FINAL MITIGATED NEGATIVE DECLARATION RELIANT ENERGY ETIWANDA GENERATING STATION SELECTIVE CATALYTIC REDUCTION (SCR) INSTALLATION PROJECT (SCH NO. 2001021027)

Prepared for:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Diamond Bar, CA

Prepared by:

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March 2001

PREFACE

This document constitutes the Final Mitigated Negative Declaration (MND) for the Reliant Energy Etiwanda Generating Station Selective Catalytic Reduction (SCR) Installation Project. The Draft MND was released for a 21-day public review and comment period from February 6, 2001 to February 26, 2001. One comment letter was received from the public. The comment letter, as well the response to the comment letter, is contained in Appendix C.

To ease in identifying modifications and/or changes to the document after the release of the Draft MND, new text is denoted in *italic*s and deleted text is denoted with ~~strikethroughs~~. None of the modifications and/or changes alter any conclusions reached in the Draft MND, nor provide new information of substantial importance relative to the Draft document.

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1.1 REGULATORY BACKGROUND

Regulation XX – Regional Clean Air Incentives Market (RECLAIM) is an alternative regulatory program designed and adopted by the South Coast Air Quality Management District (SCAQMD) to reduce oxides of nitrogen (NO_x) and sulfur dioxides (SO_x) emissions from stationary sources in the South Coast Air Basin (Basin) while lowering the cost of attaining clean air through the use of market incentives. The goals of RECLAIM are to give affected facilities added flexibility in meeting their emission reduction requirements, to lower the cost of compliance, and to assist the SCAQMD's efforts to attain and maintain state and federal ambient air quality standards. RECLAIM prescribes only total facility emissions goals, and facility operators are free to choose control strategies that work best for their facility. The emission reduction goals are established in the form of a declining annual allocation. Facilities comply with RECLAIM by installing control equipment that limits their annual NO_x or SO_x emissions to below or at their annual allocations or purchase additional RECLAIM Trading Credits (RTCs) to account for any exceedances above their annual allocations.

Reliant Energy Etiwanda, LLC (Reliant) is proposing to install Selective Catalytic Reduction (SCR) systems on existing Boiler Units No. 3 and No. 4 at the Etiwanda Generating Station. SCR will be used to reduce NO_x emissions as part of their plan to meet the declining facility-wide NO_x emission limits required by SCAQMD RECLAIM Program. It is envisioned that the proposed project, consistent with the intent of RECLAIM, will achieve an overall decrease in NO_x emissions from this facility. For a complete description of the proposed project and the anticipated activities, please refer to the Project Description below.

1.2 AGENCY AUTHORITY

The California Environmental Quality Act (CEQA) applies to "projects" proposed to be undertaken or requiring approval by State and local government agencies. The proposed installation of the SCR System at the Etiwanda Generating Station constitutes a "project" as defined by CEQA. However, where a project requires approvals from more than one public agency, CEQA requires one of these public agencies to serve as the "lead agency".

The lead agency is the public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect upon the environment (Public Resources Code § 21067). Since the proposed project requires discretionary approval from the SCAQMD, it was determined that the SCAQMD would be the most appropriate public agency to act as lead agency (CEQA Guidelines § 15051(b)).

To fulfill the purpose and intent of CEQA, the SCAQMD has prepared this Mitigated Negative Declaration (MND) to address the potential environmental impacts associated with the Reliant Energy Etiwanda SCR Installation project. A MND for a project subject to CEQA is prepared when an analysis of the project identifies potentially significant effects, but revisions in the project plans or proposals made by, or agreed to by the applicant would avoid the effects or

mitigate the effects to a point where clearly no significant effects would occur (CEQA Guidelines § 15070 (b)).

1.3 PROJECT LOCATION

The proposed project would be constructed at the Reliant Energy Etiwanda Generating Station. The Etiwanda Generating Station facility is located at 8996 Etiwanda Avenue in Rancho Cucamonga, California just east of Interstate 15 and north of the San Bernardino Freeway, Interstate 10. (See Figure 1 - Regional Location Map, and Figure 2 – Location Map at the end of Section 2.0.) Currently, Reliant contracts the operation and maintenance of the facility to Edison O & M (Operation & Maintenance) Services.

The Etiwanda Generating Station is bounded by the Santa Fe railroad to the north, Etiwanda Avenue to the east, San Bernardino Avenue to the south, and the Ontario freeway (Route 15) to the west. Within the City of Rancho Cucamonga there are residential areas, a power generation station (Reliant Energy Etiwanda Generating Station), and general and heavy industry.

The population of Rancho Cucamonga is approximately 125,600 and is distributed throughout 37.7 square miles. The terrain is generally flat. The City of San Bernardino is approximately 8 miles to the east. The Etiwanda Generating Station occupies about 64 acres and is surrounded by industrial land uses. Specific land uses surrounding the facility are shown in Figure 4 - Zoning Map, located at the end of Section 2.0.

1.4 EXISTING GENERATING STATION CONFIGURATION AND OPERATION

The Etiwanda Generating Station receives pipeline grade natural gas from Southern California Gas Company to generate electricity. There are four utility boilers (Units No. 1 through 4) and one peaking turbine (Unit No. 5), all of which are in service. Units No. 1 and No. 2 began operating in 1953 and are nominally rated at 132 Megawatt (MW) (maximum)/10 MW (minimum). Units No. 3 and No. 4 began operating in 1963 and are nominally rated at 320 MW (maximum)/20 MW (minimum). Unit No. 5 is nominally rated at 126 MW (continuous). With all units in operation, the station has a maximum summer dependable output of 1,030 MW and a maximum winter dependable output of 1,046 MW. The Etiwanda Generating Station Site Plan is shown in Figure 3, located at the end of Section 2.0.

1.5 PROJECT DESCRIPTION

1.5.1 SELECTIVE CATALYTIC REDUCTION SYSTEM

As part of the combustion process, NO_x is produced and emitted to the atmosphere with the other flue gas constituents (mostly nitrogen, carbon dioxide, and water vapor). The proposed SCR system is an air pollution control technology that reduces NO_x in boiler flue gas by combining ammonia and oxygen with NO_x in the presence of a catalyst to form nitrogen molecules (N_2) and water vapor. Ammonia is diluted with air and injected into the boiler flue gas stream through a matrix of nozzles.

In an effort to accommodate space limitations and reduce or eliminate impacts to the environment, the proposed project would consist of an "in-duct" SCR retrofit. For this design, the catalyst reactor is inserted into the existing ductwork. A conventional SCR system requires installation of a booster fan to maintain the exhaust gas velocity because the catalyst can act as a barrier and thereby impede flue gas flow. The in-duct catalyst is designed so that a booster fan is not required to push the flue gas past the catalyst.

Two SCR reactor assemblies are proposed per boiler between the boiler exit and air heaters. The SCR utilizes vanadium pentoxide catalyst modules designed for a minimum operating life of four years, cooling dilution air blowers, and an aqueous ammonia metering and injection grid. The blowers will help cool the exhaust to below 800 °F (design) and carry ammonia into the system. All new equipment will be located within the existing fenceline of the Etiwanda Generating Station. As mentioned above, the SCR reactor units will be encased in the boiler duct works and would not be visible from off-site. All other new components will be installed close to the boiler structure and would not be visible off-site.

1.5.2 Aqueous Ammonia Use and Storage

Aqueous ammonia will be stored adjacent to the SCR system in two 10,000-gallon stainless steel single-walled aboveground storage tanks. Two existing urea tanks will be removed and two new cylindrical tanks will be installed for aqueous ammonia storage. The ammonia system is designed and sized based on the use of 19 percent ammonia and a storage capacity of two weeks at 50 percent capacity for both boilers. A containment dike will be built around both ammonia storage tanks and has been designed to contain 110 percent of the volume of one tank in the event of an accidental release. A containment area to be used during the unloading ammonia of from the tanker truck to the aboveground tank will be built to contain the entire capacity of a 6,000-gallon tanker truck in the event of an accidental release during transfer of ammonia.

1.5.3 Aqueous Ammonia Transportation

Aqueous ammonia (19 percent concentration) will be transported to the facility via a 6,000-gallon tanker truck by way of an approved route, established prior to the first ammonia shipment to the facility. Based on the ammonia tank storage capacity and estimated use of aqueous ammonia, six to eight tanker truck trips of ammonia from the supplier to the facility will be required per month.

1.5.4 Construction

Construction is scheduled to begin when all permits and approvals are obtained (estimated to be March, 2001). Construction will begin on Unit 3 while the system is shutdown for planned major maintenance activities. Once Unit 3 is complete, construction will begin on Unit 4. The construction period is estimated at four months. Construction activities are projected to include usage of vehicles to transport and position equipment for the project. Construction activities are anticipated to take place five days per week, Monday through Friday, from 6:00 a.m. to 5:00 p.m. However, night and/or weekend shifts may be required to maintain the construction schedule. Construction workers will average 15 – 20 workers per day.

1.5.5 OPERATION

The proposed project would require no additional workers for operations. The project would operate whenever Units 3 & 4 generate electric power, up to 24 hours per day for 365 days per year.

2.1 ENVIRONMENTAL CHECKLIST FORM

The environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. This checklist identifies and evaluated potential adverse environmental impacts that may be created by the proposed project.

2.2 BACKGROUND

1. Project Title:	**Reliant Energy Etiwanda Selective Catalytic Reduction (SCR) Installation Project**
2. Lead Agency Name & Address:	**South Coast Air Quality Management District** **21865 E. Copley Drive** **Diamond Bar, CA 91765**
3. Contact Person & Phone Number:	**Mike Krause** **(909) 396-2706**
4. Project Location:	**8996 Etiwanda Avenue** **Rancho Cucamonga, CA**
5. Project Sponsor's Name & Address**:**	**Reliant Energy Etiwanda, LLC** **8996 Etiwanda Avenue** **Rancho Cucamonga, California**

8. General Plan Designation: **Industrial Area Specific Plan** 7. Zoning: **Heavy Industrial**

9. Description of Project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support or off-site features necessary for its implementation. Attach additional sheets if necessary).

Reliant Energy is proposing to install SCR in two of their existing boiler exhaust units (Units 3 & 4); install two 10,000-gallon aboveground aqueous ammonia (19 percent concentration) storage tanks; and construct a containment wall around both ammonia tanks. SCR would be used to reduce nitrogen oxide (NO_X) emissions as part of Reliant's plan to meet declining facilitywide NO_x emission limits required by

South Coast Air Quality Management District's (SCAQMD) Regional Clean Air Incentives Market (RECLAIM) Program.

10. Surrounding Land Uses and Setting: (Briefly describe the project's surroundings).

The generating station is located in the southeast portion of the City of Rancho Cucamonga, in an area characterized primarily by industrial uses. The site falls within the city's Industrial Area Specific Plan area. Immediately north of the generating station is the Santa Fe Railroad line. A metal manufacturing facility occupies the area directly north of the railroad line. Properties east and south of the station across Etiwanda Avenue and Sixth Street, respectively, are primarily industrial in nature, with some undeveloped areas to the east and some commercial uses mixed in with the industrial uses to the south. The Inland Empires Utilities Wastewater Treatment Plant (Regional Treatment Plant No. 2) lies across Sixth Street from the southeast corner of the generating station. Lands west of the Etiwanda facility are devoted to agricultural uses.

11. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement).

The proposed project will require Permits to Construct/Operate from the SCAQMD, ~~and require~~ building permits from the City of Rancho Cucamonga, *and Hazard Control Permits from the Rancho Cucamonga Fire District and the San Bernardino County Fire Department, Hazardous Materials Division.*

2.3 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "*x*" may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each environmental topic.

