Contents

Section **Page**

Acronyms and Abbreviations xvii

1.0 Executive Summary 1-1
1.1 Introduction 1-1
1.2 Project Overview 1-1
1.3 Project Ownership 1-2
1.4 Facility Location 1-2
1.4 Project Schedule 1-3
1.5 Project Alternatives 1-3
1.6 Environmental Considerations 1-4
1.6.1 Air Quality 1-4
1.6.2 Alternative Water Supply 1-4
1.6.3 Visual Resources 1-5
1.7 Key Benefits 1-5
1.8 Persons Who Prepared the AFC 1-6
1.9 Laws, Ordinances, Regulations, and Standards (LORS) 1-6
1.10 Permitting Requirements 1-6

2.0 Project Description 2-1
2.1 Introduction 2-1
2.1.2 Project Site Overview 2-2
2.1.3 Proposed High School 2-4
2.2 Generating Facility Description, Design, and Operation 2-4
2.2.1 Site Arrangement and Layout 2-4
2.2.2 Process Description 2-4
2.2.3 Generating Facility Cycle 2-5
2.2.4 Combustion Turbine Generators 2-5
2.2.5 Major Electrical Equipment and Systems 2-6
2.2.6 Fuel System 2-7
2.2.7 Water Supply and Use 2-7
2.2.8 Plant Cooling Systems 2-9
2.2.9 Waste Management 2-9
2.2.10 Management of Hazardous Materials 2-11
2.2.11 Emission Control and Monitoring 2-11
2.2.12 Fire Protection 2-12
2.2.13 Plant Auxiliaries 2-12
2.2.14 Interconnection to Electrical Grid 2-14
2.2.15 Project Construction 2-14
2.2.16 Generating Facility Operation 2-15

2.3 Facility Safety Design 2-17
2.3.1 Natural Hazards 2-17
2.3.2 Emergency Systems and Safety Precautions 2-17
2.4 Facility Reliability 2-18
2.4.1 Facility Availability 2-18
2.4.2 Redundancy of Critical Components 2-19
2.4.3 Fuel Availability 2-21
2.4.4 Water Availability 2-21
2.4.5 Project Quality Control 2-21
2.5 Laws, Ordinances, Regulations, and Standards 2-23
2.6 References 2-23

3.0 Demand Conformance 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

5.0 Electric Transmission 5-1
5.1 Introduction 5-1
5.2 Transmission Interconnection 5-1
5.3 Interconnection System Impact Study 5-2
5.3.1 Distribution System 5-2
5.3.2 Transmission System 5-3
5.3.3 Mitigation 5-3
5.4 Relocation of Substation Controls 5-3
5.5 Transmission Line Safety and Nuisance 5-4
5.5.1 Electrical Clearances 5-4
5.5.2 Electrical Effects 5-4
5.5.3 Aviation Safety 5-6
5.5.4 Fire Hazards 5-7
5.6 Applicable Laws, Ordinances, Regulations, and Standards 5-7
5.6.1 Design and Construction 5-7
5.6.2 Electric and Magnetic Fields 5-8
5.6.3 Hazardous Shock 5-8
5.6.4 Communications Interference 5-9
5.6.5 Aviation Safety 5-9
5.6.6 Fire Hazards 5-10
5.6.7 Jurisdiction 5-10

6.0 Natural Gas Supply 6-1
6.1 Introduction 6-1
6.2 Proposed Route 6-1
6.3 Construction Practices 6-2
6.3.1 Gas Pipeline 6-2
6.3.2 Metering Station 6-4
6.4 Pipeline Operations 6-4
6.5 Permits 6-5

7.0 Water Supply 7-1
7.1 Water Supply and Use 7-1
7.2 Water Quality 7-2
7.3 Water Treatment 7-3
7.4 Wastewater Collection and Disposal 7-3
7.4.1 Cooling Tower Drift 7-4
7.4.2 Sanitary Wastewater 7-4
7.4.3 Plant Drainage 7-4
7.5 Water Use Authorization 7-4
7.6 References 7-5

