5.9 Public Health

This section describes and evaluates the public health effects of the Redondo Beach Energy Project (RBEP). Subsection 5.9.2 discusses the affected environment. Subsection 5.9.3 presents the analysis of the public health effects of the RBEP project. Subsection 5.9.4 evaluates any potential cumulative effects to public health, and Subsection 5.9.5 addresses proposed mitigation measures that would avoid or minimize any adverse impacts. Subsection 5.9.6 describes the laws, ordinances, regulations, and standards (LORS) that apply to the project. Subsection 5.9.7 presents agency contacts, and Subsection 5.9.8 identifies the permits and permit schedule related to public health. Subsection 5.9.9 provides the references used to prepare this section.

5.9.1 Setting

The RBEP project is located on the site of the existing Redondo Beach Generating Station, an operating power plant, at 1100 North Harbor Drive, Redondo Beach, CA 90277. The RBEP site is located near sea level on the California coast and is bounded to the north by residential areas, to the east by a storage facility and office buildings, to the south by mixed use residential and commercial areas, and to the west by King Harbor marina and the Pacific Ocean. The site is located on a gently sloping coastal plain.

RBEP is a combined-cycle power plant with a net generating capacity of 496 megawatts (MW)[1] and gross generating capacity of 511 MW. The power block is composed of three combustion turbines with supplemental fired heat recovery steam generators (HRSG), a steam turbine generator, an air-cooled condenser, and ancillary facilities.

The project will use potable water, provided by the California Water Service Company, for construction water and for operational process and sanitary uses. During operation of the RBEP, stormwater and process wastewater will be discharged to a retention basin and then ultimately to the Pacific Ocean via an existing permitted outfall. Sanitary wastewater will be conveyed to the Sanitation District of Los Angeles County via the existing City of Redondo Beach sewer connection. A new 230 kilovolt (kV) transmission interconnection will connect the RBEP power block to the existing onsite Southern California Edison 230 kV switchyard.

Construction and demolition activities at the project site are anticipated to last 60 months, from January 2016 until December 2020. The first activities to occur onsite will be the dismantling and partial removal of existing Units 1-4. The major generating equipment (including steam turbines, generators, boilers, and duct work) will be removed, leaving the administration building and western portion of the building that houses Units 1-4 intact. These buildings will be left standing temporarily to provide screening between the construction site of the new power block and Harbor Drive. Construction of the new power block will begin in the first quarter 2017 and continue to the end of the second quarter 2019, when it will be ready for commercial operation. Although operational, construction will continue through 2019, including construction of the new control building and the relocation of the Wyland Whaling Wall. The existing Units 5-8 and auxiliary boiler No. 17 will remain in service until the second quarter 2018. Units 5-8 and auxiliary boiler No. 17 will be demolished starting the first quarter 2019 through the fourth quarter 2020. During the demolition and removal of Units 5-8, the Wyland Whaling Wall will be dismantled and moved to a new location directly in front of the new power block. Finally, the remaining buildings and structures left standing will be demolished and removed by the end of 2020.

All laydown and construction parking areas will be located within the existing approximately 50-acre Redondo Beach Generating Station fenceline as shown in Figure 2.1-1. A total of approximately 17 acres of the Redondo Beach Generating Station site will be used for construction laydown and parking. All construction equipment and supplies will be trucked directly to the site.

[1] The net generating capacity including auxiliary load is 496 MW, gross output as measured at the generator terminals is 511 MW, referenced to site ambient average temperature (SAAT) conditions of 63.3°F dry bulb and 58.5°F wet bulb temperature.

5.9.1.1 Project Overview as it Relates to Public Health

The RBEP three-on-one combined-cycle power block will consist of three Mitsubishi Power Systems Americas (MPSA) 501DA combustion turbine generators (CTG), one steam turbine, and an air-cooled condenser. Each combustion turbine will be equipped with an HRSG and will employ supplemental natural gas firing (duct firing). The turbines will use dry low oxides of nitrogen (NO_x) burners and selective catalytic reduction to limit NO_x emissions to 2 parts per million by volume (ppmv). Emissions of carbon monoxide (CO) will be limited to 2 ppmv and volatile organic compounds (VOC) to 1 ppmv through the use of best combustion practices and the use of an oxidation catalyst. Best combustion practices and burning pipeline-quality natural gas will minimize emissions of the remaining pollutants.

Two electric fire pumps, connected to two independent electrical power feeds from the Southern California Edison distribution system, will be used to provide onsite fire protection. Because the electric fire pumps will not be a source of air emissions, they were not included in the air quality health analysis for RBEP.

The demolition of the non-operational Redondo Beach Generating Station Units 1–4 will occur prior to the construction of the new generating units. Demolition of Units 1-4 is anticipated to take approximately 12 months, starting in first quarter 2016. The demolition of the Redondo Beach Generating Station Units 5–8 and auxiliary boiler No. 17 will begin after the new RBEP facility is operational and online, and will continue for approximately 24 months. Demolition of all existing units will include an organized, top-down dismantling of the existing boiler units, generators, and stacks. The existing foundations will remain largely intact at the conclusion of the demolition activities, and most of the demolition debris will be transported to an offsite location for recycling. All project-related construction/demolition activities are expected to be complete by December 2020.

This section presents the methodology and results of the human health risk assessment (HRA) that was conducted to assess the potential public health impacts and exposure associated with airborne emissions from the proposed routine operation of the RBEP. The quantities of hazardous materials proposed to be stored onsite, a description of their uses, and the potential concerns regarding these materials are presented in Section 5.5, Hazardous Materials Handling. A discussion of the potential concerns associated with electromagnetic field exposure is presented in Section 3.0, Transmission System Engineering.

