Contents

Section Page

Acronyms and Abbreviations xix

1.0 Executive Summary 1-1
1.1 Introduction 1-1
1.2 Project Overview 1-1
1.2.1 Project Objectives 1-3
1.2.2 Project Site Selection 1-3
1.3 Facility Location 1-4
1.4 Project Schedule 1-4
1.5 Project Ownership 1-5
1.6 Project Alternatives 1-5
1.7 Environmental Considerations 1-6
1.7.1 Air Quality 1-6
1.7.2 Biological Resources 1-6
1.7.3 Cultural Resources 1-7
1.7.4 Land Use 1-7
1.7.5 Noise 1-8
1.7.6 Public Health 1-8
1.7.7 Worker Health and Safety 1-9
1.7.8 Socioeconomics 1-9
1.7.9 Agriculture and Soils 1-10
1.7.10 Traffic and Transportation 1-10
1.7.11 Visual Resources 1-10
1.7.12 Hazardous Materials Handling 1-11
1.7.13 Waste Management 1-11
1.7.14 Water Resources 1-12
1.7.15 Geologic Hazards and Resources 1-12
1.7.16 Paleontological Resources 1-13
1.8 Key Benefits 1-13
1.8.1 Environmental 1-13
1.8.2 Employment 1-13
1.8.3 Energy Efficiency 1-13
1.9 Persons Who Prepared the AFC 1-14
1.10 Laws, Ordinances, Regulations, and Standards (LORS) 1-14
1.11 Permitting Requirements 1-14

2.0 Project Description 2-1
2.1 Introduction 2-1
2.2 Generating Facility Description, Design, and Operation 2-2
2.2.1 Site Arrangement and Layout 2-2
2.2.2 Process Description 2-2
2.2.3 Generating Facility Cycle 2-3

2.2.4 Combustion Turbine Generators, Heat Recovery Steam Generators, Steam Turbine Generator, and Condenser 2-3
2.2.5 Major Electrical Equipment and Systems 2-5
2.2.6 Fuel System 2-7
2.2.7 Water Supply and Use 2-8
2.2.8 Plant Cooling Systems 2-10
2.2.9 Waste Management 2-11
2.2.10 Management of Hazardous Materials 2-12
2.2.11 Emission Control and Monitoring 2-13
2.2.12 Fire Protection 2-14
2.2.13 Plant Auxiliaries 2-14
2.2.14 Interconnect to Electrical Grid 2-16
2.2.15 Project Construction 2-16
2.2.16 Generating Facility Operation 2-17
2.3 Facility Safety Design 2-18
2.3.1 Natural Hazards 2-18
2.3.2 Emergency Systems and Safety Precautions 2-19
2.4 Facility Reliability 2-20
2.4.1 Facility Availability 2-20
2.4.2 Redundancy of Critical Components 2-20
2.4.3 Fuel Availability 2-23
2.4.4 Water Availability 2-24
2.4.5 Project Quality Control 2-24
2.5 Laws, Ordinances, Regulations, and Standards 2-25

3.0 Demand Conformance 3-1
3.1 General 3-1
3.2 Need for Vernon Power Plant Project 3-1

4.0 Facility Closure 4-1
4.1 Introduction 4-1
4.2 Temporary Closure 4-1
4.3 Permanent Closure 4-1
4.4 Laws, Ordinances, Regulations and Standards 4-2
4.5 Involved Agencies and Agency Contacts 4-3

5.0 Transmission System Engineering 5-1
5.1 Introduction 5-1
5.2 Transmission Interconnection Engineering 5-3
5.2.1 Existing Transmission Facilities (including system map) 5-3
5.2.2 Proposed Transmission Interconnection 5-3
5.3 Transmission Interconnection Alternatives 5-6
5.3.1 Primary Alternative: Connection to the LADWP System 5-7
5.3.2 Alternatives: Direct Connection to the SCE System (CAISO Grid) through the Laguna Bell Substation 5-8
5.4 Transmission Interconnection System Impact Studies 5-9
5.5 Transmission Interconnection Safety and Nuisances 5-10
5.5.1 Electrical Clearances 5-10
5.5.2 Electrical Effects 5-11

5.5.3 Aviation Safety 5-21
5.5.4 Fire Hazards 5-22
5.6 Applicable Laws, Ordinances, Regulations, and Standards (LORS) 5-23
5.6.1 Design and Construction 5-23
5.6.2 Electric and Magnetic Fields (EMF) 5-24
5.6.3 Hazardous Shock 5-24
5.6.4 Communication Interference 5-25
5.6.5 Aviation Safety 5-25
5.6.6 Fire Hazard 5-26
5.6.7 Jurisdiction 5-26
5.7 References 5-27

6.0 Natural Gas Supply 6-1
6.1 Introduction 6-1
6.2 Proposed Route 6-1
6.3 Construction Practices 6-1
6.3.1 Gas Pipeline 6-1
6.3.2 Metering Station 6-3
6.4 Pipeline Operations 6-3

7.0 Water Supply 7-1
7.1 Introduction 7-1
7.2 Water Requirements 7-1
7.3 Recycled Water Supply 7-1
7.3.1 Central Basin Municipal Water District 7-2
7.3.2 Southeast Water Reliability Project 7-3
7.4 Recycled Water Quality 7-4
7.5 Potable Water 7-5
7.5.1 Construction 7-5
7.5.2 Operations 7-5
7.6 Permits and Permitting Agencies 7-5
7.7 Reference 7-6

8.0 Environmental Information 8-1
8.1 Air Quality 8.1-1
8.1.1 Introduction 8.1-1
8.1.2 Air Quality Setting 8.1-2
8.1.3 Overview of Air Quality Standards 8.1-3
8.1.4 Existing Air Quality 8.1-5
8.1.5 Laws, Ordinances, Regulations, and Standards 8.1-12
8.1.6 Environmental Analysis 8.1-23
8.1.7 Compliance with Laws, Ordinances, Regulations, and Standards 8.1-55
8.1.8 Cumulative Air Quality Impacts Analysis 8.1-63
8.1.9 Mitigation 8.1-63
8.2 Biological Resources 8.2-1
8.2.1 Introduction 8.2-1
8.2.2 Applicable Laws, Ordinances, Regulations, and Standards 8.2-1
8.2.3 Environmental Setting 8.2-7
8.2.4 Environmental Analysis 8.2-12

