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Eldon Heaston, Executive Director

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DATE	JUL 08 2010
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July 8, 2010

Alice Harron
Palo Verde Solar I LLC
1625 Shattuck Ave., Suite 270
Berkeley, CA 94709

Re: Final Determination of Compliance for the Blythe Solar Power Project

Dear Ms. Harron:

The public comment period on the May 25, 2010 Revised Preliminary Determination of Compliance expired on June 26, 2010. Comments were received on the proposed action; substantive changes based on the comments received have been incorporated into the Final Determination of Compliance (FDOC). The District hereby issues the FDOC for the Blythe Solar Power Project. The public comment period for the FDOC begins July 8, 2010 and will end on August 9, 2010.

If you have any questions regarding this action, please contact Roseana Navarro-Brasington, Air Quality Engineer, at (760) 245-1661, extension 5706.

Sincerely,

Alan J. De Salvio
Supervising Air Quality Engineer

Enclosure

cc: Chief, Air Permits Office USEPA Region IX
Chief, Stationary Source Division CARB
Alan Solomon, CEC
Will Walters, Aspen Environmental Group
Michael Cressner, Palo Verde Solar I LLC
Sara J. Head, AECOM
Russell Kingsley, AECOM

AJD:RNB

Final Decision/
Determination of Compliance

(New Source Review Document)

Blythe Solar Power Project – located approximately eight miles west of Blythe, CA.

Eldon Heaston
Executive Director
Mojave Desert Air Quality Management District

July 8, 2010

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Table of Contents

List of Abbreviations

APCO	Air Pollution Control Officer
ATC	Authority To Construct
ATCM	Airborne Toxic Control Measure
BACT	Best Available Control Technology
BSPP	Blythe Solar Power Project
CARB	California Air Resources Board
CATEF	California Air Toxics Emission Factors
CEC	California Energy Commission
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
dscf	Dry Standard Cubic Feet
ERC	Emission Reduction Credit
EVR	Enhanced Vapor Recovery
°F	Degrees Fahrenheit (Temperature)
FDOC	Final Determination of Compliance
FONA	Federal Ozone Non-Attainment Area
HAP	Hazardous Air Pollutant
HARP	Hot Spots Analysis and Reporting Program
HHV	Higher Heating Value
hp	Horsepower
hr	Hour
HRA	Health Risk Assessment
HTF	Heat Transfer Fluid
LAER	Lowest Achievable Emission Rate
lb	Pound
MACT	Maximum Achievable Control Technology
$\mu g/m^3$	Micrograms per cubic meter
MDAQMD	Mojave Desert Air Quality Management District
MMBtu	Millions of British Thermal Units
n/a	Not applicable
NAAQS	National Ambient Air Quality Standard
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
NSPS	New Source Performance Standard
O_2	Molecular Oxygen
OEHHA	Office of Environmental Health Hazard Assessment
OLM	Ozone Limiting Method
o/o	Owner/Operator
PAH	Polycyclic Aromatic Hydrocarbons
PDOC	Preliminary Determination of Compliance

$PM_{2.5}$	Fine Particulate, Respirable Fraction ≤ 2.5 microns in diameter
PM_{10}	Fine Particulate, Respirable Fraction ≤ 10 microns in diameter
ppmvd	Parts per million by volume, dry
PSD	Prevention of Significant Deterioration
PVSI	Palo Verde Solar I, LLC
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Oxides of Sulfur
SSG	Solar Steam Generator System
STG	Steam Turbine Generator
TAC	Toxic Air Contaminants
tpy	Tons per Year
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds

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1. Introduction

The Mojave Desert Air Quality Management District (MDAQMD) received two Applications for New Source Review for the Blythe Solar Power Project (BSPP) and a Request for Agency Participation and Application for Certification on September 16, 2009. The MDAQMD deemed the applications complete on October 13, 2009.[1] For clarity and consistency, the MDAQMD will herein refer to this project as the "BSPP" or "Project". The project was to be a joint venture proposed by Chevron Energy Solutions and Solar Millennium, LLC. On January 26, 2010[2] the District was notified that the entire project will be owned and operated by Palo Verde Solar I, LLC; a subsidiary of Solar Millennium. As originally requested by the applicant and due to timing constraints, two separate PDOCs were issued on January 28, 2010, one for two power blocks which were to be owned and operated by Solar Millennium and one for two power blocks which were to be owned and operated by Chevron Energy Solutions. The District's intent was to combine the two separate two power block project PDOCs and to issue a single unified FDOC.

The District received written comments on the PDOC. In comments focused on several areas, including emissions factors used, the proposed permit conditions, combining the emissions for all four power blocks and reissuance/re-notice of the PDOC, additional analysis of the BACT requirements, that the District evaluate and permit the Project's land farms which treat HTF contaminated soil, reassessment of the air quality modeling and toxics health risk analysis to ensure accuracy and adequacy. Additionally on April 28, 2010[3], the District received notification of project modifications proposed by the applicant.

In response to the proposed project modifications and to public comments received on the original PDOCs, the District has produced this revised PDOC. The revised document incorporates changes based on the comments and represents the emissions from the project in total. This revised NSR document reflects the changes requested by the applicant and addresses one unified project encompassing all four power block units which together comprise the BSPP.

As required by MDAQMD Rule 1306(E)(1)(a), this PDOC reviews the proposed project, evaluating worst-case or maximum air quality impacts, and establishes control technology requirements and related air quality permit conditions. This revised PDOC represents MDAQMD's preliminary pre-construction compliance review of the proposed project, to determine whether operation of the proposed project will comply with all applicable MDAQMD rules and regulations.

2. Project Location

The Project is a solar thermal electric generating facility proposed on approximately 9,400 acres in unincorporated Riverside County, California approximately eight miles west of Blythe, CA. and 2 miles north of Interstate I-10 on land owned by the Federal Government and managed by

[1] A. De Salvio (MDAQMD) to A. Solomon (CEC), October 13, 2009.
[2] R. Kingsley (AECOM) to R. N. Brasington (MDAQMD) January 26, 2010
[3] R. Kingsley (AECOM) to R. N. Brasington (MDAQMD) April 26, 2010

the Bureau of Land Management (BLM). The project site has been designated unclassified for the Federal 8-hour ozone ambient air quality standard (NAAQS) and for the Federal PM_{10} ambient air quality standards (NAAQS). The area is attainment or unclassified for all other Federal standards and averaging times. The project site has been designated non-attainment and classified as moderate for the State ozone ambient air quality standard (CAAQS) and is also non-attainment for the State PM_{10} ambient air quality standards (CAAQS). The area is attainment or unclassified for all other State standards. The proposed site consists of flat undeveloped desert terrain.

3. Description of Project

The proposed facility will consist of four 250 MW (gross) solar units. The Project uses parabolic trough solar thermal technology to generate electricity. In each power generating unit or power block, the proposed technology uses a steam turbine generator (STG) fed from a solar steam generator (SSG). SSGs receive heat transfer fluid (HTF) from solar thermal equipment comprised of arrays of parabolic mirrors that collect energy from the sun. PVSI will own and operate all four power block units.

The four power blocks share a main office building, a central switchyard, a maintenance/warehouse facility, a parking lot, access roads and two land treatment units to treat HTF contaminated soil. Units 1 and 2 and Units 3 and 4 share water treatment and storage facilities. Each of the four power blocks will consist of a solar array field, auxiliary boiler, steam turbine, emergency generator set, emergency fire pump system, an HTF ullage/expansion system with two stage carbon adsorption, a cooling tower, electrical interconnections, and several small adjacent buildings for support services.

Note that the project construction emissions and non-stationary source emissions have not been included or evaluated in this document; in addition the project includes land treatment of soil which produces fugitive emissions but which is exempt from permitting and therefore not included or evaluated in this document.

PSVI is proposing to install:

- four (4) Tier III diesel fueled emergency fire pump engines rated at 300 hp
- four (4) Tier II diesel fueled emergency generator set engines rated at 2,922 hp
- four (4) auxiliary natural gas fired boilers each rated at - 35 MMBtu/hr
- four (4) HTF ullage systems with carbon adsorption systems
- four (4) cooling towers each with drift eliminator
- one (1) gasoline dispensing facility: above ground gasoline storage tank equipped with EVR Phase I and Phase II

The internal combustion engines will meet all applicable California Air Resources Board (CARB) and U.S. Environmental Protection Agency (USEPA) Tier emissions standards depending upon engine size, year of manufacture, and service category. Additionally, the engines will meet the requirements of the CARB Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines.

