5.15 HAZARDOUS MATERIALS HANDLING

This section discusses the current and future storage and use of hazardous materials during the site preparation, construction, and operation phases of the El Segundo Power Redevelopment (ESPR) Project. Design features have been incorporated into the ESPR Project regarding the use of hazardous materials, especially their storage, to keep maximum potential impacts below defined thresholds of significance. Hazardous waste generation and management are further discussed in Section 5.14, Waste Management.

Beneficial design features of the ESPR Project that keep potential impacts below a level of significance include the following:

- Elimination of transportation of ammonia on city and county streets and highways to units 3 and 4 by installing a pipeline to deliver ammonia to the ESGS.

- Choice of aqueous, rather than anhydrous, form of ammonia to reduce the impacts of an accidental release.

- The existing location of the aqueous ammonia storage facility on the El Segundo Generating Station (ESGS) site and the proposed aqueous ammonia pipeline route from the Chevron Refinery is not immediately adjacent to surrounding residential areas (See Figure 5.15-1).

- Storage of aqueous ammonia in an underground storage tank (UST) has minimized the potential release and spread of aqueous ammonia during current operations and will continue to minimize potential hazardous materials impacts during the operation phase of ESPR.

The paragraphs below discuss the existing conditions, environmental consequences associated with hazardous materials usage during site preparation, construction, and operation of proposed Units 5, 6, and 7, cumulative impacts, mitigation measures, and applicable laws, ordinances, regulations, and standards (LORS).

5.15.1 Affected Environment

ESGS is located in an area zoned for heavy industrial uses . Hazardous materials are used at ESGS and at surrounding industrial and commercial sites. Surrounding industrial land uses include Chevron Refinery to the east-northeast, Chevron Marine Terminal, Hyperion Waste Treatment Plant and Scattergood Generating Station to the north, beyond the refinery. Hazardous materials usage is also present at the Chevron service station at 601 S. Vista Del

Mar Boulevard, adjacent to southeast of the ESGS. Surrounding land uses are shown on Figure 5.9-1 in Section 5.9, Land Use. Residential development in the vicinity of the site is not anticipated. As shown on Figure 5.15-1, there are four emergency response facilities; one medical center; and 22 preschools, daycare centers, or schools within a 2-mile radius of the ESGS. Names and addresses of sensitive receptors within 2 miles of ESGS are presented in Table 5.15-1.

ESGS is an active power plant. Currently the facility is comprised of four conventional, gas-fired conventional, electric power generation units (Units 1, 2, 3 and 4). The plans for the proposed project include demolition of the existing power blocks of Units 1 and 2 and construction of a combined-cycle plant identified as Units 5, 6 and 7, within the footprint of Units 1 and 2. A detailed description of the proposed ESPR Project is presented in Section 3.0, Facility Description. Linear facilities include a water pipeline route for two water pipelines, an ammonia supply pipeline, a sanitary wastewater pipeline, and several parking and staging areas. There are no new transmission lines required for the project.

According to the updated material inventory presented in the 2000 Hazardous Materials Business Plan (HMBP) for ESGS (NRG, 2000a), a variety of hazardous materials are stored and used by ESGS at the facility. A map of detailed hazardous material locations is provided in the 2000 HMBP. The HMBP is included in Appendix N of this application for certification (AFC). A summary of hazardous materials is provided in Table 5.15-2.

5.15.2 Environmental Consequences

The following sources are referenced in support of the identification and assessment of hazardous materials within this AFC section: *Sax's Dangerous Properties of Industrial Materials* (Lewis, 1992) and the *NIOSH Pocket Guide to Chemical Hazards,* (National Institute for Occupational Safety [NIOSH], 1997).

5.15.2.1 Site Preparation

Hazardous materials to be used during site preparation are gasoline, diesel fuel, oil, and lubricants. There are no feasible alternatives to these materials for operation of construction vehicles and equipment. Vehicle fuels (gasoline and diesel) will be provided by commercial retail fuel stations located offsite. Hazardous materials identified as potential hazardous waste materials that would be generated during site preparation are discussed in Section 5.14 - Waste Management. An inventory of potential ACMs for Units 1 and 2 are listed on Tables 5.14-2 and 5.14-3, respectively. Lead-based paint would also be removed during the site preparation.

TABLE 5.15-1

SENSITIVE RECEPTORS WITHIN 2-MILE RADIUS OF ESGS

PRESCHOOL/DAY CARE/KINDERGARTEN THROUGH HIGH SCHOOL	
El Segundo Co-Op Nursery and George E. Gordon Recreation Center Clubhouse 300 East Pine Street El Segundo, CA 90245	El Segundo Middle School (310)615-2690 332 Center Street El Segundo, CA 90245
Carousel Christian Preschool (310) 322-1112 St. Michael's Episcopal Church 361 Richmond Street El Segundo, CA 90245	Arena Continuation High School (310) 615-2650 641 Sheldon Street El Segundo, CA 90245
El Segundo Preschool (310)322-0807 301 West Grand Avenue El Segundo, CA 90245	St. Anthony School (310)322-4218 233 Lomita Street El Segundo, CA 90245
Hilltop Christian (Church of Christ) (310)332-4348 717 East Grand Avenue El Segundo, CA 90245	El Segundo High School (310) 615-2661 640 Main Street El Segundo, CA 90245
St. John's Lutheran Child Development Center (310) 615-0211 1611 East Sycamore Avenue El Segundo, CA 90245	Child Development Center (310) 546-7655 1600 Pacific Avenue Manhattan Beach, CA 90266
YMCA Program at: Pacific Baptist Church (310) 322-5975 859 Main Street El Segundo, CA 90245	Grand View Elementary School (310) 546-8022 455 25th Street Manhattan Beach, CA 90266
First Baptist Pre-School/Daycare (310) 322-2719 591 East Palm El Segundo, CA 90245	Imperial Avenue School 540 East Imperial Avenue El Segundo, CA 90245
Richmond Street Elementary School 615 Richmond Street El Segundo, CA 90245	Pacific Elementary School (310) 546-8044 1214 Pacific Avenue Manhattan Beach, CA 90266
Center Street Elementary School and The Learning Connection Daycare (310)615-2687 700 Center Street El Segundo, CA 90245	American Martyrs Catholic Elementary School (310) 545-8559 1701 Laurel Avenue Manhattan Beach, CA 90266
Beach Babies (310) 546-4622 Infant to Preschool 540 Rosecrans Avenue Manhattan Beach, CA 90266	Montessori School (310) 379-9462 315 S. Peck Avenue Manhattan Beach, CA 90266

TABLE 5.15-1
(CONTINUED)

South Bay Center Nursery School (310) 545-6575 360 N. Sepulveda El Segundo, CA 90266	Young Visions Daycare Center and (310) 546-2774 South Bay Adult Parent Education 2617 Bell Avenue Manhattan Beach, CA 90266
HOSPITALS/LONGTERM HEALTHCARE FACILITIES	
None in El Segundo	Centinela Medical Center (Woman's Clinic) 2809 Sepulveda Boulevard Manhattan Beach, CA 90266
EMERGENCY RESPONSE FACILITIES	
Fire Department 314 Main Street El Segundo, CA 90245	Fire Department 400 15th Street Manhattan Beach, CA 90266
Police Department 348 Main Street El Segundo, CA 90245	Police Department 420 15th Street Manhattan Beach, CA 90266

Impacts associated with the use of fuels, oil and lubricants are expected to be insignificant. The removal of ACMs and lead-based paint during site preparation is discussed in Section 3.8. Implementation ACM and lead-paint abatement in accordance with the plan in Section 3.8 is expected to result in insignificant impacts during site preparation.

