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Application for Certification
(15-AFC-01)

Puente Power Project (P3)
Oxnard, CA

Responses to CEC Data Requests Set 2 (48-74)

November 2015

Submitted to:
The California Energy Commission

Prepared by: sierra research AIR POLLUTION RESEARCH & CONTROL ENVIRONMENTAL PROJECT MANAGEMENT A Trinity Consultants Company AECOM

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LIST OF ACRONYMS AND ABBREVIATIONS USED IN RESPONSES

ADT	average daily traffic
AFC	Application for Certification
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEC	California Energy Commission
COC	condition of certification
DTSC	Department of Toxic Substances Control
ESA	Environmental Site Assessment
°F	Fahrenheit
HARP2	Hotspots Analysis and Reporting Program Version 2
LOS	level of service
MGS	Mandalay Generating Station
NAAQS	national ambient air quality standard
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
P3	Puente Power Project
PCB	polychlorinated biphenyl
UTM	Universal Transverse Mercator
V/C	volume-to-capacity ratio

Technical Area: Air Quality Modeling
Author: Wenjun Qian

BACKGROUND: EXHAUST PARAMETERS

Appendix C-5 of the Application for Certification (AFC) shows the input parameters that the applicant used in the air quality modeling analysis. Table C-5.2 shows that the applicant used a stack exhaust temperature of 900°F for all operating scenarios of the new gas turbine, including startups, shutdowns, and commissioning. Note a under Table 4.1-16 on Page 4.1-58 of the AFC shows that the exhaust characteristics, including the stack exhaust temperature of 900°F, reflect the ambient temperature of 39°F and 100 percent load, which results in maximum heat input/power output. However, staff believes that the stack exhaust parameters, including the stack exhaust temperature, would be different for different operating scenarios. Different exhaust temperature would result in different plume rise and possibly higher ground-level air quality impacts. In addition, the AFC does not show how the stack parameters for Mandalay Generating Station (MGS) Units 1, 2, and 3 were determined for the air quality modeling analysis.

DATA REQUEST

48. Please provide vendor data showing stack parameters for different operating scenarios of the new gas turbine, including startups, shutdowns, and commissioning.

RESPONSE

The gas turbine vendor data showing the stack parameters for different operating scenarios are shown as part of the gas turbine performance runs summarized on Table C-2.1 of the Application for Certification (AFC). These stack parameters cover the minimum and maximum loads for ambient temperatures ranging from 39 degrees Fahrenheit (°F) to 82 °F. As shown on this table, the gas turbine vendor indicates that a stack exhaust temperature of 900 °F is maintained for all loads/ambient conditions. This is done by adjusting the attemperation air (cooling air) introduced into the exhaust following the gas turbine combustors and prior to the emission control system catalyst system. By maintaining the stack exhaust temperature at 900 °F, the gas turbine vendor is able to minimize the amount of power used by the attemperation air fan, thus maximizing the efficiency of the unit. The 39 °F minimum load stack parameters were used for the startup, shutdown, and commissioning air quality modeling because, as shown on Table C-5.3 of the AFC, this operating mode resulted in the maximum impacts of ambient particulate matter less than or equal to 10 microns in diameter, due to a stack exhaust flow rate lower than that of the other operating modes.

DATA REQUEST

49. Please update the air quality modeling analysis using the stack parameters obtained for the above data request.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to California Energy Commission (CEC) Staff Data Request Set 2, docketed on November 3, 2015, the Applicant is in the process of updating the air quality/public health modeling due to new information received from the gas turbine vendor, and has requested additional time to address this Data Request.

DATA REQUEST

50. Please justify the use of the stack parameters for MGS Units 1, 2, and 3 so that the impacts of these units are conservatively estimated.

RESPONSE

The calculation of the exhaust flow parameters for Mandalay Generating Station (MGS) Units 1, 2, and 3 is shown on Table C-2.12 of the AFC. A natural gas wet-F factor was used to determine the wet standard flow rate for each unit, based on the per-unit heat input level. The resulting standard wet exhaust flow rates were increased to actual wet exhaust flow rates based on the actual exhaust temperatures for each unit (also shown on Table C-2.12). For MGS Units 1 and 2, the actual exhaust temperatures were based on an average of temperature monitoring data collected by the plant for each boiler. For MGS Unit 3, the exhaust temperature was calculated based on heat input and expected level of dilution air in the exhaust. This information is included in Appendix 50-1 and Appendix 50-2.

AIR QUALITY
APPENDICES

APPENDIX 50-1

MGS UNITS 1 AND 2 EXHAUST TEMPERATURE DATA

Table A-1-1: Summary of Exhaust Temperature Data Collected for MGS Units 1 and 2

Net MW - Unit 1	**MW**	**20.8**	**79.2**	**113.9**	**141.6**	**172.5**	**201.2**	**214.5**	**Average**
North APH Outlet	Deg F	165	180	192	209	226	233	234	
South APH Outlet	Deg F	151	162	172	181	192	206	214	
Average Outlet	**Deg F**	**158**	**171**	**182**	**195**	**209**	**219**	**224**	**194**
Net MW - Unit 2	**MW**	**20.8**	**79.2**	**113.9**	**141.6**	**182.6**	**201.2**	**214.5**	
North APH Outlet	Deg F	169	179	188	194	196	198	200	
South APH Outlet	Deg F	125	146	161	177	193	204	213	
Average Outlet	**Deg F**	**147**	**163**	**174**	**185**	**195**	**201**	**206**	**181**

APPENDIX 50-2

MGS UNIT 3 EXHAUST TEMPERATURE CALCULATION

MGS Unit 3 Exhaust Temperature Calculation

The MGS Unit 3 natural gas-fired gas generators (a total of eight gas generators) exhaust to a central gas expander which rotates turning an electrical generator. After turning the gas expander, the exhaust gas vents to the atmosphere. Based on temperature data, the temperature of the exhaust at the inlet to the gas expander is approximately 1045 °F (1505 °R) with an inlet pressure of approximately 35.3 psia. After exiting the gas expander the exhaust pressure is reduced to atmospheric conditions of 14.7 psia.

Based on adiabatic expansion across the expander: $Te = Ti*(Pe/Pi)^{((k-1)/k)}$

Where Te would be the exhaust temperature into the atmosphere, Ti = 1505 °R, Pi = 35.3 psia, Pe = 14.7 psia, k = 1.4 (based on the constant for air).

Te = 1172 °R

Te = 712 °F

BACKGROUND: MODELING OF OVERLAP PERIODS

Page 4.1-28 of the AFC shows that during the commissioning phase of the proposed project, the existing MGS Units 1, 2, and 3 would remain available for operation and the commissioning modeling analysis accounts for the combined impacts for the new unit (undergoing commissioning) and operation of the existing units. Once the commissioning tests are complete and the new CTG is available for commercial operation, MGS Units 1 and 2 will no longer be operated and will be decommissioned; MGS Unit 3 would remain in operation.

During construction of the proposed project, the existing MGS Units 1, 2, and 3 would remain available for operation. The applicant did not model the combined impacts for the construction of the new units and the operation of the existing MGS Units 1, 2, and 3.