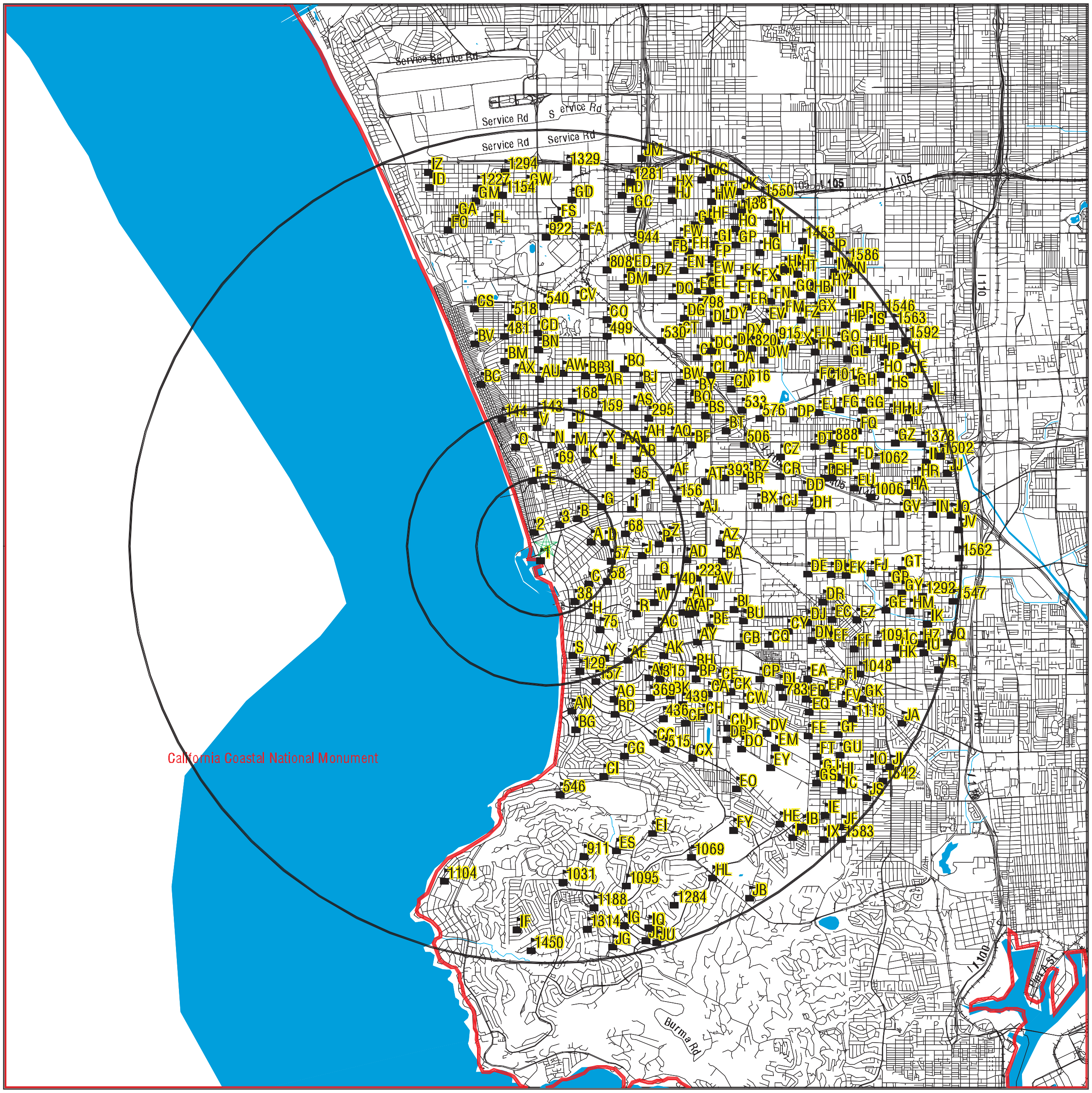
5.9.2 Affected Environment

Based on the Environmental Data Resources (EDR) *Offsite Receptor Report* (EDR, 2012), approximately 505,874 residents live within a 6-mile radius of RBEP. Per California Energy Commission (CEC) siting regulation Appendix B (g)(9)(E)(i), sensitive receptors include infants and children, the elderly, the chronically ill, and any other member of the general population who is more susceptible to the effects of exposure than the population at large. Therefore, schools (public and private), daycare facilities, convalescent homes, and hospitals are of particular concern. Sensitive receptors within a 6-mile radius of the project site identified in the EDR Report include:

- 641 preschool/daycare centers
- 17 nursing homes/senior care center
- 171 schools
- 758 hospitals, clinics, and/or pharmacies
- 5 colleges

The EDR *Offsite Receptor Report*, which includes a figure and list of the sensitive receptors located within a 6-mile radius of the project site, is presented in Appendix 5.9A. A supplemental list of sensitive receptors within the 6-mile radius was also developed based on an internet data search (Yahoo, 2012) and aerial imagery (GoogleEarth, 2012). The supplemental list is provided in Appendix 5.9B. With this additional survey, 21 schools/preschools and 22 senior care facilities were identified within a 6-mile radius. Figures 5.9-1A and 5.9-1B include the sensitive receptors within 6 miles of the site, as identified in Appendices 5.9A and 5.9B. The nearest sensitive receptors are the Salvation Army Senior Residence, which is located adjacent to the southern property boundary, and the Yak Academy Learning Center, which is approximately 280 meters east of the proposed stack location. Other schools within approximately 0.5 mile include the Beryl Heights Elementary

RECEPTOR MAP - 3264324.2s



- Target Property
- Roads
- Waterways
- Environmental or Public Receptor
- Federal Lands Linear Features
- Federal Lands Area

0 2 4 8 Miles

FIGURE 5.9-1a
Sensitive Receptors Within 6 miles – EDR Report
AES Redondo Beach Energy Project
Redondo Beach, California

Source: Environmental Data Resources (EDR). 2012. Redondo Beach Energy Project Offsite Receptor Report. February 22.

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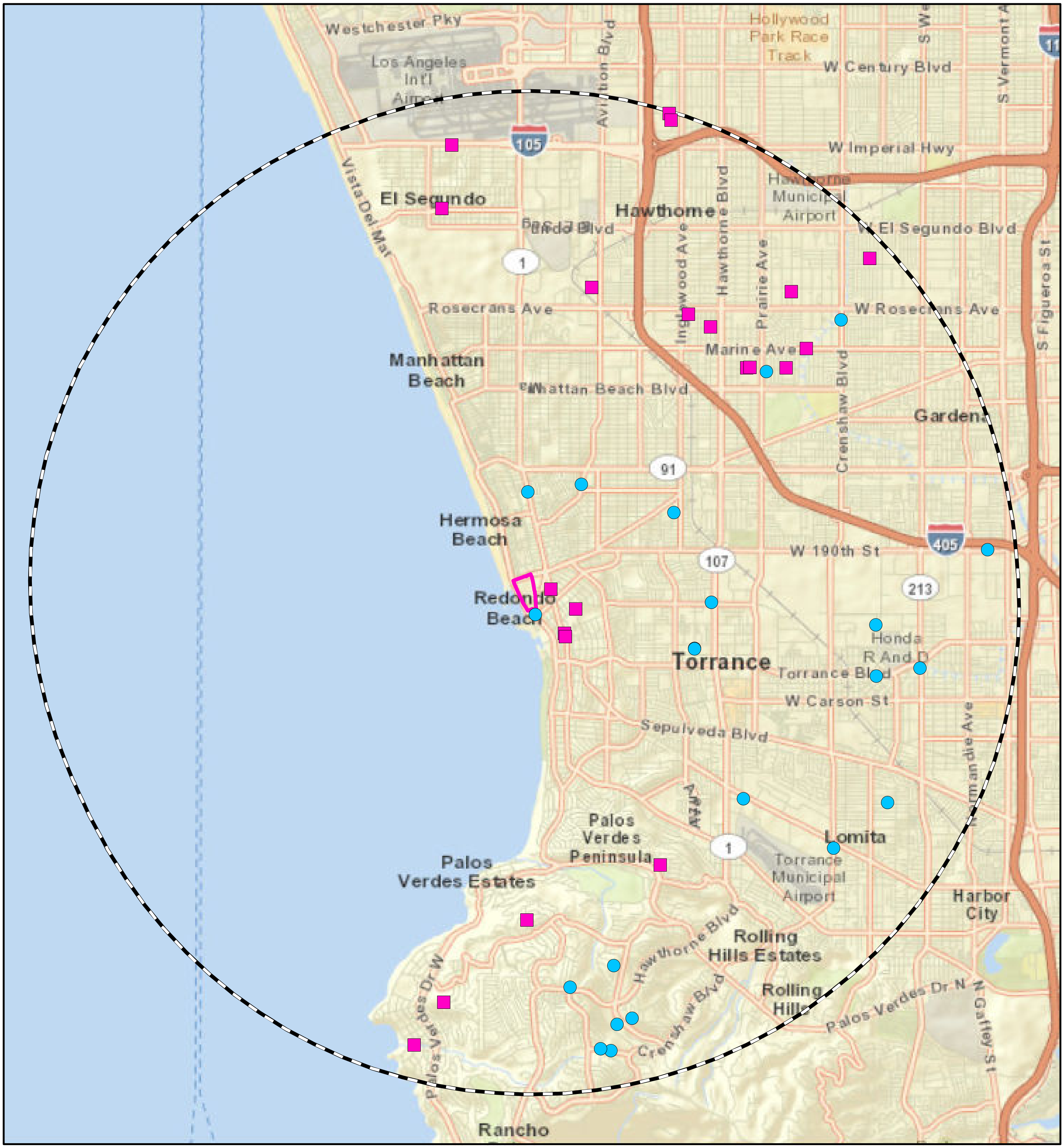