__ Land Use and Planning	__ Population/Housing	__ Geology and Soils
__ Hydrology and Water Quality	__ Air Quality	__ Transportation/Traffic
__ Biological Resources	__ Energy & Mineral Resources	*x* Hazards
__ Noise	__ Public Services	__ Solid/Hazardous Waste
__ Aesthetics	__ Recreation	__ Cultural Resources

x Mandatory Findings of Significance

2.4 DETERMINATION

(To be completed by the Lead Agency)

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. .....[ ]

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.....[ ]

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. .....[ ]

I find that the proposed project MAY have a significant effect(s) on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated". An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. .....[ ]

I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards and (b) have
been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project.....[ ]

_____	_____
Signature	Date
_____	_____
Printed Name	For

(Insert Figure 1 From File - Figure 1.doc)

Figure 1. Regional Location Map

(Insert Figure 2 from File - Figure 2.doc)

Figure 2. Project Location Map

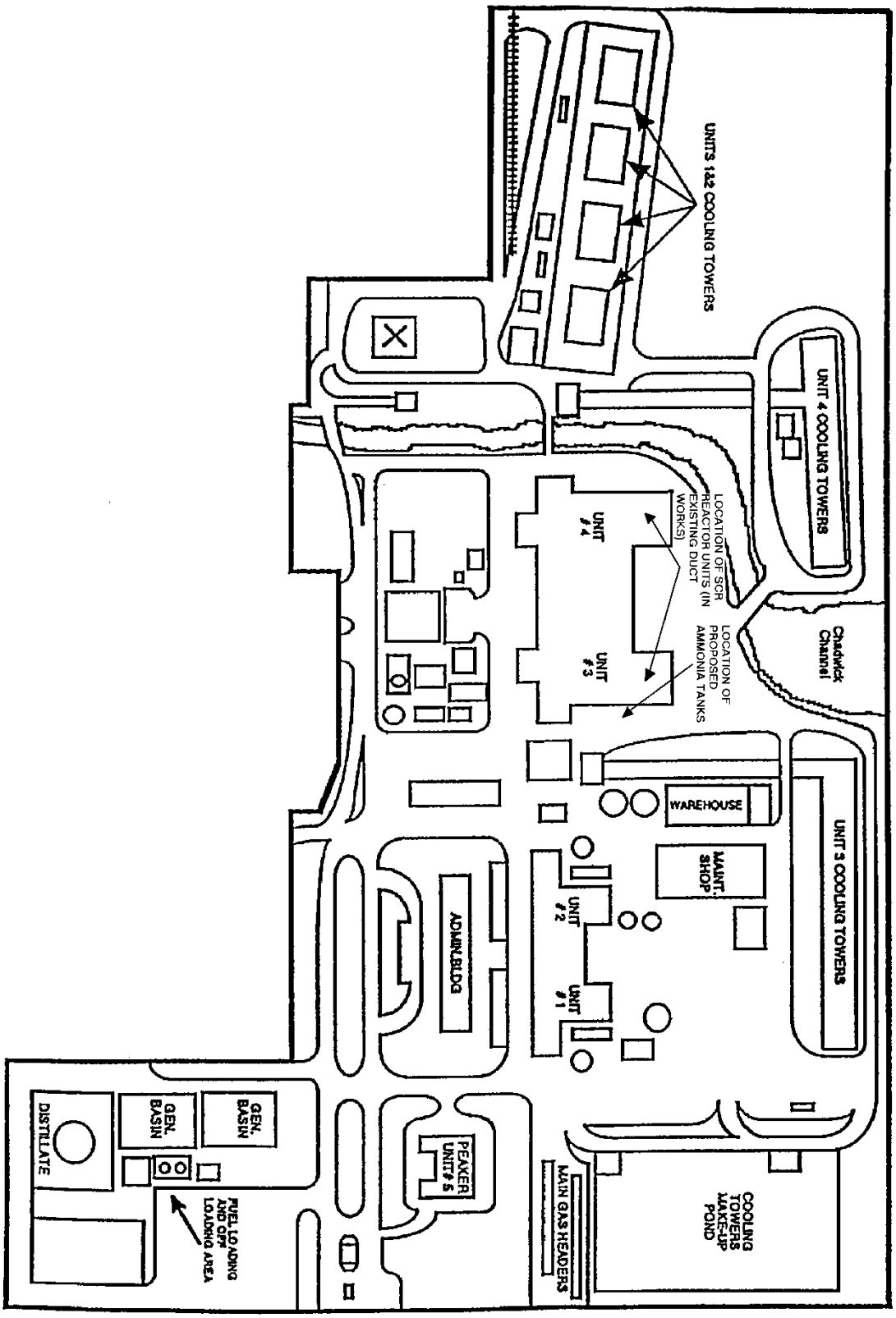
UNITS 1&2 COOLING TOWERS
UNIT 4 COOLING TOWERS
LOCATION OF SCR REACTOR UNITS (IN EXISTING DUCT WORKS)
LOCATION OF PROPOSED AMMONIA TANKS
UNIT #4
UNIT #3
Chadwick Channel
WAREHOUSE
MAINT. SHOP
UNIT 5 COOLING TOWERS
ADMIN.BLDG
UNIT #2
UNIT #1
GEN. BASIN
GEN. BASIN
DISTILLATE
FUEL LOADING AND OFF LOADING AREA
PEAKER UNIT# 5
MAIN GAS HEADERS
COOLING TOWERS MAKE-UP POND

Figure 3. Etiwanda Generating Station Site Plan

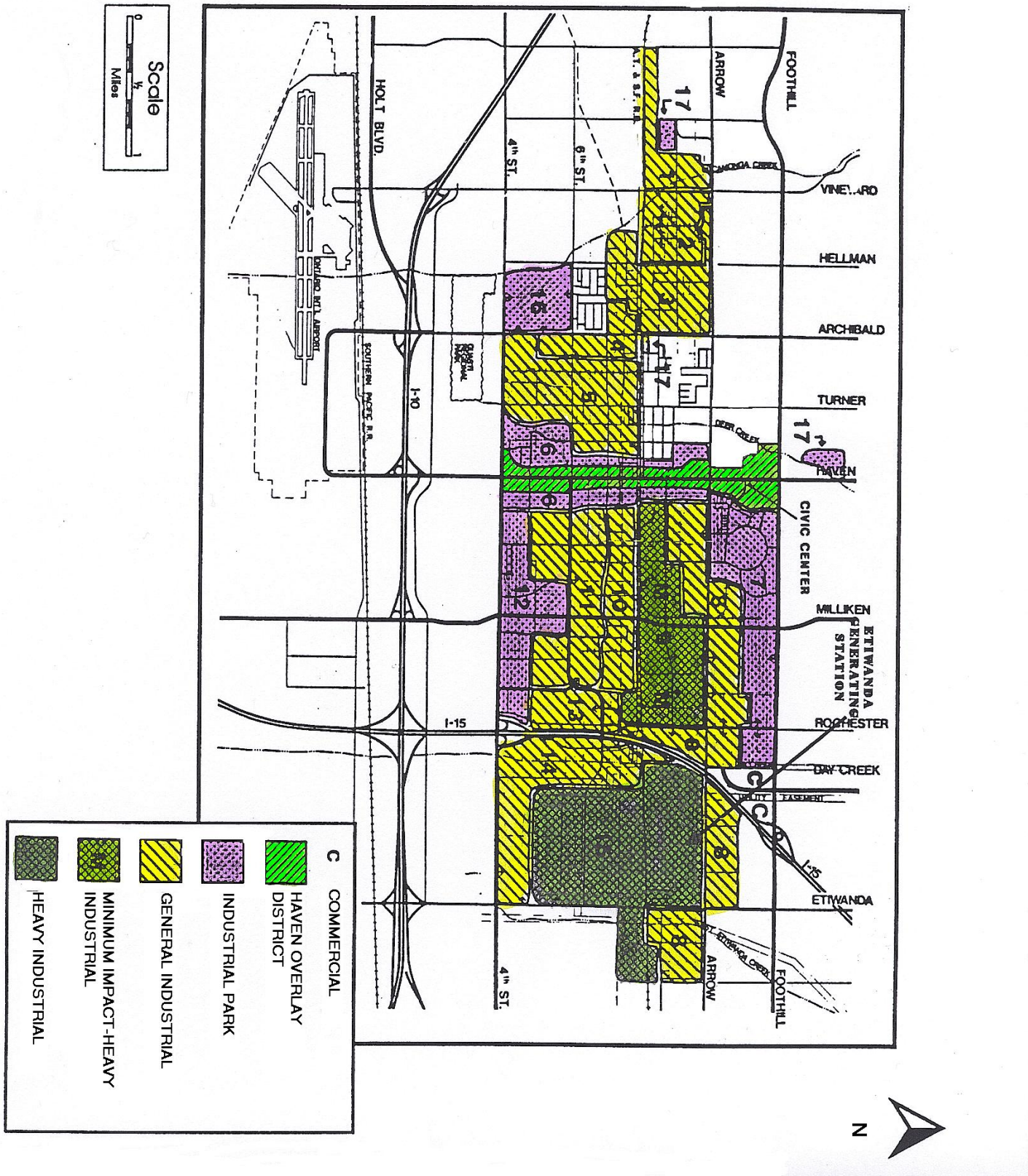

Figure 4. Rancho Cucamonga Zoning Map

3.1 LAND USE AND PLANNING

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with applicable environmental plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

3.1.1 ENVIRONMENTAL SETTING

The City of Rancho Cucamonga, in which the Etiwanda Generating Station is located, is situated in the southwestern corner of San Bernardino County, toward the east of the greater Los Angeles metropolitan region. The city lies on an expansive alluvial fan deposit at the base of the San Gabriel Mountains, which rise precipitously to the north to over 10,000 feet in elevation. To the west and south are the Cities of Upland and Ontario and adjoining municipalities of eastern Los Angeles County. To the east are the Cities of Fontana, Rialto, and Colton. Fontana is predominantly industrial near the generating station. To the south are Ontario International Airport, Ontario, and Riverside County. San Bernardino National Forest and the San Gabriel Mountains form the northern boundary of the city. The Etiwanda Generating Station is located on a 64-acre site within the city of Rancho Cucamonga, in the West Valley region of San Bernardino County.

The generating station is located in the southeast portion of the City of Rancho Cucamonga, in an area characterized primarily by industrial uses. The site falls within the city's Industrial Area Specific Plan area. Immediately north of the generating station is the AT&SF Railroad line. A metal manufacturing facility occupies the area directly north of the railroad line. Properties east and south of the station across Etiwanda Avenue and Sixth Street, respectively, are primarily industrial in nature, with some undeveloped areas to the east and some commercial uses mixed in with the industrial uses to the south. The Inland Empires Utilities Wastewater Treatment Plant (Regional

Treatment Plant No. 2) lies across Sixth Street from the southeast corner of the generating station. Lands west of the Etiwanda facility are devoted to agricultural uses.

The project site and surrounding area fall under the jurisdiction of a variety of local plans, including the City of Rancho Cucamonga General Plan and the Industrial Area Specific Plan. The Industrial Area Specific Plan contains no applicable goals or policies; however, relevant objectives from the Rancho Cucamonga General Plan are outlined below.

The City of Rancho Cucamonga General Plan objectives for the land use and development elements are:

A. Promote land use patterns, which make sustainable use of the land, plant and animal, water, energy, and air resources available to the City both within and outside its boundaries.

B. Encourage opportunities to mix different, but compatible, land uses and activities.

C. Organize land use to avoid creating nuisances among adjacent land uses.

D. Coordinate industrial development to encourage an integrated industrial area with maximum flexibility and access to the regional circulation network. (City of Rancho Cucamonga 1981).

Existing and future land uses on and around the generating station site are guided by land use designations specified in the City of Rancho Cucamonga General Plan and Industrial Area Specific Plan and zoning designations found in the City's zoning ordinance. Heavy Industrial land use designations, as defined in the general plan and Industrial Area Specific Plan, apply to the generating station site and adjacent areas. The Heavy Industrial designation typically accommodates, but is not limited to, vehicular assembly plants, power plants, concrete product manufacturers and batch plants (City of Rancho Cucamonga 1986). The City of Rancho Cucamonga has assigned a zoning designation of Heavy Industrial to the Etiwanda Generating Station property.

Prior to incorporation of the City, the facility property was subject to the jurisdiction of San Bernardino County. On November 10, 1950, a "permit" was granted to Edison (prior owner) by the San Bernardino County Board of Supervisors. It is unclear whether this permit constitutes the conditional use permit currently required in the County of San Bernardino for establishment of this use. The permit was for the "erection, construction, operation, maintenance, occupancy and use" of the property for a steam electric generating station, with switchyard and appurtenant facilities.

3.1.2 ENVIRONMENTAL IMPACTS

The proposed project will be located within the boundaries of an existing facility. The new equipment and minor modifications to existing equipment are consistent with the

existing land used in the vicinity of the Etiwanda Generating Station, which are for the most part highly industrialized areas. The components of the project are consistent with the zoning in the area, which is heavy industrial. The project is not expected to conflict with a habitat conservation or natural community conservation plan or divide an established community. Based on these considerations, no significant impacts to land use are expected.

3.1.3 MITIGATION MEASURES

No mitigation measures are required for the construction/operation of the proposed project since no significant impacts to land use are expected.

3.2 POPULATION AND HOUSING

Would the proposal:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating he construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.2.1 ENVIRONMENTAL SETTING

The Etiwanda Generating Station is located in the City of Rancho Cucamonga, in San Bernardino County. The estimated population of Rancho Cucamonga for 2000 is 125,585. The existing housing stock in Rancho Cucamonga as of January, 2000 was 42,065 units, with a vacancy rate of 7.46 percent. Population per household in Rancho Cucamonga at this time was 3.162.

3.2.2 ENVIRONMENTAL IMPACTS

CEQA guidelines suggest that a project would have a significant environmental effect due to population and housing changes if a project would: (1) induce substantial growth in an area; (2) displace a substantial number of housing units; or (3) displace a substantial number of people.

Construction activities for the proposed project would not involve the relocation of individuals, impact housing or commercial facilities, nor change the distribution of the population because the proposed project would occur within an existing industrial facility site. The construction work force, which is temporary, is expected to come from the existing labor pool in the local and surrounding communities. Additionally, the project operation would not require any new permanent employees. Since all potential impacts would occur at an existing industrial facility, displacement of housing of any type is not anticipated, Therefore, construction and operation of the proposed project is not expected to have a significant impact on population or housing.

3.2.3 MITIGATION MEASURES

No mitigation measures are required for the construction/operation of the project since no significant impacts to population and housing are expected.