8.2.5 Proposed Mitigation and Monitoring 8.2-17
8.2.6 Involved Agencies and Agency Contacts 8.2-17
8.2.7 Required Permits and Permit Schedule 8.2-18
8.2.8 References 8.2-18
8.3 Cultural Resources 8.3-1
8.3.1 Introduction 8.3-1
8.3.2 Laws, Ordinances, Regulations, and Standards 8.3-2
8.3.3 Affected Environment 8.3-4
8.3.4 Environmental Analysis 8.3-17
8.3.5 Cumulative Effects 8.3-17
8.3.6 Mitigation Measures 8.3-18
8.3.7 Involved Agencies and Agency Contacts 8.3-20
8.3.8 Permits Required and Schedule 8.3-20
8.3.9 References 8.3-21
8.4 Land Use 8.4-1
8.4.1 Introduction 8.4-1
8.4.2 Laws, Ordinances, Regulations, and Standards 8.4-2
8.4.3 Affected Environment 8.4-4
8.4.4 Future Growth Trends 8.4-12
8.4.5 Recent Discretionary Reviews by Public Agencies 8.4-12
8.4.6 Environmental Analysis 8.4-12
8.4.7 Cumulative Impacts 8.4-14
8.4.8 Permits and Agency Contacts 8.4-15
8.4.9 References 8.4-18
8.5 Noise 8.5-1
8.5.1 Introduction 8.5-1
8.5.2 Fundamentals of Acoustics 8.5-1
8.5.3 Laws, Ordinances, Regulations, and Standards 8.5-4
8.5.4 Affected Environment 8.5-7
8.5.5 Environmental Consequences 8.5-11
8.5.6 Mitigation Measures 8.5-16
8.5.7 Involved Agencies and Agency Contacts 8.5-17
8.5.8 Permits Required and Permit Schedule 8.5-17
8.5.9 References 8.5-17
8.6 Public Health 8.6-1
8.6.1 Introduction 8.6-1
8.6.2 Laws, Ordinances, Regulations, and Standards 8.6-2
8.6.3 Affected Environment 8.6-4
8.6.4 Environmental Analysis 8.6-5
8.6.5 Cumulative Impacts 8.6-10
8.6.6 Mitigation Measures 8.6-11
8.6.7 References 8.6-12
8.7 Worker Health and Safety 8.7-1
8.7.1 Introduction 8.7-1
8.7.2 Laws, Ordinances, Regulations, and Standards 8.7-1
8.7.3 Setting 8.7-6
8.7.4 Impacts 8.7-6

8.7.5 Involved Agencies and Agency Contacts 8.7-21
8.7.6 Permits Required and Permit Schedule 8.7-22
8.8 Socioeconomics 8.8-1
8.8.1 Introduction 8.8-1
8.8.2 Laws, Ordinances, Regulations, and Standards 8.8-1
8.8.3 Affected Environment 8.8-3
8.8.4 Environmental Analysis 8.8-11
8.8.5 Cumulative Impacts 8.8-20
8.8.6 Environmental Justice 8.8-21
8.8.7 Mitigation Measures 8.8-21
8.8.8 Involved Agencies and Agency Contacts 8.8-21
8.8.9 Permits and Permitting Schedule 8.8-22
8.8.10 References 8.8-22
8.9 Agriculture and Soils 8.9-1
8.9.1 Introduction 8.9-1
8.9.2 Applicable Laws, Ordinances, Regulations, and Standards 8.9-1
8.9.3 Environmental Setting 8.9-5
8.9.4 Environmental Analysis 8.9-16
8.9.5 Mitigation Measures 8.9-18
8.9.6 Permits and Agency Contacts 8.9-19
8.9.7 References 8.9-21
8.10 Traffic and Transportation 8.10-1
8.10.1 Introduction 8.10-1
8.10.2 Laws, Ordinances, Regulations and Standards 8.10-1
8.10.3 Affected Environment 8.10-4
8.10.4 Environmental Analysis 8.10-10
8.10.5 Cumulative Impacts 8.10-21
8.10.6 Mitigation Measures 8.10-22
8.10.7 Agencies and Agency Contacts 8.10-23
8.10.8 Required Permits and Permitting Schedule 8.10-23
8.10.9 References 8.10-24
8.11 Visual Resources 8.11-1
8.11.1 Introduction 8.11-1
8.11.2 Affected Environment 8.11-1
8.11.3 Environmental Analysis 8.11-8
8.11.4 Cumulative Impacts 8.11-16
8.11.5 Mitigation Measures 8.11-17
8.11.6 Laws, Ordinances, Regulations, and Standards 8.11-17
8.11.7 Permits/Approvals Required 8.11-22
8.11.8 Involved Agencies and Agency Contacts 8.11-22
8.11.9 References 8.11-22
8.12 Hazardous Materials Handling 8.12-1
8.12.1 Introduction 8.12-1
8.12.2 Laws, Ordinances, Regulations, and Standards 8.12-1
8.12.3 Affected Environment 8.12-7
8.12.4 Potential Environmental and Human Health Effects 8.12-7
8.12.5 Offsite Consequence Analysis 8.12-10

