy Commission for review and approval at least twelve months prior to commencement of closure activities (or other period of time

agreed to by the CPM). The project owner shall file 120 copies (or other number of copies agreed upon by the CPM) of a proposed facility closure plan with the Energy Commission.

The plan shall:

1. identify and discuss any impacts and mitigation to address significant adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related remnants that will remain at the site;
2. identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project;
3. identify any facilities or equipment intended to remain on site after closure, the reason, and any future use; and
4. address conformance of the plan with all applicable laws, ordinances, regulations, standards, local/regional plans in existence at the time of facility closure, and applicable conditions of certification.

In the event that there are significant issues associated with the proposed facility closure plan's approval, or the desires of local officials or interested parties are inconsistent with the plan, the CPM shall hold one or more workshops and/or the Energy Commission may hold public hearings as part of its approval procedure.

In addition, prior to submittal of the proposed facility closure plan, a meeting shall be held between the project owner and the Energy Commission CPM for the purpose of discussing the specific contents of the plan.

As necessary, prior to or during the closure plan process, the project owner shall take appropriate steps to eliminate any immediate threats to public health and safety and the environment, but shall not commence any other closure activities, until Energy Commission approval of the facility closure plan is obtained.

COM-13, Unplanned Temporary Closure/On-Site Contingency Plan

In order to ensure that public health and safety and the environment are protected in the event of an unplanned temporary facility closure, it is essential to have an on-site contingency plan in place. The on-site contingency plan will help to ensure that all necessary steps to mitigate public health and safety impacts and environmental impacts are taken in a timely manner.

The project owner shall submit an on-site contingency plan for CPM review and approval.

The plan shall be submitted no less that 60 days (or other time agreed to by the CPM) prior to commencement of commercial operation. The approved plan must be in place prior to commercial operation of the facility and shall be kept at the site at all times.

The project owner, in consultation with the CPM, will update the on-site contingency plan as necessary. The CPM may require revisions to the on-site contingency plan over the life of the project. In the annual compliance reports submitted to the Energy Commission, the project owner will review the on-site contingency plan, and recommend changes to bring the plan up to date. Any changes to the plan must be approved by the CPM.

The on-site contingency plan shall provide for taking immediate steps to secure the facility from trespassing or encroachment. In addition, for closures of more than 90 days, unless other arrangements are agreed to by the CPM, the plan shall provide for removal of hazardous materials and hazardous wastes, draining of all chemicals from storage tanks and other equipment and the safe shutdown of all equipment. (Also see the analysis for the technical areas of Hazardous Materials Management and Waste Management.)

In addition, consistent with requirements under unplanned permanent closure addressed below, the nature and extent of insurance coverage, and major equipment warranties must also be included in the on-site contingency plan. In addition, the status of the insurance coverage and major equipment warranties must be updated in the annual compliance reports.

In the event of an unplanned temporary closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, or e-mail, within 24 hours and shall take all necessary steps to implement the on-site contingency plan. The project owner shall keep the CPM informed of the circumstances and expected duration of the closure.

If the CPM determines that an unplanned temporary closure is likely to be permanent, or for a duration of more than twelve months, a closure plan consistent with the requirements for a planned closure shall be developed and submitted to the CPM within 90 days of the CPM's determination (or other period of time agreed to by the CPM).

COM-14, Unplanned Permanent Closure/On-Site Contingency Plan

The on-site contingency plan required for unplanned temporary closure shall also cover unplanned permanent facility closure. All of the requirements specified for unplanned temporary closure shall also apply to unplanned permanent closure.

In addition, the on-site contingency plan shall address how the project owner will ensure that all required closure steps will be successfully undertaken in the unlikely event of abandonment.

In the event of an unplanned permanent closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, or e-mail, within 24 hours and shall take all necessary steps to implement the on-site contingency plan. The project owner shall keep the CPM informed of the status of all closure activities.

A closure plan, consistent with the requirements for a planned closure, shall be developed and submitted to the CPM within 90 days of the permanent closure or another period of time agreed to by the CPM.

CBO Delegation and Agency Cooperation

In performing construction monitoring of the project, Commission staff acts as, and has the authority of, the Chief Building Official (CBO). Commission staff may delegate CBO responsibility to either an independent third party contractor or the local building official.

Commission staff retains CBO authority when selecting a delegate CBO including enforcing and interpreting state and local codes, and use of discretion, as necessary, in implementing the various codes and standards.

Commission staff may also seek the cooperation of state, regional and local agencies that have an interest in environmental control when conducting project monitoring.

Enforcement

The Energy Commission's legal authority to enforce the terms and conditions of its Decision is specified in Public Resources Code sections 25534 and 25900. The Energy Commission may amend or revoke the certification for any facility, and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Energy Commission Decision.