3.3 GEOLOGY AND SOILS

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i. Rupture of a know earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risk to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

3.3.1 ENVIRONMENTAL SETTING

3.3.1.1 Geological Overview

The Etiwanda Generating Station is located at approximately 1,110 feet elevation on Pleistocene alluvial fan deposits and recent Holocene wash deposits up to 1,000 feet in depth. The station is located approximately midway up a broad coalescing of gently south-sloping alluvial fans at the base of the San Gabriel Mountains, which rise sharply

to the north of the station to elevations over 10,000 feet. The soils are generally well-graded sand and gravelly-sand to a depth of 40 feet. The groundwater table occurs at a depth of 340 feet, and the groundwater is of good quality. The San Gabriel Mountains consist mostly of plutonic granitic rocks, especially Cretaceous granites and quartz diorites. Large bodies of metasedimentary rocks, Black Belt Mylonite, and other high-grade metamorphic rocks also are prominent in the San Gabriel Mountains. The range is toward the southeastern extension of the Transverse Ranges, and its eastern terminus is at the confluence of the San Andreas and San Jacinto Fault Zones.

3.3.1.2 Seismicity Overview

Tables 3.3-1 summarizes earthquake faults in the vicinity of the Etiwanda Generating Station. The San Jacinto, Cucamonga, and San Andreas Faults have perhaps the greatest recognized potential for seismicity. The southern boundary of the San Gabriel Mountains is defined by the trace of the active Cucamonga thrust fault zone, approximately 6 miles north of the generating station (Bortugno and Spittler 1986). All three faults are designated as earthquake fault zones (EFZs), considered very active, and capable of generating earthquakes of magnitude greater than 8.0 on the Richter scale. A site must be located within 0.5 miles of a EFZs to be considered prone to surface rupture (Hart 1994).

Table. 3.3 Active and Potentially Active Earthquake Faults near Etiwanda Generating Station

Fault	Trend	Closest Segment	Last Movement	Activity Status (a)	MCE (b)	Prob. of *g* force >0.2 (c)
Cucamonga	W	6 mi. N	Holocene	EFZ	7.0	60-75%
Fontana (inferred)	NE	4 mi. E	Late Quaternary	P. Active		
Indian Hill	W	10 mi. NW	Late Quaternary	P. Active		
Red Hill	SW	5 mi. N	Hol./L. Quat.	Active		
Rialto-Colton	NW	10 mi. E	Late Quaternary	P. Active		
San Andreas	NW	15 mi. E	Historic (1812)	EFZ	7.3	28%
San Jacinto	NNW	10 mi. E	Historic (1899)	EFZ	6.9	37%
San Jose	ENE	10 mi. W	Late Quaternary	P. Active	6.7	

Notes:

(a) Activity status is determined by recency of movement and other factors.

- Potentially (P.) Active = Evidence of displacement in the last 1.7 million years (Late Quaternary).
- Active = Last 11,000 years (Holocene) or last 200 years (Historic).
- EFZ = a nearby fault segment is a designated Earthquake Fault Zone under the Alquist-Priolo Act.

(b) MCE = Maximum Credible Earthquake, the estimated largest magnitude earthquake the fault is capable of generating.

(c) The 30-year probability of an earthquake generating a peak horizontal ground acceleration exceeding 0.2-*g*-force at the generating station, assuming a hard rock or stiff soil.

3.3.1.3 Soils Overview

The Etiwanda Generating Station is located on Hanford series coarse sandy loam and Tujunga series loamy sand, of the Hanford-Greenfield-San Emigdio and Tujunga Soboba Associations, respectively (Woodruff 1980).

Hanford coarse sandy loam occurs on young alluvial fans of granitic material with 2-9% slopes. Effective rooting depth is >60 inches, and permeability is moderately rapid (2.0-6.0 inches per hour). Runoff is slow to medium, and hazard of erosion is slight to moderate where the soil is unprotected (Woodruff 1980). This soil is suitable for irrigated and nonirrigated agriculture, as well as urban areas; it has few limitations that restrict land uses. Natural vegetation is mostly grasses and forbs (Woodruff 1980).

Tujunga loamy sand and coarse sand occur on gently sloping (0-5% slopes), long, broad alluvial fans of granitic material. The soil is deep (>60 inches), has rapid permeability (6.0-20.0 inches per hour), somewhat excessively drained, and is suitable for irrigated agriculture. Runoff is slow to very slow, the hazard of water erosion is slight, and the soil blowing hazard on unprotected soil is moderate to high. Natural vegetation includes chamise, big sagebrush, and annual grasses and forbs (Woodruff 1980).

3.3.2 Environmental Impacts

3.3.2.1 Earthquakes

No faults or fault-related features are known to exist within the Etiwanda Generating Station site. The proposed project site is not located in any Alquist-Priolo Earthquake fault zone and is not expected to be subject to significant fault displacement. Therefore, no significant impacts to the proposed project are expected from seismically-induced ground rupture. No significant damage has occurred to the Etiwanda Generating Station as a result of previous earthquakes in Southern California over the life of the facility.

As a result of the 1994 Northridge earthquake, the seismic design criteria in the Uniform Building Code (UBC) was revised resulting in much more stringent design criteria than in the previous edition. The revised criteria of the 1997 edition of the UBC would be used for construction of structures and foundations for the proposed project. Other Codes to be used for the construction of structures for the proposed project include; National Fire Protection Association (NFPA), the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Section VIII, Pressure Vessels), ASME B31.1, Power Piping, the American Concrete Institute (ACI) and the American Institute of Steel Construction (AISC).

A containment dike around the ammonia tanks would be in place to contain the release of ammonia in the event of a major earthquake and a catastrophic rupture of one of the ammonia tanks. Based on predictive modeling results, no off-site residences would be exposed in the event of a catastrophic release of ammonia from a 10,000-gallon tank. See the Hazards section of this document for further detail.

3.3.2.2 Liquification

Liquification, a process by which water-saturated sediment suddenly loses strength, commonly accompanies strong ground motions generated by earthquakes. Liquification is most likely to occur in unconsolidated, granular sediments that are water-saturated less than 30 below the ground surface. Potential liquification during an earthquake is not a concern for the proposed project due to the soil and water characteristics of the project site. At Etiwanda, the groundwater is located more than 50-feet below the surface and the grain size of the soil underlying the generating station is not conductive to liquification. In addition, the ammonia tanks would be installed on a cement pad that would be designed according to 1997 Uniform Building Code standards for the site's seismic zone. A geologic survey would be completed prior to finalization of pad design and the design would accommodate the geologic factors identified in the survey. These project design elements would address any potential subsidence and/or liquefaction risks. Therefore, these potential risks would be less than significant.

3.3.2.3 Erosion

The proposed project would be constructed within an existing power facility, on a site that is already graded, developed and generally flat. The project would not involve excavation, grade changes or other significant changes in the soil. Therefore, no significant impacts related to soil erosion are expected. No significant change in topography is expected because little grading/trenching is required that could substantially increase wind erosion or runoff from the affected site. Relative to operation, no change in surface runoff is expected because surface conditions at the facility will remain relatively unchanged.

3.3.3 MITIGATION MEASURES

No mitigation measures are required for the construction/operation of the project since no significant impacts to geology are expected.

3.4 HYDROLOGY AND WATER QUALITY

		Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:					
a)	Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?	☐	☐	☐	☒
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
d)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
e)	Otherwise substantially degrade water quality?	☐	☐	☒	☐
f)	Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
g)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
h)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
i)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

j)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
k)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
l)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
m)	Have sufficient water supplies available to serve the project from existing entitlements and resources. Or are new or expanded entitlements needed?	☐	☐	☐	☒
n)	Require in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

3.4.1 ENVIRONMENTAL SETTING

The main uses of water for the Etiwanda Generating Station are for heat transfer in the primary cooling systems, steam production in the turbine systems, and as cooling water for the condenser cooling system.

3.4.1.1 Existing Water Resources

The Etiwanda Generating Station is located in the City of Rancho Cucamonga, San Bernardino County. The generating station pumps groundwater from the Upper Santa Ana River Basin for use as cooling water and subsequently discharges water to the Chino Basin Municipal Water District.

The agency with jurisdiction over water quality in the region is the Santa Ana Regional Water Quality Control Board (RWQCB). The Santa Ana River is divided into six reaches by the Santa Ana Regional RWQCB. Each reach is generally a separate hydrologic and water quality unit. The Etiwanda Generating Station is located within the drainage area of Reach 5 of the Santa Ana River. Reach 5 extends from Seven Oaks Dam to San Bernardino to the San Jacinto Fault (Bunker Hill Dike), which marks the downstream edge of the Bunker Hill groundwater basin. Most of this reach tends to be dry, except during periods of storm flow. This channel is largely operated as a flood control facility (Santa Ana RWQCB 1995).

3.4.1.2 Current Water Uses

All the water used at the Etiwanda Generating Station is supplied by three onsite groundwater wells and water purchased from the Metropolitan Water District (MWD). The station also augments its groundwater supply through temporary water right transfers from other existing groundwater users in the basin (Lacroix pers. comm.).

The Etiwanda Generating Station also purchases Colorado River water from MWD via the district's Upper Feeder Canal. Colorado River water is used during winter months when the water cost is lower. During summer months, generating station water use depends more on its groundwater source due to the greater cost of Colorado River water during the summer period (Lacroix pers. comm.).

The largest water use at the facility is for evaporative cooling. The remaining water uses are for general station maintenance and operation. This water is discharged as low-volume wastewater. The low-volume wastewater includes, but is not limited to, wastewater from cooling water blowdown, floor drainage, cooling tower basin cleaning wastes, boiler wastes, metal cleaning processes, equipment washdowns, and miscellaneous sumps.

3.4.1.3 Wastewater Discharge Permit

The generating station discharges wastewater to Los Angeles County Sanitation District (LACSD) through the Inland Empires Utilities Agency non-reclaimable industrial waste lines. The Inland Empire Utilities Agency discharges to the Los Angeles County wastewater system as part of the Wastewater Reclamation and Solid Waste Management Group of the County Sanitation Districts of Los Angeles County. The discharge consists of cooling water discharge and low-volume wastewater.

3.4.1.4 Stormwater Discharges

Pursuant to § 402(p) of the Clean Water Act and 40 Code of Federal Regulations Parts 122, 123, and 124, the California State Water Quality Control Board (State Board) adopted a general permit to regulate stormwater discharges associated with industrial activity in California. The Etiwanda Generating Station is a permittee to this Statewide General Industrial Activities Stormwater Discharge Permit. Under the provisions of the permit Reliant has:

- Eliminated non-stormwater discharges to the stormwater system
- Prepared and implemented a Stormwater Pollution Prevention Plant
- Developed and implemented a Stormwater Monitoring Plan

The station discharges stormwater to the Chadwick Channel that transects the property. The channel also receives stormwater runoff from upstream industrial users. As part of their Stormwater monitoring plan, Reliant collects water samples from the channel, both

upstream and downstream of the Etiwanda Generating Station, to monitor offsite and onsite stormwater discharges. Sanitary sewage is discharged to an onsite septic tank and drainage system.

3.4.2 ENVIRONMENTAL IMPACTS

The construction and operation of the proposed project will not require additional water usage, beyond that already used at the existing generating station. Additionally, no wastewater is generated during the SCR process.

The proposed project would not alter the infiltration rates, drainage patterns, or the quality and quantity of stormwater runoff, or erosion rates because the proposed project would occur within the generating station, on an existing impervious surface, utilizing the existing drainage system. Surface and ground water quality, quantity and flow rates, as well as currents or other water movements, would not change in relation to the proposed action.

The proposed project includes the construction of two 10,000-gallon aqueous ammonia storage tanks placed within a diked area. The dike would be designed to contain a complete tank spill plus storm water, which is the equivalent to a design capacity of 110 percent of the tank. In addition the proposed project includes the construction of a containment area to used for unloading ammonia from a tanker truck to the onsite tank. Accidental spills could occur from the transfer, use and handling of aqueous ammonia. Potential water quality impacts could occur if the ammonia were washed into the storm drains, or if the ammonia percolated into the soil. All liquid wastes currently entering drains at the Etiwanda Generating Station are pumped to retention basins where they are tested prior to discharge to the circulating water outfalls.

The Etiwanda Generating Site has a Spill Prevention Control and Countermeasure (SPCC) Plan in place, as required by federal regulations. The SPCC Plan, along with their Hazardous Materials Release Contingency Plan, outlines emergency procedures, operating procedures, training of employees and engineering controls (e.g. secondary containment) necessary to prevent spills, overflows, or other incidents that may discharge hazardous materials to the environment. These plans will be updated to include the additional use and storage of aqueous ammonia. As required in the plans employees at the Etiwanda Generating Station will be trained in all operating and emergency procedures associated with the ammonia.

The purpose of theses plans are to specify how personnel would respond to any unplanned release of hazardous materials to the air, soil, or surface water. This response includes notifying the proper authorities of the release, controlling and cleaning up the release and restoring the environment as required. The plan identifies sources of hazardous materials, responsibilities of employees during a response, a step-by-step plan of how to respond to a release, and who to contract and clean up of the released material.