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 8.1-10
8.1.6 Environmental Analysis 8.1-23
8.1.7 Compliance with Laws, Ordinances, Regulations, and Standards ... 8.1-46
8.1.8 Cumulative Air Quality Impacts Analysis 8.1-52
8.1.9 Mitigation 8.1-53
8.1.10 References 8.1-53
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 8.2-8
8.2.4 Environmental Analysis 8.2-17
8.2.5 Proposed Mitigation and Monitoring 8.2-23
8.2.6 Involved Agencies and Agency Contacts 8.2-25
8.2.7 Required Permits and Permit Schedule 8.2-25
8.2.8 References 8.2-26
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 8.3-16
8.3.5 Cumulative Effects 8.3-17
8.3.6 Mitigation Measures 8.3-17
8.3.7 Involved Agencies and Agency Contacts 8.3-19
8.3.8 Permits Required and Schedule 8.3-20
8.3.9 References 8.3-20
8.4 Land Use 8.4-1
8.4.1 Introduction 8.4-1
8.4.2 Affected Environment 8.4-1
8.4.3 Future Growth Trends 8.4-8
8.4.4 Recent Discretionary Reviews by Public Agencies 8.4-8

8.4.5 Laws, Ordinances, Regulations, and Standards 8.4-10
8.4.6 Environmental Analysis 8.4-12
8.4.7 Cumulative Impacts 8.4-18
8.4.8 Mitigation Measures 8.4-19
8.4.9 References 8.4-19
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 Affected Environment 8.5-4
8.5.4 Environmental Analysis 8.5-8
8.5.5 Mitigation Measures 8.5-17
8.5.6 Laws, Ordinances, Regulations, and Standards 8.5-18
8.5.7 Involved Agencies and Agency Contacts 8.5-21
8.5.8 Permits Required and Permit Schedule 8.5-21
8.5.9 References 8.5-21
8.6 Public Health 8.6-1
8.6.1 Introduction 8.6-1
8.6.2 Laws, Ordinances, Regulations, and Standards 8.6-1
8.6.3 Affected Environment 8.6-3
8.6.4 Environmental Analysis 8.6-4
8.6.5 Mitigation Measures 8.6-10
8.6.6 References 8.6-11
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 8.7-21
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 8.8-14
8.8.5 Cumulative Impacts 8.8-24
8.8.6 Environmental Justice 8.8-25
8.8.7 Mitigation Measures 8.8-26
8.8.8 Involved Agencies and Agency Contacts 8.8-26
8.8.9 Permits and Permitting Schedule 8.8-26
8.8.10 References 8.8-27
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 8.9-4
8.9.4 Potential Environmental Analysis 8.9-20
8.9.5 Mitigation Measures 8.9-22
8.9.6 Permits and Agency Contacts 8.9-23
8.9.7 References 8.9-24

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 8.10-9
8.10.4 Environmental Analysis 8.10-15
8.10.5 Cumulative Impacts 8.10-23
8.10.6 Mitigation Measures 8.10-24
8.10.7 Involved Agencies and Agency Contacts 8.10-27
8.10.8 Permits and Permitting Schedule 8.10-28
8.10.9 References 8.10-28
8.11 Visual Resources 8.11-1
8.11.1 Affected Environment 8.11-1
8.11.2 Environmental Analysis 8.11-6
8.11.3 Cumulative Impacts 8.11-14
8.11.4 Mitigation Measures 8.11-14
8.11.5 Laws, Ordinances, Regulations, and Standards 8.11-15
8.11.6 References 8.11-17
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 8.12-8
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 Project Site Overview 8.13-1
8.13.2 Laws, Ordinances, Regulations, and Standards 8.13-3
8.13.3 Environmental Condition of Site 8.13-7
8.13.4 Project Waste Generation 8.13-12
8.13.5 Waste Disposal Sites 8.13-17
8.13.6 Waste Management Methods and Mitigation 8.13-20
8.13.7 Cumulative Impacts 8.13-23
8.13.8 Monitoring 8.13-24
8.13.9 Involved Agencies 8.13-24
8.13.10 Permits Required and Permit Schedule 8.13-25
8.13.11 References 8.13-26
8.14 Water Resources 8.14-1
8.14.1 Applicable Laws, Ordinances, Regulations, and Standards 8.14-1
8.14.2 Hydrologic Setting 8.14-6
8.14.3 Water Use and Disposal 8.14-10
8.14.4 Precipitation, Stormwater Runoff, and Drainage 8.14-12
8.14.5 Effects on Water Resources 8.14-13