The applicant has shown that the emissions associated with decommissioning of the existing MGS Units 1 and 2 would be lower than the emissions associated with the construction of the proposed project. Thus the applicant did not perform a separate modeling analysis examining the impacts for the decommissioning activities. The Project Description section shows that decommissioning includes:

- De-energize electrical equipment;
- Purge gases from equipment (e.g., natural gas, hydrogen);
- Remove oil from all pumps, motors, pipes, oil reservoirs, transformers, and other equipment;
- Electrically isolate equipment;
- Physically isolate equipment by disconnecting from piping systems or other means;
- Operate and maintain equipment as required for environmental permit compliance (e.g., storm drainage system);
- Remove from service the backup diesel generator; and
- Verify that all facilities are left in a safe condition.

During decommissioning of the existing MGS Units 1 and 2, the proposed project would be operating and the existing MGS Unit 3 would remain in service. The applicant did not model the air quality impacts for the overlap period when the existing MGS Units 1 and 2 are decommissioned and the proposed project and existing MGS Unit 3 are operating.

DATA REQUEST

51. Please model the combined impacts for the construction of the new units and the operation of the existing MGS Units 1, 2, and 3.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant is in the process of updating the air quality/public health modeling due to new information received from the gas turbine vendor, and has requested additional time to address this Data Request.

DATA REQUEST

52. Please model the overlap period when the existing MGS Units 1 and 2 are undergoing decommissioning with the proposed project and existing MGS Unit 3 operating.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant is in the process of updating the air quality/public health modeling due to new information received from the gas turbine vendor, and has requested additional time to address this Data Request.

BACKGROUND: IN-STACK NO_2/NO_X RATIOS

The applicant used the Ozone Limiting Method (OLM) to calculate the NO_2 impacts of the project. The OLM requires an in-stack NO_2/NO_X ratio to determine how much of the NO_X in the exhaust is already in the form of NO_2 when the pollutants exit the stack. For the new gas turbine, the applicant used the NO_2/NO_X ratios based on information provided by the vendor. The NO_2/NO_X ratio for the new diesel emergency generator engine is based on U.S. EPA's ISR database. The AFC does not show how the NO_2/NO_X ratios were determined for MGS Units 1, 2, and 3.

The applicant used a NO_2/NO_X ratio of 11 percent for modeling diesel construction equipment. The applicant got the ratio from the CAPCOA 2011 guidance document: Modeling Compliance of the Federal 1-Hour NO_2 NAAQS. However, the CAPCOA guidance document listed a range of NO_2/NO_X ratios from 6 percent to 11 percent for heavy duty diesel trucks and from 16 percent to 25 percent for light/medium duty gas/diesel trucks. Using a NO_2/NO_X ratio of 11 percent might underestimate the fleet average ratio. For other Energy Commission siting cases such as the El Segundo Power Facility Modification project, staff has used a NO_2/NO_X ratio of 20 percent for construction equipment.

DATA REQUEST

53. Please provide justification for the selection of the NO_2/NO_X ratios for MGS Units 1, 2, and 3.

RESPONSE

For the existing MGS Units 1 and 2, a nitrogen dioxide (NO_2)/oxides of nitrogen (NO_X) ratio of 10 percent was used for the Puente Power Project (P3) air quality modeling, based on the natural-gas–fired boiler default NO_2/NO_X ratio listed in the California Air Pollution Control Officers Association (CAPCOA) 2011 guidance document: Modeling Compliance of the Federal 1-Hour NO_2 National Ambient Air Quality Standard (NAAQS). For MGS Unit 3, a NO_2/NO_X ratio of 30 percent was used for the P3 air quality modeling, based on the normal operation NO_2/NO_X ratio used for the P3 gas turbine.

DATA REQUEST

54. Please justify the use of the NO_2/NO_X ratio of 11 percent for diesel construction equipment.

RESPONSE

The NO_2/NO_X ratio of 11 percent (from CAPCOA 2011 guidance document: Modeling Compliance of the Federal 1-Hour NO_2 NAAQS, for heavy-duty diesel trucks) was used for the P3 NO_2 ambient modeling of diesel construction equipment, because the engines in this equipment tend to be larger and of a similar size to the engines used in heavy-duty diesel trucks (i.e., 250 horsepower and larger).

DATA REQUEST

55. Please update the NO_2 modeling analysis if any of the NO_2/NO_X ratios needs to be changed.

RESPONSE

Although no new ambient NO_2 modeling is required due to revised NO_2/NO_X ratios, as discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant is in the process of updating the air quality/ public health modeling due to new information received from the gas turbine vendor.

BACKGROUND: PAIRED-SUM APPROACH FOR NO_2 MODELING

In order to demonstrate compliance with the federal 1-hour NO_2 standard, the applicant used the paired-sum approach, which combines concurrent hourly project impacts with hourly background NO_2 data. Although the paired-sum approach is allowed by the CAPCOA's 2011 guidance document, U.S. EPA does not recommend such an approach except in rare cases of relatively isolated sources where the available monitor can be shown to be representative of the ambient concentration levels in the areas of maximum impact from the proposed new source (U.S. EPA 2011 memorandum Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard). U.S. EPA also mentions another situation where such an approach may be justified in which the modeled emission inventory clearly represents the majority of emissions that could potentially contribute to the cumulative impact assessment and where inclusion of the monitored background concentration is intended to conservatively represent the potential contribution from minor sources and natural or regional background levels not reflected in the modeled inventory. For other Energy Commission siting cases, staff has been using seasonal hour-of-day background NO_2 data for the federal 1-hour NO_2 impact analysis, as suggested by U.S. EPA.

DATA REQUEST

56. Please justify the use of the paired-sum approach for the proposed project.

RESPONSE

As discussed in the Applicant's response to CEC Data Request 7, the Applicant believes the data collected at the Oxnard ambient monitoring station are representative of project area ambient pollutant levels. Therefore, the Applicant believes it is appropriate to use these ambient hourly NO_2 data along with the paired-sum approach in the AERMOD atmospheric dispersion model to determine ambient NO_2 impacts for the P3. However, as discussed in the response to Data Request 57, it is necessary for the Applicant to revise the air quality modeling for the P3, due to updated emissions information recently received from the gas turbine vendor, and the Applicant is going to perform this revised modeling using the more conservative monthly hour-of-day background NO_2 approach in the AERMOD model to determine ambient NO_2 impacts for the project.

DATA REQUEST

57. If justification for the paired-sum approach could not be provided, please update the air quality modeling using seasonal hour-of-day background NO_2.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant is in the process of updating the air quality/public health modeling due to new information received from the gas turbine vendor, and has requested additional time to address this Data Request. For this revised modeling, the Applicant is going to use the monthly hour-of-day background NO_2 approach in the AERMOD model to determine ambient NO_2 impacts for the project. The monthly hour-of-day background NO_2 approach is a more conservative lower-tier approach compared to the seasonal hour-of-day background NO_2 approach.

BACKGROUND: OPERATION OF THE EMERGENCY GENERATOR

Note (2) under Table C-2.8 in Appendix C-2 of the AFC states that the emergency generator engine would not be operated during commissioning testing of the new gas turbine and during startups or shutdowns of the new gas turbine. The applicant did not include the emergency generator engine in the air quality impact analysis for the commissioning phase and during startups/shutdowns of the new gas turbine.

DATA REQUEST

58. Would the applicant accept a staff condition of certification (COC) to limit routine readiness testing of the emergency generator engine to make sure it does not operate during commissioning testing of the new gas turbine and during startups and shutdowns of the new gas turbine? If not, why not? If yes, please explain how onsite procedures would work to ensure no overlap of operations and provide a proposed COC.