5.15.2.2 Construction Phase

Hazardous materials to be used during construction are gasoline, diesel fuel, oil, lubricants, solvents, adhesives, and paint materials. There are no feasible alternatives to these materials for operation of construction vehicles and equipment. Vehicle fuels (gasoline and diesel) will be provided by commercial and retail service stations located offsite. No acutely hazardous materials (AHMs) will be used or stored onsite during construction. No storage of hazardous materials is planned outside of the plant site.

In general, construction contractors will utilize lubricating oils, solvents and other hazardous materials during demolition and construction of the new facilities. The contractor will be responsible for assuring that the use, storage and handling of these materials will be in compliance with applicable federal, state, and local LORS, including licensing, personnel

TABLE 5.15-2

HAZARDOUS MATERIALS AND WASTES USAGE AND STORAGE DURING CONSTRUCTION AND OEPRATIONS[1]

Material	Purpose and Location	Usage/Day	Maximum Stored	Storage Type
A300- low hazard corrosion inhibitor	South of Unit 4 boiler	75 gal.	100 gal.	Steel drum, tote bin
Acetylene (C_2H_2) 99.80%	Southwest of warehouse	3,530 cu ft	10,950 cu ft	Cylinder
Ammonium Bicarbonate	South of Unit 4 boiler	400 lb.	600 lb.	Bag
Ammonium bifluoride NH_4HF_2	Chemical cleaning of HRSG	As needed	Temporary only	Portable vessel
Aqua ammonia (29.4%)	South of Unit 4 boiler	600 gal.	1,000 gal.	Steel drum, tote bin
Aqueous ammonia (29%) $NH_4(OH)$	NO_x emissions control. Top of hill and other locations	15,000 gal.	20,000 gal.	Underground tank
Argon	Warehouse, south side and other locations	850 cu ft	1,410 cu ft	Cylinder
Asbestos Containing Debris	Hazardous waste storage area and accumulation areas	2,000 lb.	15,000 lb.	Steel drum
Bleach	North of Units 3,4; southwest of Units 1,2.	1,500 gal.	2,600 gal.	Aboveground tank
Calgon C-9 Corrosion Inhibitor	Chemical storage room, chemical feed areas	250 lb.	600 lb.	Plastic/Nonmetallic Drum
Calgon H-510 Microbiocide	Chemical storage room, chemical feed areas	250 lb.	600 lb.	Plastic/Nonmetallic Drum
Cardox –carbon dioxide	Unit 2 2nd level west side	3 tons	5 tons	Tank inside building
ChelClean 665 Chelating Agent	South of Unit 4 boiler	50,000 lb.	89,000 lb.	Poly tank
Citric acid	Chemical cleaning of HRSG, feedwater systems	As needed	Temporary only	Portable vessel
CuSol Solvent Waste	South of Unit 4	100,000 gal.	180,000 gal.	Tank wagon
Dielectric Solvent	Unit 2 Aux. bay southwest corner; Unit 4 Aux. bay south end.	110 gal.	330 gal.	Steel drum
Diesel fuel	Diesel fire pump. Warehouse, southwest side	110 gal.	165 gal.	Steel drum

TABLE 5.15-2
(CONTINUED)

Material	Purpose and Location	Usage/Day	Maximum Stored	Storage Type
Di-, tri-sodium phosphate solution	Boiler water pH/scale control	5 lb.	800 gal	Portable vessel
EDTA chelant	Chemical cleaning of HRSG, feedwater systems	As needed	Temporary only	Portable vessel
Elimin-ox - Oxygen scavenger	Feedwater oxygen control. Under Unit 3 boiler and Unit 1 chem area	500 gal.	800 gal.	Tote bin
EPA Protocol Mix (1.0% O_2)	Warehouse, southwest side	282 cu ft	564 cu ft	Cylinder
EPA Protocol Mix (Nitric Oxide/Nitrogen [12.75ppm])	Warehouse, southwest side	564 cu ft	1,410 cu ft	Cylinder
EPA Protocol Mix (17% O_2)	Warehouse, southwest side	564 cu ft	1,410 cu ft	Cylinder
Flammable Gas Mixture #1	Warehouse, south side	846 cu ft	1,410 cu ft	Cylinder
Flammable Gas Mixture #2	Warehouse, southwest side	846 cu ft	1,410 cu ft	Cylinder
Flammable Gas Mixture #3	Warehouse, south side	846 cu ft	1,410 cu ft	Cylinder
Flammable Gas Mixture #4	Warehouse, southwest side	846 cu ft	1,410 cu ft	Cylinder
Flammable Gas Mixture #5 (72% Methane)	Warehouse, south side	846 cu ft	1,410 cu ft	Cylinder
Helium	Warehouse southwest side	282 cu ft	846 cu ft	Cylinder
Hydrazine (N_2H_4) 35%	Unit 3 Turbine Deck, Unit 1 Heater Deck	500 gallons	850 gallons	Tote bin
Hydrochloric acid HCl	Chemical cleaning of HRSG	As needed	Temporary only	Portable vessel
Hydrogen	Unit 3 northwest side, ground level	30,000 cu ft	40,000 cu ft	Cylinder
Hydrogen	Generator cooling.	8,000 cu ft	70,000 cu ft	Tank, carbon steel
Lubricating Oil	Unit 1 ground floor; southwest Unit 2, Unit 3 & 4 ground floor.	27,800 gal	40,500 gal	Aboveground tank, steel drum.
Mineral Spirits	Paint shack	20 gallons	50 gallons	Can

TABLE 5.15-2
(CONTINUED)

