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DOCKET
06-AFC-4
DATE OCT 0 2 2007
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October 2, 2007

Dr. James Reede
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

RE: Application for Certification Supplement C
Vernon Power Project (06-AFC-4)

On behalf of the City of Vernon, please find attached 65 hard copies and 85 CDs of the Application for Certification Supplement C, which addresses a change in the plant's general arrangement. Included in this submittal are 5 CD-ROMs with air quality and public health modeling files.

Please call me if you have any questions.

Sincerely,

CH2M HILL

John L. Carrier, J.D.
Program Manager

c: Project File
Proof of Service List

Vernon Power Plant (VPP)
(06-AFC-4)

Supplement C:
Revised General Arrangement

Submitted by

The City of Vernon

October 2, 2007

CH2MHILL
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Sacramento, CA 95833

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SUPPLEMENT C

Revised General Arrangement

1.0 Introduction

After consideration of potential impacts from the cooling tower in its current location and various options to reduce cooling tower impacts, the City of Vernon (Applicant) has decided to rotate the Vernon Power Plant's (VPP) general arrangement so that the cooling tower will be located on the south end of the plant.

2.0 Change to Project Description

As shown on the attached Figures C-1, C-2, and C-3 (figures at the end of the document), the Applicant is proposing to move the cooling tower to the south end of the plant and rotate the power block 180 degrees. In addition, the recycled water storage tank will be moved to the south end of the project site. The detention basin and switchyard will be moved to the north end of the plant. This new general arrangement has also resulted in the relocation of other pieces of plant equipment such as the ammonia tanks, gas compressors and gas metering station, water treatment equipment, and administration building.

3.0 Transmission System Engineering

As shown in Figure C-1, the switchyard will be relocated to the northern portion of the site. The relocation of the switchyard would not affect the two alternative transmission line routes that are being considered. It would also not affect any offsite electric and magnetic fields.

4.0 Environmental Analysis of Proposed Change to the Project Description

The proposed project changes set forth in this Supplement do not affect most of the environmental analyses described in the Application for Certification (AFC). An analysis of the effects of this proposed change on each of the environmental areas is presented below. In addition, laws, ordinances, regulations, and standards (LORS) contained in the AFC have been reviewed to determine if any LORS should be added or removed from the analysis as a result of this change.

4.1 Air Quality

4.1.1 Introduction

While the proposed project changes set forth in this Supplement do not affect most of the environmental analyses described in the AFC, the modification to the facility layout could potentially affect the results of the air quality impact analysis. No changes in the air emissions and operation of the project are being proposed. Therefore, only changes associated with the ambient air quality impact analyses being presented by way of remodeling the commissioning and operational emissions impacts of the VPP.

It was assumed that the Class I Impacts would not be affected by the rotation of the plant layout because of the extended distance from the VPP to the nearest Class I areas (San Gabriel is over 31 kilometers from the site). In support of this assumption, the Applicant sent a letter to the Federal Land Manager informing them of the proposed change to the project and requesting concurrence on this modeling assumption. On September 17, 2007, the Federal Land Manager issued a letter concurring with the assessment (see Attachment C4.1-A). Therefore, the CALPUFF modeling was not re-evaluated.

The following subsections describe the revised ambient impact analyses results and the evaluation of facility compliance with the applicable air quality regulations, including SCAQMD Rule 2005 (NO_x RECLAIM New Source Review [NSR]), Rule XIII (NSR), and the Prevention of Significant Deterioration (PSD) requirements per U.S. Environmental Protection Agency (USEPA) Region IX.

4.1.2 Air Quality Impact Analysis

4.1.2.1 Modeling Methodology for Evaluating Impacts on Ambient Air Quality

With the exception of the receptor spacing, the revised modeling methodology (e.g., model selection, model option, meteorological data, background data, and building downwash) was consistent with the modeling methodology submitted as part of the original AFC. For this air quality impact analysis, a coarse/fine grid assessment methodology was employed using a coarse grid spacing 100 meters from the project fence line out to 10 kilometers. The fine receptor grid assessment used a 30-meter grid spacing, centered on the maximum impact point identified from the coarse grid assessment, extended out 1 kilometer. The modification to the receptor spacing approach was made in response to agency comments and a request to reduce the size of the modeling input and output files.

4.1.2.2 Results Compared to the Ambient Air Quality Standards

Commissioning Impacts Analysis

Table 4.1-1 presents an updated comparison of the maximum predicted commissioning impacts to the ambient air quality standards (AAQS). The analysis excluded a comparison to the annual averaging period standards or thresholds because commissioning will only occur once during the project lifetime and is only expected to last approximately 3 months.[1] Electronic copies of the commissioning ISCST3 modeling files were prepared and 5 copies of the CD are submitted with this Supplemental filing.

[1] This assumption was also made in the AFC.

TABLE 4.1-1 (UPDATE OF AFC TABLE 8.1-26)
Turbine Commissioning Impacts Analysis—Maximum Modeled Impacts Compared to the Ambient Air Quality Standards
Simultaneous Turbine Emissions

Pollutant	Averaging Time	Maximum Facility Impact (μg/m^3)	Background (μg/m^3)[a]	Total Impact (μg/m^3)	State Standard (μg/m^3)	Federal Standard (μg/m^3)
NO_2	1-hour	119[b]	244.6	363	470	—
SO_2	1-hour	1.7	209.4	211	655	—
	3-hour	1.4	47.1	49	—	1,300
	24-hour	0.21	39.3	39	105	365
CO	1-hour	426.7	13,742	14,169	23,000	40,000
	8-hour	87.0	8,360	8,447	10,000	10,000
PM_{10}	24-hour	1.9	81.0	83	50	150
$PM_{2.5}$	24-hour	1.9	55.8	57.7	—	65

[a] Background concentrations were the highest concentrations monitored during 2003- 2005.

[b] A 100-percent conversion of NO_x to NO_2 was assumed.

Operation Impacts Analysis (Including Startup/Shutdown Turbine Cycles)

Table 4.1-2 presents an updated comparison of the maximum VPP project operational impacts to the ambient air quality standards. For those pollutants and averaging periods where the background concentrations do not exceed the AAQS, the project will not cause or contribute to the violation of a standard. For those pollutants where the background data are already in excess of the standards (PM_{10} and $PM_{2.5}$), the project's impact plus background is above the standard, and would further contribute to an existing violation of the standard absent mitigation. The VPP Project will be providing mitigation in the form of emission reduction or priority reserve credits. The detailed summary of normal operation impact results are presented in Attachment C4.1-B (Update to AFC Appendix 8.1C). Five CDs containing the operational ISCST3 modeling files are being submitted with this Supplemental filing. A description of the ISCST3 modeling files included on the CD is located in Attachment C4.1-C.

TABLE 4.1-2 (UPDATE OF AFC TABLE 8.1-27)
Normal Operation Impacts Analysis—Maximum Modeled Impacts Compared to the Ambient Air Quality Standards
Facility-Wide Emissions

Pollutant	Averaging Time	Maximum Facility Impact (μg/m^3)	Background (μg/m^3)[a]	Total Impact (μg/m^3)	State Standard (μg/m^3)	Federal Standard (μg/m^3)
NO_2	1-hour[b]	53.0	244.6	298	470	—
	Annual[b]	0.69	58.7	59	—	100
SO_2	1-hour	1.3	209.4	211	655	—
	3-hour	1.0	47.1	48	—	1,300
	24-hour	0.21	39.3	40	105	365
	Annual	0.05	7.9	8	—	80
CO	1-hour	327.7	13,742	14,070	23,000	40,000
	8-hour	19.6	8,360	8,380	10,000	10,000
PM_{10}	24-hour	2.32	81.0	83	50	150
	Annual	0.66	34.6	35	20	50

TABLE 4.1-2 (UPDATE OF AFC TABLE 8.1-27)
Normal Operation Impacts Analysis—Maximum Modeled Impacts Compared to the Ambient Air Quality Standards
Facility-Wide Emissions

Pollutant	Averaging Time	Maximum Facility Impact (μg/m³)	Background (μg/m³)[a]	Total Impact (μg/m³)	State Standard (μg/m³)	Federal Standard (μg/m³)
$PM_{2.5}$[c]	24-hour	2.32	55.8	58	—	65
	Annual	0.66	20.2	21	12	15

[a] Background concentrations were the highest concentrations monitored during 2003-2005.

[b] 1-hour NO_2 concentration based on ozone-limiting method (OLM). Annual NO_2 concentration based on 100 percent conversion of NO_x to NO_2

[c] Assumed all particulate is $PM_{2.5}$.

4.1.2.3 Results Compared to the SCAQMD New Source Review Requirements

The SCAQMD has two NSR rules that require a demonstration of a project's compliance with AAQS or significant change in air quality concentration criteria on a per unit basis. The first is Rule 1303 (the requirement section of Regulation XIII-NSR) and the second is Rule 2005 (the requirement section of Regulation XX-NSR). This section demonstrates the project's compliance with the modeling aspects of these two rules. In addition, this analysis presents an assessment of the project's compliance with the provisions of the recently adopted SCAQMD Priority Reserve Credit Rule (1309.1).

Rule 1303 Compliance

Although Rule 1303 only requires a comparison of permitted units to the significance thresholds, it should be noted that the PM_{10} impacts presented in Table 4.1-3 included PM_{10} emissions from the three combustion turbines, cooling tower, and the diesel fire pump engine. Table 4.1-3 conservatively shows that the maximum facility PM_{10} impacts do not exceed the SCAQMD significance thresholds. Based on the analysis, the cooling tower makes up a majority of the 24-hour impact, with the maximum individual turbine 24-hour PM_{10} impact being 0.65 μg/m³. Therefore, as defined by the SCAQMD, the project's PM_{10} impacts are not considered significant.

TABLE 4.1-3 (UPDATE OF AFC TABLE 8.1-28)
Normal Operation Impacts Analysis for VPP—SCAQMD Rule 1303 (Maximum Modeled Impacts)
Combined Facility Impact

Pollutant	Averaging Time	Maximum Impact (μg/m³)	SCAQMD Rule 1303 Significance Threshold (μg/m³)	Significant?
PM_{10}	24-hour	2.3	2.5	No
	Annual	0.66	1.0	No

Rule 2005 Compliance

To determine compliance with the SCAQMD's Rule 2005 (NSR for RECLAIM), the project's ambient air quality impacts are compared to the NO_2 AAQS of 470 μg/m³ on a 1-hour basis and 100 μg/m³ on an annual basis. As shown in Table 4.1-4, the total NO_2 impacts do not exceed the SCAQMD's Rule 2005 significance threshold. It should be noted that the NO_2 impacts modeled include NO_x emissions from the three combustion turbines and the diesel fire pump. Therefore, the project's NO_2 impacts are not considered significant as defined by the SCAQMD.

TABLE 4.1-4 (UPDATE OF AFC TABLE 8.1-29)
Normal Operation Impacts Analysis for VPP—SCAQMD Rule 2005 (Maximum Modeled Impacts)
Combined Facility Impact

Pollutant	Averaging Time	Maximum Impact Including Background ($\mu g/m^3$)	SCAQMD Rule 2005 Significance Threshold ($\mu g/m^3$)	Significant?
NO_2	1-hour	298	470	No
	Annual	59	100	No

Rule 1309.1 Compliance

The SCAQMD issued a letter to the City of Vernon on August 16, 2007, that informed the City that a showing of compliance with the recently adopted provisions of SCAQMD Rule 1309.1 was required before access to Priority Reserve Credits could be granted. Table 4.1-5 presents a comparison of the VPP project's conformance with these recently adopted provisions.

TABLE 4.1-5
Comparison of VPP Impacts to SCAQMD Rule 1309.1 Based on an Electric Generating Facility More Than 500 MW and Located in Zone 3

Draft Provision	Compliance Assessment	Complies with Provisions (Yes/No)
Cancer Risk is less than 0.5 in one million and Hazard Index (Chronic and Acute) is less than 0.1	The 70-year derived adjusted cancer risk at the point of maximum impact (PMI) for turbine operations (3 combustion turbines and three duct burners) is 0.276 in a million. The maximum exposed individual resident (MEIR) and maximum exposed individual worker (MEIW) cancer risks for the turbine operations are 0.27 and 0.053 in a million, respectively. The maximum chronic and acute hazard indices are 0.020 and 0.054, respectively.	Yes
Cancer Burden is less than 0.05	The predicted cancer burden for populations (operation of 3 combustion turbines and 3 duct burners) exposed to cancer risks above 1 in 10 million is 0.007.	Yes
Rate of PM_{10} Emissions does not exceed 0.035 lb/MW-hr	The predicted PM_{10} emission rate for the VPP (3 combustion turbine generators and the steam turbine generator) is 0.0312 lb/MW-hr (excluding startup and shutdown emissions).	Yes
Rate of NOx emissions does not exceed 0.050 lb/MW-hr	The predicted NO_x emission rate for the VPP (3 combustion turbine generators and the steam turbine generator) is 0.0495 lb/MW-hr (excluding startup and shutdown emissions).	Yes

TABLE 4.1-5
Comparison of VPP Impacts to SCAQMD Rule 1309.1 Based on an Electric Generating Facility More Than 500 MW and Located in Zone 3

Draft Provision	Compliance Assessment	Complies with Provisions (Yes/No)
Total combined 24-hour PM_{10} impact from the new or modified electrical generating units shall not exceed 2.5 μg/m^3	The total combined 24-hour PM_{10} impact for the new electrical generating units is 1.96 μg/m^3 (three combustion turbines and three duct burners).	Yes
Total combined annual PM_{10} impact from the new or modified electrical generating units shall not exceed 0.5 μg/m^3	The total combined Annual PM_{10} impact for the new electrical generating units is 0.45 μg/m^3 (three combustion turbines and three duct burners).	Yes

4.1.2.4 Results Compared to the PSD Requirements

PSD Increment Consumption

Table 4.1-6 compares the updated maximum modeling impacts to PSD significant impact levels. These comparisons show that these impacts are below all significance thresholds and no further analysis is required.

TABLE 4.1-6 (UPDATE OF AFC TABLE 8.1-30)
PSD Levels of Significance

Pollutant	Averaging Time	Significant Impact Levels (μg/m^3)	Maximum Project Impact (μg/m^3)
NO_2	Annual	1	0.69
SO_2	3-hour	25	1.0
	24-hour	5	0.2
	Annual	1	0.05
CO	1-hour	2,000	328
	8-hour	500	20

4.1.2.5 Health Risk Assessment

The evaluation of potential non-cancer health effects from exposure to short-term and long-term concentrations in air was performed by comparing modeled concentrations for the maximum exposed individual (MEI) with reference exposure levels (RELs). Unlike the health risks results presented in Table 4.1-5, which only includes the combustion turbines, this analysis includes all VPP emission sources. Based on this evaluation approach, the MEIR excess life time cancer risk predicted was 0.54 in a million, and the MEIW lifetime cancer risk was 0.32 in a million. The predicted MEIR and MEIW cancer risks are below the SCAQMD significance threshold of one in one million.

The maximum hazard index for acute non-carcinogenic substances is 0.054. The hazard index for chronic non-carcinogenic substances is 0.022 for the MEIR and the MEIW. The acute and chronic hazard indices are both well below the SCAQMD significance threshold of 1.0.

A summary of the predicted health risk impacts for this revised analysis are presented in Section 4.6. The summary includes the human health risks and the Universal Transverse Mercator (UTM) locations at the PMI, the MEIR, and the MEIW for increased cancer risk, chronic health index, and the acute health index. A complete discussion of the potential public health impacts are presented in Section 4.6, Public Health.

4.2 Biological Resources

The revised general arrangement would have no effect on the Biological Resources analysis provided in the AFC. The area was previously surveyed as part of the biological surveys conducted for the VPP project. No biological resources were found within the area and no LORS will change as a result of the arrangement. As a result, any potential biological resources impacts associated with this Supplement will be less than significant.

4.3 Cultural Resources

The revised general arrangement would have no effect on the Cultural Resources analysis provided in the AFC. Because the project's location was covered in the record searches and no additional area has been proposed for ground disturbance, there is no need for a pedestrian survey of any new areas. Therefore, the proposed modification will not result in potential impacts any different from those addressed in the AFC and no LORS will change as a result of the change in the general arrangement. As a result, any potential cultural resources impacts associated with this Supplement will be less than significant.

4.4 Land Use

The proposed change to the plant's general arrangement will be consistent with existing and planned land uses in this area. The proposed modification will not result in potential impacts greater than those analyzed in the AFC and no LORS will change as a result of these changes. As a result, any potential land use impacts associated with this Supplement will be less than significant.