8.12.6 Fire and Explosion Risk 8.12-11
8.12.7 Cumulative Impacts 8.12-12
8.12.8 Proposed Mitigation Measures 8.12-12
8.12.9 Involved Agencies and Agency Contacts 8.12-17
8.12.10 Permits Required and Permit Schedule 8.12-18
8.12.11 References 8.12-18
8.13 Waste Management 8.13-1
8.13.1 Introduction 8.13-1
8.13.2 Laws, Ordinances, Regulations, and Standards 8.13-1
8.13.3 Environmental Condition of Site 8.13-4
8.13.4 Project Waste Generation 8.13-6
8.13.5 Waste Disposal Sites 8.13-11
8.13.6 Waste Management Methods and Mitigation 8.13-13
8.13.7 Cumulative Impacts 8.13-16
8.13.8 Monitoring 8.13-16
8.13.9 Involved Agencies 8.13-17
8.13.10 Permits Required and Permit Schedule. 8.13-17
8.13.11 References 8.13-17
8.14 Water Resources 8.14-1
8.14.1 Introduction 8.14-1
8.14.2 Applicable Laws, Ordinances, Regulations, and Standards 8.14-1
8.14.3 Hydrologic Setting 8.14-6
8.14.4 Water Use and Disposal 8.14-7
8.14.5 Precipitation, Stormwater Runoff, and Drainage 8.14-9
8.14.6 Effects on Water Resources 8.14-10
8.14.7 Mitigation 8.14-14
8.14.8 Proposed Monitoring Plans and Compliance Verification Procedures 8.14-15
8.14.9 Cumulative Impacts 8.14-15
8.14.10 Permits Required 8.14-15
8.14.11 Agency Contacts 8.14-15
8.14.12 References 8.14-16
8.15 Geologic Hazards and Resources 8.15-1
8.15.1 Introduction 8.15-1
8.15.2 Laws, Ordinances, Regulations, and Standards 8.15-1
8.15.3 Affected Environment 8.15-2
8.15.4 Environmental Analysis 8.15-6
8.15.5 Mitigation Measures 8.15-7
8.15.6 Involved Agencies and Agency Contacts 8.15-8
8.15.7 Permits Required and Permit Schedule 8.15-8
8.15.8 References 8.15-8
8.16 Paleontological Resources 8.16-1
8.16.1 Introduction 8.16-1
8.16.2 Laws, Ordinances, Regulations, and Standards 8.16-1
8.16.3 Affected Environment 8.16-3
8.16.4 Environmental Analysis 8.16-8
8.16.5 Abandonment/Closure Impacts 8.16-10

8.16.6 Cumulative Impacts 8.16-11
8.16.7 Proposed Mitigation Measures 8.16-11
8.16.8 Involved Agencies and Agency Contacts 8.16-12
8.16.9 Permits Required and Permit Schedule 8.16-12
8.16.10 References 8.16-12
9.0 Alternatives 9-1
9.1 Introduction 9-1
9.2 No Project Alternative 9-1
9.2.1 Description 9-1
9.2.2 Potential Environmental Impacts 9-2
9.3 Proposed and Alternative Sites 9-2
9.3.1 Proposed Site 9-2
9.3.2 Alternative Sites 9-3
9.4 Selection of the Proposed Site 9-11
9.5 Linear Corridors 9-14
9.5.1 Potable Water Supply 9-14
9.5.2 Recycled Water 9-14
9.5.3 Sanitary Sewer Line 9-14
9.5.4 Natural Gas Supply Line 9-14
9.5.5 Electric Transmission Lines 9-14
9.6 Alternative Project Configurations 9-15
9.7 Alternative Technologies 9-16
9.8 References 9-17

10.0 Engineering 10-1
10.1 Introduction 10-1
10.2 Facility Design 10-1
10.3 Facility Reliability 10-2
10.3.1 Fuel Availability 10-2
10.3.2 Plant Availability 10-2
10.4 Thermal Efficiency 10-3
10.5 Laws, Ordinances, Regulations, and Standards 10-4
10.5.1 General Laws, Ordinances, Regulations, and Standards 10-4
10.5.2 Local LORS 10-4
10.6 Local Agency Contacts 10-4
10.7 Local Permits Required and Permit Schedule 10-5

Tables

2.2-1 Daily and Annual Water Use for VPP Operations 2-8
2.2-2 Project Schedule Major Milestones 2-17
2.2-3 Average and Peak Construction Traffic 2-17
2.4-1 Major Equipment Redundancy 2-21

4.4-1 Applicable Laws, Ordinances, Regulations, and Standards 4-3
4.5-1 Agency Contacts for Facility Closure 4-3

5.5-1 Normal Flows in the Vernon Power Plant 5-13

5.5-2 Magnetic Field (mG), Calculated Field at Mid-span Perpendicular to Transmission Centerline 5-17
5.6-1 Design and Construction LORS 5-23
5.6-2 Electric and Magnetic Field LORS 5-24
5.6-3 Hazardous Shock LORS 5-24
5.6-4 Communications Interference LORS 5-25
5.6-5 Aviation Safety LORS 5-25
5.6-6 Fire Hazard LORS 5-26
5.6-7 Jurisdiction 5-26

7.2-1 Daily and Annual Water Use for VPP Operations 7-1
7.3-1 Projected Recycled Water Used within Central Basin Service Area 7-2
7.3-2 CBMWD Recycled Water Sales (Fiscal Year 04-05) 7-3
7.3-3 CBMWD Recycled Water Uses (Fiscal Year 04-05) 7-3
7.4-1 Recycled Water Quality 7-4
7.6-1 Permits and Permitting Agencies for VPP Water and Wastewater 7-5