Material	Purpose and Location	Usage/Day	Maximum Stored	Storage Type
Mineral Oil	Transformers at Units 1, 2, 3, and 4	87,800 gal	88,000 gal	Transformers
Nalco 350-corrosion inhibitor	Under Unit 3 boiler and Unit 1 chem area	500 gal.	800 gal.	Tote bin
Nalco 356-corrosion inhibitor	Under Unit 3 boiler and Unit 1 chem area	500 gal.	800 gal.	Tote bin
Nalco BT 3000	Boiler water treatment. Under Unit 3 boiler and Unit 1 chem area	500 gal.	800 gal.	Tote bin
Nalco EG 5010	Boiler alkalinity control. Under Unit 3 boiler and Unit 1 chem area.	500 gal.	800 gal.	Tote bin
Neutralizing amine solution	Feedwater pH control	5 lb.	800 gal	Portable vessel
Nitrogen	Unit 3 north side	106,000 cu ft	141,265 cu ft	Aboveground tank, cylinder
Non-RCRA Hazardous Waste Silicone Grease and Debris	Hazardous waste storage area and accumulation area	55 lb.	110 lb.	Steel drum
Oil Contaminated Soil/Solids	Hazardous waste storage area and accumulation area	220 lb.	1,100 lb.	Steel drum
Oxides of Nitrogen Mix (Nitric Acid 34 PPM)	Warehouse, southwest side	564 cu ft	1,410 cu ft	Cylinder
Oxides of Nitrogen Mix (Nitric Oxide 59.50 PPM)	Warehouse, southwest side	564 cu ft	1,128 cu ft	Cylinder
Oxides of Nitrogen Mix (Nitric Oxide 125 PPM)	Warehouse, southwest side	846 cu ft	1,410 cu ft	Cylinder
Oxidizer	South of Unit 4 boiler	30,000 cu ft	45,000 cu ft	Cylinder trailer
Oxygen scavenger solution	Feedwater oxygen control	2.5 lb.	800 gal.	Portable vessel
Oxygen Mix (8.5% O_2)	Warehouse, southwest side	564 cu ft	1,410 cu ft	Cylinder
Oxygen – gaseous oxygen	Warehouse, south side	1,128 cu ft	3,666 cu ft	Cylinder
Paint	Paint shack	25 gallons	100 gallons	Can

TABLE 5.15-2
(CONTINUED)

Material	Purpose and Location	Usage/Day	Maximum Stored	Storage Type
Propane	Warehouse, southwest side	200 gal.	400 gal.	Cylinder
Selig Formula 229 Degreaser	Unit 2 Aux. bay southwest corner; Unit 4 Aux. bay south end.	110 gal.	110 gal.	Steel drum
Sodium Hypochlorite 12.5% wt NaOCl	Southwest of Units 1&2, North of Units 3&4	1500 gal.	2,600 gal.	Aboveground storage tank
Sodium nitrite $NaNO_2$	Chemical cleaning of HRSG	As needed	Temporary only	Portable vessel
Sulfuric acid for station batteries	Electrical/ctrl bldg. Combustion turb Miscellaneous	As needed	600 gal 732 gal 100 gal	Battery Battery Battery
Waste Hydrazine and Debris	Hazardous waste storage area and accumulation area	55 lb.	110 lb.	Steel drum
Waste Lubricating Oil	Hazardous waste storage area and accumulation area	220 lb.	550 lb.	Steel drum
Waste Mineral Oil for transformers	Hazardous waste storage area and accumulation area	110 lb.	330 lb.	Steel drum
Waste Oil & Solvent	Hazardous waste storage area and accumulation area	450 lb.	1350 lb.	Steel drum
Waste Paint & Thinner	Hazardous waste storage area and accumulation area	55 lb.	110 lb.	Steel drum
Waste Paint Chips and Debris (with Benzene & Lead)	Near Paint shack and hazardous waste storage area	110 gal.	165 gal.	Steel drum
Waste Paint Solids/Sludge	Hazardous waste storage area and accumulation area	55 gal.	165 gal.	Steel drum
Waste Solvent and Debris	Hazardous waste storage area and accumulation area	55 lb.	110 lb.	Steel drum

[1] Reference: NRG, 2000 Business Plan Update, November.

training, accumulation limits, reporting requirements and record keeping. The HMBP at ESGS outlines hazardous materials handling, storage spill response, and reporting procedures (NRG, 2000a). The following site services will also be provided, either by separate contract, or incorporated into individual construction subcontracts for the ESPR Project:

- Environmental health safety training
- Site security
- Site first aid
- Construction testing (e.g., NDE, Hydro, Soil, Concrete)
- Furnishing and servicing of sanitary facilities
- Trash collection and disposal
- Disposal of hazardous materials and waste in accordance with local, state, and federal regulations.

Small quantities of fuel oil and grease drippings from construction equipment may occur during construction. Such materials generally have a low relative risk to human health and the environment. If there is a large spill, the spill area will be bermed or controlled to minimize the footprint of the spill as quickly as is practical. Contaminated soil materials produced during a cleanup of a spill will be placed into barrels or trucks by service personnel for offsite disposal as a hazardous waste at a permitted hazardous waste, transfer, storage, and disposal facility. If a spill or leak into the environment were to involve hazardous materials equal to or greater than the specific reportable quantity (25 gallons for petroleum products), federal, state, and local reporting requirements would be adhered to. In particular, the city of El Segundo would be notified in accordance with Title 6 – Health and Sanitation of the El Segundo Municipal Code. In the event of a fire or injury, the City of El Segundo Fire Department would be called. Contractors will be expected to implement best management practices consistent with hazardous materials storage, handling, emergency spill response (NRG,2000b) and reporting in the HMBP (NRG, 2000a). Impacts associated with the use of hazardous materials will be insignificant by implementing procedures in the HMBP.

To accommodate increased aqueous ammonia usage, the ESPR project proposes to add an aqueous ammonia pipeline that will connect to the existing storage tank. As shown on Figure 5.15-1, the new aqueous ammonia line will begin at a tie-in point within the Chevron Refinery and will be routed for approximately 0.7 mile to the north perimeter fence of the

power plant site via the Vista Del Mar Boulevard overpass. The ESPR Project also proposes to install two new water supply pipelines from the tie-in points in the City of El Segundo through a small portion of the City of Los Angeles to the plant site. Sanitary wastes from the proposed combined cycle plant and existing generating plant will be discharged via a new line to the municipal sanitary sewer that is operated by the City of Manhattan Beach. Connection to the city sewer will necessitate construction of a lift station on the plant site. Construction of the proposed ammonia line, water supply lines and sewer line will meet the requirements established by the state and the cities of El Segundo, Los Angeles, and Manhattan Beach. No significant hazardous material handling is predicted to occur during the installation of the pipeline. As a result, the potential impact to the environment from hazardous materials related to the construction of water supply lines, sanitary sewer line, and aqueous ammonia line will be insignificant.

5.15.2.2 Operations Phase

Plant operations will be controlled from the operator's panel, which will be located in the existing control room of Units 3 and 4. A distributed control and information system (DCS) will provide modulating control, digital control, and monitoring and indicating functions for operation of the plant power block systems. Detailed information on material deliveries and waste disposal during the operational phase is included in Section 5.14 - Waste Management.

The major hazardous materials to be stored and/or used at the site during operation of the Units 5, 6 and 7 are included in Table 5.15-2. A map of hazardous material locations within the existing ESGS is provided in the 2000 HMBP (NRG, 2000a).

The following potential hazards associated with the storage of hazardous or acutely hazardous materials were identified:

- Fire and explosion from the use of natural gas, hydrogen gas, and other gases
- Accidental release of aqueous ammonia.