8.14.6 Mitigation 8.14-19
8.14.7 Proposed Monitoring Plans and Compliance Verification Procedures 8.14-19
8.14.8 Cumulative Impacts 8.14-19
8.14.9 Permits Required 8.14-20
8.14.10 Agency Contacts 8.14-20
8.14.11 References 8.14-21
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 8.15-1
8.15.4 Environmental Impacts 8.15-5
8.15.5 Mitigation Measures 8.15-6
8.15.6 Involved Agencies and Agency Contacts 8.15-6
8.15.7 Permits Required and Permit Schedule 8.15-6
8.15.8 References 8.15-7
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 Setting 8.16-4
8.16.4 Resource Inventory 8.16-6
8.16.5 Impacts 8.16-9
8.16.6 Mitigation 8.16-11
8.16.7 Involved Agencies and Agency Contacts 8.16-13
8.16.8 Permits Required and Permit Schedule 8.16-13
8.16.9 References 8.16-14

9.0 Alternatives 9-1
9.1 Introduction 9-1
9.2 Project Objectives 9-1
9.3 No Project Alternative 9-2
9.3.1 Description 9-2
9.3.2 Potential Environmental Impacts 9-2
9.4 Proposed and Alternative Sites 9-2
9.4.1 Alternative Site Selection Criteria 9-2
9.4.2 Properties Considered 9-3
9.4.3 Environmental Considerations 9-4
9.5 Selection of the Proposed Site 9-8
9.6 Process Water Supply 9-8
9.6.1 Recycled Water 9-9
9.6.2 Impaired Water Sources 9-12
9.6.3 Dry Cooling Technology 9-13
9.7 Alternative Linear Corridors 9-14
9.7.1 Potable Water Supply 9-14
9.7.2 Sanitary Sewer Line 9-14
9.7.3 Electric Transmission Lines 9-15
9.7.4 Natural Gas Supply Line 9-15

9.8 Alternative Air Pollution Emission Control Analysis 9-21
9.8.1 Combustion Modifications 9-22
9.8.2 Alternatives to Ammonia-based Emission Control Systems 9-23
9.9 Alternative Technologies 9-24
9.9.1 Oil; Coal; Conventional and Supercritical Boiler/Steam Turbine 9-24
9.9.2 Nuclear 9-25
9.9.3 Water 9-25
9.9.4 Biomass 9-25
9.9.5 Solar 9-25
9.9.6 Wind Generation 9-25
9.10 References 9-26

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 Efficiency 10-3
10.5 Laws, Ordinances, Regulations, and Standards (LORS) 10-3
10.5.1 General LORS 10-3
10.5.2 Local LORS 10-4
10.6 Local Agency Contacts 10-5
10.7 Local Permits Required and Permit Schedule 10-5

Appendices

1A Evidence of Control
1B Figure Showing Final Parcels
1C Owners Adjacent to the Project Site and Linear Corridors
1D Persons Who Prepared the AFC

5A System Impact Study

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

8.2A Qualifications/Resume of Field Surveyors

8.3A Agency Consultation Letters
8.3B Resume of Cultural Resources Staff
8.3C CHRIS Confidential Documents

8.4A City of Grand Terrace Land Use Documents

8.6A EDR Offsite Receptor Report
8.6B Health Risk Assessment Analysis

8.8A Environmental Justice Analysis
8.8B Records of Conversations with Public Service Providers

8.12A Offsite Consequence Analysis
8.12B Gas line Study

8.13A Phase I Environmental Site Assessments for the Proposed AES Highgrove Project