4.5 Noise and Vibration

The change in the general arrangement will result in the relocation of the gas compressors and turbine air inlets closer to the residences on Fruitland Avenue. It will also result in the relocation of cooling tower and exhaust stacks farther from those residents. However, it will not affect the City LORS that apply to the residents. The AFC noise section states:

> Operational noise from the VPP is predicted not to exceed 59 dBA at R5, the residential noise monitoring location closest to the site as shown in Figure 8.5-1. This would result in a project only CNEL of 66 dBA, 2 dBA greater than the existing CNEL of 64 dBA and below City LORS of 70 dBA CNEL. During the nighttime hours, a project level of 59 dBA is 7 dBA greater than the average nighttime L_{90} and 6 dBA greater than the average nighttime L_{50}. While these levels exceed the CEC's 5 dBA threshold for a potential noise impact suggesting further analysis is

warranted, they result in less than a 10 dBA increase. Such an increase should be considered acceptable given compliance with the City LORS, the industrial nature of the city, the limited number of affected residences, and the fact that the residences are owned by the City.

With the new arrangement, appropriate acoustical mitigation measures (such as placing the gas compressors within an acoustical enclosure) will be employed so that the noise levels to the closest residents will not exceed those analyzed in the AFC. Hence, the proposed modification will not result in potential impacts greater than those analyzed in the AFC and no noise LORS will change as a result of the revised general arrangement. As a result, any potential noise and vibration impacts associated with this Supplement will be less than significant.

4.6 Public Health

4.6.1 Introduction

The modification to the facility layout could potentially affect the results of the public health risk assessment. As a result, the results of the HARP modeling and risk assessment were re-evaluated. The following subsections describe the revised risk assessment values.

4.6.2 Environmental Analysis

4.6.2.1 Toxic Air Contaminant Exposure Assessment

Human health risks potentially associated with toxic air contaminant (TAC) emissions from the operation of the proposed project were evaluated using the same methodology as the AFC submitted in June 2006. For instance, this Human Health Risk Assessment (HHRA) was based on the guidance outlined in the 2003 Office of Environmental Health Hazard Assessment's (OEHHA's), *Air Toxics Hot Spots Program Risk Assessment Guidelines*, the USEPA's *Guideline on Air Quality Models*, 40 CFR, Part 51, Appendix W, July 1, 2005; the South Coast Air Quality Management District's (SCAQMD) *Risk Assessment Procedures for Rules 1401 and 212*; and SCAQMD's *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588).*

The OEHHA Derived and the Derived (Adjusted) Methods were used to evaluate the residential cancer risk estimates for this analysis. The Derived (Adjusted) method is based on the California Air Resources Board's (CARB) *Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk* guidance document dated October 9, 2003. The use of the Derived (Adjusted) method is also recommended in SCAQMD *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588)*, and was included in Appendix II of the SCAQMD's *Risk Assessment Procedures for Rules 1401 and 212*, version 7.0, July 1, 2005. The Derived (Adjusted) method is identical to the OEHHA Derived method with one exception. The Derived (Adjusted) method uses the breathing rate at the 80th percentile of exposure rather than the high-end point-estimate when the inhalation pathway is one of the dominant exposure pathways.

4.6.2.2 Dispersion Modeling

The air dispersion modeling for this analysis was conducted similar to the approach used in the original AFC filing. The dispersion modeling was conducted within HARP using the USEPA's Industrial Source Complex Short-Term (ISCST3) model. ISCST3 model options were selected using guidelines developed under the SCAQMD's *July 2005 Risk Assessments Procedures for Rules 1401 and 212* (Version 7) and the 2005 SCAQMD *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588)*. These options are listed below:

- Urban dispersion coefficients
- Final plume rise
- Stack tip downwash
- Buoyancy-induced dispersion
- No calm processing
- No missing data processing
- Default wind profile exponents
- Default vertical potential temperature gradients
- 10-meter anemometer height

The 1981 SCAQMD pre-formatted ISCST3 meteorological data set for Vernon was used for the analysis.

Cartesian coordinate receptor grids were used to assess the ground-level TAC concentrations surrounding the project area, identify the extent of significant impacts, and identify the maximum impact locations. Two model runs were conducted for the project: one screening model run using a 100-meter spacing coarse grid extended 10 kilometers from the facility fence line, and one refined model run using a 30-meter spacing fine grid centered over the maximum impact locations identified in the screening run.

Receptor and source base elevations were determined using the 7.5-minute USGS Digital Elevation Model (DEM) data (i.e., 30-meter spacing between grid nodes). All coordinates were referenced to the UTM North American Datum 1927 (NAD27), zone 11.

Detailed source parameters and other dispersion modeling options are presented in Attachment C4.1-B (Update to AFC Appendix 8.1C).

4.6.2.3 Risk Characterization

The results of the dispersion modeling analysis represent an intermediate product in the HHRA process. The HARP model was subsequently used to determine cancer, chronic and acute health risks. The risk characterization steps in this analysis are consistent with the steps used in the original AFC filing, but are provided here for further clarification.

To assess chronic and acute non-cancer exposures, annual and 1-hour TAC ground-level concentrations were compared to the RELs 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.

Cancer risks were evaluated based on the 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 conservative assumptions of a 70-year exposure duration for residential receptors and a 40-year exposure duration for commercial/ industrial receptors. This HHRA also included potential health impacts from home-grown produce, dermal absorption, soil ingestion, and mother's milk, as required by OEHHA (2003) and SCAQMD (2005) guidelines.

Cancer risks potentially associated with the turbine emissions were also assessed in terms of cancer burden as a part of demonstrating compliance with SCAQMD's Rule 1309.1. Cancer burden is a hypothetical upper-bound estimate of the additional number of cancer cases that could be associated with TAC emissions. Cancer burden was calculated at each census block receptor using the corresponding population information within the HARP database. Based on guidance from the SCAQMD, cancer burdens were estimated for electrical generating units (combustion turbines), using a threshold cancer risk level of 1 in 10 million.

OEHHA/CARB Cancer and Non-Cancer Reference Exposure Levels

The cancer and non-cancer RELs are consistent with the values used in the original AFC. The inhalation cancer potency, oral slope factor values, and RELs used to characterize health risks associated with the modeled impacts were obtained from the 2005 OEHHA and CARB *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values.*

4.6.2.4 Summary of TAC Exposure Assessment Results

A summary of the predicted health risk impacts for this revised analysis is presented in Table 4.6-1. The summary includes the PMI UTM locations for increased cancer risk, chronic health index, and the acute health index. An evaluation of the chemicals and sources contributing to the maximum predicted risks are also presented in this section. Additional details on the HARP results are provided in Attachment C4.6-A. Five CDs containing electronic copies of the HARP report files are being submitted with this Supplemental filing. A description of the HARP modeling files included on the CD is located in Attachment C4.6-B.

TABLE 4.6-1
Results of the Health Risk Analysis for VPP
Facility Wide Impacts

HHRA Category	Value	UTM (NAD 27)
Cancer Risks		
70-yr Derived OEHHA Cancer Risk at the Point of Maximum Impact	2.09 per million	388281, 3762029
70-yr Derived Adjusted Cancer Risk at the Point of Maximum Impact	1.61 per million	388281, 3762029
Maximum Exposed Individual Resident—70-yr Derived Adjusted Cancer Risk	0.54 per million	389440, 3762050
Maximum Exposed Individual Worker—Cancer Risk	0.32 per million	388281, 3762029
Cancer Burden*	0.00705	NA
Chronic Hazard Index (HIC)		
Chronic Hazard Index at the Point of Maximum Impact	0.022	389860, 3762080
Maximum Exposed Individual Resident – Chronic Hazard Index	0.022	389830, 3762080
Maximum Exposed Individual Worker – Chronic Hazard Index	0.022	389860, 3762080
Acute Hazard Index (HIA)		
Acute Hazard Index at the Point of Maximum Impact	0.054	388720, 3766160
Maximum Exposed Individual Resident—Acute Hazard Index	0.054	388720, 3766160
Maximum Exposed Individual Worker—Acute Hazard Index	0.054	388720, 3766160

* Cancer burden estimated for electrical generating equipment per SCAQMD guidance, using a 1 in 10 million cancer risk level.
NA = Not applicable

The 70-year Derived OEHHA cancer risk at the PMI is approximately 2.09 in a million. The 70-year Derived Adjusted cancer risk at the PMI is approximately 1.61 in a million, assuming the facility is operated 8,760 hours per year. The cancer risk PMI is located at the southeast corner of the project fence line. The MEIR cancer risk is predicted to be 0.54 in a million, which is located approximately 1,150 meters northeast of the facility. The MEIW cancer risk is predicted to be 0.32 in a million and is located along the project fence line. The cancer risks at the MEIR and MEIW for the project operation are all below the SCAQMD significance threshold of one in one million. The excess cancer burden for cancer risks over 1 in 10 million is predicted to be 0.00705, which is under the SCAQMD Rule 1309.1 threshold of 0.05.

The maximum predicted HIC is 0.022, which is approximately 1,570 meters northeast of the facility. The maximum predicted HIA is 0.054, which is located approximately 3,900 meters north of the facility. The HIC and HIA are both below the SCAQMD significance threshold of 1.0. The locations of the predicted VPP project HRA impacts are presented in Figure C-4.

The contributions from each emission source category to the maximum predicted health risk impacts are presented in Table 4.6-2. TAC emissions from the cooling towers contribute over 95 percent of the predicted cancer risk at the PMI location. The turbines emissions contributed about 88 percent of the chronic health risks at the PMI location. Nearly 100 percent of the acute risk at the PMI location is due to the turbine emissions.

TABLE 4.6-2
Relative Contribution of Sources to the Estimated Health Risks at the PMI

Source	Cancer Risk at the PMI	HIC at the PMI	HIA at the PMI
Turbines	0.02%	88.20%	~100%
Cooling Towers	95.01%	11.54%	—
Fire Pump	4.73%	0.07%	—

Table 4.6-3 presents the top contribution by chemical to the maximum predicted health risk impacts. Cadmium, hexavalent chromium, and diesel particulate PM contributed to about a total of 96 percent of the cancer risks at the cancer risk PMI location. Formaldehyde, acrolein, and ammonia accounted for a total of 86 percent of the chronic indexes at the HIC PMI location. PAHs, formaldehyde, and ammonia contributed for over 99.8 percent of the acute hazard indices at the HIA PMI location.

TABLE 4.6-3
Contribution by Chemical to the Maximum Cancer, Chronic, and Acute Impacts

TAC	Cancer Risk at the PMI	TAC	Chronic Index at the PMI	TAC	Acute Index at the PMI
Cadmium	58.5%	Formaldehyde	47.7%	PAH	76.0%
Hex. Chromium	33.8%	Acrolein	24.0%	Formaldehyde	15.3%
Diesel PM	4.7%	Ammonia	14.2%	Ammonia	8.5%

4.7 Worker Safety and Fire Protection

The proposed modification will not result in potential impacts greater than those analyzed in the AFC and no LORS will change as a result of the revised general arrangement. As a result, any potential worker safety and fire protection impacts associated with this Supplement will be less than significant.

4.8 Socioeconomics

The proposed changes to the plant's general arrangement will not affect the construction workforce, nor will it result in any change in local purchases of materials or supplies. In addition, it will not affect the Environmental Justice analysis, since all project impacts will be mitigated to a less-than-significant level. Therefore, the proposed modification will not result in potential impacts or benefits substantially greater than those analyzed in the AFC and no LORS will change as a result of the revised general arrangement. As a result, any potential socioeconomics impacts associated with this Supplement will be less than significant.

4.9 Soils and Water Resources

Although the location of the equipment has changed, the construction of the plant will still use best management practices to minimize soil erosion. The plant will still use recycled water to minimize use of potable water resources. The proposed modification will not result in any impacts different from those analyzed in the AFC and no LORS will change as a result of the revised general arrangement. Therefore, any potential soil and water resource impacts associated with this Supplement will be less than significant.

4.10 Traffic and Transportation

The proposed changes to the plant's general arrangement will not affect the construction workforce and, therefore, would not affect traffic impacts from those addressed in the AFC. Also, no LORS will change as a result of the revised general arrangement. As a result, any potential traffic and transportation impacts associated with this Supplement will be less than significant.

4.11 Visual Resources

The change in the general arrangement will result in the relocation of the cooling towers and exhaust stacks farther from the residents on Fruitland Avenue. In the AFC, only one key observation point (KOP) was selected for detailed analysis for the proposed power plant. The analysis of the project's impacts on the visual character and quality of this view that appeared in the AFC found that the project's visual effects would be limited and less than significant:

> **8.11.3.4.1 KOP-1 Fruitland Avenue Residential Area in Proximity to the Project Site**
> A simulation of the view of the VPP from KOP-1 is shown in Figure 8.11-2b. In this view, the most prominent visible features of the project would be the stacks and the existing concrete wall that would remain along Fruitland Avenue. These features would be visible in the far middleground and would be visually subordinate elements in the view, integrating well into the industrial landscape.

The stacks, although taller than adjacent buildings, would be additional vertical features of similar height to the power poles that line Fruitland Avenue (from the perspective of KOP-1) in this view. The existing concrete wall that would remain as the boundary of the site along Boyle and Fruitland avenues would partially screen the site in this view. The neutral color and non-reflective surface of the stacks and concrete wall would reduce their visual contrast with their surroundings, and would help them to be absorbed into the industrial view. In general, the stacks and concrete wall are consistent with the existing industrial nature of the view and would tend to visually merge into the view dominated by the industrial buildings and utility pole corridor.

The presence of the VPP would have a limited effect on the overall character of this view. The project would introduce exhaust stacks to a view where none are now present; the concrete wall would remain as a feature that was present on the site when used for the former Alcoa aluminum plant. Because the stacks would appear to be similar in height to the utility poles visible in this industrial view, they would be consistent in scale with the other elements in this view and would appear to be well integrated into it. Additionally, the concrete wall would be consistent with the other features in this industrial view and would be well absorbed into the view. Therefore, the effect of the VPP on the overall character of the view would be extremely limited. The overall level of visual quality of the view from KOP-1 would remain about the same. The presence of the project features would not affect the vividness of the view, would have no effect on the overall intactness of the view, and would have no effect on the visual unity of the composition of the landscape.

Neither of the two possible transmission line corridors would be visible from this KOP; therefore, there would be no change to the visual environment visible in this view due to installation of the proposed transmission line.

A simulation was prepared that depicts the revised project as it would be seen in views from this location (see Figure C-5). Review of this simulation and comparison of it to the simulation prepared for the project under the original layout indicates that the stacks would be farther from the residential viewers and would be somewhat less prominent in the view. Otherwise, there would be no change in how the project would appear in this view. Therefore, the proposed modification will not result in potential visual impacts greater than those analyzed in the AFC and the project's consistency with LORS related to visual resource issues will not change as a result of the revised general arrangement. As a result, any potential visual resources impacts associated with this Supplement will remain less than significant.

4.12 Hazardous Materials Handling

The chemical inventory for VPP will not change as a result of this modification. However, the location of the ammonia storage tanks was moved to the southern end of the site, just north of the cooling tower. The design of the loading area will remain the same. The Offsite Consequence Analysis modeling (Appendix 8.12A, Volume 2 of the AFC) indicates that, in the unlikely event that there is a breach of the ammonia tank, the area of impact would be less than 17 meters from the tank (at 75 ppm). As with the old location, the ammonia plume would not leave the project site. Therefore, the proposed change will not result in any potential impacts greater than those analyzed in the AFC, and no LORS will change as a result of the revised general arrangement. As a result, any potential hazardous materials management impacts associated with this Supplement will be less than significant.