The specific action and amount of any fines the Energy Commission may impose would take into account the specific circumstances of the incident(s). This would include such factors as the previous compliance history, whether the cause of the incident involves willful disregard of LORS, oversight, unforeseeable events, and other factors the Energy Commission may consider.

Moreover, to ensure compliance with the terms and conditions of certification and applicable LORS, delegate agencies are authorized to take any action allowed by law in accordance with their statutory authority, regulations, and administrative procedures.

Noncompliance Complaint Procedures

Any person or agency may file a complaint alleging noncompliance with the conditions of certification. Such a complaint will be subject to review by the Energy Commission pursuant to Title 20, California Code of Regulations, section 1230 et seq., but in many instances the noncompliance can be resolved by using the informal dispute resolution process. Both the informal and formal complaint procedure, as described in current State law and regulations, are described below. They shall be followed unless superseded by current law or regulations.

Informal Dispute Resolution Procedure

The following procedure is designed to informally resolve disputes concerning the interpretation of compliance with the requirements of this compliance plan. The project owner, the Energy

Commission, or any other party, including members of the public, may initiate this procedure for resolving a dispute. Disputes may pertain to actions or decisions made by any party including the Energy Commission's delegate agents.

This procedure may precede the more formal complaint and investigation procedure specified in Title 20, California Code of Regulations, section 1230 et seq., but is not intended to be a substitute for, or prerequisite to it. This informal procedure may not be used to change the terms and conditions of certification as approved by the Energy Commission, although the agreed upon resolution may result in a project owner, or in some cases the Energy Commission staff, proposing an amendment.

The procedure encourages all parties involved in a dispute to discuss the matter and to reach an agreement resolving the dispute. If a dispute cannot be resolved, then the matter must be referred to the full Energy Commission for consideration via the complaint and investigation process. The procedure for informal dispute resolution is as follows:

Request for Informal Investigation

Any individual, group, or agency may request that the Energy Commission conduct an informal investigation of alleged noncompliance with the Energy Commission's terms and conditions of certification. All requests for informal investigations shall be made to the designated CPM.

Upon receipt of a request for informal investigation, the CPM shall promptly notify the project owner of the allegation by telephone and letter. All known and relevant information of the alleged noncompliance shall be provided to the project owner and to the Energy Commission staff. The CPM will evaluate the request and the information to determine if further investigation is necessary. If the CPM finds that further investigation is necessary, the project owner will be asked to promptly investigate the matter and, within seven working days of the CPM's request, provide a written report of the results of the investigation, including corrective measures proposed or undertaken, to the CPM. Depending on the urgency of the noncompliance matter, the CPM may conduct a site visit and/or request the project owner to provide an initial report, within 48 hours, followed by a written report filed within seven days.

Request for Informal Meeting

In the event that either the party requesting an investigation or the Energy Commission staff is not satisfied with the project owner's report, investigation of the event, or corrective measures undertaken, either party may submit a written request to the CPM for a meeting with the project owner. Such request shall be made within 14 days of the project owner's filing of its written report. Upon receipt of such a request, the CPM shall:

1. immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;

2. secure the attendance of appropriate Energy Commission staff and staff of any other agencies with expertise in the subject area of concern, as necessary;

3. conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner; and

4. after the conclusion of such a meeting, promptly prepare and distribute copies to all in attendance and to the project file, a summary memorandum which fairly and accurately identifies the positions of all parties and any conclusions reached. If an agreement has not been reached, the CPM shall inform the complainant of the formal complaint process and requirements provided under Title 20, California Code of Regulations, section 1230 et seq.

Formal Dispute Resolution Procedure-Complaints and Investigations
If the project owner, Energy Commission staff, or the party requesting an investigation is not satisfied with the results of the informal dispute resolution process, such party may file a complaint or a request for an investigation with the Energy Commission's General Counsel.

Disputes may pertain to actions or decisions made by any party including the Energy Commission's delegate agents. Requirements for complaint filings and a description of how complaints are processed are in Title 20, California Code of Regulations, section 1230 et seq.

The Chairman, upon receipt of a written request stating the basis of the dispute, may grant a hearing on the matter, consistent with the requirements of noticing provisions. The Energy Commission shall have the authority to consider all relevant facts involved and make any appropriate orders consistent with its jurisdiction (Cal. Code Regs., tit. 20, §§ 1232-1236).

POST CERTIFICATION CHANGES TO THE ENERGY COMMISSION DECISION: AMENDMENTS, insignificant project CHANGES AND VERIFICATION CHANGES
The project owner must petition the Energy Commission pursuant to Title 20, California Code of Regulations, section 1769, in order to delete or change a condition of certification, modify project design, operation or performance requirements, and to transfer ownership or operational control of the facility.