8.14A Draft Construction Drainage, Erosion, and Sediment Control/Stormwater Pollution Prevention Plan
8.14B Stormwater Calculations

8.16A Paleontological Records Search and Literature Review

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

Tables

2.2-1 Estimated Water Usage
2.2-2 Project Schedule Major Milestones
2.2-3 Average and Peak Construction Traffic
2.2-4 Typical Plant Operation Workforce
2.4-1 Major Equipment Redundancy

5.6-1 Design and Construction
5.6-2 Electric and Magnetic Fields
5.6-3 Hazardous Shock
5.6-4 Communications Interference
5.6-5 Aviation Safety
5.6-6 Fire Hazards
5.6-7 Jurisdiction

7.2-1 Estimated Water Quality from Onsite Well
7.5-1 AES Highgrove Water Annexation

8.1-1 Ambient Air Quality Standards
8.1-2 Ozone Levels at 5888 Mission Blvd, Riverside, 2002-2004
8.1-3 Nitrogen Dioxide Levels at 5888 Mission Blvd, Riverside, 2002-2004
8.1-4 Carbon Monoxide Levels at 5888 Mission Blvd Station, Riverside, 2002-2004
8.1-5 Sulfur Dioxide Levels at 5888 Mission Blvd, Riverside 2002-2004
8.1-6 Particulate Sulfate Levels at 5888 Mission Blvd., 2002-2004
8.1-7 PM_{10} Levels at 5888 Mission Blvd. Station, Riverside, 2002-2004

8.1-8 $PM_{2.5}$ Levels at 5888 Mission Blvd Station, Riverside, 2002-2004
8.1-9 Airborne Lead Levels at 5888 Mission Blvd, Riverside, 2002-2004
8.1-10 Air Quality Agencies
8.1-11 Applicable Laws, Ordinances, Regulations, Standards (LORS), and Permits for Protection of Air Quality
8.1-12 Criteria Pollutant Precursors
8.1-13 Total Project Construction Emissions
8.1-14 Facility Commissioning Emission Rate (per Turbine)
8.1-15 Maximum Pollutant Emission Rates, Each Gas Turbine
8.1-16 Facility Startup/Shutdown Emission Rates
8.1-17 Typical Natural Gas Specifications
8.1-18 Maximum Facility Fuel Use (MMBtu)
8.1-19 AES Highgrove Project Facility Emissions
8.1-20 Noncriteria Pollutant Emissions for the Project
8.1-21 Background Air Concentrations for the Highgrove Facility 2002 – 2004
8.1-22 Worst Case Model Input—Commissioning Scenario
8.1-23 "Worst Case" Model Input for Normal Turbine Operation
8.1-24 Maximum Modeled Impacts from Demolition/Construction and the Ambient Air Quality Standards
8.1-25 Turbine Commissioning Impacts Analysis—Maximum Modeled Impacts Compared to the Ambient Air Quality Standards
8.1-26 Normal Operation Impacts Analysis—Maximum Modeled Impacts Compared to the Ambient Air Quality Standards
8.1-27 SCREEN3 1-Hour Fumigation Impacts Analysis
8.1-28 Normal Operation Impacts Analysis for AES—SCAQMD Rule 1303 (Maximum Modeled Impacts)
8.1-29 Normal Operation Impacts Analysis for AES —SCAQMD Rule 2005 (Maximum Modeled Impacts)
8.1-30 Distance from Proposed AES Highgrove Project to Federal Class I Areas
8.1-31 Best Available Control Technology Requirements
8.1-32 SCAQMD Offset Requirements and Project Emissions (ref: Rule 1304(d)(1)(B), Rule 1303(b)(2), Rule 1304, Table A, Regulation 2005)

8.2-1 Laws, Ordinances, Regulations, and Standards Applicable to Biological Resources
8.2-2 Applicable Conservation Policies
8.2-3 Special-Status Species Potentially Occurring in the Highgrove Project Area
8.2-4 Summary of Permanent and Temporary Project Impacts on Biological Resources During Construction
8.2-5 Contacts for the Highgrove Project