In addition to administrative controls, ammonia vapor/liquid detection instrumentation will be installed in the ammonia tank storage containment area. The instrumentation will

alarm to the control room, which is manned 24 hours per day. Investigation and appropriate action will be taken if an ammonia detection alarm is received by the control room.

Implementation of the facility's current spill response procedures, emergency response plan and the stormwater management procedures would reduce the potential for adverse water quality impacts to less than significant.

3.4.3 MITIGATION MEASURES

No mitigation measures are required for the construction/operation of the project since no significant impacts to water resources are expected.

3.5 AIR QUALITY

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the proposal:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollution?	☐	☐	☒	☐

3.5.1 ENVIRONMENTAL SETTING

The Etiwanda Generating Station is situated within the South Coast Air Basin and holds an SCAQMD permit for various facility equipment.

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin (Basin) (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of the SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The Los Angeles County portion of MDAB (known as north county or Antelope Valley) is bounded by the San Gabriel Mountains to the south and west, the Los Angeles/Kern

county border to the north, and the Los Angeles/San Bernardino county border to the east. The Riverside County portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of the Riverside County and the SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east. See Figure 5 below.

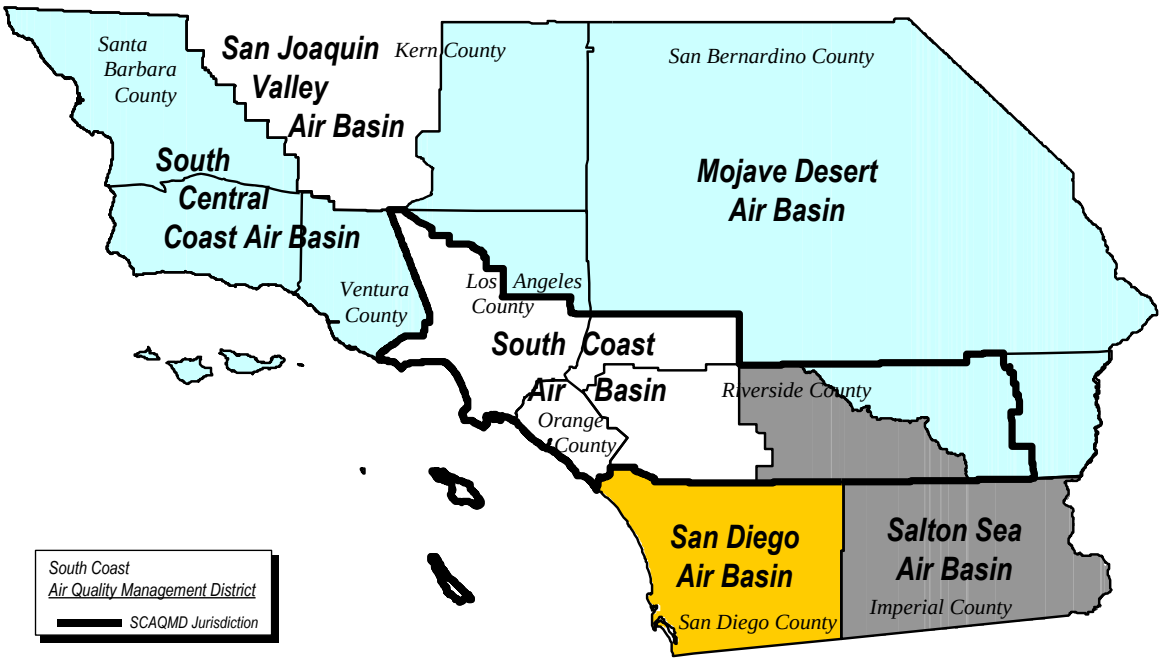

Figure 5. Air Basin Map

3.5.1.1 Regional Climate

The Basin lies within the semi-permanent high-pressure zone of the eastern Pacific Ocean. Typical of coastal strips along the western shores of continents at lower latitudes, the region is characterized by warm, dry summers and mild winters of moderate rainfall. The warmest month is August, with average temperatures in the low 70s. January in the coldest month, with minimum temperatures averaging in the low 40s. Summertime maximum temperatures range from approximately 75 °F at the coast to the 90s inland. Winter lows range from the 30s at inland and mountain locations to the mid-40s near the coast.

Precipitation in the basin is associated with winter storms that migrate inland from the Pacific Ocean. Nearly 90 percent of the annual rainfall in the basin occurs from November to April. Precipitation patterns show a strong orographic influence. The annual average rainfall is 11-15 inches in the coastal plain and inland valleys, up to 21 inches in the foothills, and greater than 50 inches in the mountains.

During the dry season, and to a lesser degree during winter, the daily circulation pattern in the basin is typified by a daytime sea breeze blowing onshore and a nighttime land breeze moving offshore. Generally, the sea breeze is approximately twice as strong as the land breeze, and summer wind speeds average slightly higher than winter wind speeds. Throughout the year during the night, a drainage flow exists as cool air from the nearby mountain sloped drains down and back toward the ocean.

On occasion during fall and winter months, a high-pressure system develops over Nevada and Utah and pushes air southward over the San Gabrial and San Bernardino Mountains. The resulting wind is known as a Santa Ana wind. Santa Ana winds can be very strong, with wind speeds through mountain passes sometimes exceeding 60 mph, and are usually warm and dry. They tend to clear the basin of accumulated air pollutants but can also cause dust storms and high particulate levels.

Air in the Basin is generally moist, due to presence of a marine air layer. Relative humidity during summer usually ranges from 70% to 80% during the night, and 50% to 60% in the daytime. During the winter, daytime relative humidity is usually between 50% to 60%, while nighttime relative humidity is approximately 75%.

Atmospheric pressure decreases with height above the earth's surface; as a result, air temperature also generally decreased with height. In the absence of other influences, air that is warmer than ambient air (that is, warmer than the air around it), such as heated exhaust from an industrial stack or vehicle tailpipe, would tend to rise indefinitely. In rising and mixing with other ambient air, this exhaust would become diluted and pollution levels would remain extremely low. However, the vertical dispersion of air pollutants in the Basin is limited by the presence of a persistent temperature inversion (a temperature increase with altitude) in the lower atmosphere. Warm air released at ground level will tend to rise as long as the surrounding air is cooler, but when the rising air encounters a temperature inversion where the air becomes warmer with altitude, it can no longer rise and becomes trapped below the layer of warmer air. The altitude at which air temperature begins to increase with altitude is the base of the inversion and defines the mixing height. The mixing height limits the volume of air that is available for mixing

and dilution of pollutants emitted near the ground. The lower the base of the inversion and the mixing height, the smaller the volume of air available for dilution of air pollutants; low mixing heights therefore lead to higher ambient concentrations of air pollutants.

Usually, inversions are lower before sunrise than during daylight hours. The mixing height normally increases during the day as the base of the inversion erodes because of surface heating. Along the coast of southern California, relatively cool surface air temperatures, coupled with warm, dry, subsiding air from aloft, produce inversions approximately 87% of the time in the early morning. The average occurrence of ground-based inversions (in which the base of the inversion is at ground level and pollutants emitted at ground level are trapped there without mixing) in 11 days per month, ranging from 2 days in June to 22 days in December and January. Elevated inversions, in which the base of the inversion may be up to 2,500 feet above mean sea level (MSL), occur approximately 20 days each month. Mixing heights of 3,500 feet above MSL or less occur approximately 191 days each year (SCAQMD, 1980).

3.5.1.2 Ambient Air Quality Standards

The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to national and state standards. These standards are set by the U. S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) at levels to protect public heath and welfare with an adequate margin of safety. National Ambient Air Quality Standards (NAAQS) were first authorized by the federal Clean Air Act of 1970. California Ambient Air Quality Standards (CAAQS) were authorized by the state legislature in 1967. Air quality of a region is considered to be in attainment of the standards if the measured ambient air pollutant levels for ozone, carbon monoxide (CO), NO_2, particulate matter less than 10 microns in diameter (PM_{10}), are not exceeded, and all other standards are not equaled or exceeded at any time in any consecutive three-year period. National standards (other than ozone, PM_{10}, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. The Basin is a non-attainment area for ozone, PM_{10}, and CO.

It is the responsibility of the SCAQMD to ensure that state and federal ambient air quality standards are achieved and maintained in the district. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone, CO, NO_2, PM_{10}, SO_2, and lead. These standards were established to protect sensitive receptors from adverse health impacts due to exposure to air pollution. The CAAQS are more stringent than the federal standards, and in the case of PM_{10} much more stringent. California has also established standards for sulfate, visibility, hydrogen sulfide, and vinyl chloride. Hydrogen sulfide and vinyl chloride are currently not monitored in the Basin, however, because these contaminants

are not seen as a significant air quality problem. See Table 3.5-1 below for a list of the California and National Ambient Air Quality Standards for the criteria pollutants, and their most relevant health effects.

Table 3.5-1 Ambient Air Quality Standards

Air Pollutant	State Standard	Federal Primary Standard	Most Relevant Effects
	Concentration/ Averaging Time	Concentration/ Averaging Time	
Ozone	0.09 ppm, 1-hr. avg.	0.12 ppm, 1-hr avg., 0.08 ppm, 8-hr avg.*	(a) Short-term exposures: (1) Pulmonary function decrements and localized lung edema in humans and animals (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; (d) Property damage
Carbon Monoxide	9.0 ppm, 8-hr avg. 20 ppm, 1-hr avg.	9 ppm, 8-hr avg. 35 ppm, 1-hr avg.	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses
Nitrogen Dioxide	0.25 ppm, 1-hr avg.	0.053 ppm, annual arithmetic mean	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration

Table 3.5-1 Ambient Air Quality Standards (cont.)

Sulfur Dioxide	0.04 ppm, 24-hr avg. 0.25 ppm, 1-hr. avg.	0.030 ppm, annual arithmetic mean 0.14 ppm, 24-hr avg.	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma
Suspended Particulate Matter (PM_{10}) Particulate Matter ($PM_{2.5}$)	30 µg/m3, annual geometric mean 50 µg/m3, 24-hr avg. Same as Federal standard	50 µg/m^3, annual arithmetic mean 150 µg/m3, 24-hr avg. 15 µg/m^3, annual arithmetic mean 65 µg/m3, 24-hr avg.	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Excess seasonal declines in pulmonary function, especially in children
Sulfates	25 µg/m^3, 24-hr avg.	None	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage
Lead	1.5 µg/m3, 30-day avg.	1.5 µg/m3, calendar quarter	(a) Increased body burden; (b) Impairment of blood formation and nerve conduction
Visibility-Reducing Particles	In sufficient amount to reduce the visual range to less than 10 miles at relative humidity less than 70%, 8-hour average (10am - 6pm)	None	Visibility impairment on days when relative humidity is less than 70 percent
µg/m3 = microgram per meter cubed ppm = parts per million			

3.5.1.3 Project Location Air Quality

Recent background ambient air quality data for criteria pollutants for the project location are presented in Table 3.5-2. The San Bernardino ambient air monitoring station is located approximately 13 miles east of the Etiwanda Generating Station and the Fontana ambient air monitoring station is located approximately 3 miles east of the facility. As shown by the data below, the PM_{10} measurements exceeded the CAAQS 24-hour Max and Annual Mean for all six years and the NAAQS Annual Mean five out of the six years. The Ozone measurements exceeded the CAAQS 1-hour Max four of the six years with the past two years falling below both the state and national standard.

Table 3.5-2 Summary of Background Air Quality (μg/m^3)

Monitor Site Address: 24302 4th Street, San Bernardino, CA

Pollutant	Averaging Time	CAAQS	NAAQS	1995	1996	1997	1998	1999	2000
NO_2	1-hour Max	470	---	162	146	141	114	139	100
	Annual Mean	---	100	40	38	35	33	35	32
PM_{10}	24-hour Max	50	150	148	136	108	114	134	78
	Annual Max	30	50	56.8	52.2	51.2	46.3	56.6	50.4
CO	1-hour Max	23000	40000	7700	5800	7600	6300	5500	5500
	8-hour Max	10000	10000	6300	4500	5900	4700	4800	3500
O_3	1-hour Max	180	235	203	239	197	214	159	149

Source: http://www.epa.gov/airsdata/monitors.htm

Monitor Site Address: 14360 Arrow Blvd, Fontana, CA

Pollutant	Averaging Time	CAAQS	NAAQS	1995	1996	1997	1998	1999	2000
NO_2	1-hour Max	470	---	170	163	147	154	149	119
	Annual Mean	---	100	42	38	36	36	38	36
PM_{10}	24-hour Max	50	150	178	130	122	101	116	n/a
	Annual Max	30	50	60.8	54.9	53.6	50.2	60.1	n/a
CO	1-hour Max	23000	40000	n/a	n/a	n/a	n/a	n/a	n/a
	8-hour Max	10000	10000	n/a	n/a	n/a	n/a	n/a	n/a
O_3	1-hour Max	180	235	n/a	n/a	n/a	n/a	n/a	n/a

n/a - Data not available
Source: http://www.epa.gov/airsdata/monitors.htm

3.5.2 ENVIRONMENTAL IMPACTS

3.5.2.1 Construction Emissions

Air quality impacts associated with construction projects generally arise from fugitive dust generation and the operation of construction equipment. Trucks, cranes, skip loaders, and other mobile sources may be powered by diesel or gasoline and are sources of combustion emissions which include NO_x, carbon monoxide, VOCs, and small amounts of air toxics.