Proposed equipment specifications, for emissions sources, are summarized as follows:

Auxiliary Boilers (4)

- Manufacturer: Nebraska Boiler (or equivalent)
- Model: D-Type Watertube
- Fuel: Natural Gas
- Rated Heat Input: 35 MMBtu/hr
- Fuel consumption: ~33,333 scf/hr (Gas HHV 1050 Btu/scf)
- Exhaust flow: 5080 dscfm, at 100% load
- Exhaust temperature: ~300 degrees Fahrenheit (°F)
- Low NO_x burner (9 ppmv)

HTF Ullage System with Carbon Adsorption (4)

- Two carbon beds in series – 85% control in each stage with an overall control efficiency of 98%
- Manufacturer: To be Determined

Internal Combustion Engines – Fire Pump (4)

- Manufacturer: To be Determined
- Emission Standard: Tier III
- Fuel: Diesel or distillate oil (15 ppmw S)
- Rated horsepower: 300 hp
- Fuel consumption: ~15.3 gallons per hour (gph)

Internal Combustion Engines - Emergency Electrical Generators (4)

- Manufacturer: Cummins
- Model: QSK60-G6
- Emissions Standard: Tier II, Engine Family ACEXL060.AAD
- Fuel: Diesel or distillate oil (15 ppm S)

- Rated horsepower: ~ 2,922 hp
- Fuel consumption: ~ 141.4 gallons per hour (gph)

Cooling Towers (4)

- Manufacturer: To be determined
- Number of Cells: 2
- Number of Fans: To be determined
- Water circulation rate: ~ 6,034 gallons per minute (gpm)
- Drift rate: less than or equal to 0.0005%
- Expected average TDS: ~ 2,000 ppmw

Gasoline Dispensing Facility (1)

- 500 gallon above ground storage tank
- Associated piping and fuel dispensing equipment
- Phase I and II vapor recovery
- Standing loss controls

The only fuels to be combusted on-site will be California-certified low-sulfur low-aromatic diesel fuel used by the emergency fire pump and the emergency generator engines, and pipeline-quality natural gas for the auxiliary boilers.

4. Overall Project Emissions

Operation of the Project will result in emissions to the atmosphere of both criteria and toxic air pollutants from the proposed auxiliary boilers, fire pumps, emergency generator engines, cooling towers, fugitive losses from the HTF system and from the HTF ullage system which is equipped with two carbon beds in series with an overall control efficiency of 98%. Criteria pollutant emissions will consist primarily of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOCs), sulfur oxides (SO_x), sub 10-micron particulate matter (PM10), and sub 2.5-micron particulate matter particulate matter (PM2.5). Air toxic pollutants will consist of a combination of toxic gases and toxic particulate matter species. Tables 1, 2 and A-9 list the pollutants that may potentially be emitted from the proposed Project.[4,5] For natural gas-fired equipment, emissions calculations are based on the Higher Heating Value (HHV) of the natural gas fuel. Project emissions limited by permit condition based on fuel usage for the auxiliary boilers and by hours of operation for the emergency generators and fire pump internal combustion engines. Emissions limits have been applied by permit condition to the HTF ullage system and associated carbon adsorption units and to the gasoline dispensing equipment via a limit on the fuel throughput.

[4] "Application for Certification Blythe Solar Power Project", September 2009.
[5] "Application for Air Permits for Project Refinements for the Blythe Solar Power Project", April 26, 2010

HTF piping has large number of valves, flanges, pumps, and fittings. Because of large temperature range these components experience daily, there is significant thermal expansion and contraction of the materials. Seals expand, contract, wear, and age, and as a result, these components occasionally leak small amounts of HTF. The facility proposes use of bioremediation to reclaim soil for later use as fill onsite. Emissions from the land treatment unit (LTU) that will be used for treatment contaminated soils resulting from HTF spills were conservatively estimated by the applicant to be 2.46 tons/year of VOC. The facility is estimated to generate 3,332 cubic yards/year of HTF impacted soils. The LTU provides a 95% control efficiency based in the assumptions of the Kern County APCD for the Ridgecrest Solar Power Project. The emissions estimate for the BSPP LTU is considerably higher than those estimated for the Ridgecrest Plant because the BSPP is approximately four times larger a facility.

The emissions calculations are presented in the Appendix.

Maximum Annual Emissions

Table 1 presents maximum annual facility operational emissions (Tables A-8 through A-13 present maximum annual facility hazardous air pollutant (HAP) emissions). For this project, $PM_{2.5}$ emissions are assumed to be equal to PM_{10} emissions, which were calculated using a $PM_{2.5}$ emissions factor.

Table 1 – BSPP Maximum Annual Operational Emissions

(All emissions presented in tons per year – four power block units, VOC fugitive emissions included)

NOx	SOx	CO	PM10	VOC
4.47	.07	6.41	1.84	5.07

Maximum Daily Emissions

Table 2 presents maximum daily facility emissions calculated under worst case conditions. Please see the Appendix for emissions calculations and limits.

Table 2 – BSPP Maximum Daily Operational Emissions				
(All emissions presented in pounds per day – four power block units, VOC fugitive emissions included)				
NOx	SOx	CO	PM10	VOC
145.65	0.26	143.96	25.71	39.37

5. Control Technology Evaluation/BACT Determination

Best Available Control Technology (BACT) is required for all new permit units that emits, or has the potential to emit, 25 pounds per day at any new facility that emits, or has the potential to emit, 25 tons per year or more of any non-attainment pollutant or its precursors (MDAQMD Rule 1303(A)). The proposed project site is state non-attainment for ozone and PM_{10} and their precursors and unclassified for federal standards for ozone and PM_{10}. Based on the proposed project's maximum emissions as calculated in §4 above, the project only triggers BACT for the proposed emergency generator internal combustion engines, which have the potential to emit more than 25 pounds per day of NO_x.

The applicant proposes to meet BACT for all emissions units and has submitted an analysis that evaluates the control technology for these pollutants, trace organics, and trace metals.[6] The MDAQMD accepts the proposed emission limits as compliant with all applicable air quality regulations. The proposed internal combustion engine emission rates are at least as stringent as applicable federal regulations such as the applicable New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII). The MDAQMD deems the proposed limits for internal combustion engines to meet BACT.

BACT for each 35MMBtu/hr Natural Gas Fired Boiler

Table 3 - Proposed Limits for each 35MMBtu/hr Natural Gas Fired Boiler		
Pollutant	Limit	Control
NO_x	9.0 ppm at 3% O_2	Ultra low-NO_x burner
VOC	None	PUC quality natural gas
PM	None	PUC quality natural gas
SO_x	None	PUC quality natural gas
CO	50 ppm at 3% O_2	Ultra low-NO_x burner

[6] ibid

BACT For Each Ullage Vent System

Table 4 - Proposed Limit for each Ullage Vent System with Carbon Adsorption Control	
Pollutant	Control
VOC	Carbon adsorption system with at least 95% control efficiency.
NO_x, SO_x, CO, PM	Not Applicable

BACT for HTF systems of similar size[7] utilizing Therminol VP-1 (or equivalent) as proposed for use by the applicant has been determined to be a VOC control system having a VOC control efficiency of 95%, and a daily inspection and maintenance plan.

The proposed carbon adsorption system is two-stage, with two carbon beds in series each providing 85% control efficiency with an overall control efficiency of 98%. 98% control efficiency of VOC from this system as proposed by the applicant exceeds the 95% level of control determined to be BACT for similar systems. VOC emissions from the system will not exceed 1.5 lb/day from each of the four proposed ullage vents and is limited by permit condition.

BACT for each Cooling Tower

Table 5 - Proposed Limit for each Cooling Tower	
Pollutant	Control
PM	Drift rate not to exceed 0.0005%
VOC	Not Applicable
NO_x, SO_x, CO	Not Applicable

The proposed cooling towers will have drift eliminators with vendor-guaranteed PM control efficiency of 0.0005%. The proposed cooling towers meet the above requirements.