8.3-1 Laws, Ordinances, Regulations, and Standards Applicable to Cultural Resources
8.3-2 Impacts to Cultural Resources from the Proposed Project—Sites within APE
8.3-3 Agency Contacts

8.4-1 General Plan & Specific Plan Land Use Designations Within the Study Area
8.4-2 Applicable Zoning Designations for the Project and Study Area
8.4-3 Laws, Ordinances, Regulations, and Standards Applicable to AES Highgrove Project Land Use

8.4-4 AES Highgrove Project Land Use Conformity with Applicable Plans and Policies

8.5-1 Definitions of Acoustical Terms
8.5-2 Typical Sound Levels Measured in the Environment and Industry
8.5-3 Summary of Hourly Measurements at R1 (dBA)
8.5-4 Summary of Hourly Measurements at R2 (dBA)
8.5-5 Summary of Hourly Measurements at R3 (dBA)
8.5-6 Construction Equipment and Composite Site Noise Levels
8.5-7 Average Construction Noise Levels at Various Distances
8.5-8 Noise Levels from Common Construction Equipment at Various Distances
8.5-9 Octave Band Sound Power Levels Used to Model Operations, dB (Flat)
8.5-10 Recommended Land Use Compatibility Guidelines for the City of Grand Terrace
8.5-11 Applicable Laws, Ordinances, Regulations, and Standards
8.5-12 Involved Agencies and Agency Contacts

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

8.7-1 Federal Laws, Ordinances, Regulations, and Standards
8.7-2 State Laws, Ordinances, Regulations, and Standards
8.7-3 Local Laws, Ordinances, Regulations, and Standards
8.7-4 Applicable National Consensus Standards
8.7-5 Construction and Demolition Hazard Analysis
8.7-6 Operation Hazard Analysis
8.7-7 Construction Training Program
8.7-8 Operations Training Program
8.7-9 Agency Contacts
8.7-10 Health and Safety Permits

8.8-1 Laws, Ordinances, Regulations, and Standards Applicable to Socioeconomics
8.8-2 Historical and Projected Populations
8.8-3 Historical and Projected Annual Average Compounded Population Growth Rates
8.8-4 Distribution of Minority and Hispanic Population by Census Tracts Within a 6-Mile Radius
8.8-5 Distribution of Low Income Population by Census Tracts Within a 6-Mile Radius
8.8-6 Housing Estimates by City and County, January 1, 2005
8.8-7 Employment Distribution in San Bernardino County, 1999 to 2004
8.8-8 Employment Distribution in Riverside-San Bernardino-Ontario MSA, 1999 to 2004
8.8-9 Employment Data, 2004
8.8-10 San Bernardino County Revenues and Expenditures by Fund
8.8-11 City of Grand Terrace General Fund Revenues and Expenditures
8.8-12 Current and Projected Enrollment by Grade
8.8-13 Plant Construction Personnel for by Discipline
8.8-14 Labor Union Contacts
8.8-15 Available Labor by Skill in Riverside and San Bernardino Counties, 2002 to 2012
8.8-16 Typical Plant Operation Workforce
8.8-17 Agencies and Agency Contacts for Highgrove Project Socioeconomics

8.9-1 Laws, Ordinances, Regulations, and Standards Applicable to Agricultural and Soil Resources
8.9-2 Soil Mapping Unit Descriptions and Characteristics
8.9-3 Estimated Soil Loss from Water Erosion
8.9-4 Mitigation Measures for Fugitive Dust Emissions
8.9-5 Estimated Unmitigated and Mitigated TSP Emissions from the Site and Along the Gas Pipeline
8.9-6 Permits and Agency Contacts for Agriculture and Soils

8.10-1 Laws, Ordinances, Regulations, and Standards Applicable to Traffic and Transportation
8.10-2 Estimated Truck Traffic at the Facility During Operation
8.10-3 Total Daily Workforce-Related Vehicle Trip Generation During Construction
8.10-4 Agency Contacts
8.10-5 Required Permits