4.13 Waste Management

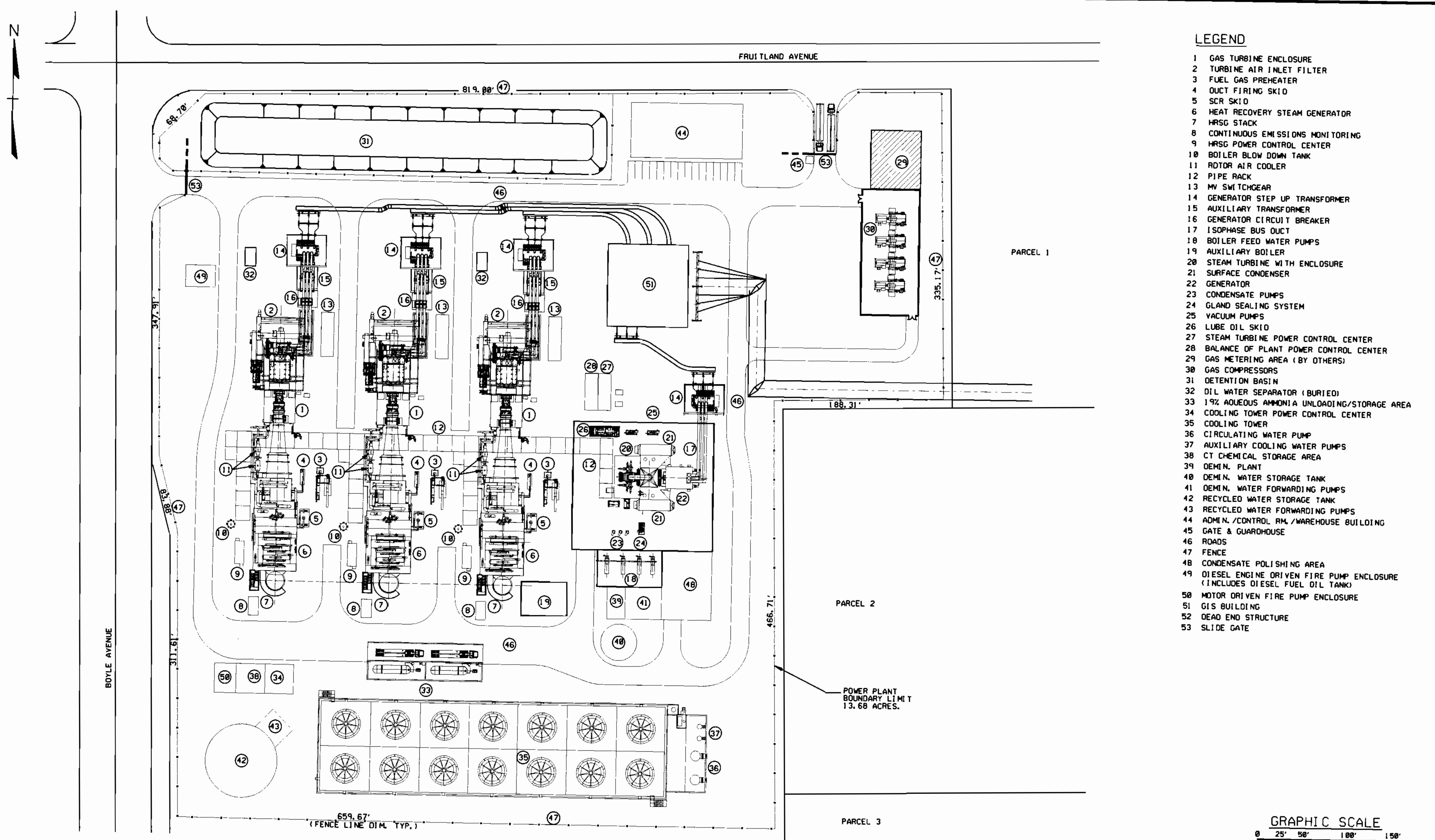
The amount and type of wastes generated by the project will not change as a result of this modification. One minor benefit is that the cooling tower will no longer be located over the TCE plume that is on the north end of the site. The proposed modification will not result in potential impacts greater than those analyzed in the AFC and no LORS will change as a result of the revised general arrangement. As a result, any potential waste management impacts associated with this Supplement will be less than significant.

4.14 Geologic Hazards and Resources

The revised general arrangement will not have any impact on Geological Hazards and Resources. A final geotechnical report will be prepared prior to final engineering design and, with the removal of the Alcoa building, borings can be made in the locations of the heavy equipment. Therefore, the proposed modification will not result in potential impacts greater than those analyzed in the AFC and no LORS will change as a result of the revised general arrangement. As a result, any potential geologic hazard impacts associated with this Supplement will be less than significant.

4.15 Paleontological Resources

The revised general arrangement will not create any paleontological impacts to the site. Therefore, the proposed modification will not result in potential impacts greater than those analyzed in the AFC and no LORS will change as a result of the revised general arrangement. As a result, any potential paleontological resource impacts associated with this Supplement will be less than significant.



Source: Burns and Roe, Dwg. No. M462 Rev. B.

EY052006001SAC figure_C1.ai 09/25/07 afint

FIGURE C-1

REVISED GENERAL ARRANGEMENT
VERNON POWER PLANT
CITY OF VERNON, CALIFORNIA

CH2MHILL

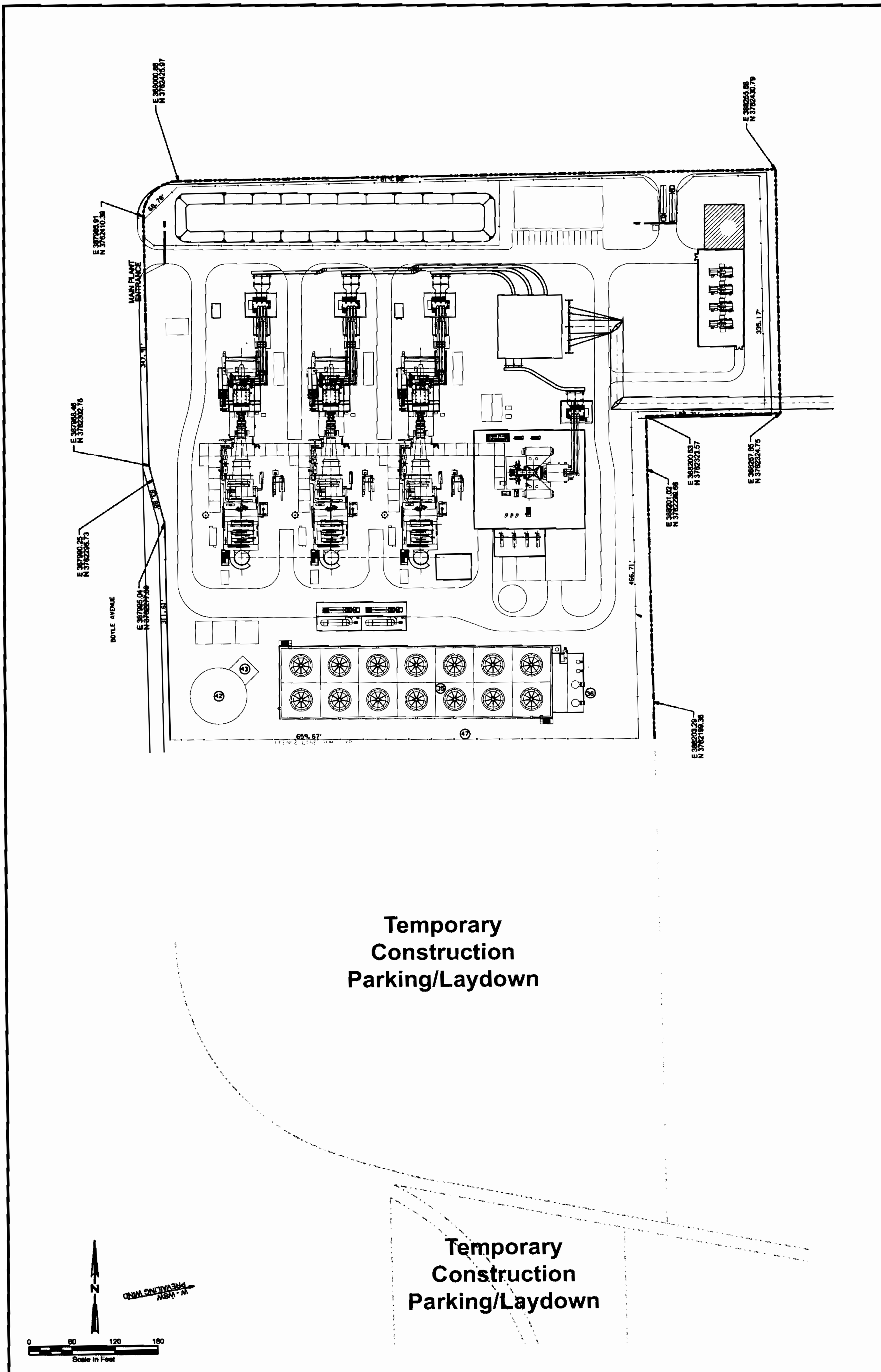


FIGURE C-2
REVISED SITE PLAN
VERNON POWER PLANT
CITY OF VERNON, CALIFORNIA

CH2MHILL

FIGURE C-3
APPEARANCE OF THE SITE AFTER CONSTRUCTION (REVISED)
VERNON POWER PLANT
CITY OF VERNON, CALIFORNIA

CH2MHILL

EY052006001SAC figure_C_3.ai 10/01/06 sbm

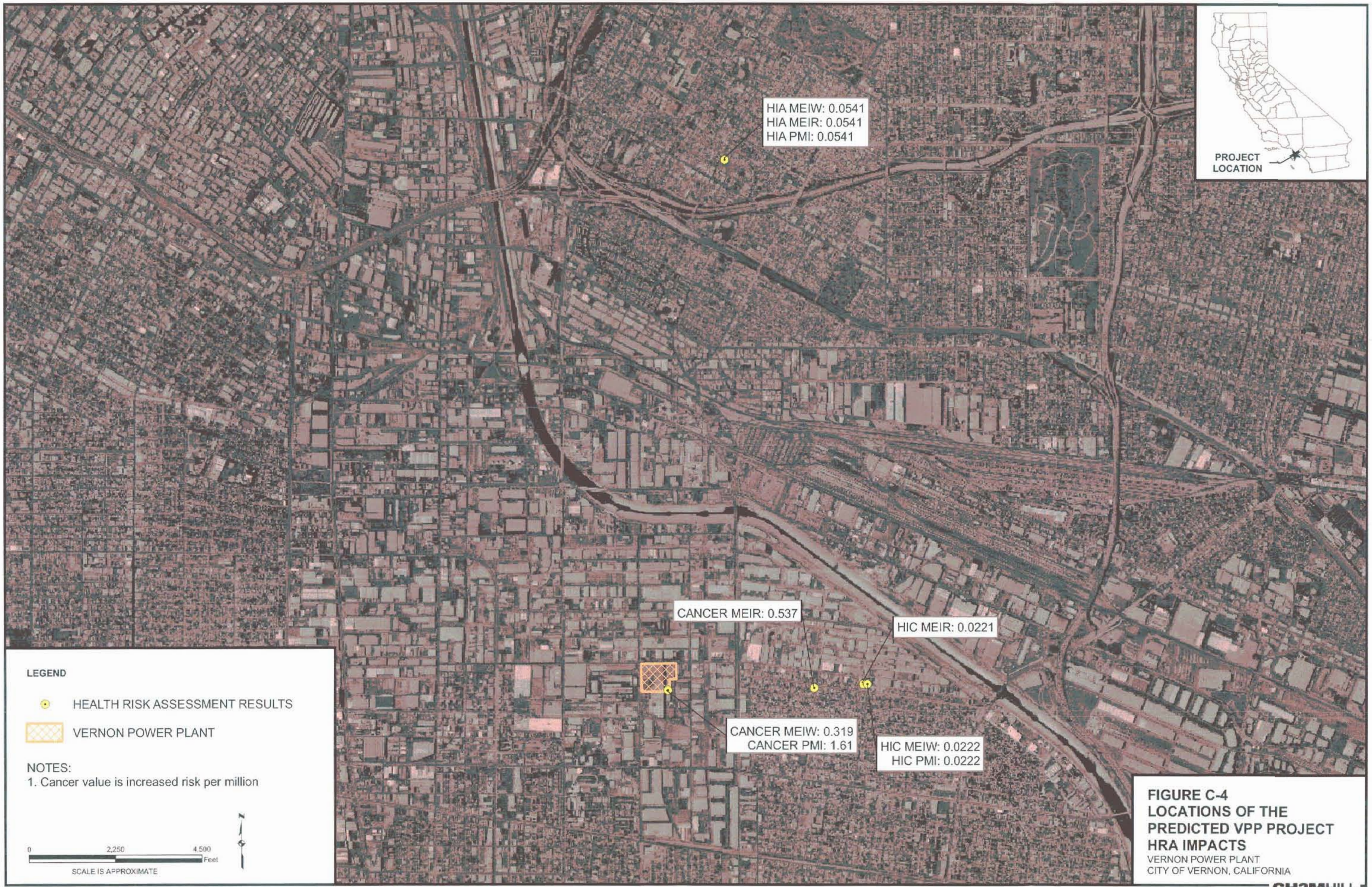


FIGURE C-4
LOCATIONS OF THE PREDICTED VPP PROJECT HRA IMPACTS
VERNON POWER PLANT
CITY OF VERNON, CALIFORNIA

CH2MHILL

RDD \\LOKI\PROJECTS\RDDGIS\VERNON\MXDS\VPP3\VPP3_HEALTH_RISK_FACILITY.MXD 9/14/2007 15:41:33

Key Observation Point-1: Existing Fruitland Avenue residential area view toward the proposed Vernon Power Plant site - looking west along Fruitland Avenue from just west of the westernmost house east of Alcoa Avenue in the City of Vernon.

Note: The former Alocoa aluminum plant has been removed.

FIGURE C-4a
KOP 1
VERNON POWER PLANT
CITY OF VERNON, CALIFORNIA

Key Observation Point - 1: Simulation of Fruitland Avenue residential area view - looking west toward the proposed Vernon Power Plant (after construction).

FIGURE C-5
KOP 1 (SIMULATION)
VERNON POWER PLANT
CITY OF VERNON, CALIFORNIA

CH2MHILL

ATTACHMENT C4.1-A

PSD Letter

USDA United States Department of Agriculture
Forest Service
Angeles National Forest SO
701 N. Santa Anita Ave.
Arcadia, CA 91006-2725
626-574-1613 Voice
800-735-5789 CRS

File Code: 2580
Date: September 17, 2007

Donal O'Callaghan
Director Power & Light Department
City of Vernon
4305 Santa Fe Avenue
Vernon, CA 90058

Dear Mr. O'Callaghan

In response to your September 6, 2007 letter we concur with your assessment concerning potential changes to the air quality affecting the U.S. Forest Service Class I managed areas created by movement of the cooling towers for the City of Vernon Power Plant, SCAQMD ID # 148533.

We do not believe that the movement of the cooling tower from the northwest corner of the plant property to the southeast corner, a distance of approximately 150 meters, would substantially influence the results of the CALPUFF long distance air quality dispersion modeling already completed. The closest CALPUFF modeled U.S. Forest Service Class I area is the San Gabriel Wilderness which lies 31 km to the north of the proposed plant.

No additional Prevention of Significant Deterioration modeling will be required by us because of this proposed cooling tower relocation.

Please contact Mike McCorison 626-574-5286 if you have any questions.

Sincerely,

Susan R Swinson
for JODY NOIRON
Forest Supervisor

cc: Chandra Bhatt, SCAQMD

Copy. E. Jeesch.
B. Hamrisen.
M. Carrol
L. Nano
J. Canover.
File.

ATTACHMENT C4.1-B

Update to AFC Appendix 8.1C

Commissioning and Operational Dispersion Modeling

Tables and figures presented in the AFC Appendix 8.1C are listed below. Those replaced as part of this Supplement C are noted. The others remain unchanged.