BACT for each Internal Combustion Engine – Emergency Generator and Fire Pump (total of eight engines)

The proposed engines are compliant with the applicable NSPS for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII) and with the applicable California State Airborne Toxic Control Measure for Stationary Compression Ignition Engines (17 CCR 93115). Compliance with the NSPS and ATCM is determined to be BACT for the fire pump and emergency generator engines and has been found by both the SCAQMD and the SJVAPCD to be an engine meeting the current tier requirements. The proposed engines meet this requirement.

[7] "Beacon Solar FDOC", August 6, 2009.

Table 6 – Proposed Limit For Each Fire Pump Engine				
Proposed Engine – Fire Pump	NO_x + NMHC (g/bhp-hr)	PM (g/bhp-hr)	CO (g/bhp-hr)	SO_x
300 hp Tier III	3.0	0.15	2.6	15 ppm S fuel
Proposed Engine – Emergency Generator	NO_x + NMHC (g/bhp-hr)	PM (g/bhp-hr)	CO (g/bhp-hr)	SO_x
2,922 hp Tier II	4.8	0.15	2.6	15 ppm S fuel

BACT for the Gasoline Dispensing Facility – 500 gallon above ground storage tank

The proposed system will be required to be compliant with the current California Air Resources Board standards for above ground gasoline storage/dispensing. The system will be required to comply with the standards at the operative date. Compliance with CARB requirements will meet the most stringent standards set forth for vapor recovery and control for this Above Ground Gasoline Storage Tank.

Table 7 – BSPP – Proposed Limits for GDF	
Pollutant	Control
VOC	Phase I EVR system Phase II system Standing Loss Control for New installation
NO_x, SO_x, CO, PM	Not Applicable

6. PSD Class I Area Protection

The Clean Air Act (CAA) established the PSD permit program to prevent areas that currently have clean air from significant deterioration. The PSD permit program limits emissions by requiring permits for major stationary air pollution sources. The BSPP did not evaluate the visibility reduction potential of project emissions on Prevention of Significant Deterioration (PSD) Class I areas. The BSPP is not a major stationary source, is not subject to the PSD requirements Title I, Part C of the Federal Clean Air Act (42 U.S.C. §§7470-7492), and therefore is in compliance with the Class I Area protection requirements of Regulation XIII.

7. Air Quality Impact Analysis

BSPP performed the ambient air quality standard impact analyses for CO, PM_{10}, $PM_{2.5}$, SO_2 and NO_2 emissions. The MDAQMD approves of the analysis methods used in these impact analyses and the findings of these impact analyses.

Findings

The impact analysis calculated a maximum incremental increase for each pollutant for each applicable averaging period, as shown in Table 8 below. When added to the maximum recent background concentration, the proposed project exceeds the most stringent (or lowest) standard for NO_2 and PM_{10} only. In the case of the PM_{10} exceedance, the background is already in excess of the standard without the project. Staged testing of the internal combustion engines coupled with PM and NO_x BACT which have been applied to all proposed permit units mitigate these exceedances.

Table 8 – BSPP Maximum Ambient Air Quality Impacts

Pollutant	Project Impact	Background	Total Impact	Federal Standard	State Standard
	All values in $\mu g/m^3$				
CO (1 hour)	267.6	2645	2912.6	40,000	23,000
CO (8 hour)	86.5	1035	1121.5	10,000	10,000
PM_{10} (24 hour)	22.3	162.0	184.3	150	50
PM_{10} (annual)	2.7	30.0	32.7	--	20
$PM_{2.5}$ (24 hour)	2.9	27.0	29.9	35	--
$PM_{2.5}$ (annual)	0.8	10.6	11.4	15	12
SO_2 (1 hour)	7.4	503.0	510.4	--	665
SO_2 (3 hour)	3.1	434.9	438.0	1300	--
SO_2 (24 hour)	0.8	99.6	100.3	365	105
SO_2 (annual)	0.1	5.2	5.3	80	--
NO_2 (1 hour)	168.5	174.9	343.4	--	339
NO_2 (1 hour)	178.7	--	178.7	188	--
NO_2 (annual)	0.896	22.6	23.5	100	57

Inputs and Methods

Maximum emissions for four power blocks under normal operating conditions were modeled. Emissions from the BSPP are presented above in Table 8. A three-year (2002 through 2004) sequential hourly meteorological data set from the meteorological tower at the Blythe Airport was used. Mixing heights were determined from Desert Rock, Nevada data. For determining NO_2 impacts using a NO_x background, the hourly Ozone Limiting Method (OLM) for conversion of NO_x to NO_2 was used.

The AERMOD dispersion model (version 07026) was used to estimate ambient concentrations resulting from BSPP. The dispersion modeling was performed according to USEPA requirements. To refine the modeling analysis, AERMOD was rerun using the "Maxifile" option to determine how many hours produced impacts of at least 164 g/m3, which when added to the maximum ambient background concentration of 175 g/m3, would exceed the CAAQS. The results showed that only 3 hours out of the 3 years modeled (i.e., an average of only 1 hour per year) had the potential to exceed the 1-hour NO_2 CAAQS. As a further refinement, hourly NO_2 background data for the Palm

Springs, California monitoring site were acquired from the EPA AIRS database data repository (http://www.epa.gov/ttn/airs/airsaqs/detaildata/downloadaqsdata.htm). The actual ambient background NO_2 concentration for each hour was then added to the modeled concentration and compared to the CAAQS. When added to the time matched ambient background NO_2 concentration, all 3 hours with the potential to exceed the CAAQS fall well below the standard of 339 µg/m3. As discussed above, the peak 1-hour NO_2 impacts for the BSPP during operations are modeled to occur at night and are caused almost entirely by emissions from the emergency diesel generators. Testing of emergency engines is unlikely to occur during nighttime hours, as simulated in the model for the three potential problem hours. The modeling results presented in Table 8 are therefore conservative and demonstrate that the NO_2 CAAQS is unlikely to be exceeded during operations at the BSPP.

Because testing of internal combustion engines is unlikely to occur at night and staged testing such that no two engines are tested during any one twenty four hour period has been required by permit condition, the modeling results are conservative and demonstrate that the NO_2 CAAQS is unlikely to be exceeded during operations at the BSPP. The District has determined that the staged testing requirements, coupled with limiting the proposed equipment to meet NO_x BACT, are adequate NO_2 mitigation.

The background level of PM10 exceeds the standard without the proposed project. The BSPP utilizes PUC quality natural gas fueled boilers which has been determined to be BACT for this category of equipment. PM BACT is proposed for all applicable permit units.

8. Health Risk Assessment and Toxics New Source Review

BSPP performed a Health Risk Assessment (HRA) for carcinogenic, non-carcinogenic chronic, and non-carcinogenic acute toxic air contaminants. The MDAQMD approves of the HRA methods and findings.

Findings

The project emits less than 10 tons per year of every single HAP and less than 25 tons per year of any combination of HAPs, therefore pursuant to Rule 1320(E)(2)(b) no further toxics new source review is required. The HRA calculated a peak 70-year cancer risk of 0.96 per million. The calculated peak 70-year residential cancer risk is less than 1.0 per million (for all receptors). The maximum non-cancer chronic and acute hazard indices are both less than the significance level of 1.0 (0.000317 and 0.000745, respectively). The HRA results are summarized below in Table 9. Please refer to the Appendix for tables representing project HAP emissions from individual emissions units.

Table 9 – HRA Results

Exposure Assumption	Cancer Risk (Per Million)	Chronic Hazard Index	Acute Hazard Index
Full-Time Resident	0.96	3.17E-04	7.45E-04
Off-Site Worker	0.19	3.17E-04	7.45E-04
Moderate Risk Thresholds	**1**	**n/a**	**n/a**
Significant Health Thresholds	**10**	**1**	**1**

Inputs and Methods

The BSPP will emit toxic air contaminants as products of natural gas combustion, diesel fuel combustion, venting of the ullage tank, equipment wear and cooling tower emissions. Combustion emissions were estimated using emission factors from OEHHA and USEPA, and a speciation profile for polycyclic aromatic hydrocarbons (PAH) was derived from the California Air Toxics Emission Factors (CATEF) database. Venting of VOC from the HTF ullage tank is controlled via carbon adsorption with 98% control efficiency. Cooling tower emissions were estimated using USEPA emission factors for evaporative emissions, engineering calculation for drift droplets, and water quality estimations for water supplied from onsite groundwater wells.

