3-31-09\_Chabot-Las Positas College District\_3-19-09\_meeting\_RCEC\_PSD.txt

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From: Weyman Lee Sent: Wednesday, April 01, 2009 9:05 AM To: Brian Bateman; Barry Young; Bob Nishimura; Alexander Crockett Cc: 'BMcBride@Calpine.com' Subject: FW: 3/19/09 Meeting re RCEC's Application for PSD Permit

----Original Message----From: Jewell Hargleroad [mailto:jewellhargleroad@mac.com] Sent: Tuesday, March 31, 2009 4:45 PM To: Weyman Lee Cc: Helen Kang; Shana Lazerow; County Counsel Stern Lindsey G.; pcort@earthjustice.org; Sanjay.Narayan@sierraclub.org Subject: 3/19/09 Meeting re RCEC's Application for PSD Permit

Weyman,

Attached is my letter on behalf of Chabot-Las Positas College District with attachments. Originals to follow in the mail. Note a second email follows with the remaining attachments. Please let me know whether you have any questions or there is any further information you require. Thanks, Jewell

Jewell J. Hargleroad Law Office Of Jewell J. Hargleroad 1090 B Street, No. 104 Hayward, California 94541 Telephone: 510-331-2975 jewellhargleroad@mac.com

March 31, 2009

Via Email <u>weyman@baaqmd.gov</u> And U.S. Mail Weyman Lee, P.E. Senior Air Quality Engineer Bay Area Air Quality Management District 939 Ellis Street, San Francisco, California 94109

#### Re: RCEC's Representations Concerning Chabot-Las Positas Objections And Comments to Draft "Federal 'Prevention of Significant Deterioration' Permit" For The Russell City Energy Center, BAAQD Application No. 15487.

Dear Mr. Lee:

On behalf of the Chabot-Las Positas Community College District, this is to address some of the issues which have come to our attention that were raised at a meeting on March 19, 2009, that we understand was attended by you and three other technical or engineering staff members Nishimura, Lusher, Young, Brian Bateman and BAAQMD's attorney Alexander Crockett, held by the attorneys for the applicant Russell City Energy Center (RCEC) or Calpine Corporation ("Calpine").

From what we understand, the scope of the discussions was initially identified for the purpose of "settlement" discussions. We were surprised to learn of the District's attendance at such a meeting given you have not re-circulated a new draft permit, responded to pending comments and no one yet has initiated litigation. Also in attendance to listen to RCEC's private presentation were the Sierra Club attorney and counsel representing Citizens Against Pollution, attorneys from the Law Clinic for Golden Gate University and Earthjustice..

We were surprised to learn that although neither your office nor Calpine contacted Chabot-Las Positas concerning this, the attorneys for RCEC focused on the information presented in Chabot-Las Positas's February 6, 2009 correspondence to you. (For that matter, to date neither has your office has never contacted Chabot-Las Positas seeking a response to Calpine's assertions.<sup>1</sup>) Despite this failure to contact Chabot-Las Positas, this is to confirm that Chabot-Las Positas remains ready and willing to respond to any inquiries or to provide you with any follow-up information. Moreover, we would expect that before you rely on any contentions by RCEC disputing Chabot-Las Positas information, BAAQMD would provide Chabot-Las Positas the opportunity to respond. This is particularly important since as the documents attached by email and enclosed by mail reflect, we suspect that the District did not receive reliable information from RCEC.

Further, this confirms that Chabot-Las Positas expects this attached and enclosed evidence, and any other evidence responsive to RCEC's attacks on the opposing parties' technical positions presented on or by February 6, 2009, to be incorporated and included in the record for consideration of RCEC's application.

# 1. The Allegation That RCEC Will Generate 828 lbs of CO2/MWh Is *At Full Baseload* Capacity, Which Is Not The Actual Expected Operation Of RCEC Under The Proposed PSD Permit Sought.