Table 8.1C.1	Stack Parameters for ISCST3 Input (Replaced)
Table 8.1C.2a-b	Building and Tank Parameters for ISCST3 Input (Replaced)
Table 8.1C.3a	Commissioning Modeling Parameters- Screening (Replaced)
Table 8.1C.3b	Commissioning Modeling Results Summary- Screening (Replaced)
Table 8.1C.4a	Operational Modeling Parameters- Screening (Replaced)
Table 8.1C.4b	Operational Modeling Results Summary- Screening (Replaced)
Table 8.1C.5a	Winter Wind Table
Table 8.1C.5b	Spring Wind Table
Table 8.1C.5c	Summer Wind Table
Table 8.1C.5d	Autumn Wind Table
Table 8.1C.5e	Annual Wind Table
Table 8.1C.6	AAQS Summary
Table 8.1C.7	Climatic Data Summaries for Los Angeles Civic Center, CA
Table 8.1C.8	SCAQMD Significance Thresholds
Tables 8.1C.9a-c	Ambient Air Quality Monitoring Summaries, 2003-2005 (SCAQMD)
Figure 8.1C-1	ISC Model Setup (Replaced)

Vernon Power Plant
Table 8.1C.1 Summary Table of Stack Parameters (ISCST3 Input)
Updated 09/06/2007

Source ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elev. (m)	Stack Height (m)	Stack Diam. (m)
1	Gas Turbine A	388110.16	3762066.00	55.47	54.86	6.10
2	Gas Turbine B	388148.56	3762066.00	55.47	54.86	6.10
3	Gas Turbine C	388187.06	3762066.00	55.47	54.86	6.10
4	Cooling tower 1	388136.00	3762020.00	55.47	17.68	9.14
5	Cooling tower 2	388152.31	3762020.00	55.47	17.68	9.14
6	Cooling tower 3	388168.62	3762020.00	55.47	17.68	9.14
7	Cooling tower 4	388184.93	3762020.00	55.47	17.68	9.14
8	Cooling tower 5	388201.24	3762020.00	55.47	17.68	9.14
9	Cooling tower 6	388217.55	3762020.00	55.47	17.68	9.14
10	Cooling tower 7	388233.86	3762020.00	55.47	17.68	9.14
11	Cooling tower 8	388136.00	3762005.75	55.47	17.68	9.14
12	Cooling tower 9	388152.31	3762005.75	55.47	17.68	9.14
13	Cooling tower 10	388168.62	3762005.75	55.47	17.68	9.14
14	Cooling tower 11	388184.93	3762005.75	55.47	17.68	9.14
15	Cooling tower 12	388201.24	3762005.75	55.47	17.68	9.14
16	Cooling tower 13	388217.55	3762005.75	55.47	17.68	9.14
17	Cooling tower 14	388233.86	3762005.75	55.47	17.68	9.14
19	firepumpW	388078.00	3762162.00	55.47	4.88	0.08

*Source 18 (firepumpE) was not included in the revised general arrangement

Vernon Power Plant
Table 8.1C-2a Summary Table of Building Parameters (ISCST3 Input)
Updated 09/06/2007

Building Name	Number of Tiers	Tier Number	Base Elevation (ft)	Tier Height (m)	Tier Height (ft)	Number of Corners	Corner 1 East (X) (m)	Corner 1 North (Y) (m)	Corner 2 East (X) (m)	Corner 2 North (Y) (m)	Corner 3 East (X) (m)	Corner 3 North (Y) (m)	Corner 4 East (X) (m)	Corner 4 North (Y) (m)	Corner 5 East (X) (m)	Corner 5 North (Y) (m)	Corner 6 East (X) (m)	Corner 6 North (Y) (m)	Corner 7 East (X) (m)	Corner 7 North (Y) (m)
A1	1	1	182	6.4	20.9974	4	388104.97	3762118.3	388104.97	3762148.7	388115.63	3762148.7	388115.63	3762118.3						
A2	2	1	182	12.5	41.0105	8	388103.45	3762155.3	388103.45	3762148.1	388106.81	3762140.6	388106.81	3762134.3	388113.51	3762134.3	388113.51	3762140.6	388116.87	3762148.1
A2	*	2	*	21.95	72.0144	4	388103.45	3762155.3	388103.45	3762148.1	388116.87	3762148.1	388116.87	3762155.3						
A5a	1	1	182	28.96	95.0131	4	388103	3762070	388103	3762090.6	388117.64	3762090.6	388117.64	3762070						
A5b	1	1	182	21.34	70.0131	4	388104.25	3762090.5	388104.25	3762100.8	388116.44	3762100.8	388116.44	3762090.5						
A5c	1	1	182	13.72	45.0131	4	388108.34	3762118.3	388106.33	3762100.9	388114.03	3762100.9	388112.02	3762118.3						
27/28	1	1	182	3.05	10.0066	4	388214.22	3762125	388214.22	3762137.2	388222.91	3762137.2	388222.91	3762125						
50A	1	1	182	3.66	12.0079	4	388090.22	3762028.8	388090.16	3762038.5	388097.56	3762038.5	388097.56	3762028.8						
50B	1	1	182	3.66	12.0079	4	388077.72	3762162.3	388077.72	3762169.9	388087.45	3762169.9	388087.45	3762162.3						
35	1	1	182	14.63	47.9987	4	388126.31	3761997.3	388126.31	3762028.9	388243.49	3762028.9	388243.49	3761997.3						
38/39	1	1	182	3.66	12.0079	4	388222.19	3762055.5	388222.19	3762066	388228.34	3762066	388228.34	3762055.5						
51	1	1	182	7.62	25	4	388220.41	3762152.5	388220.41	3762180	388247.91	3762180	388247.91	3762152.5						
18	1	1	182	6.1	20.0131	4	388218.59	3762066.3	388218.59	3762078.5	388240.69	3762078.5	388240.69	3762066.3						
44	1	1	182	6.1	20.0131	4	388227.38	3762208.3	388227.38	3762226	388265.82	3762226	388265.82	3762208.3						
B1	1	1	182	6.4	20.9974	4	388143.71	3762118.3	388143.71	3762148.7	388154.37	3762148.7	388154.37	3762118.3						
B2	2	1	182	12.5	41.0105	8	388142.15	3762155.3	388142.15	3762148.1	388145.51	3762140.6	388145.51	3762134.3	388152.21	3762134.3	388152.21	3762140.6	388155.57	3762148.1
B2	*	2	*	21.95	72.0144	4	388142.15	3762155.3	388142.15	3762148.1	388155.57	3762148.1	388155.57	3762155.3						
B5a	1	1	182	28.96	95.0131	4	388141	3762070	388141	3762090.6	388155.64	3762090.6	388155.64	3762070						
B5b	1	1	182	21.34	70.0131	4	388142.18	3762090.5	388142.18	3762100.8	388154.38	3762100.8	388154.38	3762090.5						
B5c	1	1	182	13.72	45.0131	4	388147.15	3762118.3	388145.15	3762100.9	388152.75	3762100.9	388150.75	3762118.3						
C1	1	1	182	6.4	20.9974	4	388182.41	3762118.3	388182.41	3762148.7	388193.07	3762148.7	388193.07	3762118.3						
C2	2	1	182	12.5	41.0105	8	388180.69	3762155.3	388180.69	3762148.1	388184.05	3762140.6	388184.05	3762134.3	388190.75	3762134.3	388190.75	3762140.6	388194.11	3762148.1
C2	*	2	*	21.95	72.0144	4	388180.69	3762155.3	388180.69	3762148.1	388194.11	3762148.1	388194.11	3762155.3						
C5a	1	1	182	28.96	95.0131	4	388179.5	3762070	388179.5	3762090.6	388194.14	3762090.6	388194.14	3762070						
C5b	1	1	182	21.34	70.0131	4	388181.25	3762090.5	388181.25	3762100.8	388193.45	3762100.8	388193.45	3762090.5						
C5c	1	1	182	13.72	45.0131	4	388185.95	3762118.3	388183.95	3762100.9	388191.57	3762100.9	388189.57	3762118.3						
out-1	1	1	180.12	13.72	45.0131	10	388359.22	3762207	388359.22	3762166.3	388399.94	3762166.3	388399.94	3762155.8	386425.06	3762155.8	388425.06	3762166.3	388436.34	3762166.3
out-2	1	1	178.15	13.72	45.0131	8	388303.75	3762099.5	388346.22	3762099.5	388346.22	3762084	388407.75	3762084	388406.88	3762099.5	388451.94	3762099.5	388452.81	3762019.8
out-3	1	1	175.85	13.72	45.0131	8	388303.75	3761979	388337.53	3761979	388337.53	3761965.3	388408.59	3761965.3	388408.59	3761980.8	388452.81	3761980.8	388453.69	3761879.3
out-4	1	1	173.88	13.72	45.0131	9	388307.59	3761838	388306.81	3761784.3	388448.53	3761755.3	388455.53	3761756.3	388454	3761840.3	388411.16	3761840.3	388411.16	3761824.8
out-5	1	1	171.92	13.72	45.0131	15	388290.47	3761749.3	388326.28	3761750	388439.97	3761727.3	388439.97	3761695.5	388434.53	3761695.5	388434.53	3761669.8	388429.06	3761669.8
out-6	1	1	173.23	13.72	45.0131	10	388105.94	3761799	388134.75	3761793.5	388149.53	3761788	388162.78	3761781.8	388164.34	3761652.5	388105.94	3761653.3	388105.94	3761673.5
out-7	1.	1	175.85	13.72	45.0131	16	387952.38	3761888	387952.03	3761863.8	387948.38	3781864	387949.03	3761822.8	388004.91	3761823	388004.91	3761817.8	388045.5	3761818.8
out-8	1	1	176.84	13.72	45.0131	10	387948.38	3761918.3	388029.53	3761918.5	388029.53	3761914.5	388036.19	3761914.5	388036.19	3761909	388042.16	3761908.5	388042.16	3761895
out-9	1	1	180.12	13.72	45.0131	5	388012.44	3762125	388013.63	3762065.5	388013.63	3762057	388039.81	3762057.3	388039.22	3762125.5				
out-11	1	1	185.04	13.72	45.0131	13	387962.22	3762320.3	387962.22	3762249.5	387999.81	3762249	387999.81	3762266.5	388006.88	3762266.5	388006.88	3762251.8	388044.47	3762252.3
out-12	1	1	183.07	13.72	45.0131	10	388075.5	3782324.8	388076.06	3762274.5	388115.28	3762275	388115.28	3762260.5	388122.91	3762260.5	388122.91	3762255.5	388143.03	3762257.3
out-13	1	1	182.74	13.72	45.0131	5	388184.97	3762336.3	388185.53	3762267.5	388235.63	3762268	388235.63	3762330.8	388196.97	3762336.3				
out-14	1	1	182.09	13.72	45.0131	11	388255.38	3762331.3	388256.47	3762268.5	388320.75	3762268.5	388320.75	3762281.8	388327.28	3762281.8	388327.28	3762286.5	388348.5	3762286
out-10	1	1	178.48	13.72	45.0131	4	388000.66	3762140.8	387761.63	3762139.8	387761.63	3762003.5	388002.41	3762003.5						
20/21/22	1	1	181.99	22.86	75	4	388210.03	3762078.5	388210.03	3762121	388257.94	3762121	388257.94	3762078.3						

Vernon Power Plant
Table 8.1C-2a Summary Table of Building Parameters (ISCST3 Input)
Updated 09/06/2007

Building Name	Corner 8 East (X) (m)	Corner 8 North (Y) (m)	Corner 9 East (X) (m)	Corner 9 North (Y) (m)	Corner 10 East (X) (m)	Corner 10 North (Y) (m)	Corner 11 East (X) (m)	Corner 11 North (Y) (m)	Corner 12 East (X) (m)	Corner 12 North (Y) (m)	Corner 13 East (X) (m)	Corner 13 North (Y) (m)	Corner 14 East (X) (m)	Corner 14 North (Y) (m)	Corner 15 East (X) (m)	Corner 15 North (Y) (m)	Corner 16 East (X) (m)	Corner 16 North (Y) (m)
A1																		
A2	388116.87	3762155.3																
A2																		
A5a																		
A5b																		
A5c																		
27/28																		
50A																		
50B																		
35																		
38/39																		
51																		
18																		
44																		
B1																		
B2	388155.57	3762155.3																
B2																		
B5a																		
B5b																		
B5c																		
C1																		
C2	388194.11	3762155.3																
C2																		
C5a																		
C5b																		
C5c																		
out-1	388436.34	3762228.8	388367.88	3762228.8	388367.88	3762208.8												
out-2	388303.75	3762019																
out-3	388304.63	3761877.8																
out-4	388350.44	3761824.8	388350.44	3761838.8														
out-5	388429.06	3761667.3	388422.06	3761667.3	388421.28	3761665	388408.81	3761665	388408.81	3761680.5	388330.19	3761679.8	388330.97	3761662.8	388291.25	3761662.8		
out-6	388098.59	3761874.5	388095.81	3761769.5	388105.94	3761769.5												
out-7	388045.5	3761829.8	388042.16	3761829.8	388042.16	3761854	388038.5	3761854	388038.5	3761856.3	387983.97	3761856.3	387983.63	3761863.3	388008.25	3761863	388007.91	3761888.3
out-8	388029.53	3761895	388029.19	3761901	387948.72	3761900												
out-9																		
out-11	388045	3762325.3	388005.25	3762325.3	388005.25	3762315.5	387976.94	3762315.5	387976.94	3762322	387961.69	3762321.5						
out-12	388141.97	3762331.3	388120.72	3762331.3	388120.72	3762325.8												
out-13																		
out-14	388348.5	3762317.5	388320.19	3762317.5	388319.66	3762332.3	388254.28	3762331.8										
out-10																		
20/21/22																		

Vernon Power Plant
Table 8.1C.2b Summary Table of Tank Parameters (ISCST3 Input)
Updated 09/06/2007

	Base Elevation (ft)	Center East, X (m)	Center North, Y (m)	Tank Height (m)	Tank Height (ft)	Tank Diameter (m)
Raw Water	55.47	388099.8	3762007	13.716	45	24.384
Demin Water	55.47	388226.4	3762048	9.144	30	12.192

Table 8.1C.3a Commissioning Modeling Parameters-Screening

Updated 09/06/2007

	Scenario Per Turbine	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)	SO_2 (lb/hr)	PM_{10} (lb/hr)	Velocity (m/s)	Temperature (K)
24-Hour	**CTG Testing (Full Speed No Load, FSNL)**	14.41	95.92	40.24	0.08	3.06	9.43	359.26
	CTG Testing @ 40% Load	21.56	13.38	28.11	0.21	3.48	11.28	359.26
	Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load	69.34	132.12	35.20	0.25	4.53	9.58	359.26
	Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load	23.01	15.92	6.37	0.36	4.00	12.38	359.26
	Establish Vacuum, HRSG Tuning, BOP Tuning / Establish Vacuum, BOP Tuning / CTG Load Test & Bypass Valve Tuning	29.94	16.69	7.71	0.48	5.34	12.38	359.26
	CTG Load Test & Bypass Valve Tuning, Live Safety Valve Testing	27.31	13.04	3.28	0.44	4.00	14.79	360.37
	CTG Load Test, Bypass Value Tuning (100%) and CTG Baseload, Commissioning of Ammonia System	35.50	14.71	3.87	0.58	4.32	19.04	367.59
	Bypass Operation, STG Initial Roll & Trip Test	10.73	15.53	5.70	0.29	3.34	12.38	359.26
	Bypass Operation, STG Load Test	15.35	16.69	7.71	0.48	5.34	12.38	359.26
	CTG on Bypass, STG Load Test	22.95	15.05	4.31	0.78	5.78	19.04	367.59
	STG Load Test, Combined Cycle, Combined Cycle Testing	33.22	15.74	5.21	1.19	8.69	19.04	367.59
	Commissioning Duct Burners	11.24	18.35	5.24	0.61	5.73	18.20	364.82
	Emissions Tuning	17.82	14.71	3.87	0.58	4.32	19.04	367.59
	Cal ISO Certification	10.40	17.86	3.88	0.54	4.89	19.04	367.59
	RATA, Pre-performance Testing, Source Testing, Drift testing and CAL ISO Certification with DB	11.24	18.35	5.24	0.61	5.73	18.20	364.82
	Performance Testing	17.70	22.31	5.23	1.11	9.89	19.04	367.59
	Performance Testing with DB	19.49	23.35	8.14	1.26	11.68	18.20	364.82
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load); CTG Testing (Full Speed No Load, FSNL)	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	9.43 9.58	359.26 359.26
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load); CTG Testing @ 40% Load	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	11.28 12.38	359.26 359.26
	Combination Scenario- STG Load Test, Combined Cycle, Combined Cycle Testing; Bypass Operation, STG Load Test	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	19.04	367.59
	Combination Scenario- CTG on Bypass, STG Load Test; Bypass Operation, STG Load Test	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	19.04 12.38	367.59 359.26

Table 8.1C.3a Commissioning Modeling Parameters-Screening

Updated 09/06/2007

	Scenario Per Turbine	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)	SO_2 (lb/hr)	PM_{10} (lb/hr)	Velocity (m/s)	Temperature (K)
8-Hour	**CTG Testing (Full Speed No Load, FSNL)**	43.23	287.76	120.71	0.24	9.17	9.43	359.26
	CTG Testing @ 40% Load	64.67	40.15	84.34	0.63	10.44	11.28	359.26
	Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load	142.13	269.47	70.43	0.51	9.13	9.58	359.26
	1) Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load) **2) Establish Vacuum, HRSG Tuning, BOP Tuning / Establish Vacuum, BOP Tuning / CTG Load Test & Bypass Valve Tuning**	48.76	45.44	15.10	0.73	8.09	12.38	359.26
	CTG Load Test & Bypass Valve Tuning, Live Safety Valve Testing	56.62	38.34	8.83	0.92	8.07	14.79	360.37
	CTG Load Test, Bypass Value Tuning (100%) and CTG Baseload, Commissioning of Ammonia System	73.28	43.10	10.26	1.22	8.72	19.04	367.59
	1) Bypass Operation, STG Initial Roll & Trip Test **2) Bypass Operation, STG Load Test**	27.58	45.44	15.10	0.73	8.09	12.38	359.26
	1) CTG on Bypass, STG Load Test **2) STG Load Test, Combined Cycle, Combined Cycle Testing** **3) Emissions Tuning**	38.27	43.10	10.26	1.22	8.72	19.04	367.59
	Commissioning Duct Burners	18.75	49.64	12.83	1.30	11.90	18.20	364.82
	1) Cal ISO Certification **2) Performance Testing**	23.91	49.13	10.28	1.14	10.00	19.04	367.59
	1) RATA, Pre-performance Testing, Source Testing, Drift testing and CAL ISO Certification with DB **2) Performance Testing with DB**	25.47	50.04	12.83	1.30	11.90	18.20	364.82
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load); CTG Testing (Full Speed No Load, FSNL)	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	9.43 9.58	359.26 359.26
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load); CTG Testing @ 40% Load	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	11.28 12.38	359.26 359.26
	Combination Scenario- CTG on Bypass, STG Load Test; Bypass Operation, STG Load Test	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	19.04 12.38	367.59 359.26