Source:Department of Public Work's Water Resources Division(2004).
Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

0 1.75 3.5 Miles

Legend

AES Redondo Beach Energy Project

6-Mile Buffer

Sensitive Receptors

School

Senior Facility

N

Figure 5.9-1B
Sensitive Receptors
Within 6 miles – Supplemental
AES Redondo Beach Energy Project
Redondo Beach, California

\\ZION\SACGIS\PROJ\AES\MAPFILES\REDONDO_BEACH\SENSITIVERECEPTORS\REDONDO_SENSITIVERECEPTORS.MXD KMINO 11/2/2012 9:56:34 AM

CH2MHILL

School, the Redondo Union High School, and the St. James Catholic pre-School, which are located approximately to the east, southeast, and south-southeast of the project site, respectively. The nearest residents are located north of the facility along Herondo Street, approximately 300 meters from the proposed stack locations, approximately 200 meters southeast of the proposed stack locations near the intersection of Francisca and North Catalina Avenues, and approximately 325 meters west of the proposed stack locations in the King Harbor marina. The nearest businesses are located adjacent to the eastern property boundary.

Per CEC siting regulation Appendix B (g)(9)(c), a search of available health studies concerning the potentially affected populations within a 6-mile radius is required. In October 1997, the MATES II study was initiated as part of the Environmental Justice Initiatives adopted by the South Coast Air Quality Management District (SCAQMD) Governing Board. It consisted of a comprehensive monitoring program, an updated emissions inventory, and a modeling effort to characterize health risks associated with human exposures to ambient concentrations of toxic air contaminants (TAC) in the Southern California Air Basin (SCAB). The results of the MATES II study estimated that the excess lifetime carcinogenic risk from exposures to airborne TACs in the SCAB averages about 1,400 in 1 million (1.4×10^{-3}), meaning that an individual exposed over a 70-year lifetime would have about a 0.14 percent additional chance of contracting cancer. Estimated carcinogenic risk was found to be rather uniform across the basin. For example, risk ranged from about 1,120 in 1 million to about 1,740 in 1 million for the sites monitored.

The MATES II study showed that mobile sources (for example, cars, trucks, trains, ships, and aircraft) represent the greatest contributors to the estimated risks. Approximately 70 percent of all carcinogenic risk is attributed to diesel particulate matter emissions; about 20 percent is attributed to other toxics associated with mobile sources (including benzene, butadiene, and formaldehyde); and about 10 percent of all risk is attributed to emissions from stationary sources (which include industries and other businesses, such as dry cleaners and chrome plating operations). Updating the findings of MATES II, SCAQMD completed the MATES III study by issuing a final report in September 2008. Similar to the earlier MATES II study, the MATES III study found that mobile sources continued to dominate cancer risk in the SCAB by accounting for an estimated 94 percent of the overall cancer risk. Diesel emissions alone account for 84 percent of the cancer risk. Overall, the general trend in risk exposure has been decreasing with the estimated cancer risk from exposure to airborne toxics reduced to 1,200 in 1 million. The MATES III study found that non-diesel risk has been lowered from the earlier MATES II estimates by 50 percent.

As a follow-on to the MATES II and III studies, SCAQMD announced in June 2012 that it is commencing the fourth MATES study (MATES IV). Although the outcome of this study is not available for inclusion in this report, the MATES IV study will include 1 year of monitoring of ambient TAC concentrations at monitoring sites within the basin that will be used to predict carcinogenic risk near airports, freeways, rail yards, busy intersections, and warehouse operations.[2]

5.9.3 Environmental Analysis

5.9.3.1 Air Toxics Exposure Assessment (Operation Impacts)

Human health risks potentially associated with hazardous substance emissions from the proposed operation of RBEP, which includes compounds on the list of Office of Environmental Health Hazard Assessment (OEHHA) TACs and U.S. Environmental Protection Agency (EPA) hazardous air pollutants (HAP), were evaluated. The HRA was conducted in accordance with SCAQMD Rules 212 and 1401 and the following guidance:

- Air Toxics Hot Spots Program Risk Assessment Guidelines (OEHHA, 2003)
- *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act* (AB2588) (SCAQMD, 2011a)
- California Air Resources Board (ARB) *Recommended Interim Risk Management Policy for Inhalation-based Residential Cancer Risk* (ARB, 2003)
- *Guideline on Air Quality Models* (EPA, 2005)
- Redondo Beach Energy Project Dispersion Modeling Protocol (CH2M HILL, 2012)

[2] http://www.aqmd.gov/prdas/MatesIV/MatesIV.html

The HRA modeling was conducted using the ARB *Hotspots Analysis Reporting Program* (HARP, Version 1.4e), along with the ARB HARP On-ramp program (Version 1.0). The HARP On-ramp tool was used to import the American Meteorological Society/EPA Regulatory Model (AERMOD) air dispersion modeling results into the HARP Risk Module.

The HRA process requires four general steps to estimate health impacts: (1) identify and quantify project-generated emissions; (2) evaluate pollutant transport (air dispersion modeling) to estimate ground-level TAC concentrations at each receptor location; (3) assess human exposure; and (4) use a risk characterization model to estimate the potential health risk at each receptor location. The following sections describe in detail the methods used in this HRA.

5.9.3.1.1 Air Toxics Emission Calculations

Air toxics (TAC and HAP) emissions associated with the project will consist of combustion byproducts produced by the three natural-gas-fired CTGs and HRSGs. TACs are compounds, designated by OEHHA as pollutants that may pose a significant health hazard. HAPs are compounds designated by EPA as pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects.

Air toxics emission factors for the gas turbines were obtained from the ARB California Air Toxics Emission Factors (CATEF) emission database (ARB, 2012), with the exception of polyaromatic hydrocarbons (PAH) and formaldehyde. The PAH emission factor was based on two separate source tests (2002 and 2004) at the Delta Energy Center in Pittsburg, California (Avogadro Group, 2002 and 2004). The use of the CATEF emission factor for formaldehyde would result in a formaldehyde potential to emit (PTE) greater than 10 tons per year for the facility[3]. Therefore, to reduce the PTE to less than 10 tons per year for a single pollutant, the formaldehyde emission rate presented in Table 5.9-1 was based on a maximum allowable formaldehyde concentration of 120 parts per billion (ppb) for the natural-gas-fired turbines.