RESPONSE

The Applicant would accept a CEC condition of certification (COC) to limit the operation of the emergency/backup generator engine, to ensure that nonemergency operation does not occur during gas turbine commissioning operation and/or gas turbine startup/shutdown events. The following is the Applicant's suggested draft language for this COC; the Applicant will comply with this condition by labeling the engine and providing operator training, making it clear that nonemergency operation of the engine is not allowed during gas turbine commissioning and/or gas turbine startup/shutdown events.

AQ-XXX: The emergency generator shall not be operated for nonemergency use whenever the GE 7HA.01 gas turbine is undergoing commissioning operation and/or when the gas turbine is undergoing a startup/shutdown event.

Verification: The owner or operator of this engine shall maintain a monthly operating log containing, at a minimum, the following:

(a) dates and times of engine operation; whether the operation was for maintenance and testing purposes or emergency use; and the nature of the emergency, if known;

(b) hours of operation for all uses other than those specified above and identification of the nature of that use.

The project owner shall submit to the Construction Project Manager a copy of the monthly emergency generator engine operating log data demonstrating compliance with this condition as part of the Quarterly Operation Report. The project owner shall make the site available for inspection of records by representatives of the Ventura County Air Pollution Control District, California Air Resources Board, and the California Energy Commission.

BACKGROUND: FUMIGATION ANALYSIS

The applicant modeled the inversion break-up fumigation impacts and shoreline fumigation impacts for the new gas turbine and MGS Units 1 and 2. The applicant did not model the fumigation impacts for the emergency generator or the MGS Unit 3 because the applicant believes that this type of modeling is not performed for small combustion sources with relatively short stacks. Even though the stacks for the emergency generator and the MGS Unit 3 are relatively short, the buoyancy of the plumes would result in plume rise so that the plumes could interact with the inversion layer and the Thermal Internal Boundary Layer (TIBL, for shoreline fumigation). U.S. EPA guidance document Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised (dated October 1992) provides tables showing downwind distances to the maximum ground level concentrations for inversion break-up fumigation (Table 4-4) and for shoreline fumigation (Table 4-5) as a function of stack height and plume height. The lowest stack height shown in these tables is 10 meters (32.8 ft.), which is lower than the stack height of 54 ft. for MGS Unit 3 and 70 ft. for the new emergency generator. Staff believes that the fumigation impacts need to be analyzed for MGS Unit 3 and the new emergency generator.

The applicant used SCREEN3 to model the inversion break-up fumigation impacts and shoreline fumigation impacts. U.S. EPA released a screening version of AERMOD, AERSCREEN, in 2010. The SCREEN3 model is essentially a screening version of the ISCST3 model, which was replaced by AERMOD. Thus AERSCREEN has replaced SCREEN3 as the recommended screening modeling. U.S. EPA has incorporated the fumigation algorithms in the new version of AERSCREEN (version 15181). The AERSCREEN (version 15181) model is capable of analyzing the fumigation impacts of the project.

DATA REQUEST

59. Please provide fumigation impacts analysis for MGS Unit 3 and the new emergency generator.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant is in the process of updating the air quality/public health modeling due to new information received from the gas turbine vendor, and has requested additional time to address this Data Request.

DATA REQUEST

60. Please update the fumigation impacts analysis using AERSCREEN (version 15181).

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant is in the process of updating the air quality/public health modeling due to new information received from the gas turbine vendor, and has requested additional time to address this Data Request.

Technical Area: Air Quality
Author: Jacquelyn Record

BACKGROUND: OPERATIONS MITIGATION – EMISSION REDUCTIONS

Staff's position for a California Environmental Quality Act (CEQA) impact determination of operating emissions is that all nonattainment pollutants and their precursors need to be mitigated through emission reductions at a minimum ratio of 1:1. The South Central Coast Air Basin in the area of the project site is classified as nonattainment for the state ozone, and PM_{10} standards and federal ozone standard. Without proper emission reduction mitigation, this project could contribute to existing violations of the state and federal ambient air quality standards.

The applicant does not appear to propose to fully mitigate the project's projected future actual emission with actual emission reductions from the shutdown of existing MGS Boilers 1 and 2 at the adjacent Mandalay Generating Station (MGS). Staff needs additional information to understand the sequencing and emission offset potential of the boiler shutdown and a determination of whether the applicant will propose to mitigate the project's emissions of nonattainment and precursor pollutants to address staff's impact concerns.

DATA REQUEST

61. Please discuss and provide a schedule as to when the applicant will provide a list of potential offset sources or other emission mitigation programs to be used by the applicant to obtain emission reduction credits that would mitigate the project's NO_X, PM_{10}, VOC, and SO_X emissions on a 1:1 basis.

RESPONSE

The Applicant will contact the Ventura County Air Pollution Control District and other local agencies to develop a list of potential air quality mitigation projects that could be funded (in whole or part) by the mitigation fees discussed in Applicant's response to Data Request 62. The Applicant will provide the results of these conversations to the CEC Staff within the next 45 days.

DATA REQUEST

62. Please discuss the amount of mitigation fees the applicant is willing to pay to the VCAPCD and the basis for calculating those fees.

RESPONSE

The Applicant expects the fees for funding local air quality mitigation program to be similar to the mitigation fees required by the California Air Resources Board (CARB) Carl Moyer Program. According to the current CARB Carl Moyer Program Guidelines, the cost for funding this mitigation program is currently set at approximately $18,030 per ton of pollutant. In addition to this cost, there will likely be an administrative fee charged by the local agency responsible for implementing the program.

Technical Area: Greenhouse Gases
Author: Jacquelyn Record

BACKGROUND: CARBON POLLUTION STANDARDS FOR NEW POWER PLANTS

On August 3, 2015, the U.S. EPA Administrator, Gina McCarthy signed a final rule[1] under Clean Air Act Section 111(b) to limit the greenhouse gas emissions from new, modified, and reconstructed stationary sources: electric utility generating units. The final rule eliminates the originally-proposed criteria and establishes different limits of greenhouse gas emissions for base load and non-base load natural gas-fired turbines. A "non-base load" natural gas-fired turbine is one that has a capacity factor less than or equal to the lower heating value efficiency of the turbine, expressed as a percentage. Staff would like verification that the proposed P3 would comply with this final rule.

DATA REQUEST

63. Please demonstrate how P3 would comply with the recently-signed carbon pollution standards for new power plants.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant has requested additional time to address this Data Request.

[1] U.S. EPA, 2015 - Environmental Protection Agency, Final Carbon Pollution Standards for New, Modified and Reconstructed Power Plants, August 3, 2015. The U.S. EPA Administrator, Gina McCarthy, signed the following notice on August 3, 2015, and U.S. EPA is submitting it for publication in the Federal Register (FR).

BACKGROUND: COMPLIANCE WITH AVENAL PRECEDENT

As described in the AFC, P3 would be a simple-cycle combustion turbine with reliability, efficiency, turndown, ramp rate, startup time, and time to restart characteristics that will allow it to meet the terms of its power purchase agreement (PPA). Further, the AFC states that these characteristics would allow P3 to integrate into the local reliability area and transmission grid. However, the efficiency of the proposed turbine is not as high as some other simple-cycle options and staff would need to determine if the proposed project would comply with the Avenal Precedent. The Avenal Precedent Decision requires finding as a conclusion of law that any new natural gas-fired power plant certified by the Energy Commission must:

- "not increase the overall system heat rate for natural gas plants;
- not interfere with generation from existing renewables or with the integration of new renewable generation; and
- taking into account the two preceding factors, reduce system-wide GHG emissions."