Table 8.1C.3a Commissioning Modeling Parameters-Screening

Updated 09/06/2007

	Scenario Per Turbine	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)	SO_2 (lb/hr)	PM_{10} (lb/hr)	Velocity (m/s)	Temperature (K)
3-Hour	**CTG Testing (Full Speed No Load, FSNL)**	43.80	311.12	121.89	0.24	9.28	9.43	359.26
	CTG Testing @ 40% Load	73.55	102.51	85.15	0.65	10.68	9.58	359.26
	Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load	142.13	295.63	70.63	0.51	9.14	9.49	359.26
	1) Establish Vacuum, HRSG Tuning, BOP Tuning / Establish Vacuum, BOP Tuning / CTG Load Test & Bypass Valve Tuning							
	2) Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load)	60.77	113.46	26.88	0.73	8.23	9.58	359.26
	CTG Load Test & Bypass Valve Tuning, Live Safety Valve Testing	63.67	99.65	20.16	0.92	8.18	9.58	359.26
	CTG Load Test, Bypass Value Tuning (100%) and CTG Baseload, Commissioning of Ammonia System	79.95	111.50	22.90	1.22	8.72	9.58	359.26
	1) Bypass Operation, STG Initial Roll & Trip Test							
	2) Bypass Operation, STG Load Test	42.77	113.46	26.88	0.73	8.23	9.58	359.26
	1) CTG on Bypass, STG Load Test							
	2) STG Load Test, Combined Cycle, Combined Cycle Testing							
	3) Emissions Tuning	50.74	111.50	22.90	1.22	8.72	9.58	359.26
	Commissioning Duct Burners	37.79	115.71	24.56	1.30	11.90	9.58	359.26
	1) Cal ISO Certification							
	2) Performance Testing	39.42	116.18	22.92	1.14	10.00	9.58	359.26
	1) RATA, Pre-performance Testing, Source Testing, Drift testing and CAL ISO Certification with DB							
	2) Performance Testing with DB	40.42	116.76	24.56	1.30	11.90	9.58	359.26
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load); CTG Testing (Full Speed No Load, FSNL)	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	9.43	359.26
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load); CTG Testing @ 40% Load	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	9.58	359.26
	Combination Scenario- CTG on Bypass, STG Load Test; Bypass Operation, STG Load Test	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	9.58	359.26

Table 8.1C.3a Commissioning Modeling Parameters-Screening

Updated 09/06/2007

	Scenario Per Turbine	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)	SO_2 (lb/hr)	PM_{10} (lb/hr)	Velocity (m/s)	Temperature (K)
1-Hour	**CTG Testing (Full Speed No Load, FSNL)**	43.80	385.87	121.89	0.24	9.28	9.43	359.26
	CTG Testing @ 40% Load	98.25	302.05	85.15	0.65	10.68	9.58	359.26
	Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load	142.13	379.32	71.28	0.51	9.16	9.49	359.26
	1) Establish Vacuum, HRSG Tuning, BOP Tuning / Establish Vacuum, BOP Tuning / CTG Load Test & Bypass Valve Tuning							
	2) Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load)	99.19	331.09	64.59	0.73	8.69	9.58	359.26
	CTG Load Test & Bypass Valve Tuning, Live Safety Valve Testing	86.26	295.45	55.68	0.92	8.53	9.58	359.26
	CTG Load Test, Bypass Value Tuning (100%) and CTG Baseload, Commissioning of Ammonia System	103.74	330.60	63.62	1.22	8.72	9.58	359.26
	1) Bypass Operation, STG Initial Roll & Trip Test							
	2) Bypass Operation, STG Load Test	91.37	331.09	64.59	0.73	8.69	9.58	359.26
	1) Emissions Tuning							
	2) STG Load Test, Combined Cycle, Combined Cycle Testing							
	3) CTG on Bypass, STG Load Test	92.14	330.60	63.62	1.30	11.90	9.58	359.26
	Commissioning Duct Burners	92.14	330.60	63.62	1.22	8.72	9.58	359.26
	1)Performance Testing							
	2) Cal ISO Certification	90.27	331.49	63.62	1.14	10.00	9.58	359.26
	1)Perfromance Testing with DB							
	2) RATA, Pre-performance Testing, Source Testing, Drift testing and CAL ISO Certification with DB	90.27	331.49	63.62	1.30	11.90	9.58	359.26
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load); CTG Testing (Full Speed No Load, FSNL)	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	9.43	359.26
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load); CTG Testing @ 40% Load	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	9.58	359.26
	Combination Scenario- CTG on Bypass, STG Load Test; Bypass Operation, STG Load Test	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	See Individual Scenarios	9.58	359.26

24-Hr and 8-Hr parameters are based on final loading point of commissioning sequenc

1-Hr and 3-Hr parameters are based on the lowest velocity and lowest temperature of commissioning sequenc

Table 8.1C.3b Commissioning Modeling Results Summary- Screening

Updated 09/07/2007

NO_x Results

	Scenario Per Turbine	Unit Emissions: Unit1	Unit2	Unit3	Units 1&2	Units 1&3	Units 2&3	All	NO_x - Scaled to Actual Emissions: Unit1	Unit2	Unit3	Units 1&2	Units 1&3	Units 2&3	All	Scenario Maximum
1-Hour	CTG Testing (Full Speed No Load, FSNL)	3.39969	3.43443	~~3.39283~~					18.7642	18.9559	~~18.7263~~					18.9559
	CTG Testing @ 40% Load	3.38136	3.41590	~~3.37453~~					41.8591	42.2867	~~41.7745~~					42.2867
	Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load)	~~3.39969~~	3.43443	3.39283					~~60.8847~~	61.5068	60.7618					61.5068
	1) Establish Vacuum, HRSG Tuning, BOP Tuning / Establish Vacuum, BOP Tuning / CTG Load Test & Bypass Valve Tuning 2) Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load)	3.38136	3.41590	3.37453					42.2581	42.6897	42.1727					42.6897
	CTG Load Test & Bypass Valve Tuning, Live Safety Valve Testing	3.38136	3.41590	3.37453					36.7495	37.1249	36.6752					37.1249
	CTG Load Test, Bypass Value Tuning (100%) and CTG Baseload, Commissioning of Ammonia System	3.38136	3.41590	3.37453					44.1985	44.6499	44.1092					44.6499
	1) Bypass Operation, STG Initial Roll & Trip Test 2) Bypass Operation, STG Load Test	3.38136			6.79726				38.9276			78.2528				78.2528
	1) Emissions Tuning 2) STG Load Test, Combined Cycle, Combined Cycle Testing 3) CTG on Bypass, STG Load Test	3.38136	3.41590					10.17179	39.2577	39.6587					118.0949	118.0949
	Commissioning Duct Burners							10.17179							118.0949	118.0949
	1)Performance Testing 2) Cal ISO Certification							10.17179							115.6913	115.6913
	1)Perfromance Testing with DB 2) RATA, Pre-performance Testing, Source Testing, Drift testing and CAL ISO Certification with DB	3.38136	3.41590	3.37453			6.79043	10.17179	38.4587	38.8516	38.3810			77.2326	115.6913	115.6913
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load); CTG Testing (Full Speed No Load, FSNL)	3.39969		3.39283		6.79252			60.8847		18.7263		79.6110			79.6110
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load); CTG Testing @ 40% Load	3.38136		3.37453		6.75589			42.2581		41.7745		84.0326			84.0326
	Combination Scenario- CTG on Bypass, STG Load Test; Bypass Operation, STG Load Test	3.38136	3.41590	3.37453				10.17179	39.2577	39.6587	38.8490				118.0949	118.0949

Table 8.1C.3b Commissioning Modeling Results Summary- Screening

Updated 09/07/2007

SO_2 Results

		Unit Emissions							SO_2 - Scaled to Actual Emissions							
	Scenario Per Turbine	Unit1	Unit2	Unit3	Units 1&2	Units 1&3	Units 2&3	All	Unit1	Unit2	Unit3	Units 1&2	Units 1&3	Units 2&3	All	Scenario Maximum
24-Hour	CTG Testing (Full Speed No Load, FSNL)	0.60870	0.61130	~~0.61433~~					0.0062	0.0062	~~0.0062~~					0.0062
	CTG Testing @ 40% Load	0.55895	0.56169	~~0.56426~~					0.0147	0.0148	~~0.0148~~					0.0148
	Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load)	~~0.60486~~	0.60801	0.61100					~~0.0190~~	0.0191	0.0192					0.0192
	Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load)	0.53963	0.54207	0.54435					0.0241	0.0243	0.0244					0.0244
	Establish Vacuum, HRSG Tuning, BOP Tuning / Establish Vacuum, BOP Tuning / CTG Load Test & Bypass Valve Tuning	0.53963	0.54207	0.54435					0.0325	0.0326	0.0327					0.0327
	CTG Load Test & Bypass Valve Tuning, Live Safety Valve Testing	0.47966	0.48134	0.48285					0.0268	0.0269	0.0269					0.0269
	CTG Load Test, Bypass Value Tuning (100%) and CTG Baseload, Commissioning of Ammonia System	0.41156	0.41237	0.41302					0.0298	0.0299	0.0299					0.0299
	Bypass Operation, STG Initial Roll & Trip Test	0.53963							0.0200							0.0200
	Bypass Operation, STG Load Test				1.0817							0.0651				0.0651
	CTG on Bypass, STG Load Test															
	STG Load Test, Combined Cycle, Combined Cycle Testing	0.41156	0.41237	0.41302				1.23695	0.0615	0.0616	0.0617				0.1849	0.1849
	Commissioning Duct Burners	0.42668	0.42767	0.42850				1.28286	0.0329	0.0329	0.0330				0.0988	0.0988
	Emissions Tuning	0.41156	0.41237					1.23695	0.0298	0.0299					0.0896	0.0896
	Cal ISO Certification	0.41156	0.41237	0.41302				1.23695	0.0279	0.0280	0.0280				0.0840	0.0840
	RATA, Pre-performance Testing, Source Testing, Drift testing and CAL ISO Certification with DB	0.42668	0.42767				0.85618	1.28286	0.0329	0.0329				0.0659	0.0988	0.0988
	Performance Testing	0.41156	0.41237	0.41302				1.23695	0.0575	0.0576	0.0577				0.1728	0.1728
	Performance Testing with DB	0.42668	0.42767	0.42850				1.28286	0.0677	0.0679	0.0680				0.2037	0.2037
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load); CTG Testing (Full Speed No Load, FSNL)	0.60486		0.61433		1.22242			0.0190		0.0062		0.0252			0.0252
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load); CTG Testing @ 40% Load	0.53963		0.56426		1.22242			0.02415		0.0148		0.0390			0.0390
	Combination Scenario- STG Load Test, Combined Cycle, Combined Cycle Testing; Bypass Operation, STG Load Test	0.41156	0.41237	0.41302				1.23695	0.06152	0.06165	0.0405				0.1637	0.1637
	Combination Scenario- CTG on Bypass, STG Load Test; Bypass Operation, STG Load Test	0.41156	0.41237	0.54435				1.36828	0.0404	0.0405	0.0327				0.1136	0.1136
3-Hour	CTG Testing (Full Speed No Load, FSNL)	2.81518	2.82118	~~2.77646~~					0.0869	0.0870	~~0.0857~~					0.0870
	CTG Testing @ 40% Load	2.80027	2.80624	~~2.76177~~					0.2295	0.2300	~~0.2264~~					0.2300
	Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load)	~~2.81518~~	2.82118	2.77646					~~0.1812~~	0.1815	0.1787					0.1815
	1) Establish Vacuum, HRSG Tuning, BOP Tuning / Establish Vacuum, BOP Tuning / CTG Load Test & Bypass Valve Tuning															
	2) Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load)	2.80027	2.80624	2.76177					0.2590	0.2595	0.2554					0.2595
	CTG Load Test & Bypass Valve Tuning, Live Safety Valve Testing	2.80027	2.80624	2.76177					0.3263	0.3270	0.3218					0.3270
	CTG Load Test, Bypass Value Tuning (100%) and CTG Baseload, Commissioning of Ammonia System	2.80027	2.80624	2.76177					0.4313	0.4323	0.4254					0.4323
	1) Bypass Operation, STG Initial Roll & Trip Test															
	2) Bypass Operation, STG Load Test	2.80027			5.60652				0.2590			0.5185				0.5185
	1) CTG on Bypass, STG Load Test															
	2) STG Load Test, Combined Cycle, Combined Cycle Testing															
	3) Emissions Tuning	2.80027	2.80624					8.36828	0.4313	0.4323					1.2890	1.2890
	Commissioning Duct Burners							8.36828							1.3751	1.3751
	1) Cal ISO Certification															
	2) Performance Testing							8.36828							1.2020	1.2020
	1) RATA, Pre-performance Testing, Source Testing, Drift testing and CAL ISO Certification with DB															
	2) Performance Testing with DB	2.80027	2.80624	2.76177			5.56801	8.36828	0.4601	0.4611	0.4538			0.9149	1.3751	1.3751
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load); CTG Testing (Full Speed No Load, FSNL)	2.81518		2.77646		5.59163			0.18116		0.08567		0.2668			0.2668
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load); CTG Testing @ 40% Load	2.80027		2.76177		5.56204			0.25896		0.22639		0.4854			0.4854
	Combination Scenario- CTG on Bypass, STG Load Test; Bypass Operation, STG Load Test	2.80027	2.80624	2.76177				8.36828	0.43133	0.43225	0.2554				1.1190	1.1190

Table 8.1C.3b Commissioning Modeling Results Summary- Screening

Updated 09/07/2007

SO_2 Results

		Unit Emissions							SO_2 - Scaled to Actual Emissions							
	Scenario Per Turbine	Unit1	Unit2	Unit3	Units 1&2	Units 1&3	Units 2&3	All	Unit1	Unit2	Unit3	Units 1&2	Units 1&3	Units 2&3	All	Scenario Maximum
1-Hour	CTG Testing (Full Speed No Load, FSNL)	3.39969	3.43443	~~3.39283~~					0.1049	0.1060	~~0.1047~~					0.1060
	CTG Testing @ 40% Load	3.38136	3.41590	~~3.37453~~					0.2772	0.2800	~~0.2766~~					0.2800
	Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load)	~~3.39969~~	3.43443	3.39283					~~0.2188~~	0.2210	0.2183					0.2210
	1) Establish Vacuum, HRSG Tuning, BOP Tuning / Establish Vacuum, BOP Tuning / CTG Load Test & Bypass Valve Tuning															
	2) Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load)	3.38136	3.41590	3.37453					0.3127	0.3159	0.3121					0.3159
	CTG Load Test & Bypass Valve Tuning, Live Safety Valve Testing	3.38136	3.41590	3.37453					0.3940	0.3980	0.3932					0.3980
	CTG Load Test, Bypass Value Tuning (100%) and CTG Baseload, Commissioning of Ammonia System	3.38136	3.41590	3.37453					0.5208	0.5262	0.5198					0.5262
	1) Bypass Operation, STG Initial Roll & Trip Test															
	2) Bypass Operation, STG Load Test	3.38136			6.79726				0.3127			0.6286				0.6286
	1) Emissions Tuning															
	2) STG Load Test, Combined Cycle, Combined Cycle Testing															
	3) CTG on Bypass, STG Load Test	3.38136	3.41590					10.17179	0.5556	0.5613					1.6714	1.6714
	Commissioning Duct Burners							10.17179							1.5668	1.5668
	1)Performance Testing															
	2) Cal ISO Certification							10.17179							1.4611	1.4611
	1)Perfromance Testing with DB															
	2) RATA, Pre-performance Testing, Source Testing, Drift testing and CAL ISO Certification with DB	3.38136	3.41590	3.37453			6.79043	10.17179	0.5556	0.5613	0.5545			1.1158	1.6714	1.6714
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load); CTG Testing (Full Speed No Load, FSNL)	3.39969		3.39283		6.79252			0.2188		0.1047		0.3235			0.3235
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load); CTG Testing @ 40% Load	3.38136		3.37453		6.75589			0.3127		0.2766		0.5893			0.5893
	Combination Scenario- CTG on Bypass, STG Load Test; Bypass Operation, STG Load Test	3.38136	3.41590	3.37453				10.17179	0.5556	0.5613	0.3121				1.6714	1.6714