Construction emissions for the proposed project are anticipated from the use of a 75-foot crane, a fork lift, a front loader, and a truck to hoist the ammonia vaporizer and catalyst into place. Construction emissions may not exceed the SCAQMD Air Quality Significance Thresholds shown in Table 3.5-3. Construction emissions were estimated for these equipment using SCAQMD emission factors from the SCAQMD CEQA Air Quality Handbook (1993). As shown on Table 3.5-4, construction emissions are projected to be below the significant thresholds for criteria pollutants.

Table 3.5-3 Air Quality Significant Thresholds

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
TAC, AHM, and Odor Thresholds		
Toxic Air Contaminants (TACs) Accidental Release of Acutely Hazardous Materials (AHMs)	Maximum Incremental Cancer Risk $\geq$ 10 in 1 million Hazard Index $\geq$ 1.0 (project increment) Hazard Index $\geq$ 3.0 (facility-wide) CAA §112(r) threshold quantities	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality for Criteria Pollutants		
NO_2 1-hour average annual average	 20 ug/m^3 (= 1.0 pphm) 1 ug/m^3 (= 0.05 pphm)	
PM10 24-hour annual geometric mean	 2.5 ug/m^3 1.0 ug/m^3	
Sulfate 24-hour average	 1 ug/m^3	
CO 1-hour average 8-hour average	 1.1 mg/m^3 (= 1.0 ppm) 0.50 mg/m^3 (= 0.45 ppm)	

ug/m^3 = microgram per cubic meter; pphm = parts per hundred million; mg/m^3 = milligram per cubic meter; ppm = parts per million; TAC = toxic air contaminant; AHM = Acutely Hazardous Material

Insert Construction Emissions Table 3.5-4 Here

On-road mobile source emissions were calculated using CARB's MVEIG Program, 2000 emission factors and calculations. Table 3.5-5 shows the calculations for light-duty trucks and heavy duty diesel trucks, along with emissions from worker's vehicles for commutes to the job site. Worker commuting assumes 500 miles day for the light duty trucks, based upon 10 trucks per day at 50 miles round trip; and 350 miles per day for the heavy duty diesel trucks, based upon 5 trucks per day at 70 miles round trip. The total construction emissions from on-road mobile sources were below the CEQA significance level, as shown at the bottom of the table.

Particulate emissions from fugitive dust results from vehicle and truck traffic on paved and unpaved roads. The amount of dust generated is a function of construction activities, silt and moisture contents of the soil, wind speed, frequency of precipitation, vehicle traffic and vehicle types, and roadway characteristics. Dust suppression techniques, such as watering or application of chemicals will be used in construction zones to minimize fugitive dust impacts. Additionally, the project will comply with the best available control measures referenced in SCAQMD Rule 403.

3.5.2.2 Operational Emissions

The facility currently operates as a RECLAIM NO_x facility per SCAQMD Rule 2001. Installation of the selective catalytic reduction (SCR) systems will substantially reduce emissions of nitrogen oxides (NO_x) from two existing 320-MW power generating units (Units No. 3 and No. 4). The SCR air emissions reduction technology will remove about 90 percent of the NO_x emissions from Units No. 3 and No. 4 at the Reliant Etiwanda Generating Station.

SCR is a technique that reduces NO_x in the combustion exhaust stream to nitrogen, water and oxygen. Aqueous ammonia (NH3) is used as a reducing agent which is injected over a catalyst bed of vanadium pentoxide to cause the reaction. Most of the aqueous ammonia and NO_x will undergo a catalytic reaction within a temperature range of about 600 – 800^{o}F. The combustion exhaust, along with ammonia that is injected into it, is passed over the catalyst bed. During this process the NO_x emissions are converted to nitrogen and water. Ammonia is injected at a rate that depends upon the fuel flow rate and the catalyst bed activity. The optimum ammonia injection rate is determined by source testing. However, in spite of carefully determined injection rates, some of the ammonia will pass the through the process unreacted and escape into the air. This is referred to as "ammonia slip". The ammonia slip emissions from this project are estimated at a concentration less than 10 ppm in the exhaust (corrected to 3% O2).

There is no air quality standard for ammonia, but permit conditions will be included in the SCAQMD RECLAIM Permit to limit ammonia slip emissions. There are potential health concerns associated with ammonia, as discussed below.

Insert Table 3.5-5 On Road Emissions Table Here

Ammonia is not a carcinogen, but can have chronic and acute impacts. The nearest sensitive receptor is about 600 meters from the project, and the nearest off-site worker receptor is about 115 meters. A health risk screening analysis was conducted pursuant to SCAQMD Rule 1401, to conservatively estimate the long term (chronic) non-cancer risk, and short term (acute) non-cancer risk associated with the maximum ammonia emissions. The results of these analyses revealed that both chronic hazard index and acute hazard index for both boilers No. 3 and No. 4 were less than 1.0, and therefore sensitive receptors would not be exposed to substantial pollution concentrations. (Please refer to Appendix B for the hazard index calculations.) Additionally, according to Rule 1401 with chronic hazard and acute hazard indices below 1.0, no further analysis is required.

Sensitive receptors would be exposed to less NO_x and ozone concentrations as a result of the project. There is a potential for a slight increase in the secondary formation of particulate emissions resulting from the use of aqueous ammonia in the SCR in the presence of sulfur compounds which are present in small quantities in natural gas. While most of the fuel sulfur is converted to SO_2, about 1.5 percent is converted to SO_3 in the presence of the SCR catalyst. SO_3 reacts with ammonia in the presence of water from the exhaust and forms ammonium sulfate and ammonia bisulfate, which is a very fine solid. Public Utility Commission-grade low sulfur natural gas contains no more than 0.75 grains/100 standard cubic feet of gas. This is roughly equivalent to 10 parts per million (ppm). Since only a fraction of the sulfur will contribute to formation of particulate, insignificant quantities of particulate will form as a result of the installation of the SCR system.

Regular deliveries of the aqueous ammonia to the facility would increase mobile source emissions by a small amount, as shown on Table 3.5-6.

The air quality impacts associated with the construction and operation of the proposed project are not expected to result in significant air quality impacts. The proposed project NO_x emission reductions are expected to improve overall air quality in the Basin by enhancing the probability of attaining and maintaining state and Federal NO_2 and ozone standards. Ammonia slip will be restricted to less than 10 ppm as a condition of the SCAQMD RECLAIM Permit. Cumulative secondary impacts associated with the ammonia slip and particulate emissions are expected to be insignificant.

The operating impacts of the proposed project will not violate any air quality standard. Rather, the project will provide an ambient air quality benefit by reducing NO_x emissions from the boilers by 90%. The proposed project will therefore expected to facilitate attaining and maintaining the state and Federal NO_2 and ozone ambient air quality standards.

The proposed project will not create objectionable odors, because the concentration of ammonia will be below the odor detection limit. According to dispersion estimates (Eschenroeder, et al., 1988), the buoyancy of ammonia and its dilution into the atmosphere (Benchley and Athey, 1981) would reduce the annual one-hour maximum

ground concentration to less than one ppm based on an ammonia slip of 10 ppm. A concentration of one ppm is well below the odor detection maximum limit .

The proposed project is not expected to violate an existing air quality rule nor contribute to a significant increase in air pollutants. The proposed project is being undertaken to comply with Regulation XX annual allocation requirements to reduce NO_x emissions. There will be insignificant increases in secondary particulates emitted as gaseous ammonia. Ammonia emissions will be minimal, about 10 ppm per unit, and must comply with relevant SCAQMD permit condition requirements.

3.5.3 MITIGATION MEASURES

No mitigation measures are required for the construction/operation of the proposed project since no significant impacts to air quality are expected.

Insert Table 3.5-6 Operational Emissions Here

3.6 TRANSPORTATION/TRAFFIC

Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Cause an increased traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated road or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

3.6.1 ENVIRONMENTAL SETTING

The Etiwanda Generating Station is located within the City of Rancho Cucamonga where land is intensively used. Many local streets and arterials are frequently congested. The California Department of Transportation (CalTrans) provides traffic volume statistics, including those for Routes 10, 15 and 66 which are major arterials for local transportation within the City of Rancho Cucamonga. These arterials are utilized for the majority of inter-city traffic in the area.

Table 3.6-1 lists traffic volumes for the nearest interchanges along the major traffic routes in the region of the Etiwanda Generating Station. The columns of the table contain the following data:

Peak Hour Counts. The number of vehicles in both directions (used to estimate congestion). A few hours a year will be higher than the listed value, but not many.

Usually about 200 or more hours each year will approximate this value, with about 30 to 50 hours exceeding it. Peak hours on these routes occur during the evening rush period.

Annual ADT (Average Daily Trips). The estimated averages are computed by extrapolating from available count data. The data for any year are based on the October 1 through September 30 period. These data are used for assessing statewide traffic flows, traffic trends, computing accident rates, and planning and designing highways and highway improvements.

Table. 3.6-1 Selected Traffic Volumes

From Route 15	Peak Hour	Annual ADT	From Route 10	Peak Hour	Annual ADT
Route 66	10,200	132,000	Ontario/Fourth Avenues	15,000	214,000
Fourth Street	11,500	150,000	Etiwanda Avenue	16,300	186,000
Junction 10	13,300	175,000	Ontario, Jct. Rte. 15	13,700	189,000

Source: http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/1999all.htm

3.6.2 ENVIRONMENTAL IMPACTS

3.6.2.1 Construction

The largest number of daily trips attributable to the proposed project will occur during the short-term (approximately four months) construction phase. This temporary increase in traffic in the area is associated with construction workers, construction equipment, and the delivery of construction materials. Major arteries would be used to transport materials and construction workers to the site. As a worst-case construction phase traffic assessment the peak onsite work force is estimated to include 80 workers during the day shift. Based on an average worker commute distance of 15 miles, average Vehicle Miles Traveled (VMT) is estimated to peak at approximately 2,400 miles per day (if all 80 workers drive alone). Trips would most likely radiate in all directions, using all of the major arterioles of the area. For a short period of time, 48 trips during the peak hour may occur (assuming 80 workers and a trip generation factor of 0.6).

The 24-hour traffic count for Etiwanda Avenue, the major access road to the facility, is 16,300. The maximum number of trips during peak construction period would be 48 trips. The temporary increase of construction traffic along Etiwanda Avenue represents a 0.3 percent increase, significantly below the SCAQMD's significance criteria of an increase of the volume to capacity ratio of two percent or more.

3.6.2.2 Operation

No additional employees will be added to the operation of the Etiwanda Generating Station due the SCR project. Therefore no increase in the number of workers or worker-related vehicles is expected due to operation of the proposed project. The additional

aqueous ammonia deliveries (6-8 per month) during operation would also be less than a two percent increase of the volume to capacity ratio of Etiwanda Avenue.

The proposed project is not within the vicinity of a public or private airport and would not alter the existing air traffic patterns.

As detailed above, construction-related impacts, as well as operational increases in traffic are expected to be minimal. The anticipated construction traffic for the proposed project will be minimal and no significant impacts to transportation are expected.

3.6.3 MITIGATION MEASURES

No mitigation measures are required for the construction/operation of the proposed project since no significant impacts to transportation/traffic are expected.

3.7 BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Dept. of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Dept. of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sties?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Pan, or other approved local regional, or state habitat conservation plan?	☐	☐	☐	☒

3.7.1 ENVIRONMENTAL SETTING

The Etiwanda Generating Station is located on a 64-acre site in a urban, semi-industrial area of western San Bernardino County. The facility is primarily industrial in nature with areas of naturalized open space bordering the complex to the south and west. Southern California Edison (Etiwanda Generating Station owner prior to Reliant) currently owns some of these open space areas. Portions of these open space areas appear to have been used historically as cropland but currently are out of production and support re-

established native and ruderal vegetation. Open water habitat is associated with three evaporation and groundwater percolation/recharge ponds within the generating station boundaries. Cooling water is discharged from the generating station to an industrial sewer, the Chadwick channel, which may occasionally provide aquatic habitat. Special-status animal species occurring within the vicinity of the facility are listed in the table below. No special-status plant species were identified in the area.

Table. 3.7 Special-status species reported from the vicinity of Etiwanda Generating Station.

Common Name ***Scientific Name***	**Status[a] Fed/State**	**Habitat**	**Potential for Occurrence Onsite**
San Bernardino Merriam's kangaroo rat *Dipodomys merriami parvus*	C/CSC	Sparse to moderate canopy on fine to course grain sand.	May occur in areas adjacent to the generation complex
Orange-throated whiptail *Cnemidophorus hyperythrus*	--/CSC	Unknown	Critical habitat may exist on the station property; known to occur in the vicinity of the Etiwanda property.
Delphi's sands-flower loving fly *Rhapiomidas terminatus abdominalis*	FE/CSC	Unknown	Critical habitat may exist on the station property; known to occur in the vicinity of the Etiwanda property.
San Diego horned lizard *Phrynosoma coronatum blainvillei*	--/CSC	Coastal sage scrub and chaparral habitats, with friable, rocky, or shallow sandy soils	May occur onsite

[a] Status explanation:

-- = no designation.