A petition is required for amendments and for insignificant project changes as specified below. For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to the CPM, who will file it with the Energy Commission's Docket in accordance with Title 20, California Code of Regulations, section 1209.

The criteria that determine which type of approval process applies are explained below.

Amendment
A proposed project modification will be processed as an amendment if it alters the intent or purpose of a condition of certification, has potential for significant adverse environmental

impact, or may violate applicable laws, ordinances, regulations or standards. The full Commission must approve formal amendments. The project owner shall file a petition in accordance with Title 20, California Code of Regulations, section 1769 (a).

Change of ownership or operational control also requires that the project owner files a petition, and obtains full Commission approval, pursuant to section 1769 (b).

Insignificant Project Change

If a proposed modification does not alter the intent or purpose of a condition of certification, does not have potential for significant adverse environmental impact, does not violate applicable laws, ordinances, regulations, or standards, or does not result in an ownership change, it will be processed in accordance with Section 1769(a)(2). In this regard, as specified in Section 1769(a)(2), Commission approval is not required.

The CPM shall file a statement that staff has made such a determination with the Commission Docket and mail a copy of the statement to every person on the project's post certification mailing list.

Any person may file an objection to staff's determination within 14 days of service on the grounds that the modification does not meet the criteria in section 1769 (a) (2). If an objection is received, the petition must be processed as a formal amendment to the Final Commission Decision and must be approved by the full Commission at a noticed business meeting or hearing.

Verification Change

The proposed change will be processed as a verification change if it involves only the language in the verification portion of the condition of certification. This procedure can only be used to change verification requirements that are of an administrative nature, usually the timing of a required action. In the unlikely event that verification language contains technical requirements, the proposed change must be processed as an amendment. The CPM may initiate a verification change.

SEE FORMS IN FINAL COMMISSION DECISION FOR COMPLIANCE ISSUES.

5.0 Potential Affects on the Public and Property Owners

5.1 Potential Effects on the Public

Consistent with the requirements of the CEC Siting Regulations Section 1769 (a)(1)(G), this section addresses the proposed Amendment's effects on the public.

Impacts to the public are anticipated to be significantly lower than those analyzed during the previous license proceeding for the project. Application of the R2C2 power block design will eliminate the need for the previously approved once-through cooling, significantly reducing the amount of wastes to be discharged back into the environment. The use of reclaimed and irrigation quality water as the water source for proposed plant design eliminates the facility's reliance of potable water resources.

Impacts to traffic will be reduced during peak construction periods as a consequence of the reduced work force necessary to construct the proposed modified project. Beach delivery of oversize equipment would further reduce local traffic impacts within the vicinity of the ESGS. Additionally the entrance and in-plant roadway improvements will further improve traffic within the boundaries ESGS by improving facility access and regress.

While Beach Delivery of oversize equipment may result in temporary disruption of recreational use of the beach and surf zone, the duration and frequency of distributions would be limited barge movement in and out within a 48 hour period for each barge delivery over a six month period. This will result in a temporary but minor impact.

The inclusion of a new potential laydown area would not result in any impacts to the public. The removal of one previously permitted laydown area (i.e., Fed Ex site) eliminates previous considerations at that site and its vicinity.

5.2 List of Property Owners

Consistent with the CEC Siting Regulations Section 1769(a)(1)(H), this section lists the property owners affected by the proposed modifications and is presented in Appendix 5.2.

5.3 Potential Effects on Property Owners

Consistent with the CEC Siting Regulations Section 1769(a)(1)(I), this section addresses potential effects of the proposed Amendment on nearby property owners, the public, and parties in the application proceeding. The proposed project design changes are expected to result in an environmental benefit due to the elimination of once-through cooling, elimination of ocean discharge of industrial wastewater associated with the R2C2 configuration, and the increased

reliance on reclaimed water instead of potable for plant operation. When operational, the ESPR project will eliminate ocean discharge of sanitary wastes. Therefore, impacts to property owners are expected to be lower than those analyzed during the license proceeding for the project. The operational impacts of the proposed design changes will not result in significant unmitigated environmental impacts and the proposed changes will reduce freshwater consumption significantly.

Figures

Appendices

3.1 Air Quality Appendices

3.1-A1 Air Emission Data
3.1-A2 Air Emission Data

3.2 Biological Appendices

3.2-A Terrestrial Biological Survey Result
3.2-B Threatened and Endangered and Sensitive Species

3.4 Geology & Soils Appendices

3.4-A Limited Geotechnical Evaluation
3.4-B Geotechnical Evaluation
3.4-C Supplemental Geotechnical Evaluation
3.4-D Beach Soil Grain Size Analysis
3.4-E Plant Access Road Preliminary Design Drawings

3.8 Paleontological Resources Appendices

3.8-A Paleontological Survey Report

5.2 Potential Effects on Public Appendices

5.2 List of Property Owner Potential Effected by ESPR