PM_{10} Results

		Unit Emissions							PM_{10} - Scaled to Actual Emissions							
	Scenario Per Turbine	Unit1	Unit2	Unit3	Units 1&2	Units 1&3	Units 2&3	All	Unit1	Unit2	Unit3	Units 1&2	Units 1&3	Units 2&3	All	Scenario Maximum
24-Hour	CTG Testing (Full Speed No Load, FSNL)	0.60870	0.61130	~~0.61433~~					0.2344	0.2354	~~0.2366~~					0.2354
	CTG Testing @ 40% Load	0.55895	0.56169	~~0.56426~~					0.2450	0.2462	~~0.2473~~					0.2462
	Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load)	~~0.60486~~	0.60801	0.61100					~~0.3452~~	0.3470	0.3487					0.3487
	Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load)	0.53963	0.54207	0.54435					0.2723	0.2735	0.2747					0.2747
	Establish Vacuum, HRSG Tuning, BOP Tuning / Establish Vacuum, BOP Tuning / CTG Load Test & Bypass Valve Tuning	0.53963	0.54207	0.54435					0.3630	0.3646	0.3661					0.3661
	CTG Load Test & Bypass Valve Tuning, Live Safety Valve Testing	0.47966	0.48134	0.48285					0.2416	0.2425	0.2433					0.2433
	CTG Load Test, Bypass Value Tuning (100%) and CTG Baseload, Commissioning of Ammonia System	0.41156	0.41237	0.41302					0.2243	0.2247	0.2251					0.2251
	Bypass Operation, STG Initial Roll & Trip Test	0.53963							0.2270							0.2270
	Bypass Operation, STG Load Test				1.0817							0.7276				0.7276
	CTG on Bypass, STG Load Test															
	STG Load Test, Combined Cycle, Combined Cycle Testing	0.41156	0.41237	0.41302				1.23695	0.4505	0.4514	0.4521				1.3540	1.3540
	Commissioning Duct Burners	0.42668	0.42767	0.42850				1.28286	0.3078	0.3085	0.3091				0.9255	0.9255
	Emissions Tuning	0.41156	0.41237					1.23695	0.2243	0.2247					0.6740	0.6740
	Cal ISO Certification	0.41156	0.41237	0.41302				1.23695	0.2534	0.2539	0.2543				0.7617	0.7617
	RATA, Pre-performance Testing, Source Testing, Drift testing and CAL ISO Certification with DB	0.42668	0.42767				0.85618	1.28286	0.3081	0.3088				0.6181	0.9262	0.9262
	Performance Testing	0.41156	0.41237	0.41302				1.23695	0.5127	0.5137	0.5145				1.5410	1.5410
	Performance Testing with DB	0.42668	0.42767	0.42850				1.28286	0.6279	0.6294	0.6306				1.8880	1.8880
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (25% load); CTG Testing (Full Speed No Load, FSNL)	0.60486		0.61433		1.22242			0.3452		0.2366		0.5817			0.5817
	Combination Scenario- Extended Bypass Blowdown to Condenser/HRSG Tuning (50% load); CTG Testing @ 40% Load	0.53963		0.56426		1.22242			0.27231		0.2473		0.5196			0.5196
	Combination Scenario- STG Load Test, Combined Cycle, Combined Cycle Testing; Bypass Operation, STG Load Test	0.41156	0.41237	0.41302				1.23695	0.45049	0.45138	0.3007				1.2026	1.2026
	Combination Scenario- CTG on Bypass, STG Load Test; Bypass Operation, STG Load Test	0.41156	0.41237	0.54435				1.36828	0.2997	0.3003	0.3964				0.9963	0.9963

24-Hr and 8-Hr parameters are based on final loading point of commissioning sequence

1-Hr and 3-Hr parameters are based on the lowest velocity and lowest temperature of commissioning sequence.

Table 8.1C.4a Operational Turbine Modeling Emissions Summary
Updated 09/06/2007

		Summary of Modeling Operational Emissions [1][2][3]											
Time Period	Scenario	NO_x (lb/hr)	CO (lb/hr)	PM_{10} (lb/hr)	SO_2 [4] (lb/hr)	NO_x (g/s)	CO (g/s)	PM_{10} (g/s)	SO_2 (g/s)	Velocity [5] (m/s)	Velocity [5] (ft/s)	Temperature [5][6] °F	Temperature [5][6] K
Annual	WORST CASE ANNUAL [7]	16.2	14.2	10.8	1.2	2.0	1.8	1.4	0.2	18.20	59.71	197	365
24-Hour	100%Load_35F	16.7	24.0	9.8	1.2	2.1	3.0	1.2	0.2	19.04	62.48	202	368
	70%Load_35F	13.3	21.9	8.0	0.9	1.7	2.8	1.0	0.1	14.79	48.54	189	360
	60%Load_35F	12.2	21.2	8.0	0.8	1.5	2.7	1.0	0.1	13.49	44.25	185	358
	50%Load_35F	11.1	23.2	8.0	0.7	1.4	2.9	1.0	0.1	12.38	40.62	187	359
	100%Load_65F_DB_85%EVAP	17.7	24.5	11.9	1.3	2.2	3.1	1.5	0.2	18.20	59.70	197	365
	100%Load_65F_85%EVAP	16.1	23.6	9.3	1.2	2.0	3.0	1.2	0.1	18.30	60.05	204	369
	100%Load_65F	15.8	23.4	9.2	1.1	2.0	3.0	1.2	0.1	17.95	58.88	202	368
	70%Load_65F	12.6	21.5	8.0	0.9	1.6	2.7	1.0	0.1	14.04	46.05	192	362
	60%Load_65F	11.6	20.9	8.0	0.8	1.5	2.6	1.0	0.1	12.83	42.10	188	360
	50%Load_65F	10.6	22.7	8.0	0.7	1.3	2.9	1.0	0.1	11.88	38.98	193	363
	100%Load_93F_DB_85%EVAP	15.4	23.3	8.9	1.1	1.9	2.9	1.1	0.1	17.56	57.62	203	368
	70%Load_93F	11.8	21.0	8.0	0.8	1.5	2.6	1.0	0.1	13.02	42.71	187	359
	60%Load_93F	10.9	20.4	8.0	0.7	1.4	2.6	1.0	0.1	12.00	39.36	185	358
	50%Load_93F	10.0	22.2	8.0	0.6	1.3	2.8	1.0	0.1	10.95	35.92	192	362
	100%Load_93F_85%EVAP	17.1	24.3	11.5	1.3	2.2	3.1	1.4	0.2	17.46	57.28	196	364
8-Hour	100%Load_35F	nn	53.2	nn	nn	nn	6.7	nn	nn	19.04	62.48	202	368
	70%Load_35F	nn	51.4	nn	nn	nn	6.5	nn	nn	14.79	48.54	189	360
	60%Load_35F	nn	50.9	nn	nn	nn	6.4	nn	nn	13.49	44.25	185	358
	50%Load_35F	nn	52.5	nn	nn	nn	6.6	nn	nn	12.38	40.62	187	359
	100%Load_65F_DB_85%EVAP	nn	53.6	nn	nn	nn	6.8	nn	nn	18.20	59.70	197	365
	100%Load_65F_85%EVAP	nn	52.9	nn	nn	nn	6.7	nn	nn	18.30	60.05	204	369
	100%Load_65F	nn	52.7	nn	nn	nn	6.6	nn	nn	17.95	58.88	202	368
	70%Load_65F	nn	51.1	nn	nn	nn	6.4	nn	nn	14.04	46.05	192	362
	60%Load_65F	nn	50.6	nn	nn	nn	6.4	nn	nn	12.83	42.10	188	360
	50%Load_65F	nn	52.1	nn	nn	nn	6.6	nn	nn	11.88	38.98	193	363
	100%Load_93F_DB_85%EVAP	nn	52.6	nn	nn	nn	6.6	nn	nn	17.56	57.62	203	368
	70%Load_93F	nn	50.7	nn	nn	nn	6.4	nn	nn	13.02	42.71	187	359
	60%Load_93F	nn	50.2	nn	nn	nn	6.3	nn	nn	12.00	39.36	185	358
	50%Load_93F	nn	51.7	nn	nn	nn	6.5	nn	nn	10.95	35.92	192	362
	100%Load_93F_85%EVAP	nn	53.4	nn	nn	nn	6.7	nn	nn	17.46	57.28	196	364

Table 8.1C.4a Operational Turbine Modeling Emissions Summary
Updated 09/06/2007

Summary of Modeling Operational Emissions [1][2][3]													
Time Period	Scenario	NO_x (lb/hr)	CO (lb/hr)	PM_{10} (lb/hr)	SO_2 [4] (lb/hr)	NO_x (g/s)	CO (g/s)	PM_{10} (g/s)	SO_2 (g/s)	Velocity [5] (m/s)	Velocity [5] (ft/s)	Temperature [5][6] °F	Temperature [5][6] K
3-Hour	100%Load_35F	nn	nn	nn	1.22	nn	nn	nn	0.15	19.04	62.48	202	368
	70%Load_35F	nn	nn	nn	0.95	nn	nn	nn	0.12	14.79	48.54	189	360
	60%Load_35F	nn	nn	nn	0.89	nn	nn	nn	0.11	13.49	44.25	185	358
	50%Load_35F	nn	nn	nn	0.83	nn	nn	nn	0.10	12.38	40.62	187	359
	100%Load_65F_DB_85%EVAP	nn	nn	nn	1.30	nn	nn	nn	0.16	18.20	59.70	197	365
	100%Load_65F_85%EVAP	nn	nn	nn	1.16	nn	nn	nn	0.15	18.30	60.05	204	369
	100%Load_65F	nn	nn	nn	1.14	nn	nn	nn	0.14	17.95	58.88	202	368
	70%Load_65F	nn	nn	nn	0.91	nn	nn	nn	0.11	14.04	46.05	192	362
	60%Load_65F	nn	nn	nn	0.85	nn	nn	nn	0.11	12.83	42.10	188	360
	50%Load_65F	nn	nn	nn	0.79	nn	nn	nn	0.10	11.88	38.98	193	363
	100%Load_93F_DB_85%EVAP	nn	nn	nn	1.11	nn	nn	nn	0.14	17.56	57.62	203	368
	70%Load_93F	nn	nn	nn	0.86	nn	nn	nn	0.11	13.02	42.71	187	359
	60%Load_93F	nn	nn	nn	0.81	nn	nn	nn	0.10	12.00	39.36	185	358
	50%Load_93F	nn	nn	nn	0.75	nn	nn	nn	0.09	10.95	35.92	192	362
	100%Load_93F_85%EVAP	nn	nn	nn	1.25	nn	nn	nn	0.16	17.46	57.28	196	364
1-Hour	Warm Start_remainder 35F 100%load	35.0	269	nn	1.01	4.4	33.9	nn	0.13	12.38	40.63	187	359
	Cold Start_remainder 35F 100%load	37.2	279	nn	0.98	4.7	35.2	nn	0.12	12.38	40.63	187	359
	Shut Down_remainder 35F 100%load	25.6	90	nn	0.98	3.2	11.3	nn	0.12	12.38	40.63	187	359
	100%Load_35F	15.4	9.4	nn	1.22	1.9	1.2	nn	0.15	19.04	62.48	202	368
	70%Load_35F	11.7	7.1	nn	0.92	1.5	0.9	nn	0.12	14.79	48.54	189	360
	60%Load_35F	10.5	6.4	nn	0.83	1.3	0.8	nn	0.10	13.49	44.25	185	358
	50%Load_35F	9.3	8.5	nn	0.73	1.2	1.1	nn	0.09	12.38	40.62	187	359
	100%Load_65F_DB_85%EVAP	16.5	10.0	nn	1.30	2.1	1.3	nn	0.16	18.20	59.70	197	365
	100%Load_65F_85%EVAP	14.7	9.0	nn	1.16	1.9	1.1	nn	0.15	18.30	60.05	204	369
	100%Load_65F	14.4	8.8	nn	1.14	1.8	1.1	nn	0.14	17.95	58.88	202	368
	70%Load_65F	10.9	6.7	nn	0.86	1.4	0.8	nn	0.11	14.04	46.05	192	362
	60%Load_65F	9.8	6.0	nn	0.77	1.2	0.8	nn	0.10	12.83	42.10	188	360
	50%Load_65F	8.7	8.0	nn	0.69	1.1	1.0	nn	0.09	11.88	38.98	193	363
	100%Load_93F_DB_85%EVAP	14.0	8.6	nn	1.11	1.8	1.1	nn	0.14	17.56	57.62	203	368
	70%Load_93F	10.0	6.1	nn	0.79	1.3	0.8	nn	0.10	13.02	42.71	187	359
	60%Load_93F	9.0	5.5	nn	0.71	1.1	0.7	nn	0.09	12.00	39.36	185	358
	50%Load_93F	8.1	7.4	nn	0.62	1.0	0.9	nn	0.08	10.95	35.92	192	362
	100%Load_93F_85%EVAP	15.8	9.7	nn	1.25	2.0	1.2	nn	0.16	17.46	57.28	196	364

(1) Source: Siemens Estimated SGT6-5000F Gas Turbine Performance Sheets for 35, 65, 93 F, all dated May 8, 2006. Scenarios with DB are based on maximum
(2) nn: Information not required
(3) Per CTG
(4) SO_2 Emissions using the emission factor 0.6 lb SO_2 per mm cuft natural gas - Source: SCAQMD AER Program
(5) Annual, 24hr, 8hr, and 3hr velocity and temperature parameters are from steady state scenarios. The highest levels of SO_2 emissions occur during the steady state
(6) Source: Siemens Estimated HRSG Exhaust Stack Exit (Tip) Temperatures (F)
(7) Worst case annual determined by 5,000 hours of 65F with Duct Burner and evaporative cooler, 192 starts and 192 stops with the remainder of the yearly hours at 65F

ATTACHMENT C4.1-C

Description of the ISCST3 Modeling Files Included on the CD

TABLE C4.1-C1a
Commissioning Modeling File Structures and Descriptions

Folder/ZIP File Name	File Name Start with	Modeling Scenarios Description
SCREENING	ScreenA	Modeling files for commissioning Scenario A: with stack exhaust temperature of 359.26 K, and exit velocity of 9.43 m/s
	ScreenB	Modeling files for commissioning Scenario B: with stack exhaust temperature of 359.26 K, and exit velocity of 11.28 m/s
	ScreenC	Modeling files for commissioning Scenario C: with stack exhaust temperature of 359.26 K, and exit velocity of 9.58 m/s
	ScreenD	Modeling files for commissioning Scenario D: with stack exhaust temperature of 359.26 K, and exit velocity of 12.38 m/s
	ScreenE	Modeling files for commissioning Scenario E: with stack exhaust temperature of 360.37 K, and exit velocity of 14.79 m/s
	ScreenF	Modeling files for commissioning Scenario F: with stack exhaust temperature of 367.59 K, and exit velocity of 19.04 m/s
	ScreenG	Modeling files for commissioning Scenario G: with stack exhaust temperature of 364.82 K, and exit velocity of 18.20 m/s
	ScreenAC	Modeling files for commissioning Scenario AC: with stack exhaust temperature of 359.26 K, and exit velocities of 9.43 m/s and 9.58 m/s
	ScreenBD	Modeling files for commissioning Scenario BD: with stack exhaust temperature of 359.26 K, and exit velocities of 11.28 m/s and 12.38 m/s
	ScreenDF	Modeling files for commissioning Scenario DF: with stack exhaust temperatures of 367.59 K and 359.26 K, and exit velocities of 19.04 m/s and 12.38 m/s
DETAILED	Detailed_DF_1hr_CO	Modeling files for worst case emissions scenario for 1 hr CO
	Detailed_F_1hr_NOx	Modeling files for worst case emissions scenario for 1 hr NOx
	Detailed_F_1hr_SO2	Modeling files for worst case emissions scenario for 1 hr SO2
	Detailed_GI_3Hour_SOX	Modeling files for worst case emissions scenario for 3 hr SOX
	Detailed_Gq_24Hour_PM10	Modeling files for worst case emissions scenario for 24 hr PM10
	Detailed_Gq_24Hour_SOX	Modeling files for worst case emissions scenario for 24 hr SOX
	Detailed_AC_8Hour_CO	Modeling files for worst case emissions scenario for 8 hr CO
MET	Vernon.ASC	1981 SCAQMD MET data for City of Vernon
DEM	—	USGS Digital Elevation Model (DEM) data

TABLE C4.1-C1b
BPIP/ISCST3 Modeling File Descriptions

File Extension	File Descriptions	Note
.PIP	Input file for BPIP (BpipWin.exe) in the standard EPA format.	BPIP File
.SO	Output file from BPIP; contains EPA-format source cards of building heights and widths for each source. Integrated with rest of input data when model input .DTA file is built.	BPIP File
.SUM	BPIP output file, summary form (standard EPA format).	BPIP File
.BND	File contains the boundary information (e.g. fencelines, building and stack names)	ISCST3 File
.DTA	ISCST3 Model input data file (standard EPA format).	ISCST3 File
.LST	Model output list file; contains model tabular output (standard EPA format).	ISCST3 File
.USF	ISCST3 file containing a summary of the model output.	ISCST3 File
.ASC	"ASCII" hourly meteorological data file for ISCST3	MET Data
.DEM	USGS Digital Elevation Model (DEM) data	Terrain Data

TABLE C4.1-C2a
Operational Modeling File Structures and Descriptions
File Structures

Directory Name	ZIP File Name	File Name Start with	Modeling Scenarios Description
SCREENING	Start_Stop	ShutDown	Shut Down Scenario, 35 Degrees F, 100% Load.
		WarmStart	Warm Start Scenario, 35 Degrees F, 100% Load.
	Steady_35	VPP3_35_75_off_Base	35 Degrees F, 75% RH, Evap cooler off, 100% Base load.
		VPP3_35_75_off_70	35 Degrees F, 75% RH, Evap cooler off, 70% load.
		VPP3_35_75_off_60	35 Degrees F, 75% RH, Evap cooler off, 60% load.
		VPP3_35_75_off_50	35 Degrees F, 75% RH, Evap cooler off, 50% load.
	Steady_65	VPP3_65_60_off_Base	65 Degrees F, 60% RH, Evap cooler off, 100% Base load.
		VPP3_65_60_off_70	65 Degrees F, 60% RH, Evap cooler off, 70% load.
		VPP3_65_60_off_60	65 Degrees F, 60% RH, Evap cooler off, 60% load.
		VPP3_65_60_off_50	65 Degrees F, 60% RH, Evap cooler off, 50% load.
		VPP3_65_60_85_Base	65 Degrees F, 60% RH, Evap Cooler 85% efficiency, 100% base load.
		VPP3_65_60_85	65 Degrees F, 60% RH, Evap Cooler 85% efficiency, 100% base load with Duct Burner firing.
	Steady_93	VPP3_93_32_off_70	93 Degrees F, 32% RH, Evap cooler off, 70% load.
		VPP3_93_32_off_60	93 Degrees F, 32% RH, Evap cooler off, 60% load.
		VPP3_93_32_off_50	93 Degrees F, 32% RH, Evap cooler off, 50% load.
		VPP3_93_32_85_BaseDB	93 Degrees F, 32% RH, Evap Cooler 85% efficiency, 100% base load with Duct Burner Firing.
		VPP3_93_32_85_Base	93 Degrees F, 32% RH, Evap Cooler 85% efficiency, 100% base load.