8.1-1 Ambient Air Quality Standards 8.1-4
8.1-2a Ozone Levels at North Main Street Station, Los Angeles, 2003-2005 ..... 8.1-6
8.1-2b Ozone Levels at Lynwood Station, 2003-2005 ..... 8.1-6
8.1-3a Nitrogen Dioxide Levels at the North Main Street Station, Los Angeles, 2003-2005 ..... 8.1-7
8.1-3b Nitrogen Dioxide Levels at the Lynwood Station, Los Angeles, 2003-2005 ..... 8.1-7
8.1-4a Carbon Monoxide Levels at North Main Street Station, Los Angeles, 2003-2005 .. 8.1-8
8.1-4b Carbon Monoxide Levels at Lynwood Station, 2003-2005 ..... 8.1-8
8.1-5 Sulfur Dioxide Levels at North Main Street, Los Angeles, 2003-2005 ..... 8.1-9
8.1-6a Particulate Sulfate Levels at North Main Street Station, 2002-2005 ..... 8.1-10
8.1-6b Particulate Sulfate Levels at Lynwood Station, 2002-2004 ..... 8.1-10
8.1-7 PM_{10} Levels at the North Main Street Station, Los Angeles, 2003-2005 ..... 8.1-10
8.1-8a $PM_{2.5}$ Levels at North Main Street Station, Los Angeles, 2003-2005 ..... 8.1-11
8.1-8b $PM_{2.5}$ Levels at Lynwood Station, 2003-2005 ..... 8.1-11
8.1-9a Airborne Lead Levels at North Main Street Station, Los Angeles, 2003-2005 ..... 8.1-11
8.1-9b Airborne Lead Levels at Lynwood Station, Los Angeles, 2003-2005 ..... 8.1-12
8.1-10 Air Quality Agencies 8.1-13
8.1-11 Criteria Pollutant Precursors 8.1-17
8.1-12 Laws, Ordinances, Regulations, Standards (LORS), and Permits for Protection of Air Quality 8.1-24
8.1-13 Total Project Construction Emissions 8.1-30
8.1-14 Facility Commissioning Emission Rate 8.1-30
8.1-15 Maximum Pollutant Emission Rates, Each Gas Turbine 8.1-31
8.1-16 Facility Startup/Shutdown Emission Rates per Turbine 8.1-32
8.1-17 Typical Natural Gas Specifications 8.1-33
8.1-18 Maximum Facility Fuel Use 8.1-33
8.1-19 VPP Facility Emissions 8.1-34
8.1-20 Noncriteria Pollutant Emissions for the Project 8.1-36
8.1-21 Background Air Concentrations for the Vernon Power Plant 8.1-40
8.1-22 Worst Case Commissioning Scenario Used for Detailed Model Input 8.1-42
8.1-23 "Worst Case" Operational Scenario used for Model Input 8.1-44

8.1-24 Fire Pump and Cooling Tower Emissions 8.1-45
8.1-25 Maximum Modeled Impacts from Construction and the Ambient Air Quality Standards 8.1-45
8.1-26 Turbine Commissioning Impacts Analysis—Maximum Modeled Impacts Compared to the Ambient Air Quality Standards 8.1-47
8.1-27 Normal Operation Impacts Analysis—Maximum Modeled Impacts Compared to the Ambient Air Quality Standards 8.1-47
8.1-28 Normal Operation Impacts Analysis for VPP—SCAQMD Rule 1303 (Maximum Modeled Impacts) 8.1-48
8.1-29 Normal Operation Impacts Analysis for VPP - SCAQMD Rule 2005 (Maximum Modeled Impacts) 8.1-49
8.1-30 PSD Levels of Significance 8.1-49
8.1-31 PSD Pre-construction Monitoring Exemption Levels 8.1-50
8.1-32 Nearby Class I Areas 8.1-51
8.1-33 Emission Rates used in CALPUFF 8.1-51
8.1-34 Source Characteristics 8.1-52
8.1-35 PM Speciation for Natural-Gas Fired Combustion Turbine 8.1-53
8.1-36a Class I San Gabriel Visibility Results 8.1-54
8.1-36b Class I Cucamonga Visibility Results 8.1-54
8.1-37 Class I PSD Increment Results, San Gabriel 8.1-54
8.1-38 Class I PSD Increment Results, Cucamonga 8.1-55
8.1-39 Nitrogen and Sulfur Deposition Results, San Gabriel 8.1-55
8.1-40 Nitrogen and Sulfur Deposition Results, Cucamonga 8.1-55
8.1-41 Best Available Control Technology Requirements 8.1-57
8.1-42 SCAQMD Offset Requirements and Project Emissions 8.1-59

8.2-1 Laws, Ordinances, Regulations, and Standards Applicable to VPP Biological Resources. 8.2-2
8.2-2 Special-Status Species Potentially Occurring in the Regional Vicinity of the VPP Project Area. 8.2-20
8.2-3 Summary of Permanent and Temporary VPP Project Impacts on Biological Resources During Construction. 8.2-13
8.2-4 Contacts for the VPP Project 8.2-17
8.2-5 Required Permits and Schedule 8.2-18

8.3-1 Applicable Cultural Resource Laws, Ordinances, Regulations, and Standards 8.3-2
8.3-2 Authors (Dates) and CHRIS Catalog Number for Cultural Resource Investigation Reports 8.3-11
8.3-3 Summary of Sites within 0.5 Mile of the Project Area of Potential Effects 8.3-11
8.3-4 Agency Contacts 8.3-20

8.4–1 Summary of Project Feature Jurisdictions 8.4-1
8.4-2 Laws, Ordinances, Regulations, and Standards Applicable to Vernon Power Plant Land Use 8.4-2
8.4-3 Definitions of Planning Designations in Project Land Use Study Area 8.4-5
8.4-4 Existing Land Uses and General Plan Designations within the Study Area 8.4-7
8.4-5 Land Use Conformity with Applicable Plans and Policies 8.4-14
8.4-6 Permits and Agency Contacts 8.4-15

8.5-1 Definitions of Acoustical Terms 8.5-1
8.5-2 Typical Sound Levels Measured in the Environment and Industry 8.5-3
8.5-3 Applicable Laws, Ordinances, Regulations, and Standards 8.5-4
8-5-4 City of Vernon Land Use Noise Compatibility Matrix 8.5-6
8.5-5 Summary of Hourly Measurements at R2 (dBA) 8.5-8
8.5-6 Summary of Hourly Measurements at R4 (dBA) 8.5-9
8.5-7 Summary of Hourly Measurements at R5 (dBA) 8.5-10
8.5-8 Construction Equipment and Composite Site Noise Levels 8.5-12
8.5-9 Average Construction Noise Levels at Various Distances 8.5-13
8.5-10 Noise Levels from Common Construction Equipment at Various Distances 8.5-13
8.5-11 Octave Band Sound Power Levels Used to Model VPP Operations, dB (Flat) 8.5-15
8.5-12 Involved Agencies and Agency Contacts 8.5-17