8.11-1 Landscape Scenic Quality Scale
8.11-2 Approximate Dimensions of the Major Project Features
8.11-3 Laws, Ordinances, Regulations, and Standards Applicable to AES Highgrove Project Visual Resources
8.11-4 Conformity of Highgrove Project with the City of Grand Terrace General Plan
8.11-6 Conformity of Highgrove Project with the City of Grand Terrace Zoning Code

8.12-1 Applicable Laws, Ordinances, Regulations, and Standards
8.12-2 Use and Location of Hazardous Materials
8.12-3 Chemical Inventory, Description of Hazardous Materials Stored Onsite, and Reportable Quantities
8.12-4 Toxicity, Reactivity, and Flammability of Hazardous and Regulated Substances Stored Onsite
8.12-5 Toxic Effects and Exposure Levels of Regulated Substances
8.12-6 Gaseous Ammonia Concentrations in the Event of a Release
8.12-7 Agency Contacts
8.12-8 Permits Required and Permit Schedule for AES Highgrove Hazardous Material Handling

8.13-1 Laws, Ordinances, Regulations, and Standards Applicable to AES Highgrove Waste Management
8.13-2 Hazardous Wastes Generated at the AES Highgrove Facility
8.13-3 Solid Waste Disposal Facilities for AES Highgrove Waste
8.13-4 Agency Contacts for AES Highgrove Waste Management
8.13-5 Permits Required and Permit Schedule for AES Highgrove Waste Management

8.14-1 Laws, Ordinances, Regulations, and Standards Applicable to Highgrove Project Water Resources
8.14-2 Limitations for Industrial Discharges to SARI
8.14-3 Verified Extractions from the Riverside Basin within San Bernardino County (1992-2001), in acre-feet per year
8.14-4 Average and Maximum Daily and Average Annual Water Discharge Rates
8.14-5 Average Monthly Rainfall near the Proposed Project Site (2001 to 2005)

8.14-6 Discharge Water Quality
8.14-7 Permits and Permitting Agencies for Highgrove Water Resources

8.15-1 Laws, Ordinances, Regulations, and Standards Applicable to Geologic Hazards and Resources
8.15-2 Summary of Potential Geologic Hazards
8.15-3 Permits and Agency Contact Information

8.16-1 LORS Applicable to Paleontological Resources

9.4-1 Summary Comparison of Environmental Effects Between the Alternative Sites that were Considered
9.7-1 Comparison Summary of the Proposed Gas Line Route and Alternate Routes

10.5-1 Applicable Laws, Ordinances, Regulations, and Standards
10.6-1 Local Agency Contacts

Figures

1.1-1 AES Highgrove Vicinity Map
1.1-2 General Arrangement
1.1-3 Site Layout
1.1-4 AES Highgrove Project Site and Linear Facilities Location Map
1.1-5 Appearance of Site Before Construction
1.1-6 Appearance of Site After Construction

2.1-1 AES Highgrove Project Site and Linear Facilities Location Map
2.1-2 Historic Areas of Activity
2.2-1 General Arrangement
2.2-2 Plant Elevations
2.2-3 Settled Areas, Parks, Recreation, and Scenic Areas Near the Site
2.2-4 Heat Balance
2.2-5 Construction Parking and Laydown

5.2-1 Single Line Diagram

6.2-1 Proposed Gas Route

7.1-1 Proposed Potable Water Line
7.1-2a Annual Average Water Balance
7.1-2b Peak Water Balance Diagram

8.1-1a Annual Wind Rose
8.1-1b First Quarter Wind Rose
8.1-1c Second Quarter Wind Rose
8.1-1d Third Quarter Wind Rose
8.1-1e Fourth Quarter Wind Rose
8.1-2 Elevations within 6 miles of Project Site

8.2-1 Sensitive Biological Species within One Mile of the AES Project Site
8.2-2 Sensitive Species Locations within 1,000 feet of the Natural Gas Corridor
8.2-3a-e Biological Resources along Gas Line Route

8.3-1 Area Shown is Within the Luiseño Cultural Area

8.4-1 City of Grand Terrace General Plan Map
8.4-2 General Land Use Designations for Project and Vicinity
8.4-3 City of Grand Terrace Zoning Map
8.4-4 Zoning Designations in the Project Vicinity Northern Portion