Federal status (as reported by the USFWS in the Federal Register February 28, 1996)

C = Candidate species for which there is enough data on file to support a listing as threatened or endangered.

State status (as reported by DFG's Special Animals List, August 1994)

CSC= California Species of Special Concern.

3.7.2 ENVIRONMENTAL IMPACTS

The proposed project will be located within the boundaries of an existing power generating station that has already been greatly disturbed as a result of the original construction of the facility. Construction activities will occur in areas of the facility that are paved and will not affect biological resources. No conflict with any local policies, ordinances or conservation plans will occur due to the proposed project. There will be no biological impact associated with the proposed project.

3.7.3 MITIGATION MEASURES

No mitigation measures are required for the construction/operation of the proposed project since no significant impacts to biological resources are expected.

3.8 ENERGY & MINERAL RESOURCES

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

3.8.1 ENVIRONMENTAL SETTING

Most of the oil and gas in California is produced in the southern half of the state. The Los Angeles Basin accounts for approximately 45 percent of the states' cumulative production. Anticlines and faulted anticlines are the most characteristic formations which accumulate oil, yielding a strong structural control on the occurrence of oil in both the Transverse Ranges and the Peninsular Ranges.

3.8.2 ENVIRONMENTAL IMPACTS

Incremental gasoline and diesel usage will occur during construction activities (e.g., operation of construction equipment, material delivery trucks, and worker commute vehicles. This small increase will be temporary and is expected to have a less than significant impact on local fuel reserves. Electrical consumption during construction will be temporary and can be handled by the existing infrastructure and the project itself will enhance the availability and reliability of electricity.

There would be no increase of natural gas or gasoline usage as a result of operation of the project. Operation of the project will result in a minor increase in the electrical consumption due to the operation of blowers and the pumps associated with the SCR Units. This increase in electricity will be satisfied by the new power generated by the project.

3.8.3 MITIGATION MEASURES

No mitigation measures are required for the proposed project since no significant impacts to energy and mineral resources are expected.

3.9 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the proposal involve:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
i) Significantly increase fire hazard in areas with flammable materials?	☐	☐	☐	☒

3.9.1 ENVIRONMENTAL SETTING

The proposed SCR system requires ammonia to react with NO_x in the exhaust gases to reduce NO_x emissions. Along with the use and handling of aqueous ammonia comes the risk of upset and accidental release. The risk of upset and accidental release is reduced through design, operations, maintenance, regulatory, and administrative controls. Design standards are developed through industry groups, various independent institutes, and government agencies. Operational controls include automatic devices to control and monitor process variables and documented procedures for manual operations. Routine preventative maintenance and inspections of critical equipment help to prevent unscheduled process shutdowns and potential equipment failures. Administrative controls include operator training, documentation of equipment inspection and maintenance history, and procurement prequalification controls over contractors and vendors.

Reliant adheres to and will continue to adhere to the following safety design and process standards in the operations of the equipment for the proposed project:

- The California Health and Safety Code Fire Protection specifications.
- The design standards established by American Society of Mechanical Engineers, the American Institute of Chemical Engineers, the American National Standards Institute, and the American Society of Testing and Materials.
- The applicable California Occupational Safety and Health Act (Cal-OSHA) requirements.
- *California Fire Code, 1998 Edition.*

3.9.2 ENVIRONMENTAL IMPACTS

The proposed project includes the addition of two 10,000-gallon aboveground storage tanks to service the new SCR units. The ammonia would be delivered to the Etiwanda Generating Station mixed with water at a concentration of 19 percent and stored onsite. Nineteen percent is being used rather than anhydrous ammonia or the 29 percent historically used for SCR systems in order to reduce the inherent risk of handling ammonia. Use and transport of anhydrous ammonia involves greater risk than aqueous ammonia because it is stored and transported under pressure. In the event of a leak or rupture of a tank, anhydrous ammonia is released and vaporizes into the gaseous form which is its normal state at atmospheric pressure and produces a toxic cloud. Aqueous ammonia is a liquid at ambient temperatures and gas is only produced when a liquid pool from a spill evaporates.

Aqueous ammonia at concentrations less than 20 percent is not considered a toxic substance under federal Risk Management Program requirements (title 40 of the Code of Federal Regulations, Part 68). However under current California Office of Emergency Services (OES) regulations implementing the California Accidental Release Program (CalARP) requirements, there is no threshold concentration of aqueous ammonia for

exclusion from the program (California Health and Safety code Section 2770.1). On June 19, 1998, the California Office of Environmental Health Hazard Assessment (OEHHA) issued recommended changes to the list of regulated substances in the CalARP program that included a proposed change in aqueous ammonia applicability to solutions of 20 percent or greater, which would match the federal program. Thus, both the EPA and the OEHHA have determine that aqueous ammonia of less than 20 percent concentration does not present a significant toxic risk; However the California OES has not yet acted on the OEHHA's proposed change. If these changes are not in place by the time aqueous ammonia is scheduled to be brought onsite, Reliant will coordinate with the San Bernardino County Hazardous Materials Management Unit and provide them with a CalARP Program document if required.

3.9.2.1 Hazard Analysis

The onsite storage and handling of the ammonia creates the possibility of an accidental spill and release of aqueous ammonia, which would evaporate and present a potential offsite public exposure. To further evaluate the potential for significant adverse environmental impacts due to an accidental release of aqueous ammonia, various scenarios were evaluated that could occur during the onsite storage, transportation and transfer of ammonia. These scenarios and their consequences are discussed in detail below.

3.9.2.2 Transportation Release Scenario

Reliant plans to receive ammonia from an ammonia supplier located in La Mirada approximately 38 miles southwest of the Etiwanda Generating Station. Deliveries of aqueous ammonia solution would be made to the facility by tanker truck via public roads. The maximum capacity of a tanker truck is 6,000-gallons. Based on the onsite storage capacity and consumption of ammonia, delivery frequency from the supplier to the Etiwanda facility would be six to eight tanker trucks per month. Regulations for the transport of hazardous materials by Public Highway are described in 49 Code of Federal Regulations 173 and 177.

Although trucking of aqueous ammonia and other hazardous materials is regulated for safety by the U.S. Department of Transportation, there is a small probability that a tanker truck could be involved in an accident spilling its contents. This probability can be estimated based on historical statistics. Truck accident rates are approximately 8.7 million miles (Risk of Upset Evaluation, Unocal San Francisco Refinery, ENSR 1994). Assuming 96 deliveries of 38 miles per year, the expected number of accidents would be one per 2,385 years. The risk of accident can be minimized by ensuring that a safe route is used and the shipments are made during off-peak times. The likelihood of any release in an accident is one in ten and of a major release, on in forty (ENSR 1994).

The expected major release frequency is one per 95,400 years. In the unlikely event that the tanker truck would rupture and release the entire 6,000 gallons of aqueous ammonia the ammonia solution would have to pool and spread out over a flat surface in order to create sufficient evaporation to produce a significant vapor cloud. For a road accident,

the roads are usually graded and channeled to prevent water accumulation and a spill would be channeled to a low spot or drainage system, which would limit the surface area of the spill and the subsequent toxic emissions. Additionally, the roadside surfaces may not be paved and may absorb some of the spill. Without this pooling effect on an impervious surface the spilled ammonia would not evaporate into a toxic cloud and impact residences or other sensitive receptors in the area of the spill. To further reduce potential risk of exposure, Reliant will ensure transportation of ammonia to the facility uses a route that provides the minimum expose to sensitive populations and that shipments are made during off-peak times to minimize risk by implementing the following mitigation measures:

- Prior to the first delivery of aqueous ammonia to the site, a truck haul route map shall be submitted to the SCAQMD for review and approval.

- The haul route shall minimize rail crossings and crossing of busy intersections.

- When traveling on surface streets, the haul route shall not come within one-quarter mile of an existing or proposed school.

- Deliveries shall not be en route to the site between 7:00 AM and 9:00 AM or between 4:00 PM and 6:00 PM weekdays.

- The haul route shall be resubmitted if suppliers are changed.

Based on the improbability of an ammonia tanker truck accident with a major release, its potential severity if it did occur, and the incorporation of mitigation measures, the conclusion of this analysis is that potential impacts due to accidental release of ammonia during transportation are less than significant.

3.9.2.3 Ammonia Transfer Release Scenario

This analysis was conducted to evaluate the impact of a worse-case tanker truck release on an impervious flat surface which spreads to a thickness on one centimeter (USEPA worst-case assumption). This scenario was assumed to occur at the Etiwanda facility.

The atmospheric dispersion of the ammonia emissions were calculated using the RMP*Comp™ (v 1.06) dispersion modeling program (developed by the EPA and the National Oceanic and Atmospheric NOAA)). The surface roughness used in the RMP*Comp™ modeling was "urban" (many obstacles in the immediate area), as there are structures and equipment over 25 feet high surrounding the modeled release point. An "urban" roughness indicated there are many obstacles where the spill has occurred, increasing mixing effects as the plume moves around the objects. Wind speed was assumed to be 1.5 meters/second and a Stability Class of F was used.

The vapors were assumed to disperse until a concentration of 200 ppm was attained. This toxic exposure endpoint comes from Emergency Response Planning Guidelines (ERPG)

Level II and was selected by the USEPA and the SCAQMD as their significance criterion. The ERPG Level II is defined as follows:

> "The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action."

The distance to the 200-ppm endpoint for this scenario was calculated to be 0.40 miles or 640 meters. The nearest sensitive receptor is a metal manufacturing facility located 0.25 miles or 400 meters north of the ammonia storage area. In order to reduce the off-site impact of this scenario to less than significant, Reliant will construct a containment dike to contain the entire volume of a tanker truck release. This containment area would be built near the ammonia storage tanks and used during off loading operations. This is also the northern most location that the tanker truck would travel with a full load and therefore the point of greatest exposure to the sensitive receptor. To evaluate the impacts of a release with mitigation, a 6,000-gallon tanker truck spill to a 300 square foot containment with a height of 3 feet was modeled. The exact dimensions of the containment have not yet been designed, but the actual containment would be designed to contain a spill so that the impacted area would be equal to or less than the impact area modeled for these estimated containment dimensions. The distance to the 200-ppm endpoint for this scenario was calculated to be 0.20 miles or 300 meters. The modeled worst-case release of aqueous ammonia from a tanker truck to a containment dike does not impact any sensitive receptors and therefore results in an less than significant impact with mitigation incorporated.

3.9.2.4 Ammonia Tank Rupture (Onsite) Scenario

This release scenario calculated the toxic impact from a spill of 10,000-gallons of 20 percent aqueous ammonia into a containment dike sized to hold the tank contents plus an additional 10 percent. The atmospheric dispersion of the ammonia emissions were calculated using the same methods as in the ammonia transfer release scenario. The distance to the 200-ppm endpoint for a confined release is 0.1 miles or 200 meters. The modeled worst-case release of aqueous ammonia from a catastrophic failure of one of the onsite ammonia storage tanks does not impact any sensitive receptors and therefore results in an less than significant impact with mitigation incorporated.

It should be noted that the upsets that were modeled are not likely to occur and were very conservatively based on USEPA RMP worst-case assumptions.

The proposed project site in not located within one-quarter of a mile of an existing or proposed school. In addition to the construction of containment, Reliant is prepared to implement a mitigation measure where the haul route of the tanker truck would be such that proximity to schools during transportation of aqueous ammonia would be minimized.

The proposed project will not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 nor is it located within two miles of a public or public use airport.

The proposed project is expected to have less than a significant hazards impact concerning the impairing of or physically interfering with adopted emergency response plan or emergency evaluation plans. Procedures for emergency response are provided to all Etiwanda Generating Station employees along with training guidelines in the use of personal protective equipment. These procedures and guidelines will be updated as necessary to account for the installation of new equipment. All construction and operation personnel associated with the proposed project would receive safety-training in accordance with procedures and guidelines. Additionally, the proposed project sites are located in an urban area and would not impact wildlands.

3.9.3 MITIGATION MEASURES

HHM-1 – Reliant will use a transportation route for ammonia shipments to the facility that ensures minimum expose to sensitive populations and will further minimize risks by shipping ammonia during off-peak times. This will be accomplished by implementation of the following mitigation measures:

- Prior to the first delivery of aqueous ammonia to the site, a truck haul route map shall be submitted to the SCAQMD for review and approval.

- The haul route shall minimize rail crossings and crossing of busy intersections.

- When traveling on surface streets, the haul route shall not come within one-quarter mile of an existing or proposed school.

- Deliveries shall not be en route to the site between 7:00 AM and 9:00 AM or between 4:00 PM and 6:00 PM weekdays.

- The haul route shall be resubmitted if suppliers are changed.

HHM-2 As part of the proposed project, Reliant will construct containment *system* ~~dike~~ to be used during off-loading operations. The containment *system* ~~dike~~ will *capture* ~~be sized to contain~~ the entire capacity of a ~~6,000-gallon~~ tanker truck release.