8.6-1 Summary of Primary Regulatory Jurisdiction for Public Health 8.6-2
8.6-2 Summary of Agency Contacts for Public Health 8.6-3
8.6-3 Chemical Substances Potentially Emitted to the Air from VPP 8.6-5
8.6-4 Risk Assessment Health Values for Substances of Potential Concern 8.6-7

8.7-1 Federal Laws, Ordinances, Regulations, and Standards 8.7-1
8.7-2 State Laws, Ordinances, Regulations, and Standards 8.7-2
8.7-3 Local Laws, Ordinances, Regulations, and Standards Required by Los Angeles County 8.7-3
8.7-4 Applicable National Consensus Standards 8.7-4
8.7-5 Construction Hazard Analysis 8.7-6
8.7-6 Operation Hazard Analysis 8.7-8
8.7-7 Construction Training Program 8.7-18
8.7-8 Operations Training Program 8.7-19
8.7-9 Agency Contacts 8.7-21
8.7-10 Health and Safety Permits 8.7-22

8.8-1 Laws, Ordinances, Regulations, and Standards Applicable to VPP Socioeconomics 8.8-1
8.8-2 Historical Population Estimates and Projections 8.8-4
8.8-3 Historical and Projected Average Compounded Growth Ranges 8.8-4
8.8-4 Housing Estimates by City and County, January 1, 2006 ..... 8.8-5
8.8-5 Employment Distribution of Los Angeles County 2000-2005 ..... 8.8-6
8.8-6 Employment Data 2005 ..... 8.8-7
8.8-7 Los Angeles County's General Fund (in Millions) 8.8-7
8.8-8 Current and Projected Enrollment by Grade 8.8-8
8.8-9 Construction Personnel by Month 8.8-13
8.8-10 Labor Union Contacts 8.8-14
8.8-11 Available Labor by Skill in Los Angeles County, 2002 to 2012 ..... 8.8-14
8.8-12 Typical Plant Operation Workforce 8.8-18
8.8-13 Agencies and Agency Contacts for VPP Socioeconomics 8.8-22

8.9-1 Laws, Ordinances, Regulations, and Standards for Agricultural and Soil Resources 8.9-2
8.9-2 Soil Mapping Unit Descriptions and Characteristics 8.9-7

8.9.3 Estimate of Soil Loss by Water Erosion Using Revised Universal Soil Loss Equation (RUSLE2) 8.9-13
8.9-4 Mitigation Measures for Fugitive Dust Emissions 8.9-14
8.9-5 Estimate of Total Suspended Particulates Emitted from Grading and Wind Erosion 8.9-15
8.9-6 Permits and Agency Contacts for VPP Soils....8.9-19

8.10-1 LORS Applicable to Traffic and Transportation 8.10-2
8.10-2 Intersection Capacity Utilization (ICU) Level of Service (LOS) Ranges....8.10-6
8.10-3 ICU Summary—Existing Conditions 8.10-7
8.10-5 Construction Worker and Truck Summary 8.10-11
8.10-6 Projected Daily Levels of Service During Construction....8.10-14
8.10-7 ICU Summary—Existing Plus Project Conditions....8.10-15
8.10-8 Estimated Truck Traffic at the Facility During Operation....8.10-20
8.10-9 Agency Contacts 8.10-23
8.10-10 Permit Schedule for Traffic and Transportation 8.10-24

8.11-1 Landscape Scenic Quality Scale....8.11-6
8.11-2 Approximate Dimensions of the Major Project Features....8.11-10
8.11-3 Laws, Ordinances, Regulations, and Standards Applicable to VPP Visual Resources 8.11-18
8.11-4 Conformity of VPP with the City of Vernon General Plan....8.11-19
8.11-5 Conformity of VPP with the City of Vernon Zoning Ordinances 8.11-20
8.11-6 Conformity of VPP with the City of Commerce General Plan 8.11-21
8.11-7 Involved Agencies and Agency Contacts 8.11-22

8.12-1 Applicable Laws, Ordinances, Regulations, and Standards 8.12-1
8.12-6 Gaseous Ammonia Concentrations in the Event of a Release 8.12-11
8.12-7 Agency Contacts for VPP Hazardous Materials Handling 8.12-17
8.12-8 Permits Required and Permit Schedule for VPP Hazardous Material Handling.8.12-18
8.12-2 Use and Location of Hazardous Materials 8.12-20
8.12-3 Vernon Power Plant Chemical Inventory 8.12-22
8.12-4 Toxic Effects and Exposure Levels of Regulated Substances Exceeding TQs 8.12-24
8.12-5 Toxicity of Hazardous Materials....8.12-25

8.13-1 Laws, Ordinances, Regulations, and Standards Applicable to VPP Waste Management....8.13-2
8.13-2 Wastes Generated during the Construction Phase at the VPP Facility 8.13-7
8.13-3 Hazardous Wastes Generated at the VPP Facility During Operations 8.13-10
8.13-4 Solid Waste Disposal Facilities in the Vicinity of the VPP Project 8.13-12
8.13-5 Agency Contacts for City of Vernon Project Waste Management....8.13-17
8.13-6 Permits Required and Permit Schedule for City of Vernon Project Waste Management....8.13-17

8.14-1 Laws, Ordinances, Regulations, and Standards Applicable to VPP Water Resources....8.14-2
8.14-2 Daily and Annual Water Use for VPP Operations 8.14-8
8.14-3 Operational Wastewater Discharges from VPP 8.14-9

8.14-5 Summary of Average Water Quality Characteristics for VPP Wastewater Compared to LACSD Industrial Discharge Limits 8.14-13
8.14-6 Permits and Permitting Agencies for VPP Water Resources 8.14-16