8.5-1 Noise Monitoring Locations

8.6-1a Sensitive Receptors within 6 miles from AES Highgrove Site
8.6-1b Churches and Parks Within a 3-mile Radius from Project Site
8.6-2 Quad Maps within a 10-mile Radius

8.8-1 Minority Population Distribution by Census Block Groups Within 6 Miles of AES Highgrove
8.8-2 Low Income Distribution by Census Block Groups Within 6 Miles of AES Highgrove

8.9-1 Soils Near the Proposed Site
8.9-2 Soils Along the Gas Supply Pipeline and Alternative Corridors
8.9-3 Important Farmlands Near the Proposed Site
8.9-4 Important Farmlands Along the Gas Supply Pipeline

8.10-1 AES Highgrove Project Site and Linear Facilities Location Map
8.10-2 Regional Transportation Facilities near the Project Site
8.10-3 Proposed Gas Line and Alternative Routes
8.10-4 Local Roadway Network in the Vicinity of the Project Site

8.11-1 Project Site and Photo Locations
8.11-2 Project Visibility and KOP location
8.11-3 Character Photos
8.11-4 Character Photos
8.11-5 KOP-1 View from Pico Park
8.11-6 Conceptual Landscape Plan

8.14-1 Local Surface Water Features
8.14-2 Groundwater Basins in Project Vicinity
8.14-3 100-year Floodplain Map
8.14-4 Proposed Drainage Facilities

8.15-1 Area Geology Within 2 Miles of AES Site
8.15-2 Geology within 1/4-mile of Gas Linears
8.15-3 AES Highgrove in Relation to Principal Fault Zones

8.16-1 Proposed and Alternative Gas Line Routes
8.16-2 Limit of the Paleontological Resources Study Area

9.4-1 Alternative Sites Considered
9.6-1 Location Map of Alternate Water Sources
9.7-1 Proposed and Alternative Gas Line Routes

Acronyms and Abbreviations

$\mu g/m^3$	micrograms per cubic meter
°F	degree Fahrenheit
AC	alternating current
ACHP	Advisory Council on Historic Preservation
AFC	Application for Certification
afy	acre-feet per year
AGS	Alamitos Generating Station
AHPA	Archaeological and Historic Preservation Act
ANSI	American National Standards Institute
APE	Affected Project Environment
API	American Petroleum Institute
APLIC	Avian Power Line Interaction Committee
ASME	American Society of Mechanical Engineers
B.P.	before present
BAAQMD	Bay Area Air Quality Management District
BACT	best available control technology
BMPs	best management practices
BNSF	Burlington Northern Santa Fe
BOE	Board of Education
CAAQS	California Ambient Air Quality Standards
Cal-OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFG	California Department of Fish and Game

CDOGGR	California Division of Oil, Gas and Geothermal Resources
CDPD	cellular digital pocket data
CEC	California Energy Commission
CEDD	California Employment Development Department
CEM	continuous emission monitor
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CHU	Critical Habitat Unit
CJUSD	Colton Joint Unified School District
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
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
CTG	combustion turbine generator
CUPA	Certified Unified Program Agency
CVC	California Vehicle Code
CWA	Clean Water Act
dB	decibels
dBA	decibels, A-weighted
DC	direct current
DCS	distributed control system
DLE	dry low emissions

DLN	dry low-NO_x
DOF	Department of Finance
EAF	equivalent availability factor
EDBR	Economic Development Background Report
EDI	electro deionization
EDPSG	Economic Development/Public Services Group
EIR	Environmental Impact Review
EMF	electromagnetic field
EMWD	Eastern Municipal Water District
ERPG	Emergency Response Planning Guideline
ERPG-2	Maximum airborne concentration below which nearly all individuals could be exposed for up to 2 hours without developing irreversible or serious health effects
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FMMP	Farmland Mapping and Monitoring Program
g	gravity
$g/m^2/year$	grams per square meter per year
GO	General Order (of CPUC)
gpd	gallons per day
gpm	gallons per minute
GWh	gigawatt hours
HBGS	Huntington Beach Generating Station
HCP	Habitat Conservation Plan
HDD	horizontal directional drilling
HHV	higher heating value
HSP	Health and Safety Plan
Hz	hertz
I-215	Interstate 215
I/O	input/output