TABLE C4.1-C2a
Operational Modeling File Structures and Descriptions
File Structures

Directory Name	ZIP File Name	File Name Start with	Modeling Scenarios Description
DETAILED	1_Hour	VPP_OP_1Hour_CO	Worst case modeling scenario for 1 hour CO impacts.
		VPP_OP_1Hour_NOx	Worst case modeling scenario for 1 hour NOx impacts.
		VPP_OP_1Hour_SOx	Worst case modeling scenario for 1 hour SOx impacts.
	24_Hour	VPP_OP_24Hour_PM10	Worst case modeling scenario for 24-hour PM10 impacts.
		VPP_OP_24Hour_SOx	Worst case modeling scenario for 24-hour SOx impacts.
	3_Hour	VPP_OP_3Hour_SOx	Worst case modeling scenario for 3-hour SOx impacts.
	8_Hour	VPP_OP_8Hour_CO	Worst case modeling scenario for 8-hour CO impacts.
	Annual	VPP3_OP_Annual_NOx	Worst case modeling scenario for Annual NOx impacts.
		VPP3_OP_Annual_PM10	Worst case modeling scenario for Annual PM10 impacts.
		VPP3_OP_Annual_SOx	Worst case modeling scenario for Annual SOx impacts.
	OLM	OLM_SC_1HOUR_NOx	Worst case modeling scenario for 1 hour NOx impacts using the Ozone Limiting Method.
MET	ISCOLM_DATA	O3FIL.ASC	2002-2004 ozone data for Lynwood station.
		VPP_ALL.ASC	2002 - 2004 MET data for LAX.
	ISCST3_DATA	VERNON.ASC	1981 SCAQMD MET data for City of Vernon.
DEM		—	USGS Digital Elevation Model (DEM) data.

TABLE C4.1-C2b
Modeling File Descriptions

File Extension	File Descriptions
.PIP	Input file for BPIP (BpipWin.exe) in the standard EPA format.
.SO	Output file from BPIP; contains EPA-format source cards of building heights and widths for each source. Integrated with rest of input data when model input .DTA file is built.
.SUM	BPIP output file, summary form (standard EPA format).
.BND	File contains the boundary information (e.g. fencelines, building and stack names)
.DTA	ISCST3 Model input data file (standard EPA format).
.LST	Model output list file; contains model tabular output (standard EPA format).
.USF	ISCST3 file containing a summary of the model output.
.INP	ISCOLM Model input data file
.OUT	ISCOLM Model output data file
.GRF	OISCOLM output graphic file
.ASC	"ASCII" hourly meteorological data file for ISCST3 and ISCOLM
.DEM	USGS Digital Elevation Model (DEM) data

Table 8.1C.4b Operational Modeling Results Summary- Screening
Updated 09/06/2007

Summary of Modeling Operational Emissions (1)(2)(3)

Period	Temp/RH	Scenario	NOx (lb/hr)	CO (lb/hr)	PM10 (lb/hr)	SO2 (4) (lb/hr)	Velocity (6) (m/s)	Velocity (6) (ft/s)	Temperature (5)(6) F	Temperature (5)(6) K	Unit Emissions Unit1	Unit Emissions Unit2	Unit Emissions Unit3	Unit Emissions All
Annual	65 / 60	WORST CASE ANNUAL (7)	16.2	14.2	11	1.2	18.20	59.70	197	365	0.11046	0.11014	0.11025	0.33039
24-hr	35 / 75	100%Load_35F	nn	nn	9.80	1.22	19.04	62.48	202	368	0.41069	0.41149	0.41213	1.23432
	35 / 75	70%Load_35F	nn	nn	8.05	0.93	14.79	48.54	189	360	0.48058	0.48227	0.48379	1.44664
	35 / 75	60%Load_35F	nn	nn	8.05	0.84	13.49	44.25	185	358	0.52502	0.52725	0.52931	1.58158
	35 / 75	50%Load_35F	nn	nn	8.05	0.75	12.38	40.62	187	359	0.54029	0.54274	0.54503	1.62807
	65 / 60	100%Load_65F_DB_85%EVAP	nn	nn	11.90	1.30	18.20	59.70	197	365	0.42628	0.42727	0.42809	1.28164
	65 / 60	100%Load_65F_85%EVAP	nn	nn	9.30	1.16	18.30	60.05	204	369	0.41655	0.41742	0.41813	1.25209
	65 / 60	100%Load_65F	nn	nn	9.20	1.14	17.95	58.88	202	368	0.42254	0.42348	0.42426	1.27028
	65 / 60	70%Load_65F	nn	nn	8.05	0.87	14.04	46.05	192	362	0.48645	0.48822	0.48983	1.46451
	65 / 60	60%Load_65F	nn	nn	8.05	0.78	12.83	42.10	188	360	0.53035	0.53266	0.53480	1.59781
	65 / 60	50%Load_65F	nn	nn	8.05	0.70	11.88	38.98	193	363	0.53902	0.54146	0.54373	1.62422
	93 / 32	100%Load_93F_DB_85%EVAP	nn	nn	8.90	1.11	17.56	57.62	203	368	0.42698	0.42797	0.42881	1.28376
	93 / 32	70%Load_93F	nn	nn	8.05	0.80	13.02	42.71	187	359	0.52982	0.53212	0.53425	1.59619
	93 / 32	60%Load_93F	nn	nn	8.05	0.73	12.00	39.36	185	358	0.54933	0.55192	0.55435	1.65560
	93 / 32	50%Load_93F	nn	nn	8.05	0.64	10.95	35.92	192	362	0.55834	0.56107	0.56364	1.68305
	93 / 32	100%Load_93F_85%EVAP	nn	nn	11.50	1.25	17.46	57.28	196	364	0.43696	0.43808	0.43903	1.31407
8-Hour	35 / 75	100%Load_35F	nn	53.16	nn	nn	19.04	62.48	202	368	0.76528	0.76544	0.75247	2.28318
	35 / 75	70%Load_35F	nn	51.43	nn	nn	14.79	48.54	189	360	0.89263	0.89283	0.87766	2.66312
	35 / 75	60%Load_35F	nn	50.91	nn	nn	13.49	44.25	185	358	0.93555	0.93577	0.91985	2.79117
	35 / 75	50%Load_35F	nn	52.48	nn	nn	12.38	40.62	187	359	0.96338	0.96362	0.94722	2.87422
	65 / 60	100%Load_65F_DB_65%EVAP	nn	53.61	nn	nn	18.20	59.70	197	365	0.79376	0.79393	0.78046	2.36815
	65 / 60	100%Load_65F_85%EVAP	nn	52.86	nn	nn	18.30	60.05	204	369	0.77679	0.77695	0.76379	2.31753
	65 / 60	100%Load_65F	nn	52.71	nn	nn	17.95	58.88	202	368	0.78781	0.78797	0.77461	2.35039
	65 / 60	70%Load_65F	nn	51.13	nn	nn	14.04	46.05	192	362	0.90421	0.90442	0.88905	2.69767
	65 / 60	60%Load_65F	nn	50.61	nn	nn	12.83	42.10	188	360	0.94603	0.94626	0.93016	2.82246
	65 / 60	50%Load_65F	nn	52.11	nn	nn	11.88	38.98	193	383	0.96281	0.96305	0.94666	2.87252
	93 / 32	100%Load_93F_DB_85%EVAP	nn	52.56	nn	nn	17.56	57.62	203	368	0.79820	0.79637	0.78287	2.37544
	93 / 32	70%Load_93F	nn	50.68	nn	nn	13.02	42.71	187	359	0.94483	0.94486	0.92879	2.81829
	93 / 32	60%Load_93F	nn	50.23	nn	nn	12.00	39.36	185	358	0.97903	0.97927	0.96260	2.92090
	93 / 32	50%Load_93F	nn	51.66	nn	nn	10.95	35.92	192	362	0.99670	0.99695	0.97998	2.97363
	93 / 32	100%Load_93F_85%EVAP	nn	53.38	nn	nn	17.46	57.28	196	364	0.81348	0.81366	0.79986	2.42700
3-Hour	35 / 75	100%Load_35F	nn	nn	nn	1.22	19.04	62.48	202	368	2.02935	2.03377	2.00189	6.06502
	35 / 75	70%Load_35F	nn	nn	nn	0.95	14.79	48.54	189	360	2.36744	2.37254	2.33514	7.07512
	35 / 75	60%Load_35F	nn	nn	nn	0.89	13.49	44.25	185	358	2.48139	2.48672	2.44746	7.41557
	35 / 75	50%Load_35F	nn	nn	nn	0.83	12.38	40.62	187	359	2.55529	2.56077	2.52031	7.63638
	65 / 60	100%Load_65F_DB_85%EVAP	nn	nn	nn	1.30	18.20	59.70	197	365	2.10496	2.10953	2.07642	6.29091
	65 / 60	100%Load_65F_85%EVAP	nn	nn	nn	1.16	18.30	60.05	204	369	2.05991	2.06440	2.03202	6.15633
	65 / 60	100%Load_65F	nn	nn	nn	1.14	17.95	58.88	202	368	2.08915	2.09370	2.06085	6.24370
	65 / 60	70%Load_65F	nn	nn	nn	0.91	14.04	46.05	192	362	2.39818	2.40335	2.36545	7.16698
	65 / 60	60%Load_65F	nn	nn	nn	0.85	12.83	42.10	188	360	2.50923	2.51462	2.47491	7.49875
	65 / 60	50%Load_65F	nn	nn	nn	0.8	11.88	38.98	193	363	2.55378	2.55926	2.51883	7.63187
	93 / 32	100%Load_93F_DB_85%EVAP	nn	nn	nn	1.1	17.56	57.62	203	368	2.11144	2.11603	2.08282	6.31029
	93 / 32	70%Load_93F	nn	nn	nn	0.9	13.02	42.71	187	359	2.50552	2.51090	2.47125	7.48766
	93 / 32	60%Load_93F	nn	nn	nn	0.8	12.00	39.36	185	358	2.59683	2.60240	2.56125	7.76048
	93 / 32	50%Load_93F	nn	nn	nn	0.7	10.95	35.92	192	362	2.64376	2.64942	2.60752	7.90070
	93 / 32	100%Load_93F_85%EVAP	nn	nn	nn	1.3	17.46	57.28	196	364	2.15732	2.16200	2.12803	6.44735
1-Hour		Warm Start_remainder 35F 100%lo	35.0	269	nn	1.0	12.38	40.63	187	359	3.08949	3.11551	3.08661	9.28538
		Cold Start_remainder 35F 100%loa	37.2	279	nn	1.0	12.38	40.63	187	359	3.08949	3.11551	3.08661	9.28538
		Shut Down_remainder 35F 100%lo	25.6	89.7	nn	1.0	12.38	40.63	187	359	3.08949	3.11551	3.08661	9.28538
	35 / 75	100%Load_35F	15.4	9.4	nn	1.2	19.04	62.48	202	368	2.51792	2.52361	2.50894	7.52562
	35 / 75	70%Load_35F	11.7	7.1	nn	0.9	14.79	48.54	189	360	2.89127	2.90566	2.87905	8.66007
	35 / 75	60%Load_35F	10.5	8.4	nn	0.8	13.49	44.25	185	358	3.01361	3.03819	3.00993	9.05499
	35 / 75	50%Load_35F	9.3	8.5	nn	0.7	12.38	40.62	187	359	3.09311	3.11917	3.09020	9.29629
	65 / 60	100%Load_65F_DB_85%EVAP	16.5	10.0	nn	1.3	18.20	59.70	197	365	2.60409	2.61009	2.59235	7.78345
	65 / 60	100%Load_65F_85%EVAP	14.7	9.0	nn	1.2	18.30	60.05	204	369	2.54969	2.55550	2.53971	7.62068
	65 / 60	100%Load_65F	14.4	8.8	nn	1.1	17.95	58.88	202	368	2.58270	2.58862	2.57165	7.71944
	65 / 60	70%Load_65F	10.9	6.7	nn	0.9	14.04	46.05	192	362	2.92028	2.93671	2.91003	8.75259
	65 / 60	60%Load_65F	9.8	6.0	nn	0.8	12.83	42.10	188	360	3.04003	3.06558	3.03731	9.13662
	65 / 60	50%Load_65F	8.7	8.0	nn	0.7	11.88	38.98	193	363	3.08422	3.11019	3.08161	9.26954
	93 / 32	100%Load_93F_DB_85%EVAP	14.0	8.6	nn	1.1	17.56	57.62	203	368	2.60675	2.61275	2.59492	7.79139
	93 / 32	70%Load_93F	10.0	6.1	nn	0.8	13.02	42.71	187	359	3.03780	3.06333	3.03495	9.12990
	93 / 32	60%Load_93F	9.0	5.5	nn	0.7	12.00	39.38	185	358	3.14108	3.16759	3.13798	9.44057
	93 / 32	50%Load_93F	8.1	7.4	nn	0.6	10.95	35.92	192	362	3.18565	3.21458	3.18301	9.57467
	93 / 32	100%Load_93F_85%EVAP	15.8	9.7	nn	1.3	17.46	57.28	196	364	2.66192	2.66811	2.64825	7.95645