We understand that RCEC contends that it will satisfy the Emissions Performance Standard ("EPS") adopted by the CPUC in Decision ("D.") 07-01-039 which requires that the net emissions rate of generation facilities such as the RCEC Project be no higher than 1,100 lbs. of carbon dioxide (CO2) per megawatt hour based on capacity factors, heat rates and corresponding emissions rates reflecting the <u>actual, expected operations</u> of *the powerplant.* (Opinion: Interim Opinion On Phase 1 Issues: Greenhouse Gas Emissions Performance Standard, D.07-01-039, 2007 (Jan.25, 2007), emphasis and italics added.) Further, we are aware that PG&E recently filed its public response submitting EPS documentation (*albeit* without the documentation) that "the RCEC Project . . . with allowance for reasonable degradation, to maintain a guaranteed heat rate of XXX mmbtu/MWh *at full load (baseload capacity)* [fn], which translates to 828 lbs of CO2/MWh." (PG&E Response filed March 20, 2009 in *Application of Pacific Gas and Electric Company for Expedited Approval Of The Amended Power Purchase Agreement For The Russell City Energy Company Project(U 39 E), Application 08-09-007.)* 

The problem, however, is that as reflected by your draft permit, and RCEC's own admission against interest by Barbara McBride of Calpine's November 13, 2008 e-mail to you entitled "RCEC vs. FP 10 emissions," the proposed duty cycle described by RCEC for this PSD permit is "intermediate to baseload," with the potential for daily startups and extended weekend downtime following by a cold start. So, although PG&E's representations are interesting, because this is not the actual expected

<sup>&</sup>lt;sup>1</sup> Dr. Joel Kinnamon's telephone number was clearly stated on the letterhead and he directly emailed you his February 6, 2009 letter; when he is unavailable, he has assistants who take messages and there is voicemail. Your office never attempted to contact him or his office.

operation and duty load as sought to be approved by RCEC for this permit, those representations are irrelevant and inapplicable.<sup>2</sup>

#### 2. RCEC's Contention That The Utah And Long Island Plants Identified By Chabot-Las Positas Do Not Exist As Described Is Wrong.

Our February 6, 2009, letter, pages 5-7, Chabot-Las Positas also pointed out that your "statement of basis is seriously flawed in that it mistakenly asserts that Siemens equipment is not available when in fact it and other alternatives are commercially available and in operation." (Relying on SOB, p. 41 and footnote 31 on page 40.) We additionally pointed out that the statement that "a low-load operation flexibility (LLOF) system for its turbines. . . . it has not yet been validated and is not commercially available at this time" simply is factually wrong and that the District must revisit these points. (February 6, 2009 letter, pp. 6-7.)

Citing the engineering publications by Siemens, such as by H. Emberger, E. Schmid, E. Gobrecht – Siemens Power Generation Germany, *Fast Cycling Capability for New Plants and Upgrade Opportunities*, published by Siemens AG, 2005, we discussed the development of two combined cycle fast start plant models: the Flex-Plant (FP)<sup>3</sup> 10 for peaking to intermediate duty applications, using a simplified once-through heat recovery steam generator (HRSG), and the FP 30 high efficiency fast start plant using a high efficiency HRSG for intermediate to baseload applications. (February 6, 2009 letter, p. 7 & fn. 10.)

We pointed out that based on our investigation, "there are many off-the-shelf alternatives, both new F-class combined cycle alternatives and upgrade packages to operational facilities, that dramatically reduce startup/shutdown emissions relative to the startup/shutdown emission limits identified by the District as startup/shutdown BACT for RCEC. . . . [H[owever, that this Statement of Basis fails to provide any sound technical basis for concluding that by simply following "operating instructions" for the older 501FD2 gas turbine represents state-of-the-art startup/shutdown BACT for the RCEC gas turbines." (Feb. 6, 2009 letter, p. 9.)

<sup>&</sup>lt;sup>2</sup> See Chabot-Las Positas February 6, 2009 letter: "As your Statement of Basis acknowledges, p. 10, this facility is designed for conventional baseload operation using Siemens' *older* Westinghouse 501FD2 gas turbines.<sup>2</sup> **Baseload operation, meaning continuous operation at or near the design output of the plant, generally results in only a handful of startups and shutdowns each year. Startup/shutdown emissions may be a relatively minor component of overall annual emissions in a baseload application, even if individual startup/shutdown events produced significant emissions.** However the proposed duty cycle described by RCEC for this permit is "intermediate to baseload," with the *potential* for *daily* startups and extended weekend downtime following by a cold start." (Emphasis added.)

<sup>&</sup>lt;sup>3</sup> The Flex-Plant or FP is a trademark technology. All references to "FP" are to the trade marked technology.

In support, we referred you to the following projects that should be examined:

The Lake Side Power Plant in Utah - a 2x1 combined cycle project utilizes FP 30 technology and has been in operation since December 2007; and

The Caithness Energy Long Island Power 1x1 combined cycle plant currently under construction also is permitted to use FP 30 technology.