8.15-1 Laws, Ordinances, Regulations, and Standards 8.15-1
8.15-2 Description of Stratigraphy for Project Site and Linears 8.15-3
8.15-3 Principal Faults within 20 Miles of the Proposed Vernon Power Plant Site 8.15-3
8.15-4 Summary of Potential Geologic Hazards 8.15-6
8.15-5 Local Agency Contacts 8.15-8

8.16-1 Applicable LORS Regarding Paleontological Resources 8.16-2

9.3-1 Comparison Using Site Selection Criteria 9-4
9.3-3 Land Use Status of Sites 9-7
9.4-1 Comparison of the Proposed Site and Alternative Site Locations 9-13
9.3-2 Summary Comparison of Environmental Effects of Alternative Project Sites 9-18

10.6-1 Local Agency Contacts 10-5
10.7-1 Permits and Agency Contacts 10-5

Figures

1.2-1 Vicinity Map
1.2-2 Project Location
1.2-3 Site Plan
1.2-4 General Arrangement
1.2-5 VPP Site and Linear Facilities Location Map
1.2-6 Appearance of Site Before Construction
1.2-7 Appearance of Site After Construction

2.1-1 VPP Site and Linear Facilities Location Map
2.2-1 Site Plan
2.2-2 Typical Elevation
2.2-3 Settled Areas Within 1 Mile of the VPP Site
2.2-4 One-line Schematic of the Switchyard
2.2-5a Heat Flow Diagram
2.2-5b Heat Flow Diagram
2.2-5c Heat Flow Diagram
2.2-5d Heat Flow Diagram
2.2-6a Annual Average Water Balance Diagram
2.2-6b Peak Water Balance Diagram
2.2-7 Construction Laydown Area

5.1-1 Selected Regional Transmission Assets and Interconnection Routes for the Proposed Vernon Power Plant
5.2-1 One-Line Schematic of Conceptual Switchyard to SCE
5.2-2 Vernon Power Plant Interconnection Typical Cross-Section
5.5-1 Cross-section A
5.5-2 Cross-section B - LADWP Century to Velasco
5.5-3 Cross-section C - Parallel to LADWP Century - Velasco - New

5.5-4 Cross-section D - Downey Ave. - Existing
5.5-5 Cross-section E - Downey Ave. - New
5.5-6 Cross-section F - Los Angeles River Corridor - Existing
5.5-7 Cross-section G - Los Angeles River Corridor - New
5.5-8 Cross-section H - Randolph at Colmar - Existing
5.5-9 Cross-section I - Randolph at Colmar - New
5.5-10 Cross-section J - Alcoa Ave. - Existing
5.5-11 Cross-section K - Randolph at Maywood - Existing
5.5-12 Cross-section L - Randolph at Maywood - New
5.5-13 Cross-section M - Randolph at Atlantic - Existing
5.5-14 Cross-section N - Randolph at Atlantic - New
5.5-15 Cross-sections A & J - Electric Field
5.5-16 Cross-sections B & C- Electric Field
5.5-17 Cross-sections D & E- Electric Field
5.5-18 Cross-sections F & G - Electric Field
5.5-19 Cross-sections H & I - Electric Field
5.5-20 Cross-sections K & L - Electric Field
5.5-21 Cross-sections M & N- Electric Field
5.5-22 Cross-sections A & J - Audible Noise
5.5-23 Cross-section B & C - Audible Noise
5.5-24 Cross-sections D & E - Audible Noise
5.5-25 Cross-sections F & G - Audible Noise
5.5-26 Cross-sections H & I - Audible Noise
5.5-27 Cross-sections K & L- Audible Noise
5.5-28 Cross-sections M & N- Audible Noise
5.5-29 Cross-sections A & J - Magnetic Field
5.5-30 Cross-section B & C - Magnetic Field
5.5-31 Cross-sections D & E - Magnetic Field
5.5-32 Cross-sections F & G - Magnetic Field
5.5-33 Cross-sections H & I - Magnetic Field
5.5-34 Cross-sections K & L - Magnetic Field
5.5-35 Cross-sections M & N - Magnetic Field
5.5-36 Cross-sections A & J - Radio Field
5.5-37 Cross-section B & C - Radio Field
5.5-38 Cross-sections D & E - Radio Field
5.5-39 Cross-sections F & G - Radio Field
5.5-40 Cross-sections H & I - Radio Field
5.5-41 Cross-sections K & L - Radio Field
5.5-42 Cross-sections M & N - Radio Field

6.1-1 Natural Gas Line

8.1-1a Annual Wind Rose
8.1-1b Winter Daytime Wind Rose
8.1-1c Winter Nighttime Wind Rose
8.1-1d Spring Daytime Wind Rose
8.1-1e Spring Nighttime Wind Rose
8.1-1f Summer Daytime Wind Rose

8.1-1g Summer Nighttime Wind Rose
8.1-1h Fall Daytime Wind Rose
8.1-1i Fall Nighttime Wind Rose
8.1-2 Elevations within 6 miles of Project Site

8.2-1 Special-Status Species Within a 1-Mile Radius of the VPP Site
8.2-2 Biological Resources Within 1 Mile of Project Site and Transmission Lines

8.3-1 Ethnographic Distribution in Project Vicinity
8.3-2 Previously Documented Historic Resources

8.4-1 General Plan Land Use Designations for Project Site and Vicinity
8.4-2 Zoning Designations for Project Site and Vicinity

8.5-1 Noise Monitoring Locations and Existing Residences

8.6-1a Sensitive Receptors Within 6 Miles of VPP Site
8.6-1b Churches and Parks Within 3 Miles of VPP Site
8.6-2 Terrain Above Stack Height
8.6-3 Quad Maps Within a 10-Mile Radius

8.8-1 Minority Population Distribution by Census Blocks Within 6 Miles of VPP
8.8-2 Low-Income Population Distribution by Census Blocks Within 6 Miles of VPP

8.9-1 Soils
8.9-2 Agricultural Areas in Proximity to the Vernon Power Plant

8.10-1 Regional Transportation Facilities Near the Project Site
8.10-2 Local Roadways
8.10-3 Existing A.M. Peak Hour Turns Movement
8.10-4 Existing P.M. Peak Hour Turns Movement
8.10-5 Public Transportation
8.10-6 Railroad Crossings
8.10-7 Trip Distribution