5.15.2.2.1 Fire and Explosion Risks.

Natural Gases. Natural gas, which is and will be used as a fuel for the facility, poses a fire and/or explosion risk as a result of its flammability. While natural gas is used in significant quantities, it is and will be continuously delivered to the generating plant site through a pressurized natural gas pipeline and will not be stored onsite. There are no changes proposed to the gas pipeline; therefore impacts to the affected environment would stay the same. The risk of a fire and/or explosion will be minimized through adherence to applicable codes and the continued implementation of effective safety management practices.

Hydrogen. Hydrogen will be used as a generation coolant for the ESGS site. A maximum of 70,000 cubic feet of hydrogen may be stored onsite at any one time. The gas will either be stored in an aboveground tank or in individual gas cylinders. The tank or cylinders will be stored outside near the combustion turbine generators and away from electrical lines and other potential ignition sources as required by the applicable building and fire codes. If the hydrogen is stored in cylinders, they will be stored upright, chained to a supporting structure, and protected from vehicular impact. If the hydrogen is stored in a tank, it will also be protected from vehicular impact. The risks and potential impacts presented by the quantity of hydrogen can be compared to the risks and potential impacts of natural gas delivered to the site by pipeline, discussed above. Since a hydrogen tank will hold a smaller finite volume of an explosive gas, it is reasonable to conclude that the risk presented by hydrogen at the site is less than the risk from natural gas at the facility. As a result, the potential impacts presented by the usage of hydrogen at Units 5, 6 and 7 will be insignificant.

Other Gases. Other gases currently stored and used at the facility include gases typically used for maintenance activities such as shop welding and emissions monitoring. These gases include acetylene, argon, carbon monoxide, nitric oxide, nitrogen and oxygen. The potential impacts presented by the use of these gases are not considered to be significant based on the following:

- A limited quantity of each gas is stored at the facility.
- The gases are stored in DOT-approved safety cylinders, secured to prevent upset and physical damage.
- Incompatible gases (e.g., flammable gases and oxidizers) are stored separately.
- The gases are stored in multiple standard-sized portable cylinders, in contrast to a larger cylinder, generally limiting the quantity released from an individual cylinder failure to less than 200 cubic feet.

There will be no significant changes that would result from the proposed project. Therefore, the potential impacts presented by the use of these gases at the facility are not changed and are considered insignificant.

5.15.2.2.2 Acutely Hazardous Materials. None of the chemicals proposed for use at the ESPR project site are Regulated Substances subject to the requirements of the California Accidental Release Prevention (CalARP) Program, with the exception of aqueous ammonia (approximately 29% solution) which is proposed to be piped through the new ammonia pipeline to the existing tank instead of delivered in trucks.

Aqueous ammonia (approximately 29% solution) is currently in use at the ESGS in a Selective Catalytic NO_x Reduction (SCR) system in service on one of the existing thermal units. The ammonia solution is currently stored onsite in a 20,000-gallon UST on the southeast corner of the switchyard. Because of the addition of SCRs on Units 5 and 7, an increase in ammonia usage will occur. However, the ESPR project is not proposing the installation of a new aqueous ammonia tank. To prevent increased truck traffic to deliver aqueous ammonia to the plant site, the ESPR Project proposes to purchase aqueous ammonia from Chevron Refinery and install a pipeline directly connecting the refinery aqueous ammonia production system to the onsite storage tank. The proposed new ammonia pipeline reduces the risk of aqueous ammonia release from delivery trucks. An Offsite Consequence Analysis (OCA), which evaluated two "worst-case" release scenarios (pipeline and tanker truck release), has been conducted. The analysis is included in Section 5.15.2.3.

The CalARP Program November 16, 1998, final regulations (CCR Title #19, Division 2, Chapter 4.5) provide two sets of lists of Regulated Substances: one for Federal Regulated Substances and one for State Regulated Substances.

- Section 2770.5 – Tables 1 and 2 of Section 2770.5 list Federal Regulated Substances and threshold quantities for accidental release prevention, including flammable substances. Aqueous ammonia, hydrogen, hydrochloric acid, and cyclohexylamine are on the list.

- Section 2770.5 – Table 3 of Section 2770.5 lists State Regulated Substances and threshold quantities for accidental release prevention. Aqueous ammonia, sulfuric acid and cyclohexylamine are included on this list.

Based on the above regulations and the current use of aqueous ammonia at ESGS, a Risk Management Program (RMP) is required and was consequently submitted to El Segundo Fire Department in June 1999. The RMP is included in Appendix N of this application. An OCA was conducted for the existing piping system from the aqueous ammonia UST to the SCR system in service. The results of the "worst-case" release scenario indicated that (1) approximately 1,160 pounds of aqueous ammonia would be released and, (2) the radius of influence above EPA guidance levels (EPA, 1999) would be 520 feet (NRG, 1999). An OCA has been performed for the proposed aqueous ammonia pipeline from Chevron to ESGS. The OCA assumptions, model, and "worst-case" release scenario results are presented in Section 5.15.2.3.

It is important to note that this offsite consequence analysis is ultra conservative, as required by the EPA RMP Guidance. For example, the worst-case meteorology used in the analysis of an ambient temperature of 100^{o}F, F stability, and 1-m/s winds would not realistically occur simultaneously. Under typical conditions, stable atmospheres and low winds are associated

with night and early morning conditions, when ambient temperatures are not expected to be this high. At a daytime temperature of 100°F, atmospheric stability with low winds would more likely occur under C or D stability due to thermal atmospheric mixing caused by daytime solar insulation. Conversely, F stability and 1-m/s winds are more likely to occur at overnight or early morning temperatures. Furthermore, the worst-case analysis also gives no credit for active control measures included in the ammonia storage/receiving facility design.

No special regulatory requirements or management practices related to the storage or use of hydrogen, sulfuric acid, hydrochloric acid, or neutralizing amine (containing cyclohexylamine) are anticipated.

5.15.2.2.3 Other Hazardous Materials. No adverse environmental impacts are anticipated related to other hazardous materials used at the facility. Only small quantities of paints, oils, solvent, pesticides and cleaners, typical of those packaged for retail consumer use, are or will be present during operation of the facility. Small volumes of petroleum products associated with construction equipment will be onsite during construction. As described in Section 5.15.2.2 and 5.15.3.1, long-term or cumulative impacts will be avoided by cleaning up any accidental leaks or spills of these materials as soon as they occur.

5.15.2.2.4 Material Safety Data Sheets. Material Data Safety Sheets for the hazardous materials will be kept onsite as required by 29 CFR 1910 OSHA Hazard Communication rules and regulations.

5.15.2.3 Offsite Consequence Analysis

This section presents an OCA, or evaluation of potential acute public health impacts from an accidental release of a Regulated Substance stored in a process in amounts exceeding threshold planning quantities (TPQs). The air emission control system for the units is SCR, which relies on ammonia to reduce NO_X emissions from the turbines in the presence of a catalyst. The aqueous ammonia to be used for the SCR air pollution control system would be the only Regulated Substance stored in an amount exceeding an applicable TPQ.