The HRA was conducted assuming the combustion turbines would be operated 5,900 hours per turbine per year at base load without duct burner firing, would be operated 470 hours at base load per turbine per year with duct burner firing, and would have 624 startups and shutdowns (estimated 465 hours) per turbine per year. A summary of the air toxics emissions included in the HRA is presented in Table 5.9-1. The detailed emission calculations for the air toxics are provided in Appendix 5.1B.

5.9.3.1.2 Dispersion Modeling

The AERMOD dispersion model (Version 12060) was used to predict ground-level concentrations of air toxic emissions associated with RBEP. The AERMOD settings, source parameters, meteorological data, and source definition for the risk assessment were the same as the air quality impact analysis methodology (Section 5.1). A unit emission rate (1 gram/second) was used to model each source, as outlined in the HARP On-ramp program manual.

The maximum hourly impacts were predicted for the 106 degrees Fahrenheit (°F), 70 percent load case, which represents the turbine exhaust parameters associated with the maximum predicted 1-hour ground level impact in Section 5.1. The annual impacts were predicted for the 63.3°F, 70 percent load case, which represents the average annual temperature and load scenario resulting in the maximum predicted annual ground level impact. Detailed modeling source parameters for RBEP are presented in Appendix 5.1C.

The discrete receptor grid spacing out to 50 kilometers was similar to the air quality impact analysis modeling methodology. In addition to the discrete receptor grid, the census block receptor locations and sensitive receptors within 6 miles of the RBEP site were also included in the HRA[4].

[3] Projects with a HAP PTE greater than 25 tpy for combined HAPs or 10 tpy for individual HAPs would be subject to the Title 40 CFR, Part 63 requirements.

[4] All census block receptors were included within a 6 mile radius with the exception of the one census block receptor located within the Redondo Beach Generating Station property boundary. The census block receptor within the Redondo Beach Generating Station property boundary was excluded from the analysis.

TABLE 5.9-1
Air Toxic Emission Rates Modeled for RBEP

Pollutant[a]	Chemical Abstracts Service Registry Number	CTG/HRSG (per turbine)	
		lb/hr[b]	lb/yr[b]
Ammonia[c]	7664417	1.32E+01	8.58E+04
Acetaldehyde	75070	2.68E-01	1.31E+03
Acrolein	107028	3.70E-02	1.81E+02
Benzene	71432	2.61E-02	1.28E+02
1,3-Butadiene	106990	2.49E-04	1.22E+00
Ethyl Benzene	100414	3.51E-02	1.72E+02
Formaldehyde[d]	50000	5.75E-01	2.82E+03
Hexane	110543	5.07E-01	2.49E+03
Naphthalene	91203	3.25E-03	1.59E+01
PAHs[e]	1151	2.74E-05	1.34E-01
Propylene	115071	1.51E+00	7.40E+03
Propylene oxide	75569	9.37E-02	4.59E+02
Toluene	108883	1.39E-01	6.81E+02
Xylenes	1330207	5.11E-02	2.51E+02

[a] Emission rates based on the CATEF database, unless otherwise noted (ARB, 2012).
[b] Hourly emission rates are based on a maximum turbine heat input with duct burner firing of 1,999 million Btu per hour (MMBtu/hr) (high heat value). The annual emission rates are based on 6,365 hours of turbine operation with an average annual heat input of 1,398 MMBtu/hr and 470 hours of turbine operation with duct burner firing and an average combined annual heat input of 1,905 MMBtu/hr. (See Appendix 5.1B for detailed emission estimates.)
[c] Based on the operating exhaust ammonia limit of 5 ppmv @ 15% oxygen and an F-factor of 8710.
[d] Emission factor is based on a 120 parts per billion by volume (ppbv) exhaust concentration for formaldehyde.
[e] Carcinogenic PAHs only; naphthalene considered separately. Emission Factor based on two separate source tests (2002 and 2004) from the Delta Energy Center located in Pittsburg, CA (Avogadro Group, 2002; 2004).

5.9.3.1.3 Risk Characterization

The results of the dispersion modeling analysis represent an intermediate product in the HRA process. The HARP On-ramp program was used to convert the AERMOD output files to a format compatible with the HARP model. The HARP model was subsequently used to determine cancer, chronic, and acute health risks.

Cancer risks were evaluated based on the annual air toxics ground-level concentrations, inhalation cancer potency, oral slope factor, frequency and duration of exposure at the receptor, and breathing rate of the exposed persons. Cancer risks were estimated using the required conservative assumption of 70-year continuous exposure duration for residential and sensitive receptors and a 40-year, 5-day-per-week, 8-hours-per-day exposure duration for commercial/industrial receptors. In addition, for predicted cancer risks, where the inhalation pathway is the dominant pathway of cancer risks, the Derived (Adjusted) Method was used for the cancer risk evaluation, based on the *Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk* (ARB, 2003).

If a predicted Derived Adjusted cancer risk is greater than 1 in 1 million, the cancer burden is calculated for each census block receptor. Cancer burden is defined as the estimated increase in the occurrence of cancer cases in a population resulting from exposure to carcinogenic air contaminants. The population data for census block receptors within 6 miles of the RBEP site are based on the population information within the HARP database.

Chronic toxicity is defined as adverse health effects from prolonged chemical exposure caused by chemicals accumulating in the body. Per CEC Siting Regulations, "a chronic exposure is one which is greater than twelve (12) percent of a lifetime of seventy (70) years."[5] Acute toxicity is defined as adverse health effects caused by a brief chemical exposure of no more than 24 hours. Per CEC Siting Regulations, "An acute exposure is one which occurs over a time period of less than or equal to one (1) hour."[6] To assess chronic and acute non-cancer exposures, annual and 1-hour air toxics ground-level concentrations are compared with the Reference Exposure Levels (REL) developed by OEHHA to obtain a chronic or acute hazard index. The REL is a concentration in ambient air at or below which no adverse health effects are anticipated.

OEHHA/ARB Cancer and Non-Cancer RELs. The HRA included potential health impacts from home-grown produce, dermal absorption, soil ingestion, and mother's milk, as required by OEHHA guidelines (OEHHA, 2003). The inhalation cancer potency, oral slope factor values, and RELs used to characterize health risks associated with the modeled impacts were obtained from the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values* (OEHHA and ARB, 2012), and are shown in Table 5.9-2.

TABLE 5.9-2
Risk Assessment Health Values for Air Toxic Substances

Compound	Inhalation Cancer Potency $(mg/kg\text{-}day)^{-1}$	Oral Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	Chronic Inhalation Reference Exposure Level ($\mu g/m^3$)	Chronic Oral Reference Exposure Level (mg/kg-day)	Acute Inhalation Reference Exposure Level ($\mu g/m^3$)
PAHs	3.90E+00	1.20E+01	—	—	—
Xylenes	—	—	7.00E+02	—	2.20E+04
Formaldehyde	2.10E-02	—	9.00E+00	—	5.50E+01
Benzene	1.00E-01	—	6.00E+01	—	1.30E+03
Acetaldehyde	1.00E-02	—	1.40E+02	—	4.70E+02
Propylene oxide	1.30E-02	—	3.00E+01	—	3.10E+03
Naphthalene	1.20E-01	—	9.00E+00	—	—
Ethyl Benzene	8.70E-03	—	2.00E+03	—	—
1,3-Butadiene	6.00E-01	—	2.00E+01	—	—
Acrolein	—	—	3.50E-01	—	2.50E+00
Toluene	—	—	3.00E+02	—	3.70E+04
Hexane	—	—	7.00E+03	—	—
Propylene	—	—	3.00E+03	—	—
NH_3	—	—	2.00E+02	—	3.20E+03