DATA REQUEST

To evaluate compliance with the Avenal Precedent please provide all of the following:

64. Please explain why this turbine was selected rather than one with a higher efficiency.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant has requested additional time to address this Data Request.

DATA REQUEST

65. Please explain how the capacity factor and efficiency of P3 would not increase the overall system heat rate for natural gas plants.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant has requested additional time to address this Data Request.

DATA REQUEST

66. Please explain how the capacity factor and efficiency of P3 would not interfere with the generation from existing renewables or with the integration of new renewable generation.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant has requested additional time to address this Data Request.

DATA REQUEST

67. Taking into account the two preceding factors, please explain how the capacity factor and the efficiency of P3 would reduce system-wide GHG emissions.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant is in the process of updating the air quality/public health modeling due to new information received from the gas turbine vendor, and has requested additional time to address this Data Request.

Technical Area: Air – Biological Resources
Author: Wenjun Qian

BACKGROUND: NITROGEN DEPOSITION ANALYSIS

The applicant modeled the nitrogen deposition impacts of the project. Table C-2.17 and Table C-2.18 in Appendix C-2 of the AFC show the nitrogen emission rates for the new equipment and for the existing Units 1 and 2. Staff also checked the nitrogen deposition modeling files that the applicant provided in the docketed CDs (TN# 206014). The applicant modeled two nitrogen emissions sources, one for NO_X-based nitrogen and the other NH3-based nitrogen. The applicant used the stack parameters for the new gas turbine for both of the modeled emission sources. The nitrogen deposition modeling files provided by the applicant did not include other emission sources, such as the new emergency generator and the existing MGS Unit 3. The emission rates that the applicant used in the modeling files do not match those shown in Table C-2.17. The applicant used the nitrogen emission rate of 0.29 grams/sec (g/s) from NO_X and 0.41 g/s from NH3 in the modeling analysis. However, Table C-2.17 shows nitrogen emission rate of 0.32 grams/sec (g/s) from NO_X and 0.5 g/s from NH3 for the new gas turbine.

DATA REQUEST

68. Please remodel the nitrogen deposition impacts of the new emergency generator and the existing MGS Unit 3 or justify why they were not modeled.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant is in the process of updating the air quality/public health modeling due to new information received from the gas turbine vendor, and has requested additional time to address this Data Request.

DATA REQUEST

69. Please explain the differences of the emission rates in the modeling files and in Table C-2.17 and determine which one is correct. Remodel nitrogen deposition as needed.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant is in the process of updating the air quality/public health modeling due to new information received from the gas turbine vendor, and has requested additional time to address this Data Request.

Technical Area: Public Health
Author: Huei-An Chu (Ann), Ph.D.

BACKGROUND: CANCER BURDEN

Cancer burden is a hypothetical upper-bound estimate of the additional number of cancer cases that could be associated with emissions from the project. Cancer burden is calculated as the maximum product of any potential carcinogenic risk greater than 1 in one million, and the number of individuals at that risk level. Therefore, if a predicted derived adjusted cancer risk is greater than 1 in one million, the cancer burden is calculated for each census block receptor. Cancer burden is defined as the estimated increase in the occurrence of cancer cases in a population resulting from exposure to carcinogenic air contaminants

DATA REQUEST

70. Please provide the calculations and results of the cancer burden of Puente Power Project within a 6-mile radius of the stack. The estimated cancer burden should not require additional dispersion modeling, but could use the modeling results docketed on August 17, 2015.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant is in the process of updating the air quality/public health modeling due to new information received from the gas turbine vendor, and has requested additional time to address this Data Request

DATA REQUEST

BACKGROUND: KML FILE

In HARP2, after calculating risk results, the Export option allows users to export the risk values of each grid or receptor into a KML file. Then the KML file could be imported into Google Earth to see an aerial image of the grids/receptors. However, staff couldn't generate the KML file since the air dispersion modeling was done separately in AERMOD, not in HARP2.

71. Please explain in detail how to generate the AERMOD exported KML file.

RESPONSE

For the health risk assessment performed for the P3, the AERMOD model is only used to determine the unit impact (i.e., micrograms per cubic meter impact, based on an emission rate of 1 gram per second) at each receptor. This information, along with the actual toxic air contaminant emission rates for the project, is exported into the Hotspots Analysis and Reporting Program Version 2 (HARP2) model to calculate health risk values at each receptor. Therefore, to summarize the health risk values at each receptor, it is necessary to generate the KML file using the HARP2 model. The following steps need to be taken to generate health-risk values in the KML format:

1. Copy the Universal Transverse Mercator (UTM) coordinates and health risk values from the HARP2 output files to an Excel worksheet.

2. Use the ARCGIS software (version 10.3) and import the Excel worksheet to the ARCMAP module of the ARCGIS software. This is done by defining the map projection for the project (for P3 modeling, the map projection is in NAD83, UTM Zone 11). Once this is done, the ARCMAP module will display the health-risk values on a map.

3. Find the "export to KML" tool in the ARCGIS software toolbox and use this tool to export the map to the KML format.

DATA REQUEST

72. Please provide the AERMOD exported risk data in KML format.

RESPONSE

As discussed in the Applicant's Request for Additional Time to Respond to CEC Staff Data Request Set 2, docketed on November 3, 2015, the Applicant is in the process of updating the air quality/public health modeling due to new information received from the gas turbine vendor, and has requested additional time to address this Data Request.

Technical Area: Traffic and Transportation
Author: Andrea Koch and Ashley Gutierrez

BACKGROUND: LEVEL OF SERVICE INFORMATION FOR VICTORIA AVENUE AND DORIS AVENUE

As part of the first round of data requests, staff asked for level of service (LOS) information for the intersection at W. Fifth Street and Victoria Avenue, and for the road segment of Victoria Avenue between W. Fifth Street and Gonzales Road, to help staff assess the feasibility of a change in route for exiting vehicles, where exiting vehicles would turn right to travel southbound on Harbor Boulevard. Staff needs LOS information for an additional intersection and road segment along this route.

DATA REQUEST

73. For the intersection of Victoria Avenue and Doris Avenue and for the West 5th Street road segment between Harbor Boulevard and Victoria Avenue, please submit traffic and LOS information equivalent to that provided in Tables 4.12-3, 4.12-6, 4.12-8, and 4.12-10 of the AFC.

RESPONSE

The level of service (LOS) information for the intersection at Victoria Avenue and Doris Avenue is provided in Table 73-1, and the LOS information for the road segment of West 5th Street between Harbor Boulevard and Victoria Avenue is provided in Table 73-2. The tables show the information for the same scenarios and assumptions studied and presented in the AFC and in Applicant's response to CEC Data Request 45.

The tables show that for both study scenarios (i.e., Existing Baseline [2015] and Future Baseline [2019]), additional trips exiting the project during peak construction activities will not adversely impact the intersection at Victoria Avenue and Doris Avenue, or the road segment of West 5th Street between Harbor Boulevard and Victoria Avenue. The proposed project trips would not degrade the LOS for the intersection or road segment, and would not increase the volume-to-capacity ratio by more than 0.02. In the City of Oxnard 2030 General Plan, the acceptable LOS for intersections incorporated in the Oxnard Traffic Model is grade C or better.