The OCA was performed for the SCR under two potential accidental release scenarios identified as "worst case." The first scenario involves the option where the aqueous ammonia is delivered to the facility via pipeline from the neighboring Chevron El Segundo Refinery and the entire pipeline contents from the underground storage tank to the property boundary is assumed to be released. A second scenario assumes that the aqueous ammonia is delivered by tanker truck. In this scenario, it is assumed that the contents from a full 6,000-gallon tanker truck would be released within a 10-minute period. These hypothetical release scenarios are further described below. Previously, as part of ESGS RMP, an OCA was conducted for the existing

aqueous ammonia pipe system that leads from the UST to the existing SCR system. The results of that analysis are included in the existing RMP ("worst-case" release scenario was a 1,160-pound release and a radial distance above EPA guidance levels of 520 feet). Zones of vulnerability were then assessed using U.S. EPA-approved dispersion techniques which predict the airborne migration and concentration of the ammonia. Potential short-term health effects were evaluated from the estimated zones of vulnerability.

The OCA performed herein described in detail below includes four components. The first is an estimation of emission rates associated with the hypothetical release. Second, an evaluation of historical meteorological data to determine the frequency of occurrence of various meteorological conditions. Third, atmospheric dispersion modeling using both the emission rates and meteorological data to predict the extent of potential vulnerability zones associated with the hypothetical, worst-case release. Finally, the fourth component assesses the potential degree and extent of offsite consequences based on the dispersion modeling results. For this OCA, an aqueous ammonia concentration of 30 percent was assumed.

5.15.2.3.1 Ammonia Health Criteria. Short-term exposures to airborne ammonia can cause skin, eye and upper respiratory irritation. At extremely high concentrations, ammonia can be life threatening. Three levels of concern (LOC) were identified as a means to characterize worst-case impacts associated with the hypothetical release of ammonia. They are described below.

Lethality. The lethality value is 2,000 parts per million (ppm) (30-minute averaging time). This lower limit value for lethality to human populations was obtained from the literature (Wray, 1991) and is used by the California Energy Commission in evaluating potentially lethal ammonia exposures.

IDLH. The immediately dangerous to life and health (IDLH) value is 300 ppm (30-minute averaging time). This is a worker protection value published by the National Institute of Occupational Safety and Health (NIOSH, 1997). Concentrations above IDLH values pose a threat to cause death or immediate or delayed adverse health effects or cause a condition to prevent escape from such an environment.

ERPG-2. The Emergency Response Planning Guideline Level 2 (ERPG-2) value is 200 ppm (1-hour averaging time). The ERPG-2 value is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing any irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action.

5.15.2.3.2 Modeling Methodology. This section summarizes the emission estimate, the release characteristics and the exposure assessment criteria for each of the two scenarios.

The emission estimates for each of the scenarios are based upon the procedures set forth in the U.S. EPA Guidance document for unmitigated releases for toxic liquids (EPA, 1999). In this procedure, the total release is defined to be release within the first 10 minutes. Within this period, the release rate is assumed to be uniform and is defined as follows:

$$QR = QS \times 1.4 \times LFA \times DF$$

where: QR = Release rate (pounds per minute)
QS = Quantity released (pounds)
1.4 = Wind speed factor = $1.5^{0.78}$, where 1.5 meters per second is the wind speed for the worst case.
LFA = Liquid Factor Ambient
DF = Density Factor.

Based upon the characteristics of ammonia the LFA is defined as 0.026 and the DF is defined as 0.55 (Exhibit B-3 of the guidance document). For the worst-case analysis, it is assumed that the release would occur during very stable condition (Stability Class F) and light wind speeds (1.5 m/s), with a temperature of 100^{o} F. Further, it is assumed that the wind direction could occur in any direction.

Based upon the guidance document, the significant exposure threshold is defined as the downwind distance where the predicted concentration exceeds the ERPG-2 level of 200 ppm. The maximum downwind concentration is predicted (for each scenario) in the guidance document as a function of the release rate and the ERPG-2 level. The significant downwind distances have been provided in the guidance document specifically for aqueous ammonia and are a function of the estimated release rate. Estimation of the significant exposure distances was generated from this table for each scenario.

5.15.2.3.3 Site-Specific Modeling Parameters.

Pipeline Release Scenario. Potential accidental release scenario for the pipeline transportation of the aqueous ammonia involves the rupture of the pipeline and allowing all of the contents to be spilled onto the ground. Pipeline design will include sufficient check valves and safety measures to ensure that ammonia will not leak between the two facilities' pipelines. Therefore, the extent of the accidental release for a pipeline rupture is assumed to be limited from between the ESGS and Chevron property line and the ESGS underground storage tank. The estimated distance from the tank to the property line was 2,145 feet. The diameter of the ammonia line is assumed to be 3 inches, giving a total volume of 105 cubic feet (790 gallons of aqueous

solution). This results in approximately 6,000 pounds of aqueous ammonia at 29 percent ammonia or equivalent to approximately 2,000 pounds of ammonia within the solution.

Based upon the equation in Section 5.15.2.3.2, the release rate from this spillage would be estimated at 40 pounds per minute. For the purposes of this analysis, this release was evaluated at the most southern point of the pipeline (the nearest point to the residents to the south) and the most northwesterly tip of the pipeline (to evaluate the nearest beach locations). The release point and beach points used in this scenario is shown in Figure 5.15-2.

Tanker Truck Release Scenario. Potential accidental release scenario for the tanker truck transportation of the aqueous ammonia involves the rupture of the tanker truck while unloading the aqueous ammonia. The release assumed that the truck was full, the accident occurred at the beginning of the unloading process, and the entire contents of the truck spilled onto an undiked area. The total volume of 6,000 gallons would result in approximately 44,000 pounds of aqueous ammonia, of which approximately 14,000 pounds would be ammonia, assuming a 29 percent solution.

The release rate was again based upon the equation in Section 5.15.2.3.2 and the spillage release rate would be estimated at 270 pounds per minute. For the purposes of this analysis, this release was evaluated at the unloading area near the underground storage location. This release scenario has been discussed herein; however, with the installation of the aqueous ammonia pipeline from Chevron Refinery, the truck release scenario will no longer represent the potential consequences. This represents a substantial lessening of risk of exposure to the public.

5.15.2.3.4 Offsite Consequence Analysis Results

Pipeline Scenario Results. The results of the analysis for the pipeline scenario indicate that an area within one-tenth of a mile would be predicted to exceed the U.S. EPA screening threshold level (Section 5.15.2.3.1), using the OCA guidance document procedures. This distance would not affect any residences in the surrounding area, even at the most southerly location of the pipeline. Figure 5.15-2 illustrates the radius of influence for the worst-case wind speed/stability class combination. However, it should be noted that under this worst-case condition, the zone of influence does encompass a small area of the public beach to the northwest corner of the property. In addition, a small section of Vista Del Mar Boulevard would be within the zone of influence.