HHM-3 As part of the proposed project, Reliant will construct a containment dike around the ammonia tanks to contain 110 percent of the volume of the 10,000-gallon ammonia tank.

(Insert Figure 6 from File - Figure 6.doc)

Figure 6. Zones of Impact for Modeled Releases

3.10 NOISE

		Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:					
a)	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f)	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.10.1 ENVIRONMENTAL SETTING

Noise is defined as unwanted or objectionable sound, and airborne sound can be described as a rapid fluctuation of air pressure above and below the atmospheric pressure. Sound magnitude is expressed in decibels (dB) which are logarithmic (power of 10) ratios comparing measured sound pressures to a reference pressure. The unit of measurement of frequency is Hertz (Hz) (defined as one vibration per second). The human ear responds to sounds with frequencies in the range of 20-20,000 Hz. Most of the sounds we hear in the environment do not consist of a single frequency but rather a broad band of frequencies with each differing in sound level. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies that comprise a sound in accordance with a weighting. The weighting reflects that human hearing is less sensitive at low frequencies and extreme high frequencies than in the

frequency mid-range. This is called A weighting, and the decibel level so measured is called the A-weighting sound level (dBA).

Because noise levels can vary over a given time period, they are further quantified using the Equivalent Sound Level (L_{eq}). The L_{eq} is an average of the time-varying sound energy for a specified time period. Day-Night Sound Level (L_{dn}) is an average of the time-varying sound energy for one 24-hour period, with a 10 decibel (dB) addition to the sound energy for the time period of 22:00 to 07:00 hours. If the sound energy does not vary with time, the L_{dn} level will be equal to the L_{eq} level plus 6.4 dB.

For Rancho Cucamonga, the maximum allowable noise level of land use category "Heavy Industrial" shall not exceed 85 L_{dn} at the property line (City of Rancho Cucamonga Development Code, Chapter 17.30).

3.10.2 ENVIRONMENTAL IMPACTS

3.10.2.1 Construction

Additional equipment and personnel would be present at the Etiwanda Generation Station during the construction phase of the proposed project. Short-term onsite noise would occur during this period. Construction noise sources would principally be cement trucks and the motors of erection cranes. In addition to the actual construction, there would be worker vehicular trips and other truck trips to the site which would occur when bringing supplies for installing the SCR injection equipment.

Construction noise sources will be temporary and will cease following construction activities. The estimated noise level during equipment installation is expected to be an average of about 80 dBA at 50 feet from the center of construction activity. This estimate is based on typical noise levels from construction equipment. The closest noise sensitive receptor is 0.3 miles north-east of the facility. The noise level at the closest residential receptor is not expected to increase during construction activities. Most of the construction noise sources will be located near ground level, so the noise levels are expected to attenuate further than analyzed here. In general, construction activities would occur during daylight hours.

3.10.2.2 Operation

Operational noise will most likely be associated with vaporizers and blowers required to inject the ammonia into the boiler exhaust stream. This may produce a small increase in propagated broad-band (pink) noise energy. The proposed project is expected to have no fundamental effect upon the noise character or levels as measured at the property boundary. The noise level at the property boundary is not expected to increase beyond the presents levels. As mentioned above, the closest residence is approximately 0.3 miles north-east of the facility. Due to the buildings and vegetation between the source of any potential noise increase and the residence, the propose project is not expected to affect any sensitive noise receptor.

3.10.3 MITIGATION MEASURES

No mitigation measures are required for the proposed project since no significant impacts to noise are expected.

3.11 PUBLIC SERVICES

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☐	☒
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☐	☒

3.11.1 ENVIRONMENTAL SETTING

Police protection for the Etiwanda Generating Station is provided by the Rancho Cucamonga Police Department. Fire and emergency services are coordinated by the Rancho Cucamonga Fire Department (Fire Department). The Fire Department has two stations within the city that would respond to all emergencies at the Etiwanda Generating Station. These are located at 11239 Jersey Boulevard and at 12158 Baseline Road. Response time to an emergency at the facility is approximately three minutes.

The Fire Department is well equipped and trained for responding to and dealing with fires, paramedic rescues, and certain types of hazardous materials incidents. In the event that an incident exceeds the scope of the Fire Department capabilities, the local Fire Department contacts the West End Hazardous Materials (Haz Mat) Unit, which is comprised of members from five agencies in the local area. Mutual aid agreements are in effect for this service. Mutual aid occurs at the request of the "Incident Commander". In the event of an incident beyond the scope of the Fire Department, the Incident Commander will determine the nature and extent of the aid to be requested. The aid would be utilized for either emergency mitigation or standby backup.

The Fire Department serves a vital role in transferring information from one emergency response unit to another (e.g., fire, police, California Highway Patrol (CHP), private emergency service or equipment providers, etc.) both prior to and after an accidental release. Emergency response plans and evacuation routes are prepared and coordinated in advance of any emergency by the Fire Department, with development and review of such plans and routes supported by all of the public services involved.

Involvement of Fire Department personnel during a significant hazardous materials incident is typically kept to a minimum unless abatement of the hazards can be accomplished without harmful exposure to fire personnel. Specialized emergency response functions would be made by properly equipped and trained private contractors and /or public agencies such as county or state hazardous materials units. As stated previously, Rancho Cucamonga requests assistance from the West End Hazardous Unit for emergency response during hazardous materials incidents beyond the Fire Department's control.

3.11.2 ENVIRONMENTAL IMPACTS

3.11.2.1 Construction

Construction activities are not expected to result in an increased need for fire response services and compliance with state and local fire codes is expected to minimize the need for additional fire protection services.

Due to the comprehensive nature of emergency response in the Etiwanda area, planning for the transport, storage, and use of aqueous ammonia will have only a small incremental impact on fire services. A revised emergency response plan will be submitted to the Fire Department prior to bringing ammonia onsite.

3.11.2.2 Operation

There would be no increase in the number of employees at the Etiwanda Generating Station due to operation of the proposed project. Therefore, this project would not affect the demand for additional parks, maintenance of public facilities, nor would it create an increase in demand for additional public facilities.

3.11.3 MITIGATION MEASURES

No mitigation measures are required for the construction/operation of the proposed project since no significant impacts to public services are expected.

3.12 SOLID & HAZARDOUS WASTES

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the proposal result in a need for new systems, or substantial alterations to the following:				
a) Substantially increase the amount or volume of solid or hazardous waste generated?	☐	☐	☐	☒
b) Result in a need for new systems, or substantial alterations to existing solid or hazardous waste disposal facilities?	☐	☐	☐	☒

3.12.1 ENVIRONMENTAL SETTING

The Resource Conservation and Recovery Act (42 U.S.C §6901 et seq.) (RCRA) sets forth standards for the management of hazardous solid wastes. RCRA allows the USEPA to delegate its administration to the various states if and when a state program is shown to be at least equivalent to the federal requirements. California received RCRA authorization on August 1, 1992. California Code of Regulations (CCR) Title 22, §66260 et seq. contains the RCRA-equivalent regulations governing hazardous waste management in California. In addition, the California Health and Safety Code, §25100 et seq., identifies California-specific requirements for the identification and management of non-RCRA hazardous wastes. CCR Title 14, Section 17020 et seq., sets forth the minimum standards for the management of solid wastes, as well as enforcement and administration provisions for solid waste storage and disposal.

There are currently three Class I (hazardous waste) landfills located in California. Chemical Waste Management Corporation in Kettleman City is a permitted treatment, storage, and disposal facility with a capacity of 13 million cubic yards. Safety Kleen operates a Class I facility in Button Willow with a permitted capacity of 13 million cubic yards, of which 2.5 million cubic yards has been filled. Landfill disposal is also available for the Safety Kleen facility located in Westmoreland. In addition, hazardous waste can be transported to permitted facilities outside California.

3.12.2 ENVIRONMENTAL IMPACTS

Small volumes of non-hazardous wastes will be generated during project construction. The demolition/construction debris and operations waste would be disposed at either a Class II (industrial) or Class III (municipal) landfill. These small volumes would not be expected Substantially increase the amount or volume of solid or hazardous waste currently generated at the facility or result in a need for new solid or hazardous waste disposal facilities.

Project operations will generate small quantities of hazardous wastes, including cleaning solvent and spent SCR catalyst. The solvents are used in small quantities for equipment cleaning and the spent solvents will be managed per the requirements of Title 22 §§ 66260 et seq., which includes storing the material in closed containers within secondary containment. The SCR catalyst normally has a life of three to five years before replacement and will be sent for recycle when spent.

3.12.3 MITIGATION MEASURES

The impacts of the proposed project on solid and hazardous waste facilities are less than significant, therefore no mitigation measures are required.

3.13 AESTHETICS

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the proposal:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

3.13.1 ENVIRONMENTAL SETTING

The Etiwanda Generating Station is located on a 64-acre site within the City of Rancho Cucamonga, in the West Valley region of San Bernardino County. The visual character of the station vicinity is defined primarily by the area's flat topography and the industrial uses located north, east, and south of the generating station. Views to the north, east, and south reflect these industrial uses, mixed with some commercial development and undeveloped vacant lands. To the west, agricultural uses are visible in the foreground. Background views are dominated by the San Gabriel Mountains north of the generating station.

The Etiwanda Generating Station occupies a flat site surrounded by undeveloped vacant land to the south and east; agricultural fields to the west; and industrial development to the south, east, and north. The tanks at the southern end of the property are highly visible from the southwest and east. A tall earthen berm along Sixth Street obscures views of the generating station from that roadway. The generating units and four adjacent stacks are painted shades of beige to minimize visual contrast with surrounding areas. Black bands are visible at the tops of the stacks. The site is enclosed by a chain-link fence, with a landscaped area, berm, and trees screening views of the facility from Etiwanda Avenue.

3.13.1.1 Visual Sensitivity and Key Observation Points

The Etiwanda Generating Station is located in a primarily industrial area of Rancho Cucamonga. Few sensitive receptors are present nearby. No scenic routes are identified within the vicinity of the Etiwanda Generating Station; however, the generating station is visible from adjacent roadways. Consequently, the above parameters would apply primarily to travelers on major transportation corridors, such as Interstate-10 to the south.

Commuters and other travelers on this freeway and nearby streets are assumed to have moderate concern for scenic quality.

3.13.2 ENVIRONMENTAL IMPACTS

The installation of the two SCR units is proposed within existing mechanical equipment and will not result in a substantial visual alteration of the facility. The new equipment on the ground and within the existing boilers will not be visible from the surrounding properties and will not have a substantial effect on a scenic vista, a scenic resource, and will not create new light sources. The proposed project will be built within the existing fenceline of the Etiwanda Generating facility and would not create a negative aesthetic effect.

3.13.3 MITIGATION MEASURES

The impacts of the proposed project on aesthetics are less than significant so no mitigation measures are required.

3.14 CULTURAL RESOURCES

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the proposal:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

3.14.1 ENVIRONMENTAL SETTING

Archaeological Resources. The following information is taken from an archaeological records search (CAI-SBCM 1996) and other published information as cited.

No archaeological survey of the Etiwanda ETPC Facility property has been conducted. Systematic surveys within 1 mile of the facility site include the following:

- Owen (1995) surveyed a short pipeline leading to the facility.
- Hogan (1992) monitored a pipeline corridor that traverses the east edge of the facility.
- Hampson, Schmidt, and Schmidt (1991), and McKenna (1993) surveyed a pipeline route that runs north and south, and west of the facility.
- Bouscaren and Swanson (1989), and Swanson (1990) surveyed a 27-acre site immediately south of the facility.
- Swanson (1987) surveyed a fairly large area farther south of the facility.
- Clevenger (1988) surveyed a fairly large area north of the facility.
- Chace and Bricker (1994) surveyed an area along Foothill Boulevard, north of the facility.
- White (1988) surveyed a small area nearly 1 mile northwest of the facility.

- Landis (1993) surveyed a small area nearly 1 mile north of the facility.

- Mason (1985) surveyed a corridor northeast of the facility.

- Sturm, Monk, and Strudwick (1995) surveyed the Kaiser Steel Mill (located 1 mile southeast of the facility) and evaluated the property for National Register eligibility.

- Swope (1992) surveyed an area southeast of the facility.

Known archaeological sites within 1 mile of the Etiwanda facility include the following:

- **CA-SBR-7099H**, an early 20th century fired-clay sewer line, is located nearly 1 mile north of the facility.

- **CA-SBR-7199H**, an early 20th century residential site, is located nearly 1 mile northeast of the facility.

Although the Etiwanda facility has not been surveyed for cultural resources, the extent of survey in the surrounding vicinity indicates a low probability of prehistoric archaeological materials being present (none have been found nearby).

Ethnographic Resources. Documentation of Kumivit settlements is sparse and unreliable; the more recent summaries of Gabrielino ethnography (e.g., Bean and Smith 1978) have refused to speculate on locations of pre-contact villages. The closest known village site to the Etiwanda facility is *Kukamongna* (after which Cucamonga is named) (Johnston 1962), which may have been located archaeologically several miles west (see Martz 1976). Gabrielino people living in the Los Angeles area are known to have concerns about archaeological sites within their traditional territory, especially village sites where human burials are likely.