The methods used to assess potential human health risks are consistent with the Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments published by the California Office of Health Hazard Assessment (OEHHA 2003). The latest OEHHA cancer potency factors, and chronic and acute reference exposure levels (RELs) for each TAC were used. The California Air Resources Board (ARB) Hot Spots Analysis and Reporting Program (HARP, Version 1.4a) software was used to perform the risk analysis. The USEPA current guideline model, AERMOD was used along with the ARB-provided HARP On-Ramp tool to generate this HRA. The HARP On-Ramp converts AERMOD dispersion results into a format compatible with HARP's risk module.

9. Offset Requirements

MDAQMD Regulation XIII – *New Source Review* requires offsets for non-attainment pollutants and their precursors emitted by large, new sources. The BSPP does not have the PTE 25 tons or more of NO_x, SO_x or VOC or 15 tons per year or more of PM_{10}. Offsets are not required for the BSPP.

Table 10 - Comparison of BSPP Emissions with Offset Thresholds All emissions in tons per year				
	NO_x	**VOC**	**SO_x**	**PM_{10}**
Maximum Annual Potential to Emit	4.5	5.1	0.07	1.8
Offset Threshold	25	25	25	15

10. Applicable Regulations and Compliance Analysis

Selected MDAQMD Rules and Regulations will apply to the proposed project:

Regulation II – Permits

Rule 212 – Standards for Approving Permits establishes baseline criteria for approving permits by the MDAQMD for certain projects. In accordance with these criteria, the proposed project accomplishes all required notices and emission limits through the PDOC and complying with stringent emission limitations set forth on permits.

Regulation IV - Prohibitions

Rule 401 – *Visible Emissions* limits visible emissions opacity to less than 20 percent (or Ringelmann No. 1). During start up of all equipment, visible emissions may exceed 20 percent opacity. However, emissions of this opacity are not expected to last three minutes or longer. In normal operating mode, visible emissions are not expected to exceed 20 percent opacity.

Rule 402 – *Nuisance* prohibits facility emissions that cause a public nuisance. The proposed turbine power train exhaust is not expected to generate a public nuisance due to the sole use of pipeline-quality natural gas as a fuel. In addition, due to the location of the proposed project, no nuisance complaints are expected.

Rule 403 – *Fugitive Dust* specifies requirements for controlling fugitive dust. The proposed project does not include any significant sources of fugitive dust so the proposed project is not expected to violate Rule 403.

Rule 404 – *Particulate Matter – Concentration* specifies standards of emissions for particulate matter concentrations. The proposed project will be required to comply with Rule 404.

Rule 405 – *Solid Particulate Matter - Weight* limits particulate matter emissions from fuel combustion on a mass per unit combusted basis. The proposed project will be required to comply with Rule 405.

Rule 407 – *Liquid and Gaseous Air Contaminants* limits emissions of CO. The proposed project utilizes natural gas fired auxiliary boilers. Compliance with Rule 407 is expected and will be required.

Rule 408 – *Circumvention* prohibits hidden or secondary rule violations. The proposed project is not expected to violate Rule 408.

Rule 409 – *Combustion Contaminants* limits total particulate emissions on a density basis. The proposed project will be required to comply with Rule 409.

Rule 430 – *Breakdown Provisions* requires the reporting of breakdowns and excess emissions. The proposed project will be required to comply with Rule 430.

Rule 431 – *Sulfur Content in Fuels* limits sulfur content in gaseous, liquid and solid fuels. The proposed project will be required to use fuels which comply with Rule 431.

Rule 432 – *Gasoline Specifications* specifies requirements for gasoline used within the District for fuel in motor vehicles. The project will be required to use compliant gasoline.

Rule 461 – *Gasoline Transfer and Dispensing* limits the emissions of VOC and TACs from gasoline transfer and dispensing. The proposed project will be required to comply with Rule 461.

Rule 463 – *Storage of Organic Liquids* limits the emissions of VOC and TACs during the Storage of Organic Liquids. The gasoline storage tank will be equipped with a p/v valve as specified in the rule. The storage tanks for diesel are below the size threshold for permit, and store fuel with a vapor pressure below the vapor pressure threshold specified in the rule. The proposed project will be required to comply with this rule.

Regulation IX – Standards of Performance for New Stationary Sources

Regulation IX includes by reference the NSPS for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60 Subpart IIII) and for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60 Subpart Dc). Permit conditions for the proposed project will establish limits which are in compliance with the compression ignition engine NSPS referenced in Regulation IX.

Regulation XI - Source Specific Standards

Rule 1113 - *Architectural Coatings* limits VOC content of applied architectural coatings. The proposed project will be required to use compliant coatings.

Rule 1158 – *Electric Power Generating Facilities*. This rule is only applicable to units located within the FONA. Since the BSPP is located outside of the FONA, this rule does not apply.

Rule 1157 – *Boilers and Process Heaters*. This rule is only applicable to units located within the FONA. Since the BSPP is located outside of the FONA, this rule does not apply.

Regulation XII – Federal Operating Permits

Regulation XII contains requirements for sources which must have a federal operating permit and an acid rain permit. The proposed project will not be required to submit applications for a federal operating permit because this facility is not a major source nor is a federal operating permit required under any applicable federal regulation.

Regulation XIII – New Source Review

Rule 1300 – *General* ensures that Prevention of Significant Deterioration (PSD) requirements apply to all projects. The proposed project does not have the PTE to emit more than the offset emissions thresholds (table 5) and therefore is not a major source of emissions. As this facility is not a major source it is not subject to the PSD requirements Title I, Part C of the Federal Clean Air Act (42 U.S.C. §§7470-7492) which apply to major sources only and therefore is in compliance with the PSD requirements of Rule 1300.

Rule 1302 – *Procedure* requires certification of compliance with the Federal Clean Air Act, applicable implementation plans, and all applicable MDAQMD rules and regulations. The ATC application package for the proposed project includes sufficient documentation to comply with Rule 1302(D)(5)(b)(iii). Permit conditions for the proposed project will require compliance with Rule 1302(D)(5)(b)(iv).

Rule 1303 – *Requirements* requires BACT major new sources and permit units which have the PTE to emit more than 25 pounds per day of criteria pollutants. As this facility is not a major source BACT is only required for the internal combustion engines which have the PTE to emit more than 25 pounds per day of NO_x.

Rule 1305 – *Emissions Offsets* this facility does not have the PTE to emit more than the offset emissions thresholds (table 5) and therefore offsets are not required.

Rule 1306 – *Electric Energy Generating Facilities* places additional administrative requirements on projects involving approval by the California Energy Commission (CEC). The proposed project will not receive an ATC without CEC's approval of their Application for Certification, ensuring compliance with Rule 1306.

Rule 1320 - *New Source Review for Toxic Air Contaminants* specifies the requirements for preconstruction review and ensures proper emissions controls for all new projects that emit or have the PTE any HAP, TAC or Regulated Toxic Substance. The District has reviewed the health risk assessment as provided by the applicant and has determined the proposed project is compliant with this rule.

Maximum Achievable Control Technology Standards

Health & Safety Code §39658(b)(1) states that when USEPA adopts a standard for a toxic air contaminant pursuant to §112 of the Federal Clean Air Act (42 USC §7412), such standard becomes the Airborne Toxic Control Measure (ATCM) for the toxic air contaminant. Once an ATCM has been adopted it becomes enforceable by the MDAQMD 120 days after adoption or implementation (Health & Safety Code §39666(d)). USEPA has not to date adopted a

Maximum Achievable Control Technology (MACT) standard that is applicable to the proposed project. Should USEPA adopt an applicable MACT standard in the future, the MDAQMD will be required to enforce said MACT as an ATCM on the proposed project. MACT is also required for each major source of toxic air contaminants. The BSPP will not emit more than ten tons per year of any individual toxic air contaminant, and will not collectively emit more than 25 tons per year of all toxic air contaminants, so MACT is not required.

11. Conclusion

The MDAQMD has reviewed the proposed project's Application for New Source Review. The District has determined that the proposed project, after application of the permit conditions given below, will comply with all applicable MDAQMD Rules and Regulations. This FDOC will be released for public comment and publicly noticed on or after July 8, 2010. Written comments will be accepted for thirty days from the date of publication of the public notice.