It is important to note that this offsite consequence analysis is ultra conservative, as required by the EPA RMP Guidance. For example, the worst-case meteorology used in the analysis of an ambient temperature of 100^{o}F, F stability, and 1-m/s winds would not realistically occur

simultaneously. Under typical conditions, stable atmospheres and low winds are associated with night and early morning conditions, when ambient temperatures are not expected to be this high. At a daytime temperature of 100°F, atmospheric stability with low winds would more likely occur under C or D stability due to thermal atmospheric mixing caused by daytime solar insulation. Conversely, F stability and 1-m/s winds are more likely to occur at overnight or early morning temperatures. Furthermore, the worst-case analysis also gives no credit for active control measures included in the ammonia storage/receiving facility design.

Tanker Truck Scenario Results. The results of the analysis for the tanker truck scenario extend a significantly larger area than the pipeline scenario. The maximum zone of influence above the significance level extends outwards to a distance of 0.3 mile (approximately 1,600 feet from the release location). This encompasses the several residential locations to the south of the property, Vista Del Mar Boulevard, and the public beach areas near the hypothetical release as seen in (Figure 5.15-2).

Again, it should be noted that this offsite consequence analysis is very conservative and may over-predict actual release conditions.

5.15.2.3.5 Summary. In summary, a sudden release of the pipeline scenario would not have significant offsite consequences at residential receptors at public health concern levels from a rupture of the aqueous ammonia pipeline. However, a small area within the public beach (approximately 250 feet in length) may have concentrations exceeding the ERPG-2 guidance levels. The release of the tanker truck would have a much larger zone of influence and could affect both public beach area and residential locations to the south. The overall extent of the zone of influence under this case would be 1,600 feet offsite. However, the ammonia pipeline will be the primary mode of transportation and truck deliveries will only be used as a back-up.

Power plant workers in the vicinity of the ammonia truck unloading area could be exposed to harmful concentrations of ammonia in the unlikely event of an accidental ammonia release. The proposed project design includes measures to reduce the likelihood and consequences of an accidental ammonia release. As discussed in Section 5.17, Worker Safety**,** workers at the power plant are trained to avoid and respond to accidental releases of hazardous materials, including ammonia. The proposed project design and worker safety training limit the worker safety hazard due to an accidental ammonia release to an acceptable level.

In general, the businesses in the area use limited amounts of hazardous materials such as petroleum products and water-based solvents. Chevron Refinery presents “worst-case” scenario assumptions for aqueous ammonia, anhydrous ammonia, and flammable substances in their RMPs. (The worst-case presented in the RMP of Chevron information is a railcar containing 153,120 lbs, impacting a circle of 1.2 miles radius). As a result of the above

discussion, existing facilities in the project area combined with the proposed project will not create a significant cumulative impact even should simultaneous releases occur.

5.15.2.4 Cumulative Impacts.

The planning departments at the cities of Culver City, Playa Del Ray, and Manhattan Beach were contacted regarding future projects with the potential to handle hazardous materials in quantities which would create a potential cumulative impact in combination with the proposed power plant project. No large-scale industrial developments are planned in the near future. Based on information obtained from the above-referenced cities, no significant cumulative impacts due to hazardous material handling are expected from future projects in combination with the proposed power plant project.

Cumulative impacts considered for this project were focused on accidental releases of hazardous materials. Specifically, the increased risk to public health and safety when multiple facilities handling hazardous materials were considered together with the proposed project.

The hazardous material that has the greatest potential to migrate offsite is aqueous ammonia. To determine cumulative impacts, other sites in the vicinity of the proposed project as well as planned projects with the potential to handle aqueous ammonia were identified and analyzed. In addition, sites handling hazardous materials that could negatively interact with ammonia and with the potential for offsite migration were identified, analyzed, and discussed in Section 5.15.2. Based on results of the OCA for the aqueous ammonia pipeline release scenario and the evaluation of other projects in the area, cumulative hazardous materials impacts for the ESPR Project are expected to be insignificant.

5.15.3 Stipulated Conditions of Certification

As a means of cooperating with the California Energy Commission (CEC) and establishing a conciliatory relationship, and an open efficient Application For Certification (AFC) process that allows the Commission to utilize its resources in the most efficient manner possible, El Segundo Power LLC expresses a willingness to stipulate to and accept the following CEC standard general conditions as promulgated by the CEC that apply to the issue area of Hazardous Materials Management.

HAZ-1: Hazardous Materials Less Than Reportable Quantities. The project owner shall not use any hazardous material in reportable quantities, as specified in Code of Federal Regulations, Part 40, Subpart F, Section 68.130, that is not listed in Table 5.15-2, unless approved in advance by the CEC Compliance Project Manager (CPM).

Verification: The project owner shall provide, in the Annual Compliance Report, a list of hazardous materials contained at the facility in reportable quantities.

HAZ-2: Business Plan and Risk Management Plans. The project owner shall submit both the Business Plan and Risk Management Plan to the CPM for review and comment, and shall also submit these plans and/or procedures to the El Segundo Fire Department for approval.

Verification: At least sixty (60) days prior to the initial delivery of any hazardous materials in reportable quantities to the facility, the project owner shall submit the Business Plan and Risk Management Plan to the CPM for review and comment. At the same time, the project owner shall submit these plans to the El Segundo Fire Department for approval. The project owner shall also submit evidence to the CPM that the El Segundo Fire Department approved these plans, when available.

HAZ-3: Safety Management Plan. The project owner shall provide a detailed Safety Management Plan (SMP) to the CPM for review and approval.

Protocol. The SMP shall include the following: 1) a description of how each element of the SMP applies to the proposed facility; 2) an explicit chain of command (by job title on final organization chart) for each specific objective identified in the plan (for example, under "Accountability," a list of who will be responsible for the preparation of the specific statement of expectations, objectives and goals by senior management, daily shift logs and reports of abnormal conditions); 3) a description of how corporate management will ensure proper implementation of the SMP and ensure that production and safety are properly balanced; 4) methods that will be used to motivate employees to accomplish safety objectives; and 5) detailed procedures to address the hazards associated with human error during storage and transfer of hazardous materials.

Verification: At least sixty (60) days prior to the initial delivery of any hazardous materials in reportable quantities to the facility, the project owner shall provide a detailed SMP as described in the Protocol section of this Condition of Certification to the CPM for review and approval.

5.15.4 Mitigation Measures

The CEC standard conditions, stipulated to above, provide appropriate mitigation and compliance conditions that ensure ESRR utilizes hazardous materials in compliance with all applicable LORS and in a manner than ensures no significant environmental impacts.

5.15.5 Applicable Laws, Ordinances, Regulations, and Standards

The LORS applicable to the ESPR Project, including the generating plant and pipelines, in the context of hazardous materials handling are discussed in this section**.** The El Segundo Power LLC will comply with all LORS pertaining to hazardous materials.

The storage and use of hazardous materials and acutely hazardous materials at ESGS is governed by federal, California, and local laws. Applicable laws and regulations address the use and storage of hazardous materials to protect the environment from contamination and facility workers and the surrounding community from exposure to hazardous and acutely hazardous materials. The applicable LORS related to hazardous materials handling are summarized in Table 5.15-3.