(Feb. 6, 2009 letter, p. 13.)

:

Although you have never contacted us to provide you the validating documentation, we understand that at this meeting RCEC contended that these plants as identified above do not exist. RCEC's contention is grossly incorrect and this is to reiterate that before the District relies on anything asserted by RCEC disputing a point raised, the District provide the proponent of the point the opportunity to respond. In this regard, if we are "misstating" RCEC's contention, please promptly notify us as to just what does RCEC dispute and provide us an adequate opportunity to respond.

Attached via email and enclosed by mail are copies of the following documents:

October 4, 2004 Approval for Lake Side Power Plant Utah County, CDS A; NA; NSPS, NESHAPS, HAPs, TITLE V MAJOR, PSD MAJOR, NAA/NSR MAJOR

January 6, 2005 Approval Order For The Lake Side Power Plant issued by the Utah Air Quality Board (we suggest you compare the emission limits)

January 13, 2005 Response to Comments received on Summit Vineyard LLC Project (N3031-001) discussing limitations on daily start-up & shut down emissions; and

http://en.wikipedia.org/wiki/Lake Side Power Plant.

This last entry is the link for Wikopedia showing the picture of the Utah power plant operating and referring to the local newspaper's articles concerning its completion which RCEC apparently contends does not exist as described.

Also, enclosed by mail and attached via email are the following documents reflecting that the Long Island facility is presently under construction, a point which we earlier discussed and that apparently RCEC also disputes:

The August 1, 2006 Environmental Conservation Permit for the CAITHNESS LONG ISLAND ENERGY CENTERZORN BLVD|SCTM# 777-01-28.4.

The Long Island air permit describes the facility as follows:

This facility consists of one Siemens-Westinghouse 501F combustion turbine, which shall fire natural gas as its primary fuel with distillate oil as a back-up fuel. The gas turbine shall operate as a combined cycle unit with a nominal power output of 346 MW. The heat recovery steam generator (HRSG) contains supplemental firing from a natural gas only duct burner. The turbine employs dry low NOx, steam injection, and a selective catalytic reduction unit (SCR) for control of oxides of nitrogen and catalytic oxidation unit (CO catalyst) for the control of carbon monoxide. *The facility also consists of an auxiliary boiler which fires primarily natural gas with distillate oil back-up. The auxiliary boiler employs a low NOx burner and flue gas recirculation (FGR) to control emissions of NOx*. Finally the facility has a natural gas fired fuel gas heater, a diesel fire pump, a steam turbine generator, and a 20,000-gallon aqueous ammonia storage tank..

(Emphasis and italics added.) As reflected by the attached and enclosed documents, both permits for both plants include emission limits for the auxiliary boiler, which is the signature of the Flex Plant technology.

#### 3. RCEC's Reliance On *Sumas Energy* Should Be Dismissed As Both Decisions Are Unpublished, The 2005 Decision Never Reaches Substantive Issues On BACT Analysis Applicable To Startups And Shut Downs, And For Those Issues It Reaches, It Supports Chabot-Las Positas' Position.

We also understand that RCEC's attorneys contend that a decision in *In re Sumas Energy 2 Generation Facility*, PSD Appeal No. 02-10 & 02-11 provides legal support for their argument that BACT analysis does not apply to startups and shut downs. If, of course, we have their contention incorrect, please let me know and we will address it. Nevertheless, assuming we correctly state RCEC's position, this is to bring to your attention that the *Sumas* decisions are unpublished, expressly never reach the applicability of BACT to startups and shutdowns because it was not preserved for review, and upon examination, in fact supports Chabot-Las Positas's position.<sup>4</sup>

First, unlike the objectors in *Sumas,* Chabot-Las Positas has made clear that the BACT analysis is flawed, specifically with respect to start ups and shut downs. (*Compare, id* at slip opn. 15: "none of these comments asserted that EFSEC's BACT analysis was flawed in any way.") Further, to make sure there is no confusion, this again confirms Chabot-Las Positas's earlier contention on February 6, 2009 that your District has "failed to conduct a top-down BACT analysis regarding emissions during startup and shutdown." (*Id.* at slip opn. p. 15.)

<sup>&</sup>lt;sup>4</sup> There are in fact two *Sumas* decisions, both of which were unpublished. We address the latter 2005 decision that was rendered after the 2003 unpublished decision reversed and affirmed in part the prior PSD permit.