The traffic counts and traffic model calculation worksheets are provided in Appendix 73-1.

Table 73-1
Intersection Level of Service

No.	Intersection	Type of Control	A.M. Peak		P.M. Peak	
			V/C	LOS	V/C	LOS
Existing Conditions						
6	Victoria Avenue/Doris Avenue	Signal	0.737	C	0.658	B
Existing Baseline (2015) Plus Project Conditions						
6	Victoria Avenue/Doris Avenue	Signal	0.737	C	0.658	B
Future Baseline (2019) No Project Conditions						
6	Victoria Avenue/Doris Avenue	Signal	0.796	C	0.710	C
Future Baseline (2019) Plus Project Conditions						
6	Victoria Avenue/Doris Avenue	Signal	0.796	C	0.710	C

Notes:
LOS = level of service
V/C = volume-to-capacity ratio

Table 73-2
Roadway Segment Level of Service

No.	Roadway	Segment	Roadway Classification	General Plan Capacity	ADT	V/C	LOS
Existing Conditions							
10	West 5th Street[1]	Between Harbor Boulevard and Victoria Avenue	Local Arterial	32,000	5,102	0.159	A
Existing Plus Project Conditions							
10	West 5th Street[1]	Between Harbor Boulevard and Victoria Avenue	Local Arterial	32,000	5,126	0.160	A
Future Baseline (2019) No Project Conditions							
10	West 5th Street[1]	Between Harbor Boulevard and Victoria Avenue	Local Arterial	32,000	5,510	0.172	A
Future Baseline (2019) Plus Project Conditions							
10	West 5th Street[1]	Between Harbor Boulevard and Victoria Avenue	Local Arterial	32,000	5,534	0.173	A

Notes:

[1] Classified as a 4-Lane Local Arterial. (Currently 2-Lane Roadway west of Victoria Avenue.)

ADT = average daily traffic
LOS = level of service
V/C = volume-to-capacity ratio

TRAFFIC AND TRANSPORTATION
APPENDICES

APPENDIX 73-1
TRAFFIC COUNTS AND WORKSHEETS

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Victoria Ave and Doris Ave , Oxnard

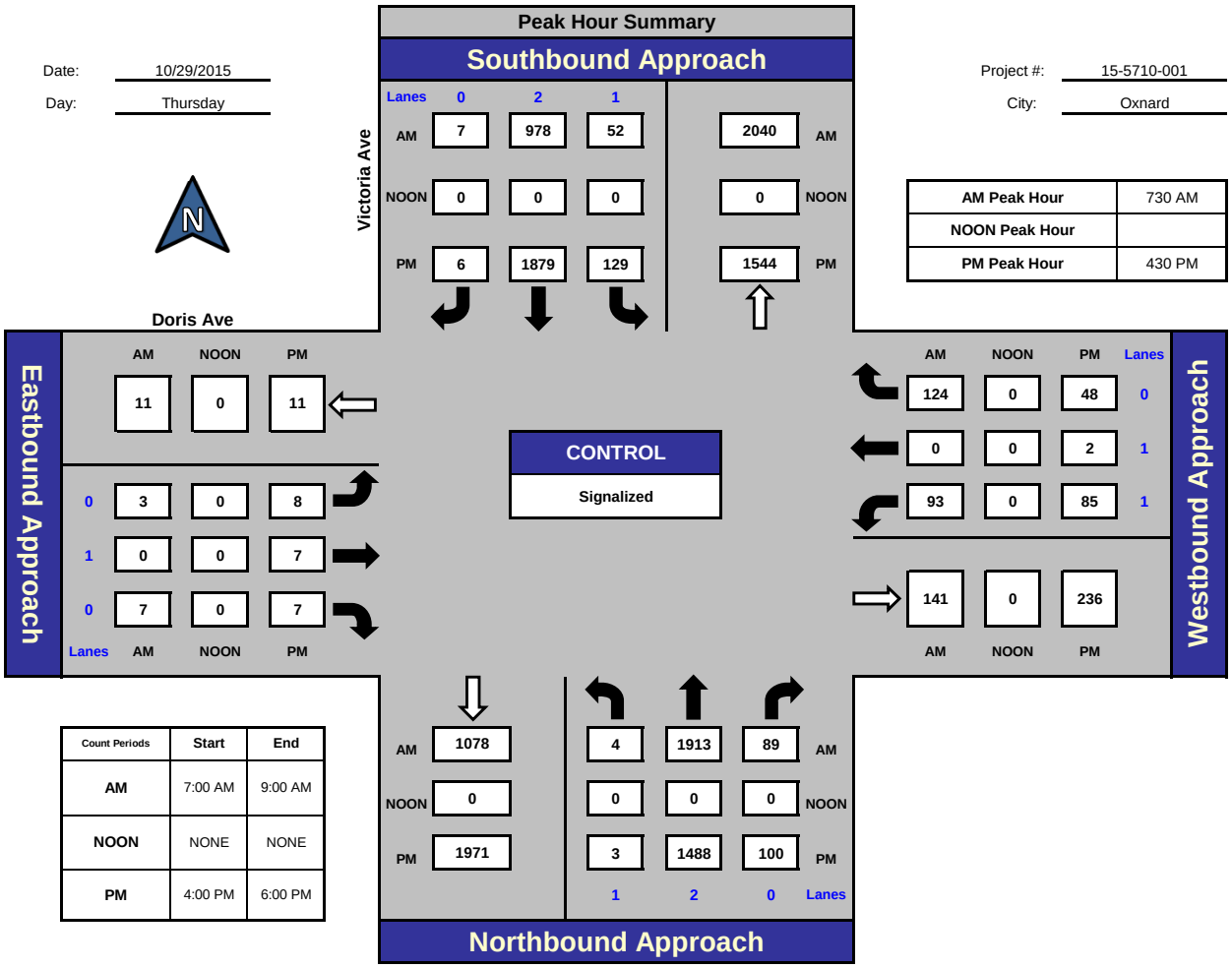
Date: 10/29/2015

Day: Thursday

Project #: 15-5710-001

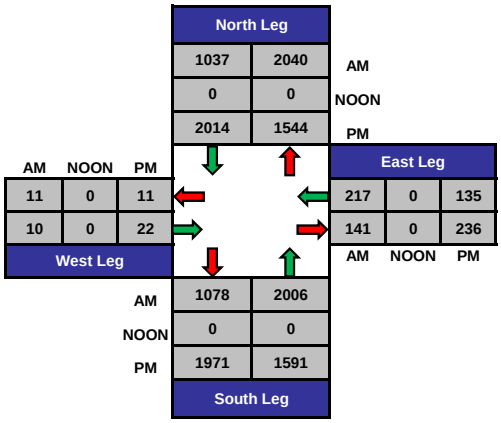
City: Oxnard

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

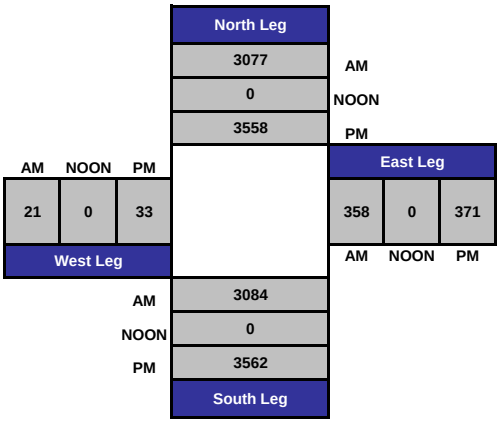


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Prepared by NDS/ATD

VOLUME

5th St Bet. Victoria Ave & Harbor Blvd

Day: Thursday
Date: 10/29/2015

City: Oxnard
Project #: CA15_5711_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,563	2,539	5,102