Notes:
$\mu g/m^3$ = microgram(s) per cubic meter
mg/kg-day = milligram(s) per kilogram per day
NH_3 = ammonia
Source: OEHHA and ARB, 2012

[5] Data Adequacy Checklist, Appendix B (g)(9)(E)(iii)

[6] Data Adequacy Checklist, Appendix B (g)(9)(E)(ii)

Significance Criteria

Cancer Risk. Cancer risk is the probability or chance of contracting cancer over a human life span (assumed to be 70 years). Carcinogens are not assumed to have a threshold below which there is no human health impact. In other words, any exposure to a carcinogen is assumed to have some probability of causing cancer; the lower the exposure (time or mass), the lower the cancer risk (that is, a linear, no-threshold model). State and local regulations in California use an excess (that is, an incremental increase from the project) cancer risk greater than 10 in 1 million as the significant impact level for public health impact assessments. The excess cancer risk calculation also uses conservative assumptions and techniques to ensure that the excess cancer risk number bounds the actual risk. For example, the 10-in-1-million risk level is used by the Air Toxics Hot Spots (AB 2588) program and California's Proposition 65 as the public notification level for air toxic emissions from existing sources. An excess cancer risk below 1 in 1 million for a project is typically considered the de minimus impact level, meaning an excess cancer risk for a project less than 1 in 1 million would be less than significant.

Based on SCAQMD Rule 1401 and the SCAQMD California Environmental Quality Act (CEQA) significance thresholds (SCAQMD, 2011b), a source with a maximum individual cancer risk (MICR) less than 1 in 1 million individuals and a project increment MICR of less than 10 in 1 million individuals would be less than significant. Individual sources with a MICR between 1 and 10 in 1 million would be required to install best available control technology for toxics (T-BACT). Therefore, the predicted health risk values for each individual source will be compared to the incremental increase in cancer risk of 1 in 1 million individuals per source (that is, each of the three CTGs/HRSGs), and the predicted incremental increase in cancer risk for the project will be compared to the 10-in-1-million-individuals threshold.

Based on SCAQMD Rule 1401 and the SCAQMD CEQA significance thresholds (SCAQMD, 2011b), a cancer burden greater than 0.5 excess cancer cases in areas with an incremental increase greater than 1 in 1 million individuals is considered significant.

Non-cancer Risk. Non-cancer health effects can be either chronic or acute. In determining potential non-cancer health risks (chronic and acute) from air toxics, it is assumed there is a dose of the air toxic substance below which there would be no impact on human health. The air concentration corresponding to this dose is called the Reference Exposure Level. Non-cancer health risks are measured in terms of a hazard quotient, which is the calculated exposure of each contaminant divided by its REL. Hazard quotients for pollutants affecting the same target organ are typically summed with the resulting totals expressed as hazard indexes for each organ system. Based on SCAQMD Rule 1401 and the SCAQMD CEQA significance thresholds (SCAQMD, 2011b), a chronic or acute hazard index of less than 1.0 for each source and the project increment, respectively, is considered to be a less-than-significant health risk.

5.9.3.1.4 Summary of Air Toxic Exposure Assessment Results

A summary of the MICR, chronic health index, and acute health index at the point of maximum impact (PMI) locations, as well as the maximum predicted public health impacts for worker, residential, and sensitive receptors, has been included in Table 5.9-3 and Table 5.9-4. In accordance with SCAQMD Rule 1401, the results in Table 5.9-3 represent the predicted risk for each individual emission unit, while the results in Table 5.9-4 represent a comparison of the total predicted RBEP impact to the SCAQMD CEQA significance thresholds. The receptor grid used to evaluate the predicted impacts is included in Appendix 5.1C. Additionally, the HARP report files were also prepared and provided on compact disc.

As presented in Table 5.9-3, the predicted MICR at the PMI for each individual turbine is approximately 0.088 in 1 million.[7] The maximum impact is located approximately 260 meters east-northeast of the project boundary. The predicted MICR for the maximum exposed individual resident (MEIR), which is approximately 330 meters east-northeast of the project boundary, is predicted to be 0.069 in 1 million (Derived Adjusted); and the predicted MICR for the maximum exposed individual worker (MEIW), which is located approximately 260 meters east-northeast of the project boundary, is predicted to be 0.014 in 1 million for the individual units. The predicted

[7] All cancer risk values presented represent the 70-year OEHHA Derived methodology, unless noted.

MICR at the maximum exposed sensitive receptor is predicted to be 0.045 in 1 million. Overall, the predicted MICR for the MEIR, MEIW, and the sensitive receptors is well below the individual source significance threshold of 1 in 1 million. Therefore, based on SCAQMD Rule 1401, the predicted incremental increase in cancer risk from each individual unit will be less than significant, and T-BACT would not be required. However, while not required, the emission control technologies included in this project are considered to be T-BACT.

The maximum chronic hazard index for an individual source at the PMI is predicted to be 0.0028, which is located approximately 260 meters east-northeast of the project boundary. The maximum acute hazard index for an individual source at the PMI is predicted to be 0.029, which is located on the east side of the facility fence line. The predicted chronic and acute indices are well below the SCAQMD individual source significance threshold of 1.0. Therefore, the predicted impact from each individual unit will be less than significant, and T-BACT will not be required. However, as previously noted, the emission control technologies included in this project are considered to be T-BACT.

TABLE 5.9-3
Health Risk Assessment Summary: Individual Units[a]

Risk[b]	Turbine 1	Turbine 2	Turbine 3
Derived Cancer Risk at the PMI[c] (per million)	0.088	0.081	0.080
Derived Adjusted Cancer Risk at the PMI[d] (per million)	0.070	0.064	0.064
Derived Adjusted Cancer Risk at the MEIR[d] (per million)	0.069	0.064	0.064
Derived Adjusted Highest Cancer Risk at a Sensitive Receptor [d] (per million)	0.045	0.042	0.040
Derived Cancer Risk at the MEIW[c] (per million)	0.014	0.013	0.012
Chronic Hazard Index at the PMI	0.0028	0.0026	0.0026
Resident Chronic Hazard Index	0.0028	0.0026	0.0026
Worker Chronic Hazard Index	0.0028	0.0026	0.0026
Chronic Hazard Index at Sensitive Receptor	0.0018	0.0017	0.0016
Acute Hazard Index at the PMI	0.029	0.020	0.015
Resident Acute Hazard Index	0.013	0.013	0.013
Worker Acute Hazard Index	0.029	0.020	0.015
Acute Hazard Index at Sensitive Receptor	0.014	0.016	0.012

[a] The results in Table 5.9-3 represent the predicted excess risk for each individual emission unit in accordance with SCAQMD Rule 1401.
[b] A source with an excess MICR less than 1 in 1 million individuals is considered to be less than significant. A chronic or acute hazard index less than 1.0 for each source is considered to be a less-than-significant health risk.
[c] Cancer risk values are based on the OEHHA Derived Methodology.
[d] Risk values are based on the Derived Adjusted Methodology.

A risk analysis was also performed to evaluate the potential facility-wide impacts. The potential health impacts at the PMI, the MEIR, the MEIW, and sensitive receptors resulting from RBEP operation are summarized in Table 5.9-4.