Period	Temp/RH	Scenario	NOx Actual Emissions Unit1	NOx Unit2	NOx Unit3	NOx All	CO Actual Emissions Unit1	CO Unit2	CO Unit3	CO All	PM10 Actual Emissions Unit1	PM10 Unit2	PM10 Unit3	PM10 All	SO2 Actual Emissions Unit1	SO2 Unit2	SO2 Unit3	SO2 All
Annual	65 / 60	WORST CASE ANNUAL (7)	0.22510	0.22445	0.22467	0.67329					0.14978	0.14934	0.14949	0.44799	0.01723	0.01718	0.01720	0.05154
24-hr	35 / 75	100%Load_35F									0.50712	0.50811	0.50890	1.52414	0.06326	0.06338	0.06348	0.19012
	35 / 75	70%Load_35F									0.48728	0.48900	0.49054	1.46682	0.05620	0.05640	0.05658	0.16918
	35 / 75	60%Load_35F									0.53234	0.53461	0.53669	1.60364	0.05526	0.05549	0.05571	0.16646
	35 / 75	50%Load_35F									0.54783	0.55031	0.55263	1.65078	0.05074	0.05097	0.05119	0.15291
	65 / 60	100%Load_65F_DB_85%EVAP									0.63916	0.64065	0.64188	1.92169	0.07005	0.07021	0.07034	0.21060
	65 / 60	100%Load_65F_85%EVAP									0.48811	0.48913	0.48996	1.46720	0.08098	0.06111	0.06121	0.18330
	65 / 60	100%Load_65F									0.48981	0.49090	0.49180	1.47251	0.06052	0.06066	0.06077	0.18196
	65 / 60	70%Load_65F									0.49324	0.49503	0.49666	1.48494	0.05320	0.05339	0.05357	0.16017
	65 / 60	60%Load_65F									0.53775	0.54009	0.54226	1.62010	0.05233	0.05256	0.05277	0.15766
	65 / 60	50%Load_65F									0.54654	0.54901	0.55132	1.64688	0.04762	0.04764	0.04804	0.14350
	93 / 32	100%Load_93F_DB_85%EVAP									0.47904	0.48015	0.48109	1.44028	0.05974	0.05988	0.06000	0.17961
	93 / 32	70%Load_93F									0.53721	0.53954	0.54170	1.61846	0.05356	0.05379	0.05401	0.16136
	93 / 32	60%Load_93F									0.55699	0.55962	0.56208	1.67870	0.05032	0.05056	0.05078	0.15166
	93 / 32	50%Load_93F									0.56613	0.56890	0.57150	1.70653	0.04472	0.04494	0.04514	0.13479
	93 / 32	100%Load_93F_85%EVAP									0.63316	0.63478	0.63615	1.90409	0.06897	0.06915	0.06930	0.20741
8-Hour	35 / 75	100%Load_35F					5.12577	5.12684	5.03997	15.29251								
	35 / 75	70%Load_35F					5.78473	5.78603	5.68772	17.25848								
	35 / 75	60%Load_35F					6.00099	6.00240	5.90028	17.90367								
	35 / 75	50%Load_35F					6.37069	6.37227	6.26382	19.00678								
	65 / 60	100%Load_65F_DB_65%EVAP					5.36153	5.36268	5.27169	15.99590								
	65 / 60	100%Load_65F_85%EVAP					5.17350	5.17456	5.06692	15.43498								
	65 / 60	100%Load_65F					5.23200	5.23306	5.14434	15.60940								
	65 / 60	70%Load_65F					5.82560	5.82695	5.72792	17.38041								
	65 / 60	60%Load_65F					6.03245	6.03392	5.93126	17.99769								
	65 / 60	50%Load_65F					6.32142	6.32300	6.21539	18.85981								
	93 / 32	100%Load_93F_DB_85%EVAP					5.27267	5.27380	5.18440	15.73087								
	93 / 32	70%Load_93F					6.03245	6.03392	5.93130	17.99773								
	93 / 32	60%Load_93F					6.19662	6.19814	6.09263	18.48739								
	93 / 32	50%Load_93F					6.48742	6.48905	6.37859	19.35505								
	93 / 32	100%Load_93F_85%EVAP					5.47167	5.47288	5.38006	16.32460								
3-Hour	35 / 75	100%Load_35F													0.31258	0.31327	0.30835	0.93421
	35 / 75	70%Load_35F													0.26413	0.28475	0.28026	0.84914
	35 / 75	60%Load_35F													0.27761	0.27821	0.27382	0.82964
	35 / 75	50%Load_35F													0.26574	0.26631	0.26210	0.79416
	65 / 60	100%Load_65F_DB_85%EVAP													0.34588	0.34663	0.34119	1.03371
	65 / 60	100%Load_65F_85%EVAP													0.30155	0.30221	0.29747	0.90123
	65 / 60	100%Load_65F													0.29925	0.29990	0.29520	0.89435
	65 / 60	70%Load_65F													0.27517	0.27577	0.27142	0.82236
	65 / 60	60%Load_65F													0.26925	0.26983	0.26557	0.80465
	65 / 60	50%Load_65F													0.25569	0.25624	0.25219	0.76412
	93 / 32	100%Load_93F_DB_85%EVAP													0.29542	0.29606	0.29141	0.88289
	93 / 32	70%Load_93F													0.27306	0.27365	0.26933	0.81604
	93 / 32	60%Load_93F													0.26588	0.26645	0.26224	0.79458
	93 / 32	50%Load_93F													0.24951	0.25004	0.24609	0.74563
	93 / 32	100%Load_93F_85%EVAP													0.34051	0.34125	0.33589	1.01765
1-Hour		Warm Start_remainder 35F 100%lo	13.63633	13.75118	13.62362	40.98362	104.72685	105.60887	104.62923	314.75377					0.39246	0.39577	0.39210	1.17954
		Cold Start_remainder 35F 100%loa	14.46419	14.58601	14.45071	43.47173	108.66892	109.56414	108.56762	326.60154					0.38229	0.38551	0.38193	1.14896
		Shut Down_remainder 35F 100%lo	9.96805	10.05201	9.95876	29.95872	34.92063	35.21473	34.88808	104.95302					0.38222	0.38544	0.38186	1.14874
	35 / 75	100%Load_35F	4.88577	4.89681	4.86835	14.60271	2.98222	2.98896	2.97159	8.91334					0.38784	0.38872	0.38646	1.15919
	35 / 75	70%Load_35F	4.26231	4.28352	4.24430	12.76668	2.58653	2.59940	2.57560	7.74730					0.33686	0.33854	0.33544	1.00898
	35 / 75	60%Load_35F	3.98701	4.01953	3.98214	11.97975	2.43018	2.45000	2.42721	7.30194					0.31432	0.31689	0.31394	0.94444
	35 / 75	50%Load_35F	3.62451	3.65504	3.62110	10.89339	3.31272	3.34063	3.30960	9.95633					0.28605	0.28846	0.28578	0.85971
	65 / 60	100%Load_65F_DB_85%EVAP	5.41390	5.42638	5.38950	16.18179	3.28115	3.28871	3.26636	9.80715					0.42790	0.42889	0.42597	1.27896
	65 / 60	100%Load_65F_85%EVAP	4.72254	4.73330	4.70405	14.11502	2.89135	2.89794	2.88003	8.64185					0.37325	0.37410	0.37179	1.11560
	65 / 60	100%Load_65F	4.68605	4.69679	4.66600	14.00615	2.86370	2.87026	2.85145	8.55932					0.36995	0.37060	0.36836	1.10574
	65 / 60	70%Load_65F	4.01071	4.03328	3.99664	12.02081	2.46530	2.47917	2.45665	7.38894					0.31714	0.31892	0.31602	0.95052
	65 / 60	60%Load_65F	3.75383	3.78538	3.75047	11.28190	2.29826	2.31758	2.29621	6.90728					0.29623	0.29872	0.29596	0.89029
	65 / 60	50%Load_65F	3.38092	3.40939	3.37828	10.16127	3.10889	3.13507	3.10646	9.34370					0.26730	0.26955	0.26709	0.80337
	93 / 32	100%Load_93F_DB_85%EVAP	4.59831	4.60889	4.57744	13.74401	2.82467	2.83118	2.81186	8.44275					0.36472	0.36556	0.36308	1.09012
	93 / 32	70%Load_93F	3.82763	3.85980	3.82404	11.50367	2.33485	2.35448	2.33266	7.01724					0.30366	0.30622	0.30338	0.91264
	93 / 32	60%Load_93F	3.56198	3.59205	3.55647	10.70561	2.17677	2.19514	2.17462	6.54232					0.28290	0.26529	0.28262	0.85027
	93 / 32	50%Load_93F	3.25127	3.28080	3.24858	9.77191	2.97030	2.99727	2.96784	8.92742					0.24883	0.25089	0.24842	0.74727
	93 / 32	100%Load_93F_85%EVAP	5.29935	5.31167	5.27214	15.83970	3.25340	3.26096	3.23669	9.72437					0.42016	0.42113	0.41800	1.25585

(1) Source: Siemens Estimated SGT6-5000F Gas Turbine Performance Sheets for 35, 65, 93 F, all dated May 8, 2006. Scenarios with DB are based on maximum theoretical emissions.

(2) nn: Information not required

(3) Per CTG

(4) SO2 Emissions using the emission factor 0.6 lb SO2 per mm cuft natural gas - Source: SCAQMD AER Program

(5) Annual, 24hr, 8hr, and 3hr velocity and temperature parameters are from steady state scenarios. The highest levels of SO2 emissions occur during the steady state conditions. 1-Hour velocity and temperature parameters are from the lowest velocity and lowest temperature during the start/shut down and 1 hour of steady state scenarios.

(6) Source: Siemens Estimated HRSG Exhaust Stack Exit (Tip) Temperatures (F)

(7) Worst case annual determined by 5000 hours of 65F with Duct Burner and evaporative cooler, 192 starts and 192 stops with the remainder of the yearly hours (8760 hrs) at 65F without duct burner with evaporative cooler

ATTACHMENT C4.6-A

Detailed HARP Results

TABLE C4.6-A1
Detailed File References to PMI, MEIR, and MEIW of the Risks – Turbines and Cooling Towers

	Category	Risk Value	Receptor Number	UTM (NAD 27)	HARP Modeling File Name
Cancer	PMI Derived (OEHHA) Method *	2.09 in a million	31400	(388281, 3762029)	Rep_Can_70yr_DerOEH_AllRec_AllSrc_AllCh_ByRec_Site.txt
	PMI Derived (Adjusted) Method	1.61 in a million	31400	(388281, 3762029)	Rep_PMI_All_resident.txt Rep_Can_70yr_DerAdj_AllRec_AllSrc_AllCh_ByRec_Site.txt Rep_Can_70yr_DerAdj_Rec31400_AllSrc_AllCh_ByRec_ByChem_Site.txt Rep_Can_70yr_DerAdj_Rec31400_AllSrc_AllCh_BySrc_Site.txt
	MEIR Derived (Adjusted) Method (Refined Grid)	0.54 in a million	26611	(389440, 3762050)	Rep_PMI_All_resident.txt Rep_Can_70yr_DerAdj_AllRec_AllSrc_AllCh_ByRec_Site.txt Rep_Can_70yr_DerAdj_Rec26611_AllSrc_AllCh_ByRec_ByChem_Site.txt Rep_Can_70yr_DerAdj_Rec26611_AllSrc_AllCh_BySrc_Site.txt
	MEIW (Refined Grid)	0.32 in a million	31400	(388281, 3762029)	Rep_PMI_All_worker.txt Rep_Can_WRK_Avg_AllRec_AllSrc_AllCh_ByRec_Site.txt
HIC	PMI	0.022	26491	(389860, 3762080)	Rep_PMI_All_resident.txt Rep_Chr_Res_DerOEH_Rec26491_AllSrc_AllCh_ByRec_ByChem_Site.txt Rep_Chr_Res_DerOEH_Rec26491_AllSrc_AllCh_BySrc_Site.txt
	MEIR	0.021	26490	(389830, 3762080)	Rep_Chr_Res_DerOEH_Rec26490_AllSrc_AllCh_ByRec_ByChem_Site.txt Rep_Chr_Res_DerOEH_Rec26490_AllSrc_AllCh_BySrc_Site.txt
	MEIW	0.022	26491	(389860, 3762080)	Rep_PMI_All_worker.txt Rep_Chr_Wrk_PtEst_AllRec_AllSrc_AllCh_ByRec_Site.txt
HIA	PMI	0.054	8229	(388720, 3766160)	Rep_PMI_All_resident.txt Rep_Acu_AllRec_AllSrc_AllCh_ByRec_Site.txt Rep_Acu_Rec8229_AllSrc_AllCh_BySrc_Site.txt
	MEIR	0.054	8229	(388720, 3766160)	Rep_Acu_AllRec_AllSrc_AllCh_ByRec_Site.txt Rep_Acu_Rec8229_AllSrc_AllCh_BySrc_Site.txt
	MEIW	0.054	8229	(388720, 3766160)	Rep_Acu_AllRec_AllSrc_AllCh_ByRec_Site.txt Rep_Acu_Rec8229_AllSrc_AllCh_BySrc_Site.txt

* Note: All receptor numbers and modeling file names refer to the detailed (30-meter spacing) HRA modeling files.

TABLE C4.6-A2
VPP Project – HHRA Results Summary: Cancer Risks

	@ PMI	PMI location (UTM)	@ MEIR	MEIR Location (UTM)	MEIW	MEIW Location
All	1.61 in a million	(388281, 3762029)	0.54 in a million	(389440, 3762050)	0.32 in a million	(388281, 3762029)
Turbine1	0.092 in a million	(389890, 3762080)	0.091 in a million	(389830, 3762080)	0.018 in a million	(389890, 3762080)
Turbine2	0.091 in a million	(389890, 3762080)	0.090 in a million	(389830, 3762080)	0.018 in a million	(390580, 3762110)
Turbine3	0.091 in a million	(390610, 3762110)	0.090 in a million	(390100, 3762505)	0.018 in a million	(390610, 3762110)
Cooling Tower	1.53 in a million	(388281, 3762029)	0.28 in a million	(389050, 3762020)	0.30 in a million	(388281, 3762029)
Fire Pump	0.91 in a million	(388030, 376223)	0.074 in a million	(388960, 3762170)	0.18 in a million	(388030, 376223)

Note
PMI and MEIR of Cancer risks were calculated using the Derived (Adjusted) Method.

TABLE C4.6-A3
VPP Project - HHRA Results Summary: HIC

	@ PMI	PMI location (UTM)	@ MEIR	MEIR Location (UTM)	@MEIW	MEIW Location
All	0.022	(389860, 3762080)	0.021	(389830, 3762080)	0.022	(389860, 3762080)
Turbine1	0.0066	(389860, 3762080)	0.0065	(389830, 3762080)	0.0066	(389860, 3762080)
Turbine2	0.0066	(389860, 3762080)	0.0065	(389830, 3762080)	0.0066	(389860, 3762080)
Turbine3	0.0066	(390610, 3762110)	0.0065	(390100, 3762505)	0.0066	(390610, 3762110)
Cooling Tower	0.021	(388281, 3762029)	0.0038	(388990, 3762020)	0.018	(388281, 3762029)
Fire Pump	0.00057	(388030, 3762230)	0.000046	(388960, 3762170)	0.00057	(388030, 3762230)

TABLE C4.6-A-4
VPP Project - HHRA Results Summary: HIA

	@ PMI	PMI location (UTM)	@ MEIR	MEIR Location (UTM)	@MEIW	MEIW Location
All	0.054	(388720, 3766160)	0.054	(388720, 3766160)	0.054	(388720, 3766160)
Turbine1	0.018	(388480, 3766250)	0.018	(388480, 3766250)	0.018	(388480, 3766250)
Turbine2	0.018	(388510, 3766040)	0.018	(388720, 3766190)	0.018	(388510, 3766040)
Turbine3	0.018	(388540, 3765980)	0.018	(388540, 3765980)	0.018	(388540, 3765980)
Cooling Tower	0.00061	(388281, 3762029)	0.000096	(387670, 3761120)	0.00061	(388281, 3762029)
Fire Pump	NA	NA	NA	NA	NA	NA

ATTACHMENT C4.6-B

Description of the HARP Modeling Files Included on the CD

TABLE C4.6-B-1
File Structure and Naming Convention – HARP Modeling

Folder	Folder/ZIP File Name	Descriptions
VPP3_Screening	VPP3_Screening.zip	HARP modeling files, screening run, all sources, using 100-meter spacing, with census blocks receptors
	Screening_output	HARP modeling output reports, screening run, all sources, using 100-meter spacing, with census blocks receptors
VPP3_Detailed	VPP3_SC.zip	HARP modeling files, refined run using 30-meter spacing
	All_sources_output	HARP modeling output reports, refined run, included all sources, using 30-meter spacing
	All_Turbines_output	HARP modeling output reports, refined run, included all turbines, using 30-meter spacing
	Turbine1_output	HARP modeling output reports, refined run, included only turbine 1, using 30-meter spacing
	Turbine2_output	HARP modeling output reports, refined run, included only turbine 2, using 30-meter spacing
	Turbine3_output	HARP modeling output reports, refined run, included only turbine 3, using 30-meter spacing
	CoolingTower_output	HARP modeling output reports, refined run, included only cooling tower, using 30-meter spacing
	FirePump_output	HARP modeling output reports, refined run, included only cooling tower 1, using 30-meter spacing
VPP3_Cancer_Burden	VPP3_CancerBurden.zip	HARP modeling files for cancer burden, using 100-meter spacing, with census receptors
	Cancer Burden_output	HARP modeling files, cancer burden, all turbines, using 100-meter spacing, with census blocks receptors
MET		"ASCII" hourly meteorological data
DEM		USGS Digital Elevation Model (DEM) data

TABLE C4.6-B-2
ISCST3/BPIP/HARP Modeling File Extensions and Descriptions

File Extension	File Type
*.ini	HARP initialization file
*.isc	ISC Workbook input file
*.inp	ISC input file
*.out	ISC output file
*.xoq	HARP X/Q file
BPIP.sum	BPIP summary file
BPIP.inp	BPIP input file
BPIP.out	BPIP output file
*.src	HARP source receptor file
*.sit	Site parameters file
*.tra	HARP Transaction file
*.txt	HARP risk analysis report file
*.dem	Digital elevation model file
.asc	Meteorology data file

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION **FOR THE VERNON POWER PLANT PROJECT** **BY THE CITY OF VERNON**	**DOCKET NO. 06-AFC-4** **PROOF OF SERVICE LIST** **(REVISED 8/22/2007)**

INSTRUCTIONS: All parties shall (1) file a printed, original signed document plus 12 copies OR file one original signed document and e-mail the document to the Docket address below, AND (2) all parties shall also send a printed OR electronic copy of the document, plus a proof of service declaration, to each of the entities and individuals on the proof of service list:

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DECLARATION OF SERVICE

I, Jeannette Harris, declare that on October 2, 2007, I deposited the required copies of the attached AFC Supplement C filed for Vernon Power Project (06-AFC-4) in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above. I declare under penalty of perjury that the foregoing is true and correct.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

Jeannette Harris

Jeannette Harris