Please forward any comments on this document to:

Eldon Heaston
Executive Director
Mojave Desert Air Quality Management District
14306 Park Avenue
Victorville, CA 92392

12. Permit Conditions

The following permit conditions will be placed on the Authorities to Construct (ATC) for the project. Separate permits will be issued for each auxiliary boiler, HTF ullage/expansion tank, carbon adsorption system, cooling tower, fire pump internal combustion engine, emergency internal combustion engine and the gasoline dispensing facility. The electronic version of this document contains a set of conditions that are essentially identical for each of multiple pieces of equipment, differing only in MDAQMD permit reference numbers. The signed and printed ATCs will have printed permits (with descriptions and conditions) in place of condition language listings.

Auxiliary Boilers Authority to Construct Conditions

[Four - 35 MMBtu/hr Natural Gas Fired Auxiliary Boiler]

Application Number:	*0010748*	*Permit Number:*	*B010913*
	0010755		*B010915*
	0010762		*B010916*
	0010769		*B010917*

1. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

2. This equipment shall be exclusively fueled with natural gas and shall be operated and maintained in strict accord with the recommendations of its manufacturer or supplier and/or sound engineering principles.

3. This equipment is subject to the federal NSPS codified at 40 CFR Part 60, Subparts A (General Provisions) and Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units).

4. Emissions from this equipment shall not exceed the following hourly emission limits at any firing rate, verified by fuel use and compliance tests:
   a. NO_x as NO_2:
      1. 0.389 lb/hr operating at 100% load (based on 9.0 ppmvd corrected to 3% O_2 and averaged over one hour)
      2. 0.097 lb/hr operating at 25% load (based on 9.0 ppmvd corrected to 3% O_2 and averaged over one hour)
   b. CO:

1. 1.322 lb/hr operating at 100% load (based on 50 ppmvd corrected to 3% O_2 and averaged over one hour)
2. 0.331 operating at 25% load (based on 50 ppmvd corrected to 3% O_2 and averaged over one hour)

c. VOC as CH_4:
1. 0.175 lb/hr operating at 100% load
2. 0.044 lb/hr operating at 25% load

d. SO_x as SO_2:
1. 0.019 lb/hr operating at 100% load
2. 0.005 lb/hr operating at 25% load

e. PM_{10}:
1. 0.035 lb/hr operating at 100% load
2. 0.088 lb/hr operating at 25% load

5. This equipment shall be operated only on PUC pipeline quality natural gas and shall be equipped with a non-resettable fuel meter. Fuel used shall not exceed:
   a. 57,499,425 cubic feet of natural gas per rolling twelve months; and
   b. 441,662cubic feet of natural gas per calendar day.

6. Operation of this equipment shall not exceed 17 total hours per day with no more than:
   a. 15 hours per calendar day and 4500 hours per rolling twelve months at 25% load; and
   b. 12 hours per calendar day and 600 hours per rolling twelve months at 100% load.

7. The o/o shall maintain an operations log for this equipment on-site and current for a minimum of five (5) years, and said log shall be provided to District personnel on request. The operations log shall include the following information at a minimum:
   a. Total operation time (hour/day, hours/month and cumulative hours/rolling twelve months);
   b. Fuel use (daily, monthly and cumulative hours/rolling twelve months);
   c. Maximum hourly, maximum daily, total quarterly, and total calendar year emissions of NO_x, CO, PM_{10}, VOC and SO_x (including calculation protocol); and,
   d. Any permanent changes made to the equipment that would affect air pollutant emissions, and indicate when changes were made.

8. Records of fuel supplier certifications of fuel sulfur content shall be maintained to demonstrate compliance with the sulfur dioxide and particulate matter emissions limits.

9. The owner/operator shall continuously monitor fuel flow rate and flue gas oxygen level.

10. The o/o shall perform an initial compliance test on this equipment in accordance with the MDAQMD Compliance Test Procedural Manual within 180 days of initial start up. The test report shall be submitted to the District within 6 weeks of performance of the test. The initial compliance test shall be for all items listed in condition 4 above, in addition to:

a. NO_x as NO_2 in ppmvd at 3% oxygen and lb/hr (measured per USEPA Reference Methods 19 and 20).
b. CO in ppmvd at 3% oxygen and lb/hr (measured per USEPA Reference Method 10).
c. PM_{10} in mg/m^3 at 3% oxygen and lb/hr (measured per USEPA Reference Methods 5 and 202 or CARB Method 5).
d. Opacity (measured per USEPA reference Method 9).
e. Flue gas flow rate in dscf per minute.
f. VOC as CH_4 in ppmvd at 3% oxygen and lb/hr (measured per USEPA Reference Methods 25A and 18).
g. SOx as SO2 in ppmvd at 3% oxygen calculated based on fuel supplier provided information.

11. The o/o shall perform annual compliance tests on this equipment in accordance with the MDAQMD Compliance Test Procedural Manual. The test report shall be submitted to the District no later than six weeks prior to the expiration date of this permit. The following compliance tests are required:
    a. NO_x as NO_2 in ppmvd at 3% oxygen and lb/hr (measured per USEPA Reference Methods 19 and 20).
    b. CO in ppmvd at 3% oxygen and lb/hr (measured per USEPA Reference Method 10).
    c. Flue gas flow rate in dscf per minute.
    d. Opacity (measured per USEPA reference Method 9).

12. This unit shall be tuned annually in accordance with the tuning procedure referenced in District Rule 1157 Section (I) or a modification of the tuning procedure described in Section (I) as approved by the District, or the permit unit manufacturer's specified tune-up procedure, by a technician that is qualified, to the satisfaction of the District, to perform a tune-up;

(Ullage System) Authority to Construct Conditions

[Four – HTF ullage expansion tank]

Application Number:	*0010750*	*Permit Number:*	*T010934*
	0010757		*T010935*
	0010764		*T010936*
	0010771		*T010937*

1. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

2. This system shall store only HTF, specifically the condensable fraction of the vapors vented from the ullage system.

3. This system shall be operated at all times with the carbon adsorption system under District permit [C010918, C010919, C010920, C010921].

4. Vent release shall be monitored in accordance with a District approved Inspection, Monitoring and Maintenance plan.

5. The owner/operator shall establish an inspection and maintenance program to determine, repair, and log leaks in HTF piping network and expansion tanks. Inspection and maintenance program and documentation shall be available to District staff upon request.

    a. All pumps, compressors and pressure relief devices (pressure relief valves or rupture disks) shall be electronically, audio, or visually inspected once every operating day.

    b. All accessible valves, fittings, pressure relief devices (PRDs), hatches, pumps, compressors, etc. shall be inspected quarterly using a leak detection device such as a Foxboro OVA 108 calibrated for methane.

    c. Inspection frequency for accessible components, except pumps, compressors and pressure relief valves, may be changed from quarterly to annual when two percent or less of the components within a component type are found to leak during an inspection for five consecutive quarters.

    d. Inspection frequency for accessible components, except pumps, compressors and pressure relief valves, shall be increased to quarterly when more than two percent of the components within a component type are found to leak during any inspection or report.

    e. If any evidence of a potential leak is found the indication of the potential leak shall be eliminated within 7 calendar days of detection.

    f. VOC leaks greater than 10,000-ppmv shall be repaired within 24-hours of detection.

    g. After a repair, the component shall be re-inspected for leaks as soon as practicable, but no later than 30 days after the date on which the component is repaired and placed in service.

    h. O/o shall maintain a log of all VOC leaks exceeding 10,000-ppmv, including location, component type, date of leak detection, emission level (ppmv), method of leak detection, date of and repair, date and emission level of reinspection after leak is repaired.

    i. O/o shall maintain records of the total number of components inspected, and the total number and percentage of leak components found, by component types made.

    j. O/o shall maintain record of the amount of HTF replaced on a monthly basis for a period of 5 years.

6. The o/o shall submit to the District a compliance test protocol within sixty (60) days of start-up and shall conduct all required compliance/certification tests in accordance with a

District-approved test plan. Thirty (30) days prior to the compliance/certification tests the operator shall provide a written test plan for District review and approval. Written notice of the compliance/certification test shall be provided to the District ten (10) days prior to the tests so that an observer may be present. A written report with the results of such compliance/certification tests shall be submitted to the District within forty-five (45) days after testing.