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			9		1		10		12:00			35		35		70	
00:15			5		5		10		12:15			43		34		77	
00:30			2		5		7		12:30			38		38		76	
00:45			1	17	2	13	3	30	12:45			40	156	33	140	73	296
01:00			3		4		7		13:00			47		49		96	
01:15			0		0		0		13:15			28		33		61	
01:30			1		2		3		13:30			34		37		71	
01:45			5	9	0	6	5	15	13:45			32	141	44	163	76	304
02:00			2		0		2		14:00			40		39		79	
02:15			1		0		1		14:15			37		40		77	
02:30			4		1		5		14:30			32		42		74	
02:45			2	9	1	2	3	11	14:45			46	155	44	165	90	320
03:00			1		0		1		15:00			38		48		86	
03:15			1		0		1		15:15			45		37		82	
03:30			0		2		2		15:30			59		50		109	
03:45			3	5	1	3	4	8	15:45			55	197	44	179	99	376
04:00			1		6		7		16:00			62		62		124	
04:15			6		3		9		16:15			54		31		85	
04:30			6		3		9		16:30			69		63		132	
04:45			6	19	12	24	18	43	16:45			58	243	53	209	111	452
05:00			3		9		12		17:00			76		63		139	
05:15			10		7		17		17:15			61		41		102	
05:30			12		19		31		17:30			70		53		123	
05:45			13	38	33	68	46	106	17:45			55	262	25	182	80	444
06:00			17		43		60		18:00			51		47		98	
06:15			16		32		48		18:15			44		37		81	
06:30			34		53		87		18:30			56		36		92	
06:45			33	100	51	179	84	279	18:45			37	188	42	162	79	350
07:00			32		23		55		19:00			31		26		57	
07:15			34		36		70		19:15			25		25		50	
07:30			48		66		114		19:30			18		20		38	
07:45			44	158	89	214	133	372	19:45			22	96	23	94	45	190
08:00			54		43		97		20:00			20		17		37	
08:15			57		45		102		20:15			23		10		33	
08:30			40		37		77		20:30			15		20		35	
08:45			40	191	35	160	75	351	20:45			7	65	23	70	30	135
09:00			32		32		64		21:00			5		22		27	
09:15			31		27		58		21:15			15		20		35	
09:30			29		30		59		21:30			14		11		25	
09:45			43	135	32	121	75	256	21:45			12	46	9	62	21	108
10:00			37		27		64		22:00			6		9		15	
10:15			41		28		69		22:15			16		13		29	
10:30			35		31		66		22:30			8		14		22	
10:45			23	136	29	115	52	251	22:45			9	39	7	43	16	82
11:00			36		28		64		23:00			9		8		17	
11:15			32		32		64		23:15			8		4		12	
11:30			30		46		76		23:30			5		5		10	
11:45			37	135	38	144	75	279	23:45			1	23	4	21	5	44
TOTALS				952		1049		**2001**	**TOTALS**				1611		1490		**3101**
SPLIT %				47.6%		52.4%		**39.2%**	**SPLIT %**				52.0%		48.0%		**60.8%**

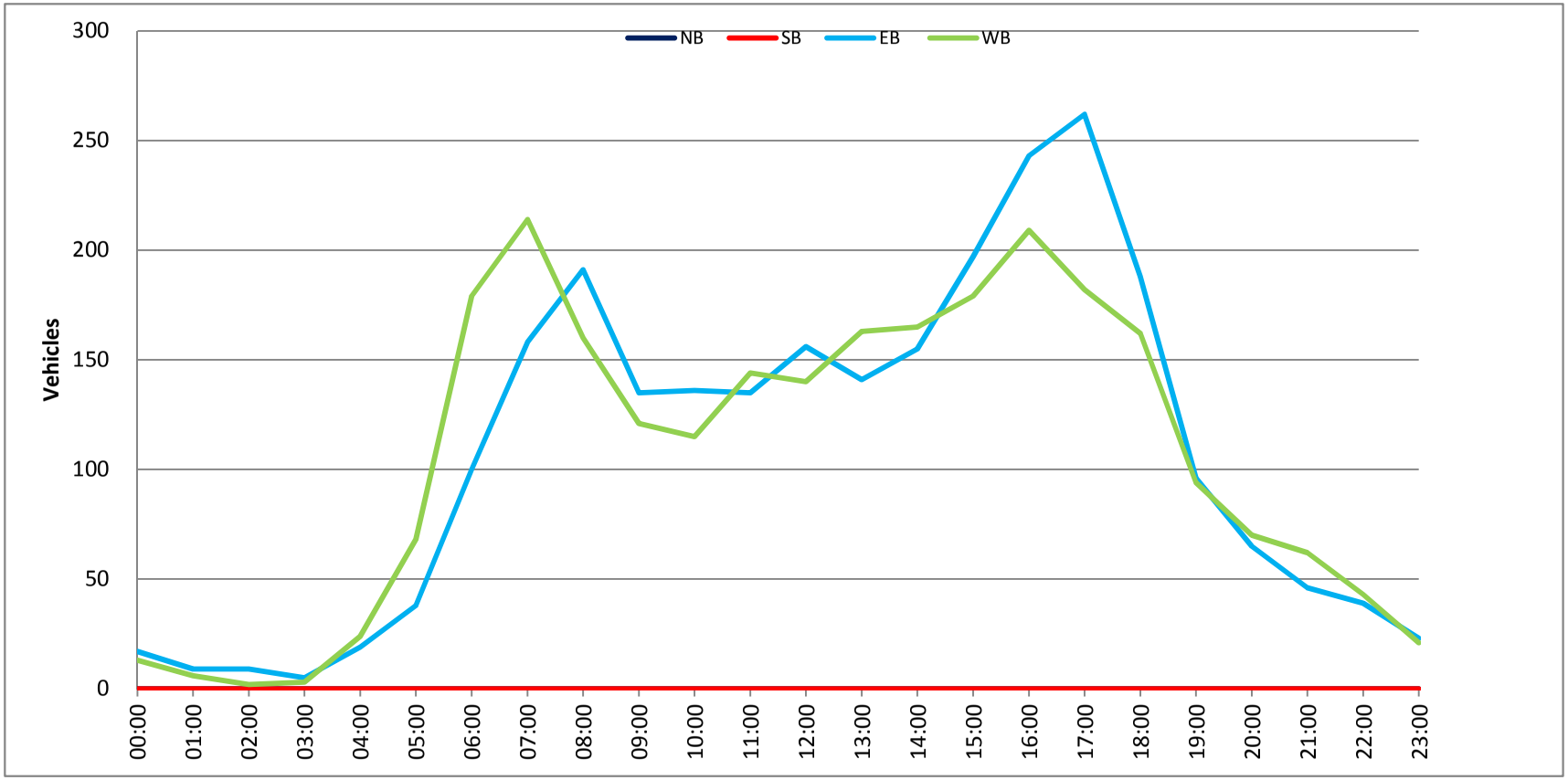
DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,563	2,539	5,102