It should be noted that the maximum impacts reported in Table 5.9-4 represent the maximum predicted impacts at one receptor from all sources combined. In contrast, the maximum impacts reported for each individual source in Table 5.9-3 may occur at different receptors. Therefore, the RBEP totals in Table 5.9-3 are not directly additive and should not be directly compared to the results presented in Table 5.9-4.

TABLE 5.9-4
Health Risk Assessment Summary: Facility[a]

Risk[b]	Receptor Number	Value
Derived Cancer Risk at the PMI[c]	767	0.25 per million
Derived Adjusted Cancer Risk at the PMI[d]	767	0.20 per million
Derived Adjusted Cancer Risk at the MEIR[d]	799	0.20 per million
Highest Cancer Risk at a Sensitive Receptor[d]	9859	0.13 per million
Derived Cancer Risk at the MEIW[c]	767	0.038 per million
Chronic Hazard Index at the PMI	767	0.0079
Resident Chronic Hazard Index	799	0.0078
Worker Chronic Hazard Index	767	0.0079
Chronic Hazard Index at Sensitive Receptor	9859	0.0051
Acute Hazard Index at the PMI	21	0.056
Resident Acute Hazard Index	758	0.037
Worker Acute Hazard Index	21	0.056
Acute Hazard Index at Sensitive Receptor	9855	0.042

[a] The results in Table 5.9-4 represent the combined predicted risk for all three turbines operating simultaneously.
[b] A facility with an overall individual increase in cancer risk (MICR) less than 10 in 1 million individuals is considered to be less than significant. A facility chronic or acute hazard index less than 1.0 is considered to be a less-than-significant health risk.
[c] Cancer risk values represent the OEHHA Derived Methodology.
[d] Risk values represent the Derived Adjusted Methodology.

The predicted incremental increase in cancer risk at the PMI associated with RBEP is approximately 0.25 in 1 million[8] and is approximately 310 meters east-northeast of the project boundary. The predicted incremental increase in cancer risk at the MEIR is predicted to be 0.20 in 1 million (Derived Adjusted). The receptor location for the MEIR is about 330 meters east-northeast of the project boundary. The predicted incremental increase in cancer risk for the MEIW, which is located approximately 310 meters east-northeast of the project boundary, is predicted to be 0.038 in 1 million. The predicted incremental increase in cancer risk at the maximum exposed sensitive receptor is predicted to be 0.13 in 1 million. The predicted MICR for the MEIR, MEIW, and the sensitive receptors is below the facility-wide significance threshold of 10 in 1 million. Therefore, based on SCAQMD CEQA significance thresholds, the predicted incremental increase in cancer risk associated with the project will be less than significant.

The maximum chronic hazard index increment at the PMI is predicted to be 0.0079. The maximum predicted chronic impact is located approximately 310 meters east-northeast of the project boundary. The maximum acute hazard index at the PMI is predicted to be approximately 0.056. The maximum predicted acute impact is located along the east RBEP fence line. The chronic and acute index increments are below the project significance threshold of 1.0.

The predicted chronic and acute indices are well below the SCAQMD project significance threshold of 1.0. Therefore, the predicted impact from the project will be less than significant.

5.9.3.2 Uncertainty in the Public Health Impact Assessment

Sources of uncertainty in the HRA include emissions estimates, numerical dispersion modeling calculations, exposure characteristics, and extrapolation of toxicity data in animals to humans. Assumptions used in HRAs are

[8] All cancer risk values presented represent the 70-year OEHHA Derived methodology, unless noted.

designed to provide sufficient health protection to avoid underestimation of risk to the public, which may add an additional level of conservativeness in the predicted impacts. Some sources of uncertainty and conservativeness applicable to this HRA are discussed below.

The CATEF database contains approximately 2,000 air toxics emission factors calculated from source test data collected for the Air Toxics Hot Spots Program. Most of the source test data are based on emission measurements from the early 1990s. The emission factor data have not been updated since 1996.[9] Therefore, the CATEF emission factors do not incorporate the best available control technology advances in selective catalytic reduction (SCR) and CO/VOC oxidation catalysts since the late 1990s. As noted in the EPA AP-42 Section 3.1 Stationary Internal Combustion Processes guidance document updated in 2000 (EPA, 2006), uncontrolled HAP emissions could be reduced by up to 85 to 90 percent with the use of an oxidation catalyst system.[10] The RBEP design includes the use of an oxidation catalyst to reduce CO and VOC emissions to the best available control levels of 2.0 ppm and 1.0 ppm, respectively. Therefore, it is expected that the actual HAP emissions, and resulting predicted health risk impacts, would be significantly less than the potential risk presented in this analysis. Long-term emissions were also estimated, assuming the turbines would operate at an annual average heat input rate for 5,900 hours per year with an additional 470 hours per year with supplemental duct firing, plus 624 startup and shutdown events. Under normal operating conditions, the turbines would likely be operated less than the permitted levels on an annual basis. Consequently, the emissions used for this HRA are expected to be higher than the actual quantities during normal operation.

The models used in dispersion modeling contain assumptions that tend to overpredict ground-level concentrations. For example, the modeling performed in the HRA assumed a conservation of mass (that is, all of the pollutants emitted from the sources remained in the atmosphere while being transported downwind). During the transport of pollutants from sources to receptors, none of the material was assumed to be removed through chemical reaction or to be lost at the ground surface through reaction, gravitational settling, precipitation, or turbulent impaction. In reality, these mechanisms work to reduce the level of pollutants remaining in the atmosphere.

The long-term exposure characteristics assessed in the HRA included the assumption that residents were exposed to turbine emissions continuously at the same location for 24 hours per day, 365 days per year, for 70 years. It is extremely unlikely that any person would meet this condition. The conservative exposure assumption tends to overpredict risk estimates in the HRA process.

The toxicity data used in the HRA contain uncertainties due to the extrapolation of data from animals to humans. Typically, safety factors are applied when doing the extrapolation. Furthermore, the human population is much more diverse, both genetically and culturally, than animals used for experimental exposures and bred and housed under controlled conditions; thus, the intraspecies variability among humans is expected to be much greater than in laboratory animals. With all of the uncertainty in the assumptions used to extrapolate toxicity data, significant measures are taken to ensure that sufficient health protection is built into the available health effects data.

5.9.3.3 Air Toxics Exposure Assessment (Construction and Demolition Impacts)

The emissions of air toxics associated with the construction of RBEP and the demolition of the existing Redondo Beach Generating Station units will consist of combustion byproducts generated during movement of onsite construction/demolition equipment and onsite and offsite movement of vehicles associated with the construction and demolition of the project. The primary exhaust air toxic pollutant of concern associated with construction and demolition activities is diesel particulate matter (diesel PM). Emissions of asbestos and asbestos-containing material (ACM) are also fugitive dust pollutants of concern associated with the demolition of the existing Redondo Beach Generating Station structures.

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[9] CATEF-California Air Toxics Emission Factor Database website: http://www.arb.ca.gov/ei/catef/catef.htm

[10] AP-42, page 3.1-7—The oxidation process takes place spontaneously, without the requirement for introducing reactants. The performance of these oxidation catalyst systems on combustion turbines results in 90-plus percent control of CO and about 85 to 90 percent control of formaldehyde. Similar emission reductions are expected on other HAP pollutants.