7. The o/o shall perform the following initial compliance tests on this equipment in accordance with the MDAQMD Compliance Test Procedural Manual. The test report shall be submitted to the District within 180 days of initial start up. The following compliance test are required:
   a. VOC as CH_4 in ppmvd and lb/hr (measured per USEPA Reference Methods 25A and 18 or equivalent).
   b. Benzene in ppmvd at and lb/hr (measured per CARB method 410 or equivalent).

8. The o/o shall perform the following annual compliance tests on this equipment in accordance with the MDAQMD Compliance Test Procedural Manual. The test report shall be submitted to the District no later than six weeks prior to the expiration date of this permit. The following compliance tests are required:
   a. VOC as CH_4 in ppmvd and lb/hr (measured per USEPA Reference Methods 25A and 18 or equivalent).
   b. Benzene in ppmvd and lb/hr (measured per CARB method 410 or equivalent).

   Additionally, records of all compliance tests shall be maintained on site for a period of five (5) years and presented to District personnel upon request.

9. Emissions from this equipment may not exceed the following emission limits, based on a calendar day summary:
   a. VOC as CH4 – 1.5 lb/day, verified by compliance test.

10. If current non-criteria substances become regulated as toxic or hazardous substances and are used in this equipment, the owner/operator (o/o) shall submit to the District a plan demonstrating how compliance will be achieved and maintained with such regulations.

Carbon Adsorption System Authority to Construct Conditions

[Four – carbon adsorption systems, one serving each HTF ullage system]

Application Number:	*0010751*	*Permit Number:*	*C010918*
	0010758		*C010919*
	0010765		*C010920*
	0010772		*C010921*

Application Number: 0010751, 0010758, 0010765 and 0010772]

1. Operation of this equipment shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

2. This carbon adsorption system shall provide 98% control efficiency of VOC emissions vented from the HTF ullage system under District Permit [T010934, T010935, T010936, T010937].
3. The o/o shall prepare and submit a monitoring and change-out plan for the carbon adsorptions system which ensures that the system is operating at optimal control efficiency at all times for District approval prior to start up.
4. This equipment shall be properly maintained and kept in good operating condition at all times.
5. This equipment must be in use and operating properly at all times the HTF ullage system is venting.
6. Total emissions of VOC to the atmosphere shall not exceed 1.5 lbs/day and 300 lbs/year calculated based on the most recent monitoring results.
7. During operation, o /o shall monitor VOC measured at outlet from the carbon beds. .Sampling is to be performed on a weekly basis. Samples shall be analyzed pursuant to USEPA Test Method 25 – Gaseous Non-methane Organic Emissions. Initial test shall be submitted to the District within 180 days after startup.
8. FID shall be considered invalid if not calibrated on the day of required use.
9. The o/o shall maintain current and on-site for the duration of the project a log of the weekly test results, which shall be provided to District personnel upon request, with date and time the monitoring was conducted.
10. Prior to January 31 of each new year, the o/o of this unit shall submit to the District a summary report of all VOC emissions (as hexane).

Cooling Tower Authority to Construct Conditions

[Four Cooling Towers, Application Number: 0010752, 0010759, 0010766 and 0010773]

1. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

2. This equipment shall be operated and maintained in strict accord with the recommendations of its manufacturer or supplier and/or sound engineering principles.

3. The drift rate shall not exceed 0.0005 percent with a maximum circulation rate of 6,034 gallons per minute. The maximum hourly PM_{10} emission rate shall not exceed 0.061 pounds per hour, as calculated per the written District-approved protocol.

4. The operator shall perform weekly tests of the blow-down water total dissolved solids (TDS). The TDS shall not exceed 2000 ppmw based on an arithmetic average of all TDS measurements conducted each month . The operator shall maintain a log which contains the date and result of each blow-down water test in TDS ppm, and the resulting mass emission rate. This log shall be maintained on site for a minimum of five (5) years and shall be provided to District personnel on request.

5. The operator shall conduct all required cooling tower water tests in accordance with a District-approved test and emissions calculation protocol. Thirty (30) days prior to the first such test the operator shall provide a written test and emissions calculation protocol for District review and approval.

6. A maintenance procedure shall be established that states how often and what procedures will be used to ensure the integrity of the drift eliminators. This procedure is to be kept on-site and available to District personnel on request.

Emergency Generator Authority to Construct Conditions

[Four – 2,922 hp emergency IC engine each driving a generator]

Application Number:	*0010753*	*Permit Number:*	*E010926*
	0010760		*E010927*
	0010767		*E010928*
	0010774		*E010929*

1. This equipment shall be installed, operated and maintained in strict accord with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of contaminants. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit.

2. This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15 ppm) on a weight per weight basis per CARB Diesel or equivalent requirements.

3. A non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed and maintained on this unit to indicate elapsed engine operating time. (Title 17 CCR §93115.10(e)(1)).

4. This unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than one hour in any twenty four hour period and 20 hours per year for testing and maintenance, excluding compliance source testing. Time required for source testing will not be counted toward the one hour daily or 20 hour per year limit.

5. This facility shall not perform testing of more than one internal combustion engine at any one time and no more than two internal combustion engines in any twenty four hour period.

6. The owner/operator (o/o) shall maintain a operations log for this unit current and on-site, either at the engine location or at a on-site location, for a minimum of five (5) years, and for another year where it can be made available to the District staff within 5 working days from the District's request, and this log shall be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below:

a. Date of each use and duration of each use (in hours);

b. Reason for use (testing & maintenance, emergency, required emission testing);
c. Calendar year operation in terms of fuel consumption (in gallons) and total hours; and,
d. Fuel sulfur concentration (the o/o may use the supplier's certification of sulfur content if it is maintained as part of this log).

7. This unit is subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (Title 17 CCR 93115). In the event of conflict between these conditions and the ATCM, the more stringent shall govern.

8. This unit is subject to the requirements of the Federal National Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII).

Emergency Fire Suppression Water Pump Authority to Construct Conditions

[Four - 300 hp emergency IC engine each driving a fire suppression water pump]

Application Number:	*0010754*	*Permit Number:*	*E010933*
	0010761		*E010930*
	0010768		*E010931*
	0010775		*E010932*

1. This equipment shall be installed, operated and maintained in strict accord with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of contaminants. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit.

2. This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15 ppm) on a weight per weight basis per CARB Diesel or equivalent requirements.

3. A non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed and maintained on this unit to indicate elapsed engine operating time. (Title 17 CCR §93115.10(e)(1)).

4. This unit shall be limited to use for emergency power, defined as in response to a fire or due to low fire water pressure. In addition, this unit shall be operated no more than one hour in any twenty four hour period and 50 hours per year for testing and maintenance, excluding compliance source testing. Time required for source testing will not be counted toward the one hour daily limit or 50 hour per year limit. The one hour daily and 50 hour limit can be exceeded when the emergency fire pump assembly is driven directly by a stationary diesel fueled CI engine operated per and in accord with the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition. This requirement includes usage during emergencies. {Title 17 CCR 93115.3(n)}

5. This facility shall not perform testing of more than one internal combustion engine at any one time and no more than two internal combustion engines in any twenty four hour period.

6. The owner/operator (o/o) shall maintain a operations log for this unit current and on-site, either at the engine location or at a on-site location, for a minimum of five (5) years, and for another year where it can be made available to the District staff within 5 working days from the District's request, and this log shall be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below:

a. Date of each use and duration of each use (in hours);
b. Reason for use (testing & maintenance, emergency, required emission testing);
c. Calendar year operation in terms of fuel consumption (in gallons) and total hours; and,
d. Fuel sulfur concentration (the o/o may use the supplier's certification of sulfur content if it is maintained as part of this log).

7. This unit is subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (Title 17 CCR 93115). In the event of conflict between these conditions and the ATCM, the more stringent shall govern.

8. This unit is subject to the requirements of the Federal National Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII).

Non-retail Gasoline Dispensing Facility Authority to Construct Conditions

[One – above ground gasoline storage tank and fuel receiving and dispensing equipment Application Number: 0011391, Permit Number N010938]

1. The toll-free telephone number that must be posted is 1-800-635-4617.

2. The owner/operator (o/o) shall maintain a log of all inspections, repairs, and maintenance on equipment subject to Rule 461. Such logs or records shall be maintained at the facility for at least two (2) years and available to the District upon request. Records of Maintenance, Tests, Inspections, and Test Failures shall be maintained and available to District personal upon request; record form shall be similar to the Maintenance Record form indicated in EO VR-401-A, Figure 2N

3. Any modifications or changes to the piping or control fitting of the vapor recovery system require prior approval from the District.