km	kilometer
kV	kilovolt
kV/m	kilovolts per meter
L_{90}	noise level that is exceeded during 90 percent of the measurement period
L_{eq}	equivalent noise level
L_n	percentile noise level
LO/TO	lock-out/tag-out
LORS	laws, ordinances, regulations, and standards
LOS	level of service
m	meter
mA	milliamperes
MEI	Maximum Exposed Individual
MEIR	Maximum Exposed Individual—Resident
MEIW	Maximum Exposed Individual—Worker
mG	milligauss
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mgd	million gallons per day
MLD	Most Likely Descendant
Mmax	maximum moment magnitude
MMBtu/hr	million British thermal units per hour
mph	miles per hour
MRZ	Mineral Resource Zone
MSA	Metropolitan Statistical Area
MSDS	Material Safety Data Sheets
MSHCP	Multi Species Habitat Conservation Plan
MUTCD	Manual of Uniform Traffic Control Devices
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission

NCCP	Natural Communities Conservation Plan
NFPA	National Fire Protection Association
NH_3	ammonia
NHPA	National Historic Preservation Act
NO_x	oxides of nitrogen
NPCA	Notice of Proposed Construction or Alteration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSCR	non-selective catalytic reduction
NWP	Nationwide Permit
O&M	operations and maintenance
OAC	Outdoor Adventures Center
OCA	offsite consequence analysis
OEHHA	Office of Environmental Health Hazard Assessment
OSD	Official Soil Descriptions
OSHA	Occupational Safety and Health Act
PAH	polycyclic aromatic hydrocarbons
PCS	plant control system
PEIR	Programmatic Environmental Impact Report
PGA	peak ground acceleration
PM_{10}	particulate matter less than 10 microns in equivalent diameter
PPE	personal protective equipment
ppm	parts per million
ppmvd	parts per million by volume, dry
PRC	Public Resources Code
PRMMP	Paleontological Resources Monitoring and Mitigation Plan
RCRMC	Riverside County Regional Medical Center
REL	reference exposure level
RHWC	Riverside Highland Water Company

RI-TVI	radio interference and television interference
RIX	Rapid Infiltration and Extraction
RMP	Risk Management Plan
RO	reverse osmosis
ROG	reactive organic gases
ROW	right-of-way
RPA	Registered Professional Archaeologist
RTA	Riverside Transit Agency
RTP	Regional Transportation Plan
RUSLE2	Revised Universal Soil Loss Equation
RWQCB	Regional Water Quality Control Board
S&HC	Street and Highways Code
SAA	Streambed Alteration Agreement
SARI	Santa Ana Regional Interceptor
SAWPA	Santa Ana Watershed Project Authority
SBMWD	City of San Bernardino Municipal Water Department
SCADA	Supervisory Control and Data Acquisition
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCR	selective catalytic reduction
SHPO	State Historic Preservation Officer
SLR	San Luis Rey
SMS	Safety Management System
SNA	Significant Natural Area
SNCR	selective non-catalytic reduction
SO_2	sulfur dioxides
SoCalGas	Southern California Gas Company
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan

SWRCB	State Water Resources Control Board
TDS	total dissolved solids
TMP	Traffic Management Plan
TSP	total suspended particulate matter
U2A	EC&C Technologies Incorporated Urea to Ammonia system
UCR	University of California at Riverside
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USNPS	U.S. Department of the Interior, National Park Service
VOC	volatile organic compound
WATCH	Work Area Traffic Control Handbook
WEAP	worker environmental awareness program
WEAT	worker environmental awareness training
WGCEP	Working Group on California Earthquake Potential
WMWD	Western Municipal Water District
WQCP	Water Quality Control Plant
WRP	Water Reclamation Plant
WWTP	Wastewater Treatment Plant