Due to the length of the proposed construction and demolition period, a screening health risk assessment was conducted based on the annual average emissions of diesel PM. The screening risk assessment is consistent with the health risk assessment methodology outlined in Section 5.9.3.1 and the dispersion modeling methodology outlined in Section 5.1. The total diesel PM exhaust emissions from construction and demolition activities were averaged over the 5-year construction period and spatially distributed across the 50-acre parcel. The incremental increases in cancer risk at the MEIR and MEIW were estimated by multiplying the predicted annual diesel PM concentration at the MEIR and MEIW by the OEHHA inhalation unit risk factor of 3.0E-04 $(\mu g/m^3)^{-1}$and adjusting the predicted results to a 9-year exposure duration to more closely reflect the exposure duration associated with construction activities (OEHHA, 2003). The predicted MEIW values were also adjusted to reflect an 8-hour day, 5 day per week, 49 week per year exposure duration (OEHHA, 2003). The non-carcinogenic (chronic) risk values were estimated by dividing the predicted annual diesel PM concentrations by the chronic reference exposure level of 5.0 $\mu g/m^3$.

Based on the analysis, the predicted incremental increases in cancer risk at the MEIR and MEIW associated with construction activities are 9.0 and 3.9 in 1 million, respectively. The predicted chronic health indexes at the MEIR and MEIW are 0.046 and 0.091, respectively. The detailed calculations for the MEIR and MEIW are included in Appendix 5.9C. The predicted incremental increase in cancer risk and chronic health index are less than the CEQA significance thresholds of 10 in 1 million and 1.0 defined in Section 5.9.3.1.3, respectively.

In addition, Rule 1401 Toxic New Source Review would also apply to any stationary equipment subject to New Source Review permitting during the construction and demolition phase. Construction and demolition impacts would also be further reduced with the implementation of the additional mitigation measures presented in Section 5.1 and the implementation of a construction fugitive dust and diesel-fueled engine control plan. Therefore, the impacts associated with exhaust emissions from the finite construction and demolition activities are less than significant.

To reduce the potential risk associated with the removal of asbestos and ACM, the project owner will also comply with all requirements outlined in SCAQMD Rule 1403, which requires the notification and special handling of ACM during demolition activities. The Applicant will comply with SCAQMD Rule 1403 by:

- Conducting a facility survey to identify and quantify the presence of all friable and non-friable Class I and Class II ACM prior to the start of demolition activities,
- Notifying the SCAQMD and CEC compliance project manager (CPM) of the intent to conduct demolition activities in a district-approved format (e.g., submittal of a Rule 1403 Plan) prior to the start of any demolition activities,
- Employing one or more of the following methods for asbestos removal: High Efficiency Particulate Air (HEPA) Filtration, Glovebag or Mini-enclosures, Dray Removal, or an alternative approved method,
- Collecting and storing ACM in a leak-tight or wrapped container to avoid releasing ACM to the atmosphere,
- Requiring an onsite representative to complete the Asbestos Abatement Contractor/Supervisor course pursuant to the Asbestos Hazard Emergency Response Act and Provision of Title 40, Code of Federal Regulations, Parts 61.145 to 61.147, 61.152, and Part 763, and be present during all ACM demolition or handling procedures,
- Disposing of ACM wastes at a licensed waste disposal facility; ACM wastes will be hauled from the site by an appropriately licensed ACM waste transporter.

As a result of the activities listed above and in compliance with SCAQMD Rule 1403, the potential impacts associated with asbestos removal during demolition will be less than significant.

5.9.4 Cumulative Effects

5.9.4.1 Operational Cumulative Effects

As previously discussed, the MATES II and MATES III studies consisted of a comprehensive monitoring program, an updated emissions inventory, and a modeling effort to characterize health risks associated with human exposures to ambient concentrations of TACs in the SCAB. The estimated carcinogenic risk was found to be rather uniform across the basin, ranging from about 1,120 in 1 million to about 1,740 in 1 million for the sites monitored. Updating the findings of MATES II, SCAQMD completed the MATES III study by issuing a final report in September 2008. Similar to the earlier MATES II study, the MATES III study found that mobile sources continued to dominate cancer risk in the SCAB by accounting for an estimated 94 percent of the overall cancer risk. Diesel emissions alone account for 84 percent of the cancer risk. Overall, the general trend in risk exposure has been decreasing with the estimated cancer risk from exposure to airborne toxics reduced to 1,200 in 1 million.

The maximum incremental increase in the facility-wide cancer risk predicted at the PMI for the RBEP is 0.25 in 1 million. The maximum facility-wide chronic and acute hazard indices at the PMI are 0.0079 and 0.056, respectively. These levels are well below the CEQA significance de minimus thresholds for cancer risk of 10 in 1 million, and/or the chronic and acute hazard index of 1.0. Furthermore, the results of the MATES III study indicate that the cumulative background cancer risk from exposure to airborne toxics is approximately 1,200 in 1 million, with an estimated 94 percent of the overall cancer risk due to mobile sources. Therefore, facility-wide stationary source emissions from the RBEP are expected to contribute to approximately less than 0.04 percent of the background risk in the vicinity of the project. While not required, T-BACT emission control technologies will also be installed as part of the project, which will reduce the TAC emissions to the extent technically feasible. The removal/demolition of the existing Redondo Beach Generating Station units will also offset a portion of the potential impacts from the operation of RBEP relative to the existing background levels. Therefore, it is concluded that RBEP will not have a significant cumulative human health risk impact.

5.9.4.2 Construction and Demolition

The RBEP construction activities and the existing Redondo Beach Generating Station’s demolition activity would be finite, and best available emission control techniques would be used throughout the 60-month activity period to control pollutant emissions. Impacts from the demolition of existing Redondo Beach Generating Stations units would be further reduced with the implementation of the additional construction mitigation measures presented in Section 5.1 and the implementation of a construction fugitive dust and diesel-fueled engine control plan. Therefore, the potential cumulative human health risk impacts from construction and demolition are expected to be less than significant.

5.9.5 Mitigation Measures

5.9.5.1 Criteria Pollutants

5.9.5.1.1 Operation

The results of the air dispersion modeling presented in Section 5.1, Air Quality, concluded that RBEP emissions during operation will not cause or contribute to the violation of the ambient air quality standards (either National Ambient Air Quality Standards [NAAQS] or California Ambient Air Quality Standards) for those pollutants for which the area is designated as attainment. These standards are intended to protect the general public with a wide margin of safety. Therefore, RBEP is not expected to have a significant impact on public health from emissions of criteria pollutants. For those criteria pollutants (and their precursor pollutants) where the ambient air quality standards are categorized as non-attainment, mitigation will be provided to reduce the impacts to less-than-significant levels (see Section 5.1). RBEP will also include emission-control technologies necessary to meet the required emission standards specified for criteria pollutants under SCAQMD rules.

5.9.5.1.2 Construction/Demolition

The construction activity would be finite and best available emission control techniques would be used throughout the 60-month construction activity period to control criteria pollutant and diesel PM emissions.

Construction impacts would be further reduced with the implementation of the additional construction mitigation measures presented in Section 5.1 and the implementation of a construction fugitive dust and diesel-fueled engine control plan.