4. Pursuant to EO VR-401-A, vapor vent pipes are to be equipped with Husky 5885 pressure relief valves or as otherwise allowed by EO.

5. The o/o shall perform the following tests within 60 days of construction completion and annually thereafter in accord with the following test procedures:

a. Determination of Static Pressure Performance of Vapor Recovery Systems at Gasoline Dispensing Facilities with Aboveground Storage Tanks shall be conducted per EO VR-401-A Exhibit 4. Exhibit 4,
b. Phase I Adapters, Emergency Vents, Spill Container Drain Valve, Dedicated gauging port with drop tube and tank components, all connections, and fittings shall NOT have any detectable leaks; test methods shall be per EO VR-401-A Table 2-1, and
c. Liquid Removal Test (if applicable) per TP-201.6, and

Summary of Test Data shall be documented on a Form similar to EO VR-401-A Form 1

The District shall be notified a minimum of 10 days prior to performing the required tests with the final results submitted to the District within 30 days of completion of the tests.

The District shall receive passing test reports no later than six (6) weeks prior to the expiration date of this permit.

6. Pursuant to California Health and Safety Code sections 39600, 39601 and 41954, this aboveground tank shall be installed and maintained in accordance with Executive Order (EO) VR-401-A for EVR Phase I, and Standing Loss requirements: http://www.arb.ca.gov/vapor/eos/eo-vr401/eo-vr401a/eo-401a.pdf.

Additionally, Phase II Vapor Recovery System shall be installed and maintained per G-70-116-F with the exception that hanging hardware shall be EVR Balance Phase II type hanging hardware (VST or other CARB Approved EVR Phase II Hardware).

7. Pursuant to EO VR-401-A: Maintenance and repair of system components, including removal and installation of such components in the course of any required tests, shall be performed by OPW Certified Technicians.

8. Pursuant to EO VR-401-A, Maintenance Intervals for OPW; Tank Gauge Components; Dust Caps Emergency Vents; Phase I Product and Vapor Adapters, and Spill Container Drain Valve, shall be conducted by an OPW trained technician annually.

9. The annual throughput of gasoline shall not exceed 600,000 gallons per year. Throughput Records shall be kept on site and available to District personnel upon request. Before this annual throughput can be increased the facility may be required to submit to the District a site specific Health Risk Assessment in accord with a District approved plan. In addition public notice and/or comment period may be required.

10. The o/o shall; install, maintain, and operate EVR Phase I in compliance with CARB Executive Order VR-401-A, and Phase II vapor recovery in accordance with G-70-116-F. In the

event of conflict between these permit conditions and/or the referenced EO's the more stringent requirements shall govern.

Appendix – BSPP Emissions Calculations

Table A-1
Emissions Summary

	lb/day					t/yr				
	NOx	SOx	CO	PM10	VOC	NOx	SOx	CO	PM10	VOC
Emission Per 250 MW unit	36.412	0.064	35.990	6.429	9.843	1.117	0.017	1.602	0.461	1.141
Total Project (1000 MW)	145.650	0.257	143.959	25.714	39.370	4.468	0.069	6.409	1.844	5.068

Table A-2
BSPP Auxiliary Boiler

Permit No. Equipment	*MMBtu/hr*	*Max Day Hours*	*Annual Hours*	EmFac lb/MMBTU NOx	VOC	SO2	PM10	CO	EmFac pounds/hour NOx	VOC	SO2	PM10	CO	Max Daily (pounds) NOx	VOC	SO2	PM10	CO	Max Annual (pounds) **NOx**	**VOC**	**SOx**	**PM10**	**CO**
35 MMBtu/hr at 25% load	35	*5*	*4500*	0.011	0.005	0.0005	0.010	0.038	0.097	0.044	0.005	0.088	0.331	0.486	0.219	0.024	0.438	1.653	437.510	196.875	21.429	393.750	1487.671
35 MMBtu/hr at 100% load	35	*12*	*600*	0.011	0.005	0.0005	0.010	0.038	0.389	0.175	0.019	0.350	1.322	4.667	2.100	0.007	4.200	15.868	233.338	105.000	11.429	210.000	793.424
												total pounds each:		5.153	2.319	0.030	4.638	17.521	670.848	301.875	32.857	603.750	2281.095
												total tons each:		0.003	0.001	0.000	0.002	0.009	***0.335***	***0.151***	***0.016***	***0.302***	***1.141***

Max. Fuel Rate (scf/hr)	Daily Fuel Use Limit	*Annual Fuel Use Limit*
33,333.00	441,662.25	57,499,425.00

Notes:
NOx and CO based on manufacturer guarantee 9 ppm Nox and 50 ppm CO
Other emission factors from vendor data
SO2 emission factor assumes 0.2 grains of sulfur in 100 scf fuel
Emissions at 25% load are 100% of those at 100% load - manufacturer guarrantee
Meets BACT for Nox, CO

Table A-3

BSPP Emergency ICE

Tier 2

App No.	Equipment	bhp	gal/hr	Max Day Hours	PTE Annual Hours	EmFac gm/bhp-hr NOx	VOC	SO2	PM10	CO	EmFac pounds/hour NOx	VOC	SO2	PM10	CO	Max Daily (pounds) NOx	VOC	SO2	PM10	CO	Max Annual (pounds) NOx	VOC	SOx	PM10	CO
		2922	141.4	*1*	*50*	4.56	0.24		0.15	2.60	29.375	1.546	0.031	0.966	16.749	29.375	1.546	0.031	0.966	16.749	1468.730	77.302	1.527	48.313	837.434
														total pounds:		29.375	1.546	0.031	0.966	16.749	1468.730	77.302	1.527	48.313	837.434
														total tons:		0.015	0.001	0.000	0.000	0.008	***0.734***	***0.039***	***0.001***	***0.024***	***0.419***

Notes:
EPA Tier II emission factors - except SOx
Sox based on fuel use and CARB diesel
fuel density (lb/gal): 7.2
fuel sulfur content (ppm): 15
MW SO2 (l 64
MW S (lb/n 32
ok per Stationary ATCM - emergency & meets .15 g/bhp-hr - 50 hrs/yr maintenance and testing
Is not within 1000 feet of a school
Assumes voc .05% Nox + NMHC
Current tiered engine (tier II for this hp) is BACT

Table A-4

BSPP Emergency ICE - Fire Pump

Tier 3

App No.	Equipment	bhp	gal/hr	Max Day Hours	PTE Annual Hours	EmFac gm/bhp-hr NOx	VOC	SO2	PM10	CO	EmFac pounds/hour NOx	VOC	SO2	PM10	CO	Max Daily (pounds) NOx	VOC	SO2	PM10	CO	Max Annual (pounds) NOx	VOC	SOx	PM10	CO
		300	15.3	*1*	*50*	2.85	0.15		0.15	2.60	1.885	0.099	0.003	0.099	1.720	1.885	0.099	0.003	0.099	1.720	94.246	4.960	0.165	4.960	85.979
														total pounds:		1.885	0.099	0.003	0.099	1.720	94.246	4.960	0.165	4.960	85.979
														total tons:		0.001	0.000	0.000	0.000	0.001	***0.047***	***0.002***	***0.000***	***0.002***	***0.043***

Notes:
EPA Tier III emission factors - except SOx
Sox based on fuel use and CARB diesel
fuel density (lb/gal): 7.2
fuel sulfur content (ppm): 15
MW SO2 (l 64
MW S (lb/n 32
ok per Stationary ATCM - emergency & meets .15 g/bhp-hr - 50 hrs/yr maintenance and testing
Is not within 1000 feet of a school
Assumes voc .05% Nox + NMHC
Current tiered engine (tier III for this hp) is BACT

Table A-5

BSPP Cooling Tower

	hourly emissions (lb/hr)	daily emissions (lb/dy)	annual emissions (t/yr)
PM	0.03023034	0.72552816	0.132408889
WCR	6034	gpm	
TDS	2000	ppmv	
drift	0.0005	%	
density	8.35	lb/gal	
	24	hrs/dy	
	8760	hrs/yr	