8.11-1 Locations of Project Features and KOP Viewpoints
8.11-2 KOP 1
8.11-3 KOP 2
8.11-4 KOP 3

8.12-1 Ammonia Impact Area

8.14-1 Surface Water Features
8.14-2 Groundwater Basins
8.14-3 Proposed Drainage Facilities

8.15-1 Area Geology
8.15-2 Principal Fault Zones in Project Area

8.16-1 Area Geology
8.16-2 Confidential Paleontological Resources in Project Vicinity

9.3-1 Alternative Sites Considered

Appendixes

1A Adjacent Landowners
1B Persons Who Prepared the AFC
1C Evidence of Site Control

5A Partial Preliminary System Impact Study
5B EMF and Power Line Concepts

6A "Will Serve" Letters

7A "Will Serve" Letters

8.1A Construction Emission Estimates and Dispersion Modeling
8.1B Calculation of Maximum Hourly, Daily, and Annual Emissions
8.1C Commissioning and Operational Dispersion Modeling
8.1D LAER/BACT Determination
8.1E Mitigation
8.1F Cumulative Impact Analysis

8.2A Resume of Biology Staff

8.3A Native American Consultation Letters
8.3B Resumes of Cultural Staff
8.3C Confidential CHRIS Record Search

8.6A EDR Sensitive Receptor Report
8.6B Publicly Available Health Studies
8.6C Health Risk Assessment

8.8A Environmental Justice

8.12A Offsite Consequence Analysis

8.13A EDR Report of Site and Linears

8.14A Stormwater Calculations
8.14B Construction SWPPP
8.14C Industrial SWPPP
8.14D "Will Serve" Letters

8.15A Initial Geotechnical Report

10A Civil Engineering Design Criteria
10B Structural Engineering Design Criteria
10C Mechanical Engineering Design Criteria
10D Electrical Engineering Design Criteria
10E Control Engineering Design Criteria
10F Chemical Engineering Design Criteria
10G Geologic and Foundation Design Criteria

Acronyms and Abbreviations

$\mu g/m^3$	micrograms per cubic meter
°F	degree Fahrenheit
A	ampere
AC	alternating current
ACGIH	American Conference of Government Industrial Hygienists
ACHP	Advisory Council on Historic Preservation
ADT	average daily traffic
AFA	Austin-Foust Associates, Inc.
AFC	Application for Certification
afy	acre-feet per year
AHM	acutely hazardous material
AHPA	Archaeological and Historic Preservation Act
AMR	American Medical Response
ANSI	American National Standards Institute
APCD	air pollution control district
API	American Petroleum Institute
AQMD	air quality management district
AQRVs	air quality related values
ASME	American Society of Mechanical Engineers
AST	aboveground storage tank
B.P.	before present
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BMPs	best management practices
BOP	balance of plant
BPIP	Building Profile Input Program
BUR	Burbank Airport

CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAISO	California Independent System Operator
CalARP	California's Accidental Release Prevention Program
CalEPA	California Environmental Protection Agency
Cal-OSHA	California Occupational Safety and Health Administration
CAM	Compliance Assurance Monitoring
CAS	Chemical Abstract Service
CBC	California Building Code
CBMWD	Central Basin Municipal Water District
CBO	Certified Building Official
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFG	California Department of Fish and Game
CDPD	Cellular Digital Pocket Data
CEC	California Energy Commission
CEDD	California Employment Development Department
CEM	continuous emission monitoring
CEMS	continuous emission monitoring system
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CHP	California Highway Patrol
CHU	Critical Habitat Unit
City	City of Vernon
CIWMA	California Integrated Waste Management Act
CMP	Congestion Management Program
CNDDB	California Natural Diversity Data Base

CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
County	Los Angeles County
CPM	Compliance Project Manager
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRS	Cultural Resources Specialist
CSC	California species of special concern
CT	combustion turbine
CTG	combustion turbine generator
CUP	conditional use permit
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
DAS	data acquisition system
dB	decibels
dBA	decibels, A-weighted
DC	direct current
DCS	distributed control system
DEM	Digital Elevation Model
DER	Designated Ecological Reserve
DLN	dry low nitrogen oxide
DOC	determination of compliance
DOF	Department of Finance
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
EAF	equivalent availability factor
EDR	Environmental Data Resources, Inc.
EGFs	electric generating facilities

EHD	Environmental Health Department
EHS	extremely hazardous substance
EIR	Environmental Impact Review
EMF	electric and magnetic field
EO	Executive Order
EPCRA	Emergency Planning and Community Right-To-Know Act of 1986
ERC	emission reduction credits
ERPG	Emergency Response Planning Guideline
ERPG-1	Maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without experiencing other than mild transient adverse health effects
ERPG-2	Maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without developing irreversible or serious health effects
ERPG-3	Maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without experiencing life-threatening health effects
ES	Elementary School
FAA	Federal Aviation Administration
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FLAG	Federal Land Managers' Air Quality Related Values Workgroup
FMMP	Farmland Mapping and Monitoring Program
FY	fiscal year
g/hp-hr	gram per horsepower hour
g/m^3	gram per cubic meter
GEP	Good Engineering Practice
Gj/hr	gigajoules per hour
GO	General Order (of CPUC)
GO-95	General Order 95

gpd	gallons per day
gpm	gallons per minute
gr/dscf	grains per dry standard cubic foot
GWh	gigawatt hours
H&SC	California Health and Safety Code
HAP	hazardous air pollutant
HAZMAT	Hazardous Materials
HCM	*Highway Capacity Manual*
HCP	Habitat Conservation Plan
HDD	horizontal directional drilling
HHV	higher heating value
HI	hazard index
HMBP	Hazardous Materials Business Plan
HMERT	Hazardous Materials Emergency Response Team
HP	high pressure
HRSG	heat recovery steam generator
HSP	Health and Safety Plan
HWCL	Hazardous Waste Control Law
Hz	hertz
I/O	input/output
ICU	Intersection Capacity Utilization
IDLH	Immediately dangerous to life and health
IEEE	Institute of Electrical and Electronic Engineers
IPP	independent power producers
ITE	Institute of Transportation Engineers
IWDP	Industrial Wastewater Discharge Permit
K	degrees Kelvin
kA	kilo-ampere
km	kilometer
KOP	key observation point