Most significantly, *Sumas* actually supports Chabot-Las Positas's position. *Sumas* observed that the PSD permit at issue there "included significantly more restrictive limitations on emissions during startup and shutdown in the final permit." (*Id.* at slip opn. p. 17 ["EPA guidance indicates that if emission limits specified for normal operation are not feasible under startup or shutdown, **PSD permits must specify startup and shutdown emission limits that are protective of the NAAQS,**" emphasis added] & p. 19.) Unlike the numerous limitations on emissions required in *Sumas*, the proposed **PSD draft for RCEC presently imposes no limitations whatsoever on startup and shutdowns**. (BAAQMD Statement of Basis (SOB), p. 121.)

#### 4. The Data For Palomar That We Identified Is Available From The San Diego Air District And Confirms Chabot-Las Positas's Points.

In response to the District's attempt to justify its failure to examine Palomar Energy, in San Diego, which optimized its operating procedures and reduced its startup emissions by applying the OpFlex control software and early ammonia injection, the District claimed supporting data is limited and therefore it is not possible to determine what reductions are attributable to the OpFlex control software and early ammonia injection. (Statement of Basis, p. 41.)

Chabot-Las Positas challenged that summary as incorrect and specifically cited and referred to San Diego Gas & Electric's Report, entitled "OpFlex and Early Ammonia Effects on Startup emissions," San Diego County APCD Variance No. 4073, dated March 6, 2007, which documents the breakdown for emissions reduction. Apparently, we understand that RCEC announced at this meeting that no such documentation exists. Attached and enclosed is a copy of the March 6, 2007 Report.

Additionally, by some time next week, we expect to receive the inspection reports from the San Diego County Air District concerning its records on the continuous emissions monitoring system ("CEMS") data from Palomar Energy. We also can provide you with the contact information of the EPA personnel who we understand collect hourly detailed CEMs reports for Palomar.

#### 5. Any Modifications Or Updating Of Equipment By RCEC, Including A Possible Benson Boiler, Needs To Be Put In Writing And Incorporated In The Application And Proposed Permit, And Circulated For Public Comment.

Contrary to its earlier position contending that an auxiliary boiler would offset emission benefits and that it had "no room" for a boiler, arguments which Chabot-Las Positas disputed, we understand that RCEC's attorneys announced at this meeting that RCEC has or intends to acquire a Benson boiler and that it has made or intends to make substantial modifications to its equipment which it contends were not available at the time of RCEC's application. Given a Benson boiler is a significant piece of equipment which has significant substantive consequences for startup and shutdown emissions, this equipment and such modifications must be addressed in writing in any proposed permit. With this substantial change and/or modifications of equipment, we would expect this application to be amended and the proposed permit circulated based on this new information. In this regard, it is unfortunate that RCEC earlier failed to inform the District of this information, and amend its application to incorporate whatever modifications and new equipment it contemplates, prior to the District and numerous members of the public and organizations taking substantial time to review an application and draft permit which allegedly is now "superceded."

Given the important issues presented concerning the enforcement of the Clean Air Act for the District, which already is out of compliance with the Clean Air Act, the **District may not rely on such verbal representations by RCEC without detailed information reduced in writing and including supporting documentation to allow you to properly analyze this new information, re-circulate a draft and to allow for public comment**. We refer you to the October 6, 1999 letter from Robert B. Miller, EPA Chief Permits and Grants Section, to Michigan's Permit Section for its State Department of Environmental Quality, making it clear that approval of a PSD permit may be reversed if the BACT decision is based on misleading information. (*See* p. 1: "grounds for overturning a BACT decision include an inappropriate review (BACT procedures not correctly followed), an incomplete review (BACT decisions not correctly justified), or a review based on false or misleading information." *Relying on* 40 CFR 52.21.)

Please let me know what, if any, additional information you may require or whether there are any additional questions you may have. Your attention concerning these important issues is greatly appreciated.