AM Peak Hour			07:30	07:30	**07:30**	**PM Peak Hour**			16:45	16:30	**16:30**
AM Pk Volume			203	243	**446**	**PM Pk Volume**			265	220	**484**
Pk Hr Factor			0.890	0.683	**0.838**	**Pk Hr Factor**			0.872	0.873	**0.871**
7 - 9 Volume	0	0	349	374	**723**	**4 - 6 Volume**	0	0	505	391	**896**
7 - 9 Peak Hour			07:30	07:30	**07:30**	**4 - 6 Peak Hour**			16:45	16:30	**16:30**
7 - 9 Pk Volume	0	0	203	243	**446**	**4 - 6 Pk Volume**	0	0	265	220	**484**
Pk Hr Factor	0.000	0.000	0.890	0.683	**0.838**	**Pk Hr Factor**	0.000	0.000	0.872	0.873	**0.871**

Prepared by NDS/ATD

Project #: CA15_5711_001 **City:** Oxnard

Location: 5th St Bet. Victoria Ave & Harbor Blvd **Date:** 10/29/2015



Mandalay AFC
Existing Traffic Conditions
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Victoria Ave (NS) at Doris Ave (EW) - #6

Cycle (sec): 100 Critical Vol./Cap. (X): 0.737
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 71 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1	0	1	0 1	1	0	0	0 1!	0		1	0 0	1	0
Volume Module: 7-9 AM																
Base Vol:	4	1913	89		52	978	7		3	0	7		93	0	124	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	4	1913	89		52	978	7		3	0	7		93	0	124	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	4	1913	89		52	978	7		3	0	7		93	0	124	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	4	1913	89		52	978	7		3	0	7		93	0	124	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	4	1913	89		52	978	7		3	0	7		93	0	124	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	4	1913	89		52	978	7		3	0	7		93	0	124	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.91	0.09		1.00	1.99	0.01		0.30	0.00	0.70		1.00	0.00	1.00	
Final Sat.:	1600	3058	142		1600	3177	23		480	0	1120		1600	0	1600	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.63	0.63		0.03	0.31	0.31		0.00	0.00	0.01		0.06	0.00	0.08	
Crit Moves:		****				****				****					****	

Mandalay AFC
Existing Traffic Conditions
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Victoria Ave (NS) at Doris Ave (EW) - #6

Cycle (sec): 100 Critical Vol./Cap. (X): 0.658
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 54 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1	0	1	0 1	1	0	0	0 1!	0		0	1 0	0 1	0
Volume Module: 4-6 PM																
Base Vol:	3	1488	100		129	1879	6		8	7	7		85	2	48	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	3	1488	100		129	1879	6		8	7	7		85	2	48	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	3	1488	100		129	1879	6		8	7	7		85	2	48	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	3	1488	100		129	1879	6		8	7	7		85	2	48	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	3	1488	100		129	1879	6		8	7	7		85	2	48	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	3	1488	100		129	1879	6		8	7	7		85	2	48	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.87	0.13		1.00	1.99	0.01		0.36	0.32	0.32		1.00	0.04	0.96	
Final Sat.:	1600	2998	202		1600	3190	10		582	509	509		1600	64	1536	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.50	0.50		0.08	0.59	0.59		0.01	0.01	0.01		0.05	0.03	0.03	
Crit Moves:	****					****				****				****		

Mandalay AFC
Existing Plus Project Traffic Conditions
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Victoria Ave (NS) at Doris Ave (EW) - #6

Cycle (sec):	100	Critical Vol./Cap. (X):	0.737
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	71	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1 0	1	0	1	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: 7-9 AM																
Base Vol:	4	1913	89		52	978	7		3	0	7		93	0	124	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	4	1913	89		52	978	7		3	0	7		93	0	124	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	4	1913	89		52	978	7		3	0	7		93	0	124	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	4	1913	89		52	978	7		3	0	7		93	0	124	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	4	1913	89		52	978	7		3	0	7		93	0	124	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	4	1913	89		52	978	7		3	0	7		93	0	124	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.91	0.09		1.00	1.99	0.01		0.30	0.00	0.70		1.00	0.00	1.00	
Final Sat.:	1600	3058	142		1600	3177	23		480	0	1120		1600	0	1600	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.63	0.63		0.03	0.31	0.31		0.00	0.00	0.01		0.06	0.00	0.08	
Crit Moves:		****				****				****					****	

Mandalay AFC
Existing Plus Project Traffic Conditions
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Victoria Ave (NS) at Doris Ave (EW) - #6

Cycle (sec): 100 Critical Vol./Cap. (X): 0.658
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 54 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1	0	1	0 1	1	0	0	0 1!	0		0	1 0	0 1	0
Volume Module: 4-6 PM																
Base Vol:	3	1488	100		129	1879	6		8	7	7		85	2	48	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	3	1488	100		129	1879	6		8	7	7		85	2	48	
Added Vol:	0	23	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	3	1511	100		129	1879	6		8	7	7		85	2	48	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	3	1511	100		129	1879	6		8	7	7		85	2	48	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	3	1511	100		129	1879	6		8	7	7		85	2	48	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	3	1511	100		129	1879	6		8	7	7		85	2	48	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.88	0.12		1.00	1.99	0.01		0.36	0.32	0.32		1.00	0.04	0.96	
Final Sat.:	1600	3001	199		1600	3190	10		582	509	509		1600	64	1536	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.50	0.50		0.08	0.59	0.59		0.01	0.01	0.01		0.05	0.03	0.03	
Crit Moves:	****					****				****				****		

Mandalay AFC
Future Construction Baseline (2019) - No Project Conditions
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Victoria Ave (NS) at Doris Ave (EW) - #6

Cycle (sec): 100 Critical Vol./Cap. (X): 0.796
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 91 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1	0	1	0 1	1	0	0	0 1!	0		1	0 0	1	0
Volume Module: 7-9 AM																
Base Vol:	4	1913	89		52	978	7		3	0	7		93	0	124	
Growth Adj:	1.08	1.08	1.08		1.08	1.08	1.08		1.08	1.08	1.08		1.08	1.08	1.08	
Initial Bse:	4	2066	96		56	1056	8		3	0	8		100	0	134	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	4	2066	96		56	1056	8		3	0	8		100	0	134	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	4	2066	96		56	1056	8		3	0	8		100	0	134	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	4	2066	96		56	1056	8		3	0	8		100	0	134	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	4	2066	96		56	1056	8		3	0	8		100	0	134	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.91	0.09		1.00	1.99	0.01		0.30	0.00	0.70		1.00	0.00	1.00	
Final Sat.:	1600	3058	142		1600	3177	23		480	0	1120		1600	0	1600	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.68	0.68		0.04	0.33	0.33		0.00	0.00	0.01		0.06	0.00	0.08	
Crit Moves:		****				****				****					****	

Mandalay AFC
Future Construction Baseline (2019) - No Project Conditions
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Victoria Ave (NS) at Doris Ave (EW) - #6