5.9.5.2 Air Toxic Substances

As presented in Section 5.9.3, the maximum per turbine incremental increases in the cancer risk predicted at the point of maximum impact, MEIR, MEIW, and sensitive receptor are 0.088, 0.069, 0.014, and 0.045 in 1 million, respectively. The maximum facility incremental increases in the cancer risk predicted at the point of maximum impact, MEIR, MEIW, and sensitive receptor are 0.25, 0.20, 0.038 and 0.13 in 1 million, respectively. The maximum facility chronic and acute hazard indices are 0.0079 and 0.056, respectively. These levels are below the per emission unit significance threshold for cancer risk of 1.0 in 1 million and the facility significance thresholds for cancer risk of 10 in 1 million, and/or the chronic and acute hazard index of 1.0. The RBEP will also incorporate T-BACT emission control technologies, which will reduce impacts below the predicted impacts presented in Section 5.9.3. Therefore, mitigation measures are not required for air toxic emissions from the operations of RBEP.

The construction activity would be finite and best available emission control techniques would be used throughout the 60-month construction and demolition period to control air toxic substance emissions. Construction impacts would be further reduced with the implementation of the additional construction mitigation measures presented in Section 5.1 and the implementation of a construction fugitive dust and diesel-fueled engine control plan.

5.9.6 Laws, Ordinances, Regulations, and Standards

An overview of the relevant LORS that affect public health as well as the conformity of the project to each of the LORS are identified in Table 5.9-5.

TABLE 5.9-5
Laws, Ordinances, Regulations, and Standards for Public Health

LORS	Requirements/Applicability	Administering Agency	Analyses of Conformance
Federal			
Title 40 CFR, Part 63	Establishes national emission standards to limit emissions of hazardous air pollutants (HAPs, or air pollutants identified by EPA as causing or contributing to the adverse health effects of air pollution but for which NAAQS have not been established) from facilities in specific categories.	SCAQMD, with EPA Region IX oversight	The estimated annual RBEP HAP emissions are less than the major source thresholds for HAPs (10 tons per year for any one pollutant or 25 tons per year for all HAPs combined), and no lower pollutant-specific MACT thresholds apply to RBEP emission units. Therefore, National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations do not apply.
State			
Health and Safety Code Sections 44360 to 44366 (Air Toxics "Hot Spots" Information and Assessment Act—AB 2588)	Requires preparation and biennial updating of facility emission inventory of hazardous substances; risk assessments.	SCAQMD with oversight from ARB/OEHHA	An estimate of TAC emissions and associated risk was conducted as part of this analysis. (See Conformance description for SCAQMD Rule 1401 (Permits – Toxics New Source Review)
Health and Safety Code 25249.5 et seq. (Safe Drinking Water and Toxic Enforcement Act of 1986—Proposition 65)	Provides notification of Proposition 65 chemicals.	OEHHA	The project owner will comply with all signage and notification requirements.
Local			
SCAQMD Rule 1401 (Permits – Toxics New Source Review)	The purpose of this rule is to provide for the review of new and modified sources of TAC emissions in order to evaluate potential public exposure and health risk, to mitigate potentially significant health risks resulting from these exposures, and to provide net health risk benefits by improving the level of control when existing sources are modified or replaced.	SCAQMD	T-BACT shall be applied to any new or modified source (i.e., individual permit unit) of TACs where the source risk is a cancer risk greater than 1.0 in 1 million (10^{-6}), a chronic hazard index greater than 1.0, or an acute hazard index greater than 1.0. The predicted MICRs at the MEIR and MEIW cancer risks for the project are 0.20 and 0.038 in 1 million, respectively. The maximum predicted chronic and acute hazard indices are 0.0079 and 0.056, respectively. The values are less than the individual source thresholds of 1.0 in 1 million (10^{-6}). The levels are also below the Permit to Construct or Permit to Operate facility thresholds for cancer risk of 10 in 1 million and the chronic and acute hazard index of 1.0. Nevertheless, the project will employ emission controls considered to be T-BACT.
SCAQMD Rule 1403 (Permits – Asbestos Removal)	The purpose of this rule is to specify work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials.	SCAQMD	The project owner will comply with the requirements outlined in Rule 1403 prior to the removal of asbestos-containing materials.

TABLE 5.9-5
Laws, Ordinances, Regulations, and Standards for Public Health

LORS	Requirements/Applicability	Administering Agency	Analyses of Conformance
SCAQMD Rule 212 (Permits – Public Notice)	The purpose of this rule is to establish standards for approving permits and issuing public notice.	SCAQMD	Rule 212 requires public notification if: a. any new or modified permit unit, source under Regulation XX, or equipment under Regulation XXX that may emit air contaminants is located within 1,000 feet from the outer boundary of a school. b. any new or modified facility that has onsite emission increases exceeding any of the daily maximums specified in subdivision (g) of this rule; c. any new or modified permit unit, source under Regulation XX, or equipment under Regulation XXX with increases in emissions of toxic air contaminants for which the Executive Officer has made a determination that a person may be exposed to a MICR is greater than 1 in 1 million (1×10^{-6}), due to a project's proposed construction, modification, or relocation for facilities with more than one permitted equipment unless the applicant can show that the total facility-wide MICR is below 10 in 1 million (10×10^{-6}). The predicted total facility-wide MICR is less than 1 in 1 million. However, RBEP will be within 1,000 feet from the outer boundary of a school, and the onsite emissions will exceed the daily maximums listed in subdivision (g) of this rule. Therefore, a public notice consistent with the requirements outlined in Rule 212 will be issued. The process for public notification and comment will include all of the applicable provisions of 40 CFR Part 51, Section 51.161(b), and 40 CFR Part 124, Section 124.10.
SCAQMD Rule 3008 – Title V Permits (Potential to Emit Limitations)	The purpose of this rule is to exempt low-emitting facilities with actual emissions below a specific threshold from federal Title V permit requirements by limiting the facility's potential to emit.	SCAQMD	This rule shall apply to any facility that would, if it did not comply with the limitations set forth in either paragraphs (d)(1) or (d)(2) of Rule 3008, have the potential to emit air contaminants equal to or in excess of the thresholds specified in Table 2, subdivision (b) of Rule 3001 –Applicability, or for greenhouse gasses 100,000 or more tons per year CO_2e. RBEP will exceed the Title V thresholds listed in Rule 3001. As a result, RBEP will submit an application to modify the existing Title V permit as part of the permitting process.

Notes:
CFR = Code of Federal Regulations
MACT = maximum achievable control technology

5.9.7 Agencies and Agency Contacts

Table 5.9-6 provides contact information for agencies involved with public health.

TABLE 5.9-6
Agency Contacts for Public Health

Issue	Agency Contacted	Person Contacted
Regulatory oversight	EPA Region IX	Gerardo Rios EPA Region IX 75 Hawthorne Street San Francisco, CA 94105 (415) 947-3974
Regulatory oversight	ARB	Michael Tollstrup Project Assessment Branch California Air Resources Board 2020 L Street Sacramento, CA 95814 (916) 322-6026
Permit issuance, enforcement	SCAQMD	Andrew Lee South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765 (909) 396-2643

5.9.8 Permits and Permit Schedule

Consistent with the CEC siting regulations, SCAQMD is responsible for issuing the required operating permits related to public health. Sections 5.1.9 and 5.1.11 include a summary of the SCAQMD and EPA permits required and expected issuance schedule.

5.9.9 References

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