5.15.5.1 Federal

The Superfund Amendments and Reauthorization Act of 1968 (SARA) Title Ill (Sections 302, 304, 311, and 313) and the Clean Air Act of 1990 (40 CFR 68) established a nation-wide emergency planning and response program and imposed reporting requirements for businesses which store, handle, or produce significant quantities of extremely hazardous materials. The Acts require the states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility (see 40 CFR, Section 68.115). The requirements of these Acts are reflected in the California Health and Safety Code, Section 25531 et seq.

The Clean Water Act is designed to prevent or contain discharge or threat of discharge of oil into navigable water or adjoining shorelines. Regulations (40 CFR 112) under the Clean Water Act require facilities to prepare a SPCC Plan if they store oil in a single aboveground storage tank with a capacity greater than 660 gallons, total above ground storage greater than 1,320 gallons, or underground storage capacity greater than 42,000 gallons. An SPCC Plan is included in the HMBP.

Title 49, Code of Federal Regulations, Section 171-177, governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.

TABLE 5.15-3

LORS APPLICABLE TO HAZARDOUS MATERIALS HANDLING

LORS	Applicability	Conformance (Section)
Federal:		
Clean Air Act (40 CFR 68)	Requires a RMP if listed hazardous materials are stored above threshold quantities (TQ)	Section 5.15.5.1
Clean Water Act (40 CFR 112)	Requires preparation of an SPCC plan if oil is stored above TQ	Section 5.15.5.1
SARA Title III, Section 302	Requires certain planning activities when hazardous materials are present in excess of TQ.	Section 5.15.5.1
SARA Title III, Section 304	Requires notification if there is a release of hazardous materials in excess of TQ.	Section 5.15.5.1
SARA Title III, Section 311	MSDSs to be kept onsite for each hazardous materials. Required to be submitted to El Segundo Fire Department	Section 5.15.5.1
SARA Title III, Section 313	Requires annual reporting of releases of hazardous materials	Section 5.15.5.1
29 CFR, Section 1910.120, Occupational Safety and Health Administration (OSHA); CAL-OSHA	Describes worker safety and health procedures and safe handling of hazardous materials and wastes.	Section 5.15.5.1 and 5.15.5.2
49 CFR 171-177	Governs the transportation of hazardous materials, including the marking of the transportation vehicles.	See Section 5.15.2.1 Traffic and Transportation
State:		
Health and Safety Code Section 25500, et seq. (Waters Bill)	Requires preparation of an HMBP if hazardous materials are handled or stored in excess of TQ.	Section 5.15.5.2
Health and Safety Code Section 25531, et seq. (La Follette Bill)	Requires registration of facility with local authorities and preparation of a RMP if hazardous materials stored or handled in excess of TQ.	Section 5.15.5.2
CCR, Title 8, Section 5189	Facility owners are required to implement safety management plans to ensure safe handling of hazardous materials.	Section 5.15.5.2

TABLE 5.15-3
(CONTINUED)

LORS	Applicability	Conformance (Section)
California Uniform Building Code	Requirements regarding the storage and handling of hazardous materials.	Section 5.15.5.2
California Government Code Section 65850.2	Restricts issuance of COD until facility has submitted a RMP.	Section 5.15.5.2
Local:		
Los Angeles County Code Chapter 12.64	Requires new/modified businesses to complete a business plan, waste minimization plan, and RMP prior to final plan/permit approval.	Section 5.15.5.3
	Requires a conditional use permit for businesses handling acutely hazardous materials in excess of TQ (55 gals, 500 lbs, or 200 cuft).	Section 5.15.5.3
City of El Segundo Municipal Code Title 6 Chapter 6.22 Unified Hazardous Waste and Materials Management Regulatory Program	Regulates enforcement responsibility for the implementation of Title 23, Division 3, Chapter 16 and 18 of CCR, as it relates to hazardous material storage and petroleum UST cleanup.	Section 5.15.3.3
Industry Standards:		
Uniform Fire Code (Articles 79 and 80)	Requirements for secondary containment, monitoring, etc. for extremely hazardous materials.	Section 5.15.5.3, 5.15.5.4

5.15.5.2 State

The California Health and Safety Code, Section 25500 requires companies that handle hazardous materials in sufficient quantities to develop a HMBP. HMBP has been prepared for ESGS; it includes the basic information on the location, type, quantity, and health risks of hazardous materials handled, stored, used, or disposed of which could be accidentally released into the environment. It also includes a plan for training new personnel and for annual training of all personnel in safety procedures to follow in the event of a release of hazardous materials. It also includes an emergency response plan and identifies the business representative able to assist emergency personnel in the event of a release.

According to ESGS personnel, a release of a reportable quantity of hazardous materials during plant operations has not occurred in approximately 12 years, when fuel oil was released and contained within a concrete vault located at Unit 2.

The California Health and Safety Code, Section 25531 directs facility owners storing or handling acutely hazardous materials in reportable quantities to develop a RMP and submit it to appropriate local authorities, the EPA, and the designated local Administering Agency for review and approval. A RMP has been in place at ESGS since June, 1999. The RMP includes an evaluation of the potential impacts associated with an accidental release, the likelihood of an accidental release occurring, the magnitude of potential human exposure, any preexisting evaluations or studies of the material, the likelihood of the substance being handled in the manner indicated, and the accident history of the material. This new, recently developed program supersedes the California Risk Management and Prevention Plan and is known as the California Accidental Release Program.

The California Code of Regulations, Title 8, Section 5189 requires facility owners to develop and implement effective Safety Management Plans to ensure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the RMP process.

California Government Code Section 65850.2 states that a city or county shall not issue a final certificate of occupancy unless there is verification that the applicant has met the applicable requirements of Health and Safety Code, Section 25531 and requirements, if any, for a permit from the air pollution control district.

The Uniform Building Code contains requirements regarding the storage and handling of hazardous materials. The Chief Building Official must inspect and verify compliance with these requirements prior to issuance of an occupancy permit.

5.15.5.3 Local

Los Angeles County Code Chapter 12.64 Hazardous Materials Disclosure and Risk Management requires new or modified businesses to complete a business plan, waste minimization plan, and if applicable, a RMP prior to final approval of a land use permit for a new business or modification of an existing business. Because certain quantities of acutely hazardous materials could pose a threat to the public health and safety and the environment, Los Angeles County Code Chapter 12.64 requires a conditional use permit for all businesses or government facilities handling acutely hazardous materials in excess of 55 gallons, 500 pounds, or 200 cubic feet.

The City of El Segundo has adopted the UFC Article 80, which is incorporated into the City of El Segundo Municipal Code Title 6. Pursuant to the provisions of the California Health

and Safety Code Sections 25500 through 25521, or as they may be amended, the City Manager of the City of El Segundo or his designee is designated as the administering agency.