Sincerely,

Jewell J. Hargleroad

Cc: (Via Email Only)
Deputy County Counsel, Alameda County Lindsey Stern
Professor Helen H. Kang, Director
Environmental Law & Justice Clinic
Golden Gate University School of Law
Paul Cort, Earthjustice
Sanjay Narayan, Sierra Club
Shana Lazerow, Communities for a Better Environment

### UTAH DIVISION OF AIR QUALITY NEW SOURCE PLAN REVIEW

Tom Cameron Vice President Summit Vineyard LLC 6682 W. Greenfield Ave West Allis, WI 53214	Project fee code: N3031-001
RE:	Approval for Lake Side Power Plant Utah County, CDS A; NA; NSPS, NESHAPS, HAPs, TITLE V MAJOR, PSD MAJOR, NAA/NSR MAJOR
REVIEW ENGINEER:	John D. Jenks
DATE:	October 25, 2004
NOTICE OF INTENT SUBMITTED:	May 21, 2004
PLANT CONTACT:	Tom Cameron
PHONE NUMBER: FAX NUMBER:	(414) 475-2015 (414) 475-4552
SOURCE LOCATION:	1825 North Pioneer Lane, Vineyard, UT 84058 Utah County
UTM COORDINATES:	4,464.5 km. Northing, 436.0 km. Easting, Zone 12 UTM datum NAD27

N:\Engineer Directory\word\ Company Review

#### **REVIEWS**:

Peer Engineer

#### Milka Radulovic

DAQ requests that a company/corporation official read the attached draft/proposed Plan Review with Recommended Approval Order Conditions. If this person does not understand or does not agree with the conditions, the <u>PLAN REVIEW ENGINEER</u> should be contacted within five days after receipt of the Plan Review. Special attention needs to be addressed to the Recommended AO Conditions because they will be recommended for the final AO. If this person understands and the company/corporation agrees with the Plan Review or Recommended AO Conditions, this person should sign below and return (can use FAX # 801-536-4099) within 10 days after receipt of the conditions. If the Plan Review Engineer is not contacted within 10 days, the Plan Review Engineer shall assume that the Company/Corporation official agrees with this Plan Review and will process the Plan Review towards final approval. A 30-day public comment period will be required before the Approval Order can be issued.

Thank You

Applicant Contact

(Signature & Date)

Project - Plan Review October 25, 2004 Page 2

### **TYPE OF IMPACT AREA**

Attainment Area	
PM <sub>10</sub> No	
SO <sub>2</sub>	Yes
СО	Yes
Ozone	Yes
Non-attainment Area	
PM <sub>10</sub>	Yes
SO <sub>2</sub> No	
CONo	
Maintenance Area	
OzoneNo	
CONo	
NSPS	Yes
40 CFR Part 60, Subparts A, Db, Dc, and GG	
NESHAPNo	
MACTNo	
Hazardous Air Pollutants (HAPs)	Yes
Hazardous Air Pollutants Major SourceNo	
New Major Source	Yes
Major ModificationNo	
PSD Permit	Yes
PSD Increment (modeling)	Yes
Operating Permit Program	
MinorNo	
Major	Yes
Send to EPA	Yes
Comment period	
-	

#### Abstract

Summit Vineyard LLC, has submitted a Notice of Intent (NOI) to install and operate a 560 MW (gross) electric generation plant in Utah County. The plant would be located on the site of the old Geneva Steel facility, and would consist of two (2) combustion turbine and HRSG arrangements and a single steam turbine generator. The combustion turbines and HRSG units will be equipped with CO catalysts, SCR, and combustion controls featuring dry-low NO<sub>x</sub> burners. This source is major under both the Prevention of Significant Deterioration (PSD) and Non-attainment Area New Source Review (NAA/NSR) regulations. Utah County is a Non-attainment area of the National Ambient Air Quality Standards (NAAQS) for PM<sub>10</sub>. New Source Performance Standards (NSPS) A, Db, Dc, and GG regulations apply to this source. The Acid Rain Program (Title IV) of the Clean Air Act applies to this source. Title V of the 1990 Clean Air Act applies to this source, with the requirement that the source submit a Title V Operating Permit application within one year of beginning operations.

The emissions, in tons per year, will be as follows:  $PM_{10}$  95.8,  $NO_x$  138.3,  $SO_2$  26.5, CO 547.1, VOC 72.8, HAPs (Formaldehyde) 6.2.

#### Newspaper Notice

Summit Vineyard LLC, has submitted a Notice of Intent (NOI) to install and operate a 560 MW (gross) electric generation plant in Utah County. New Source Performance Standards (NSPS) A, Db, Dc, and GG regulations apply to this source. The Acid Rain Program (Title IV) of the Clean Air Act applies to this source. Title V of the 1990 Clean Air Act applies to this source, with the requirement that the source submit a Title V Operating Permit application within one year of beginning operations.