kV	kilovolt
kV/m	kilovolts per meter
L_{90}	he noise level that is exceeded during 90 percent of the measurement period
L_{90}	noise level that is exceeded during 90 percent of the measurement period
LA River	Los Angeles River
LACMVP	Natural History Museum of Los Angeles County Vertebrate Paleontology Department
LACSD	Sanitation Districts of Los Angeles County
LADWP	Los Angles Department of Water and Power
LARW	Los Angeles River Watershed
LARWQCB	California Regional Water Quality Control Board, Los Angeles Region
LAUSD	Los Angeles Unified School District
LAX	Los Angeles International Airport
lb/hr	pounds per hour
lb/MMscf	pounds per million standard cubic feet
LC	load center
LD50	dose lethal to 50 percent of those tested
LDLO	lowest published lethal dose
LEL	lower explosive limit
LEPC	Local Emergency Planning Committee
L_{eq}	equivalent sound pressure level
LGB	Long Beach Airport
LHV	lower heating value
LO/TO	lock-out/tag-out
LORS	laws, ordinances, regulations and standards
LOS	Level of Service
LP	low pressure
m	meter
M	Richter Magnitude
m/s	meter per second

mA	milliamperes
MACT	maximum achievable control technology
MCC	motor control centers
MEI	Maximum Exposed Individual
MEIR	Maximum Exposed Individual Resident
MEIW	Maximum Exposed Individual Worker
mG	milligauss
mg/kg	milligrams per kilogram
mg/L	milligrams/liter
mg/m^3	milligrams per cubic meter
MGS	Malburg Generating Station
mgy	million gallons per year
MICR	maximum individual cancer risk
MLD	Most Likely Descendant
MMBtu/hr	million British thermal units per hour
MS	Middle School
MSDS	Material Safety Data Sheets
MVA	megavolt-amperes
MW	megawatt
MWD	Metropolitan Water District
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NESC	National Electric Safety Code
NESHAPS	National Emission Standards for Hazardous Air Pollutants (
NFPA	National Fire Protection Association
NH_3	ammonia
NHPA	National Historic Preservation Act [
NIOSH	National Institute of Occupational Safety and Health
NO	nitric oxide
NO_x	oxides of nitrogen

NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSPS	Standards of Performance for New Stationary Sources (
NSR	New Source Review
O&M	operations and maintenance
OEHHA	Office of Health Hazard Assessment
ONT	Ontario International Airport
OSHA	Occupational Safety and Health Act
PAH	polycyclic aromatic hydrocarbons
PEL	OSHA permissible exposure limit for 8-hr workday
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in equivalent diameter
$PM_{2.5}$	particulate matter with less than 2.5 microns n equivalent diameter
PMI	point of maximum impact
PPE	personal protective equipment
ppm	parts per million
ppmv	parts per million by volume
PRC	Public Resources Code
PRGs	Preliminary Remediation Goals
PRMMP	Paleontological Resources Monitoring and Mitigation Plan
PSD	Prevention of Significant Deterioration
RBLC	USEPA's RACT/BACT/LAER Clearinghouse
RCRA	Resource Conservation and Recovery Act
RECLAIM	REgional CLean Air Incentives Market
RELs	reference exposure levels
RH	relative humidity
RICE	reciprocating internal combustion engines
RI-TVI	Radio Interference and Television Interference

RMP	Risk Management Plan
RO/EDI	electrodeionization with reverse osmosis pretreatment
ROW	right-of-way
RQ	Reportable Quantity
RTCs	RECLAIM Trading Credits
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SARA	Superfund Amendments and Reauthorization Act
SBCM	San Bernardino County Museum
SCADA	Supervisory Control and Data Acquisition
SCAG	Southern California Council of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central California Information Center
SCE	Southern California Edison
SCR	selective catalytic reduction
SCS	Soil Conservation Service
SERC	State Emergency Response Commission
SHPO	State Historic Preservation Officer
SIC	Standards Industrial Classification
SIP	State Implementation Plan
SMP	Self Monitoring Program
SNA	Significant Nature Areas
SoCalGas	Southern California Gas Company
SOP	standard operating procedure
SO_x	sulfur oxides
SPCC	Spill Prevention Control and Countermeasures
SQMP	stormwater quality management program
State	State of California
STEL	Short-term exposure limit, 15-minute exposure
STG	steam turbine generator

SUSMP	Standard Urban Stormwater Mitigation Plan
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
T-BACT	toxic emissions with the best available control technology for toxics
TCA	Transportation Corridor Agency
TCLO	lowest published toxic concentration
TLV	ACGIH threshold limit value for 8-hour workday
TMP	Traffic Management Plan
TPQ	Threshold Planning Quantity
tpy	tons per year
TQ	threshold quantity
TRALIN	Transmission Line Parameters and Electric Gradient
TRI	Toxic Chemical Release Inventory
TSD	Treatment, Storage, and Disposal
TSP	total suspended particulate matter
TWA	NIOSH time-weighted average for 8-hour workday
UBC	Uniform Building Code
UCMP	University of California Museum of Paleontology
UPRR	Union Pacific Railroad
UPS	uninterruptible power supply
USAR	Urban Search and Rescue
USC	United States Code
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USNPS	United States Department of the Interior, National Park Service
UTM	Universal Transverse Mercator Projection
UXO	unexploded ordinance

V/C	volume-to-capacity
Vernon	City of Vernon
VFD	Vernon Fire Department
VOC	volatile organic compound
VPP	Vernon Power Plant
WDRs	Waste Discharge Requirements