The designated Certified Unified Program Agencies for the ESPR Project site is El Segundo Fire Department. They have delegated authority to administer state and federal programs. The City of El Segundo regulates (1) the implementation of the hazardous material inventory and emergency response plan, and (2) the storage of hazardous materials in underground storage tanks and cleanup of petroleum releases from USTs under Title 6, Chapters 6.21 and 6.22, respectively. The City of El Segundo shall be contacted in the event of a release of hazardous wastes or materials to the environment. The City also assumes enforcement responsibility for the implementation of CCR, Title 23.

5.15.5.4 Industry Standards

The Uniform Fire Code contains provisions regarding the storage and handling of hazardous materials. These provisions are contained in Articles 79 and 80. Article 80 was extensively revised in the latest (1994) edition. These articles contain requirements that are generally similar to those contained in the California Health and Safety Code Section 25531 et seq. The UFC does, however, contain unique requirements for secondary containment, monitoring, and treatment of toxic gases emitted through emergency venting. These unique requirements are generally restricted to extremely hazardous materials.

5.15.5.5 Agencies and Agency Contacts

There are a number of federal and state agencies that regulate hazardous materials, including the USEPA at the federal level and the California-EPA at the state level. However, local agencies are the primary enforcers of hazardous materials laws. For the ESGS site, the local agency is the City of El Segundo and the contact is shown in Table 5.15-4.

TABLE 5.15-4

AGENCY CONTACT

Agency	Contact	Title	Telephone
City of El Segundo Fire Department	Steve Tsumura, CIH	Environmental Safety Manager	(310) 524-2242
Department of Toxic Substance Control	Adela Weinstein	Specialist	(818) 551-2171

5.15.5.6 Permits Required and Permit Schedule

ESGS, as an active generating station, has hazardous materials plans and permits in place. These plans are periodically updated when changes occur (e.g., equipment, responsible personnel). The ESGS will update its existing HMBP and RMP prior to the startup of Units 5, 6 and 7 and submit them to the City of El Segundo Fire Department (see contact in Table 5.15-4). The most recent copies of the HMBP and RMP are included as Appendix N.

ESGS will update the Safety Management Plan prior to the startup of Units 5, 6, and 7. The plan focuses on the delivery and handling of hazardous materials in accordance with CCR, Title 8, Section 5189 and Title 6 of the El Segundo Municipal Code. The updated Safety Management Plan will be incorporated into the updated RMP.

ESGS will update the SPCC Plan for the storage of oil onsite in excess of TQ. The SPCC Plan will be reviewed and certified by a registered professional engineer and will be prepared within 6 months after the startup of the plant. The SPCC Plan will be available for onsite review during normal business hours. The current SPCC Plan is included in the HMBP for ESGS.

TABLE 5.15-5

PERMIT TABLE FOR HAZARDOUS MATERIALS

Jurisdiction	Potential Permit Requirement
Federal	Risk Management Plan (on file)
State	No permits required (at this time)
Local	Hazardous Materials Business Plan (on file)

5.15.6 References

Environmental Protection Agency. 1999. Risk Management Program Guidance for Offsite Consequence Analysis. EPA Document EPA550B99009. April, 1999.

Lees, F.P. 1983. Loss Prevention in the Process Industries, Volumes I and II. Butterworths.

Lewis, Richard J., Sr. 1992. *Sax's Dangerous Properties of Industrial Materials. Eighth Edition.* Van Nostrand Reinhold. New York, New York.

National Institute of Occupational Safety and Health. 1997. NIOSH Pocket Guide to Chemical Hazards. DHHS Publication No. 97-140. U.S. Government Printing Office. Washington, D.C.

NRG El Segundo Operations Inc. 2000a. Business Plan Update. November.

2000b. El Segundo Generating Station Emergency Preparedness and Emergency Response Plan. May 15 Revision.

1999 Draft Risk Management Plan. June.

Wray, Thomas, K. 1991. "HazMat Chemist: Ammonia." *HazMat World*. p. 86. November

Adequacy Issue: Adequate ____ Inadequate ____ **DATA ADEQUACY WORKSHEET** Revision No. ____ Date ____

Technical Area: **Hazardous Materials Handling** Project: ____ Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (1)	...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.	Sections 5.15.1 – 5.15.3 Figure 5.15-1 Figure 5.9-1 Table 5.15-1 and 5.15-2		
Appendix B (g) (10) (A)	A list of all materials used or stored on-site which are hazardous or acutely hazardous, as defined in Title 22, California Code of Regulations, § 66261.20 et seq., and a discussion of the toxicity of each material.	Table 5.15-2 Section 5.15.1		
Appendix B (g) (10) (B)	A map at a scale of 1:24,000 depicting the location of schools, hospitals, day-care facilities, emergency response facilities and long-term health care facilities, within the area potentially affected by any release of hazardous materials.	Figure 5.15-1		
Appendix B (g) (10) (C)	A discussion of the storage and handling system for each hazardous material used or stored at the site.	Section 5.15.2; Appendix N		
Appendix B (g) (10) (D)	The protocol that will be used in modeling potential consequences of accidental releases that could result in off site impacts. Identify the model(s) to be used, a description of all input assumptions, including meteorological conditions. The results of the modeling analysis can be submitted after the AFC is complete.	Section 5.15.2.3		

Adequacy Issue: Adequate ____ Inadequate ____ **DATA ADEQUACY WORKSHEET** Revision No. ____ Date ____

Technical Area: **Hazardous Materials Handling** Project: ____ Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (10) (E)	A discussion of whether a risk management plan (Health and Safety Code § 25531 et seq.) will be required, and if so, the requirements that will likely be incorporated into the plan.	Sections 5.15.2.2.2, 5.15.4.2		
Appendix B (g) (10) (F)	A discussion of measures proposed to reduce the risk of any release of hazardous materials.	Section 5.15.3		
Appendix B (g) (10) (G)	A discussion of the fire and explosion risks associated with the project.	Section 5.15.2.2 Page 5.15-4-5.15-6		
Appendix B (h) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, and permits applicable to the proposed project, and a discussion of the applicability of each. The table or matrix shall explicitly reference pages in the application wherein conformance, with each law or standard during both construction and operation of the facility is discussed;	Section 5.15.5 Table 5.15-3		
Appendix B (h) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.	Section 5.15.5.5; Table 5.15-4		

Adequacy Issue: Adequate ____ Inadequate ____

DATA ADEQUACY WORKSHEET

Revision No. ____ Date ____

Technical Area: **Hazardous Materials Handling** Project: ____ Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (h) (2)	A discussion of the conformity of the project with the requirements listed in subsection (h)(1)(A).	(Various); Section 5.15		
Appendix B (h) (3)	The name, title, phone number, and address, if known, of an official within each agency who will serve as a contact person for the agency.	Section 5.15.5.5; Table 5.15-4		
Appendix B (h) (4)	A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.	Section 5.15.5.6		Additional Hazardous Materials-related permits are not required at this time. Hazardous Material Business Plan and Risk Management Plan are in-place that describes management practices.