Table A-6

BSPP HTF Ullage/Expansion Tank

	hourly emissions (lb/hr)	daily emissions (lb/dy)	annual emission (t/yr)
1 HTF vent	0.75	1.5	0.15
daily hours	2		
annual hours	400		
CE	98	%	

Table A-7

Fugitive Emissions

Daily Operating Hours		24	Assumed
Annual Days of Operation		365	Assumed
Equipment	**Component Count[1]**	**Emission Factor[2] (kg/hr/source)**	**Emissions (lb/hr)**
Valves	3050	8.40E-06	5.65E-02
Pump Seals	4	2.40E-05	2.12E-04
Connectors	7594	7.50E-06	1.26E-01
Pressure Relief Valves	10	8.40E-06	1.85E-04

Fugitive VOC Emissions			
	Hourly Emissions (lb/hr)	**Daily Emissions (lb/day)**	**Annual Emissions (ton/yr)**
Fugitive VOC - One Power Block (250 MW)	0.182	4.38	0.799
Fugitive VOC - Four Power Block (1000 MW)	0.730	17.51	3.196

Notes:

[1] Component count is per power plant unit

[2] Emission factors from EPA 1995 Protocol for Equipment Leak Emission

Table A-8

Gas Dispensing Facility-Non-retail, above ground ("Code 4")

Facility Design			Emission Factors (pounds per 1000 gallons)																	
			VOC			Benzene			Ethylbenzene			Methyl Tertiary Butyl Ether			Toluene			Xylene (Total)		
Tank Location	Control system	Code	Vapor	Liquid	Total	Vapor	Liquid	Total	Vapor	Liquid	Total	Vapor	Liquid	Total	Vapor	Liquid	Total	Vapor	Liquid	Total
Above Ground	None	1	18.90	0.61	19.51	0.0567	0.0061	0.0628	0.0000	0.0098	0.0098	0.0000	0.0671	0.0671	0.0000	0.0488	0.0488	0.0000	0.0146	0.0146
	Phase I Only	2	10.92	0.61	11.53	0.0328	0.0061	0.0389	0.0000	0.0098	0.0098	0.0000	0.0671	0.0671	0.0000	0.0488	0.0488	0.0000	0.0146	0.0146
	Phase I & II without Vent Values	3	1.26	0.42	1.68	0.0038	0.0042	0.0080	0.0000	0.0067	0.0067	0.0000	0.0462	0.0462	0.0000	0.0336	0.0336	0.0000	0.0101	0.0101
	Phase I & II with Vent Values	4	1.10	0.42	1.52	0.0033	0.0042	0.0075	0.0000	0.0067	0.0067	0.0000	0.0462	0.0462	0.0000	0.0336	0.0336	0.0000	0.0101	0.0101
Under Ground	None	5	17.64	0.61	18.25	0.0529	0.0061	0.0590	0.0000	0.0098	0.0098	0.0000	0.0671	0.0671	0.0000	0.0488	0.0488	0.0000	0.0146	0.0146
	Phase I Only	6	9.66	0.61	10.27	0.0290	0.0061	0.0351	0.0000	0.0098	0.0098	0.0000	0.0671	0.0671	0.0000	0.0488	0.0488	0.0000	0.0146	0.0146
	Phase I with Vent Values	7	8.69	0.61	9.30	0.0261	0.0061	0.0322	0.0000	0.0098	0.0098	0.0000	0.0671	0.0671	0.0000	0.0488	0.0488	0.0000	0.0146	0.0146
	Phase I & II without Vent Values	8	1.26	0.42	1.68	0.0038	0.0042	0.0080	0.0000	0.0067	0.0067	0.0000	0.0462	0.0462	0.0000	0.0336	0.0336	0.0000	0.0101	0.0101
	Phase I & II with Vent Values	9	0.85	0.42	1.27	0.0025	0.0042	0.0067	0.0000	0.0067	0.0067	0.0000	0.0462	0.0462	0.0000	0.0336	0.0336	0.0000	0.0101	0.0101

Toxic substance	Percent by Weight	
	Vapor	Liquid
Benzene	0.3	1.0
Ethylbenzene	0.0	1.6
Methyl Tertiary Butyl Ether	0.0	11.0
Toluene	0.0	8.0
Xylene (Total)	0.0	2.4

Annual Throughput 600,000.00 gallons

Pollutants / Substance Name	CAS	Category	Emission Factor lbs/1,000 gal	Emission Rates
Criteria Pollutants				tpy
Reactive Organic Gases		ROG	1.52	0.46
Toxic Substances				lbs/yr
Benzene	71432	VOC	0.0075	4.51
Ethylbenzene	100414	VOC	0.0067	4.03
Methyl Tertiary Butyl Ether	1634044		0.0462	27.72
Toluene	108883	VOC	0.0336	20.16
Xylene (Total)	1210	VOC	0.0101	6.05

Notes:
Emission factors from MDAQMD

Table A-9 – Modeled TAC emissions – single auxiliary boiler

Pollutant	CAS Number Used in HARP	Maximum Hourly Emission Rate (lb/hr)	Annual Average Emission Rate (lb/yr)
7,12-Dimethylbenz(a)anthracene	57976	5.33E-07	9.20E-04
Acenaphthene	83329	6.00E-08	1.04E-04
Acenaphthylene	208968	6.00E-08	1.04E-04
Anthracene	120127	8.00E-08	1.38E-04
Benz(a)anthracene	56553	6.00E-08	1.04E-04
Benzene	71432	7.00E-05	1.21E-01
Benzo(a)pyrene	50328	4.00E-08	6.90E-05
Benzo(b)fluoranthene	205992	6.00E-08	1.04E-04
Benzo(g,h,i)perylene	191242	4.00E-08	6.90E-05
Benzo(k)fluoranthene	207089	6.00E-08	1.04E-04
Chrysene	218019	6.00E-08	1.04E-04
Dibenz(a,h)anthracene	53703	4.00E-08	6.90E-05
p-Dichlorobenzene	106467	4.00E-05	6.90E-02
Fluoranthene	206440	1.00E-07	1.73E-04
Formaldehyde	50000	2.50E-03	4.31E+00
Hexane	110543	6.00E-02	1.04E+02
Indeno(1,2,3-cd)pyrene	193395	6.00E-08	1.04E-04
Naphthalene	91203	2.03E-05	3.51E-02
Phenanthrene	85018	5.67E-07	9.78E-04
Pyrene	129000	1.67E-07	2.88E-04
Toluene	108883	1.13E-04	1.96E-01

Table A-10 Modeled TAC emissions – single ICE – fire pump

Pollutant	CAS Number Used in HARP	Maximum Hourly Emission Rate (lb/hr)	Annual Average Emission Rate (lb/yr)
Diesel Particulate Matter	9901	9.91E-02	4.96E+00

[1] Emissions for each diesel powered fire water pump

Table A-11 Modeled TAC emissions – single ICE – emergency

Pollutant	CAS Number Used in HARP	Maximum Hourly Emission Rate (lb/hr)	Annual Average Emission Rate (lb/yr)
Diesel Particulate Matter	9901	9.65E-01	4.83E+01

[1] Emissions for each diesel powered emergency generator

Table A-12 Modeled TAC emissions – single cooling tower

Pollutant	CAS Number Used in HARP	Maximum Hourly Emission Rate (lb/hr)	Annual Average Emission Rate (lb/yr)
Chloroform	67663	1.58E-02	1.39E+02
Chromium (Hexavalent)	18540299	1.34E-08	1.17E-04
Copper	7440508	1.33E-07	1.16E-03
Vanadium	7440622	7.17E-08	6.28E-04
Zinc	7440666	3.27E-06	2.87E-02

[1] Emissions for each cooling tower (2 cells combined)

Table A-13 Modeled TAC emissions – single ullage vent stack

Pollutant	CAS Number Used in HARP	Maximum Hourly Emission Rate (lb/hr)	Annual Average Emission Rate (lb/yr)
Benzene	71432	7.50E-01	3.00E+02
Biphenyl	92524	7.50E-05	3.00E-02

[1] Emissions for each Ullage vent stack

Table A-14

Emissions from Land Treatment Unit			
	Hourly Emissions (lb/hr)	Daily Emissions (lb/day)	Annual Emissions (ton/yr)
VOC	0.561	13.47	2.458