Historic Resources. Important properties in the area relate to transportation and industry (wineries and steel). A number of known historic structures are located within a 1-mile radius of the Etiwanda facility. These include:

- **CA-SBR-2910H,** is U.S. Route 66 (Foothill Boulevard), is located nearly 1 mile north of the facility.

- **P1084-57H**, a structure associated with the Cucamonga Top Winery (now the Guidera Winery), is approximately 0.75 mile north of the facility.

- **P1084-23H**, ruins of the early 20th century Campenella residence, is located approximately 0.75 mile north of the facility.

- **P1084-52H**, several structures associated with the Etiwanda Grape Products Company, is located approximately 0.25 mile south of the facility.

- **CA-SBR-4131H**, the Kaiser Steel Mill site, was built during World War II and is 0.5 mile and more east of the facility. It is one of the largest steel production mills west of the Mississippi and was designated as a California Point of Historical Interest in 1975. The site has recently been evaluated for the National Register (Sturm, Monk, and Strudwick 1995) (CAI-SBCM 1996).

In addition, the California Archaeological Inventory, San Bernardino County Museum, has indicated that:

a) Numbers of standing structures of varying historical significance occur within the area,

b) Based on old maps, historical archaeological remains are likely within the area, especially along Rochester Avenue west of the facility, and

c) A number of historic structures are known, but not mapped, in a north-south-trending corridor immediately east of the facility (CAI-SBCM 1996).

The Etiwanda Generating Station is not considered historic (less than 50 years old).

Paleontological Resources. No record search was conducted for fossil findings in the vicinity of the Etiwanda facility.

3.14.2 Environmental Impacts

The proposed project would be constructed within an existing power facility, on a site that is already graded and developed. The proposed project will not result in any adverse changes in the significance of historical resources. There will not be a substantial adverse change in the significance of an archaeological resource. The proposed project will not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. There will also be no disruption of human remains. There will be no cultural impact associated with the proposed project.

3.14.3 Mitigation Measures

The impacts of the proposed project on cultural resources are less than significant, therefore no mitigation measures are required.

3.15 RECREATION

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.15.1 ENVIRONMENTAL SETTING

This recreation setting is based on the City of Rancho Cucamonga General Plan (City of Rancho Cucamonga 1981). The Etiwanda Generating Station is located in San Bernardino County, in the southeastern edge of the City of Rancho Cucamonga within the city limits.

The City of Rancho Cucamonga currently has 300 acres of parkland, of which 165 acres have been developed.

Recreation facilities in the vicinity of the Etiwanda Generating Station are as follows:

- Red Hill Community Park,
- Bear Gulch Park,
- Church Street Park,
- Coyote Canyon Park,
- Groves Park,
- Hermosa Park,
- Lions Park,
- Old Town Park,
- Spruce Avenue Park,
- West Greenway Park,

- Windrows Park,
- Vintage Park,
- Kenyon Park,
- Ranch Cucamonga Neighborhood Center, and
- Lions Park Community Center.

In addition, the city has an extensive right-of-way along flood control channels for trail purposes (e.g., bicycling, hiking, and equestrian) that are located in the northern portion of the city away from the station site.

There is limited open space in the vicinity of the Etiwanda facility. Directly north of the site is a narrow strip of utility corridor. The northern portion of the city has more extensive open space areas that are not in the vicinity of the generating station.

The City of Rancho Cucamonga has adopted a parkland standard of 5 acres per 1,000 population.

The City of Rancho Cucamonga must increase its facilities by 57% to achieve the adopted standard.

The city is in the development phase of Rancho Cucamonga Central Park, which will be located approximately 2 miles from the generating station. This park will serve a wide variety of recreational interests. It will include a sports complex and provide parkland and open space. Rancho Cucamonga is also aggressively pursuing a reduction of its deficiency in recreational facilities.

3.15.2 Environmental Impacts

The proposed project will not result in any use increase of existing neighborhood and regional parks such that physical deterioration would occur or be accelerated. The proposed project does not require construction or expansion of recreational facilities or new employment. There will be no impact to recreational facilities associated with the proposed project.

3.15.3 Mitigation Measures

The proposed project in not expected to have significant impacts on recreation therefore, no mitigation measures are required.

3.16 MANDATORY FINDINGS OF SIGNIFICANCE

		Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☐	☒
c)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

The purpose of the project is to improve air quality through the reduction of NO_x emissions from Unit No. 3 and Unit No. 4. All aspects of this pollution control project will be located within an existing power plant facility. The project would not reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal. No important examples of history or prehistory would be affected.

The transportation, storage, and use of aqueous ammonia for this project has potentially significant impacts to the environment and humans in the event of an accidental release. The project will include mitigation measures that reduce the probability of an accidental release and reduce the impacts of a release if one were to occur. As detailed in the hazards section with mitigation incorporated, the use, transportation and storage of aqueous ammonia impacts of the project are reduced to less than significant.

The project will be cumulatively beneficial to air quality on the region by substantially reducing NO_x emissions from Units No. 3 and Unit No. 4. The project will not result in

cumulatively considerable adverse impacts due to the short duration of construction and the beneficial air quality impacts during operation.

No impacts to aesthetics, agricultural resources, cultural resources, land use and planning, mineral resources, population and housing, public services, and recreation are expected as a result of the project.

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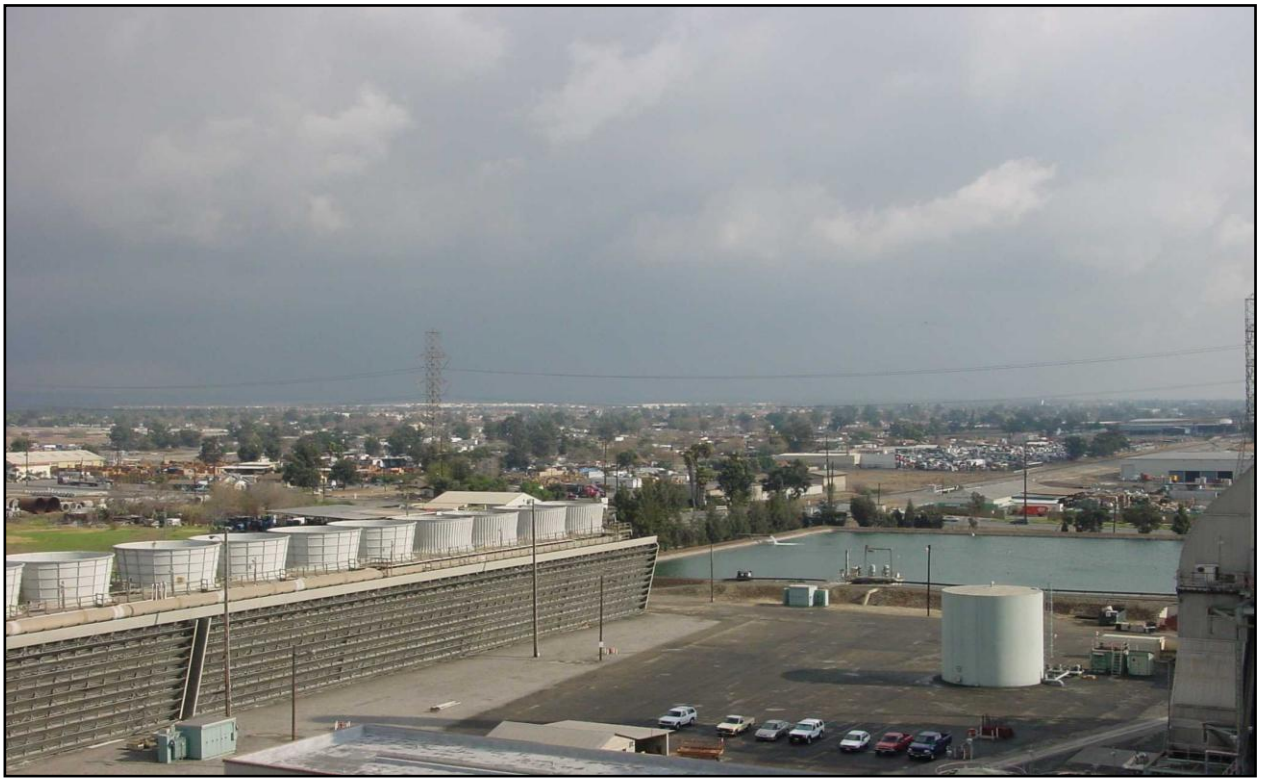
APPENDIX A

PHOTOGRAPHS OF PROJECT SITE AND SURROUNDING LAND USE

Ducting View and Location of Catalyst Installation

Aerial View of Units 3 & 4 of Etiwanda Generating Station



View to the North East

Location of Proposed Aqueous Ammonia Storage Tanks

(existing tanks to be removed)

APPENDIX B

HAZARD INDEX CALCULATIONS

HAZARD INDEX CALCULATIONS

Hazard Index (Chronic) Calculation

Description of Equipment:	SCRs with ≤ 10 ppmdv ammonia slip
Operating Schedule:	> 12 hrs/day
Emission Type:	point source
Stack Height:	99 feet
Distance to Nearest Residential or Sensitive Receptor:	600 meters
Distance to Nearest Off-site Worker Receptor:	115 meters
Nearest AQMD Meteorological Station:	Fontana
X/Qyr (based on deemed complete date of 11/17/00) =	1.99[(ug/m^3)/(tons/yr)]

MET = 1.19

REL chronic = 200

MP = 1

Annual Average NH_3 Emissions Boiler #3 (capacity factor = 0.42):

115,632 lbs/yr (0.42)(1 ton/2000 lbs) = 24.3 tons/yr

Annual Average NH_3 Emissions Boiler #4 (capacity factor = 054):

115,632 lbs/yr (0.54)(1 ton/2000 lbs) = 31.2 tons/yr

Chronic Hazard Index (HIC) Boiler #3 = (24.3)(1.99)(1.19)(1)/(200) = 0.288

Chronic Hazard Index (HIC) Boiler #4 = (31.2)(1.99)(1.19)(1)/(200) = 0.369

Since the HIC for each boiler is less than 1, no further analysis is required.

Hazard Index (Acute) Calculations

Description of Equipment:	SCRs with ≤ 10 ppmdv ammonia slip
Operating Schedule:	> 12 hrs/day
Emission Type:	point source
Stack Height:	99 feet

Hazard Index (Acute) Calculations (cont.)

Distance to Nearest Residential or Sensitive Receptor:	600 meters
Distance to Nearest Off-site Worker Receptor:	115 meters
Nearest AQMD Meteorological Station:	Fontana
X/Qhr (based on deemed complete date of 11/17/00) =	88.64[(ug/m^3)/(yr/yr)]

AF = 1

REL acute = 3,200

Maximum Hourly Emissions (each boiler) = 13.2 lbs/hr

Acute Hazard Index (HIA) (each = (13.2)(88.64)/(3,200) = 0.366

Since the HIA for each boiler is less than 1, no further analysis is required.

APPENDIX C

COMMENTS ON THE DRAFT MND AND RESPONSE TO COMMENTS

Michael Krause

From: Locati, Steve [SLocati@ci.rancho-cucamonga.ca.us]
Sent: Wednesday, February 21, 2001 3:08 PM
To: 'mkrause@aqmd.gov'
Cc: Salazar, Salvador; Crane, Ralph
Subject: Reliant Energy Etiwanda

Mr. Krause,

We have reviewed the "Notice of Intent to Adopt a Mitigated Negative Declaration" for Reliant Energy Etiwanda SCR Installation and have the following comments:

1. On the "Environmental Checklist Form," Section 2.2, Subsection 11 (Page 6) there are Hazard Control permits required by the Uniform Fire Code which is enforced by Rancho Cucamonga Fire District and the San Bernardino County Fire Department, Hazardous Materials Division. This should be added to assure completeness.

2. Under "Hazards and Hazardous Materials," Section 3.9.1 (Page 50), second paragraph, bulletin items- Add "California Fire Code, 1998 Edition." This is the minimum standard for on-site storage and use of hazardous materials.

3. Strict compliance with the provisions of the California Fire Code and the identified "Mitigation Measures" (Page 54), HHM-1, HHM-2 and HHM-3 the project should not present an unreasonable risk to the citizens of Rancho Cucamonga.

Should you have any questions please contact my office at (909) 477-2770, Extension 3009.

Steve Locati
Fire Planning Specialist
Rancho Cucamonga Fire District

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Comment Letter 1: City of Rancho Cucamonga, Fire District

1-1: Thank you for your comment. The Rancho Cucamonga Fire District and the San Bernardino County Fire Department, Hazardous Materials Division will be added to the Final Mitigated Negative Declaration (MND) in order to ensure proper compliance of the Hazard Control permits.

1-2: "California Fire Code, 1998 Edition" will be added to the list of items of safety design and process standards under the Environmental Setting of Hazards and Hazardous Materials. Thank you for highlighting the established standard.

1-3: Staff agrees that strict compliance with the provisions of the established safety design and process standards, including the California Fire Code, and the mitigation measures identified in the MND should not present an unreasonable risk to the citizens of Rancho Cucamonga. Thank you for your comment.