Cycle (sec): 100 Critical Vol./Cap. (X): 0.710
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 64 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1 0	1	0	1	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: 4-6 PM																
Base Vol:	3	1488	100		129	1879	6		8	7	7		85	2	48	
Growth Adj:	1.08	1.08	1.08		1.08	1.08	1.08		1.08	1.08	1.08		1.08	1.08	1.08	
Initial Bse:	3	1607	108		139	2029	6		9	8	8		92	2	52	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	3	1607	108		139	2029	6		9	8	8		92	2	52	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	3	1607	108		139	2029	6		9	8	8		92	2	52	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	3	1607	108		139	2029	6		9	8	8		92	2	52	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	3	1607	108		139	2029	6		9	8	8		92	2	52	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.87	0.13		1.00	1.99	0.01		0.36	0.32	0.32		1.00	0.04	0.96	
Final Sat.:	1600	2998	202		1600	3190	10		582	509	509		1600	64	1536	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.54	0.54		0.09	0.64	0.64		0.01	0.01	0.01		0.06	0.03	0.03	
Crit Moves:	****					****				****				****		

Mandalay AFC
Future Construction Baseline (2019) - Plus Project Conditions
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Victoria Ave (NS) at Doris Ave (EW) - #6

Cycle (sec): 100 Critical Vol./Cap. (X): 0.796
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 91 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1	0	1	0 1	1	0	0	0 1!	0	0	1	0 0	1	0
Volume Module: 7-9 AM																
Base Vol:	4	1913	89		52	978	7		3	0	7		93	0	124	
Growth Adj:	1.08	1.08	1.08		1.08	1.08	1.08		1.08	1.08	1.08		1.08	1.08	1.08	
Initial Bse:	4	2066	96		56	1056	8		3	0	8		100	0	134	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	4	2066	96		56	1056	8		3	0	8		100	0	134	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	4	2066	96		56	1056	8		3	0	8		100	0	134	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	4	2066	96		56	1056	8		3	0	8		100	0	134	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	4	2066	96		56	1056	8		3	0	8		100	0	134	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.91	0.09		1.00	1.99	0.01		0.30	0.00	0.70		1.00	0.00	1.00	
Final Sat.:	1600	3058	142		1600	3177	23		480	0	1120		1600	0	1600	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.68	0.68		0.04	0.33	0.33		0.00	0.00	0.01		0.06	0.00	0.08	
Crit Moves:		****				****				****					****	

Mandalay AFC
Future Construction Baseline (2019) - Plus Project Conditions
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Victoria Ave (NS) at Doris Ave (EW) - #6

Cycle (sec): 100 Critical Vol./Cap. (X): 0.710
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 64 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1	0	1	0 1	1	0	0	0 1!	0		0	1 0	0 1	0
Volume Module: 4-6 PM																
Base Vol:	3	1488	100		129	1879	6		8	7	7		85	2	48	
Growth Adj:	1.08	1.08	1.08		1.08	1.08	1.08		1.08	1.08	1.08		1.08	1.08	1.08	
Initial Bse:	3	1607	108		139	2029	6		9	8	8		92	2	52	
Added Vol:	0	23	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	3	1630	108		139	2029	6		9	8	8		92	2	52	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	3	1630	108		139	2029	6		9	8	8		92	2	52	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	3	1630	108		139	2029	6		9	8	8		92	2	52	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	3	1630	108		139	2029	6		9	8	8		92	2	52	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.88	0.12		1.00	1.99	0.01		0.36	0.32	0.32		1.00	0.04	0.96	
Final Sat.:	1600	3001	199		1600	3190	10		582	509	509		1600	64	1536	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.54	0.54		0.09	0.64	0.64		0.01	0.01	0.01		0.06	0.03	0.03	
Crit Moves:	****					****				****				****		

Technical Area: Waste Management
Author: Ellie Townsend-Hough

BACKGROUND: ENVIRONMENTAL SITE ASSESSMENT

Puente Power Plant (P3) would be developed on approximately three acres of previously disturbed vacant brownfield located within the existing boundaries of the Mandalay Generating Station (MGS). The Application for Certification Phase I Environmental Site Assessment indicated that historical uses on the proposed project site include a dredging spoils storage area, an insulator testing facility, and abandoned gas lines. There is no background information on the possible chemical constituents or contaminants. The applicant proposes to conduct soil sampling to evaluate whether there has been any contamination of site soils but does not specify when (NRG 2015 Section 4.14.1.1 and Appendix M). Staff is concerned that since it is unknown what these materials may contain, whether the site is contaminated, and what the vertical and lateral extent of contamination might be, there may be a need for significant remediation. To determine if there would be potential risks to construction workers, P3 staff, and/or the environment, staff requests that the applicant conduct soil sampling and screening of this area on the proposed project site so potential impacts can be better understood prior to licensing. This would also be important for determining whether remediation would impact project design and schedule.

DATA REQUEST

74. Please provide a Phase II Environmental Site Assessment, include the results of field sampling and analysis which adequately characterize the presence of harmful chemicals or conditions and whether there would be any risk to construction workers, plant personnel, or the environment due to the presence of contamination in the soil.

RESPONSE

The AFC Phase I Environmental Site Assessment (ESA) Report (see AFC Appendix M-1) includes a discussion of previous environmental investigations at the MGS. The previous investigations that were summarized included a Phase II ESA completed in 1997; the 1997 Phase II ESA is included as Appendix 74-1. The Phase II ESA includes subsurface information for MGS inclusive of the P3 site. Our response outlines information available in the Phase II ESA that pertains to the characterization of the P3 site. Information pertaining to the balance of MGS is useful in addressing site characterization and closure requirements borne by Southern California Edison (prior owner). The California Department of Toxic Substances Control (DTSC) is the lead agency with respect to subsurface characterization and closure activities at MGS, inclusive of the P3 site.

As discussed in AFC Section 4.14.1.1, the P3 site is in the northern portion of the MGS property evaluated as part of the Phase II ESA. During the 1997 Phase II ESA, samples were collected and analyzed from those areas in the proposed P3 site potentially impacted by historical operations. Two soil samples were collected from the soil directly beneath two transformers at the insulator test facility within the proposed footprint of P3, and analyzed for polychlorinated biphenyls (PCBs). PCBs were not detected above reported detection limits in those soil samples. The historical dredge spoil pile soil within the proposed P3 footprint was sampled and analyzed for total petroleum hydrocarbons, metals, and PCBs. Based on the analytical results of those soil samples, no further action was recommended for the dredge spoil pile area. In conclusion, the results of the 1997 Phase II ESA suggest that there were not any conditions of concern within the boundaries of the proposed P3 site at that time. There have not been any

activities on the proposed P3 site since that time that would be expected to result in any conditions of concern. Based on the results of the 1997 Phase II ESA, the use of the P3 site since that time, and the results and conclusions of the recent Phase I ESA, Applicant does not believe that additional pre-certification characterization is warranted. However, to address the potential for unidentified historical impacts within the P3 ground disturbance footprint, a Soil Management Plan will be prepared and implemented to ensure proper management of potentially impacted soil and/or groundwater, and to address potential worker and site personnel safety concerns. The objective of the Soil Management Plan is to provide guidance for the proper identification, handling, onsite management, and disposal of impacted soil or groundwater that could be encountered during construction activities. A draft of the Soil Management Plan was provided in AFC Appendix M-2. If impacted soil and/or groundwater is encountered, the characterization, remediation, and closure activities in P3 will be coordinated with DTSC and CEC.

WASTE MANAGEMENT
APPENDICES

APPENDIX 74-1
1997 PHASE II ENVIRONMENTAL SITE ASSESSMENT

(SUBMITTED UNDER SEPARATE COVER)