#### I. <u>DESCRIPTION OF PROPOSAL</u>

Two natural gas-fired combined cycle CTs will be the primary power generating equipment at the Lake Side Power Plant (LSPP). At full operating capacity (including power augmentation capability), the LSPP will have capacity of approximately 560 MW at site average annual ambient temperatures.

The LSPP project site is located on property presently owned by the Geneva Steel Corporation. The parcel includes approximately 60 acres, which is more than adequate for the new generation plant, switchyard, and the peripheral buffers.

#### I.1 LOCATION

The site is located in the town of Vinyard in Utah County, Utah, approximately 2 miles west of the town of Orem. The project is located on the south side of 200 South Road, between North Pioneer Lane and 250 West (Proctor) Road. The site address is 1825 North Pioneer Lane, Vineyard, UT 84058.

The Lake Side Power Plant will be located in an area that is designated as non-attainment for PM10 and

unclassified/attainment for all other criteria pollutants for state and federal standards.

The project site is essentially flat, with an average elevation of approximately 4,500 feet above mean sea level (MSL).

#### **I.2 DESCRIPTION OF PLANT PROCESSES**

The primary processes at this project consist of the following equipment:

- 2 Siemens Westinghouse 501F CTs (165 MW each)
- 2 duct-fired HRSGs
- 1 steam turbine generator unit (240 MW)

The support processes having the potential for air emissions at this project consist of the following equipment:

- One cooling tower for the steam turbine
- Auxiliary boiler
- Fuel dew point heater
- Fire pump (diesel engine)
- Standby diesel generator

The turbine generators will be powered by pipeline-quality natural gas delivered to the facility from existing Kern or Questar pipelines located in the area. The diesel-fired firewater pump engine and standby diesel engine generator will be started at scheduled intervals to ensure they are working properly.

Table I-1 lists the process and air pollution control equipment to be used at the LSPP. The project will consist of generating equipment in a configuration that has been permitted and is in use throughout the United States and the world.

The plant will be equipped with a selective catalytic reduction system (SCR) for control of  $NO_x$  emissions and an oxidation catalyst for control of CO and VOC emissions. Fuel for the plant will be natural gas, delivered to the site via interconnection with a Kern or Questar natural gas pipeline located near the Project site. The Project will interconnect with the PacifiCorp 345kV transmission grid.

### TABLE I-1VINEYARD ENERGY EMISSION SOURCES AND ADD-ON CONTROLEQUIPMENT

Equipment Name	Capacity (per unit)	Units	Equipment Type
Combustion Turbines (2)	165	MW	Siemens-Westinghouse Combustion Turbine Model 501F
Heat Recovery Steam Generators (2)	184	MMBTU/hr (HHV)	Steam generator
Selective Catalytic Reduction systems (2)	-	-	Catalytic reduction of NO <sub>x</sub>
Oxidation Catalyst systems (2)			Catalytic oxidation of CO and VOC

Auxiliary Boiler	49	MMBTU/hr	Steam Generator used during downtime.
Cooling Tower (10 cells)	118,800	gpm	Evaporative, mechanical draft
Fuel dew point heater	4	MMBTU/hr	Natural gas fuel
Fire pump	290	hp	Internal combustion – Diesel
Standby generator	1,500	hp	Internal combustion – Diesel

#### I.3 PROJECT DESIGN, OPERATION, AND EMISSIONS

The layout is based on a Siemens-Westinghouse "Reference" design for a 2 on 1 combined-cycle facility. The CTs, HRSGs and STGs will be housed within a turbine hall. This Reference plant design utilizes Siemens-Westinghouse 501F combustion turbine generators and has been successfully permitted in many locations in the United States.

#### I.4 PROJECT DESIGN AND OPERATING CHARACTERISTICS

The power plant will consist of two Siemens-Westinghouse 501F CTs, two HRSGs with duct burners; a single condensing STG; a de-aerating surface condenser; a bank of mechanical draft wet cooling towers; and associated support equipment.

Each of the two CTs will generate approximately 165 MW. The CTs will be equipped with evaporative inlet cooling systems to increase plant output during periods of high ambient temperature conditions. The exhaust gas from each CT is routed to a triple pressure reheat HRSG to generate steam for the STG. There is one HRSG for each CT. Steam from the two HRSGs is combined and taken to one triple pressure STG. Duct firing will be provided in the HRSGs, and will be used to supplement steam generation capacity during conditions when exhaust energy from the CTs declines. Steam from the HRSGs will be directed to a condensing STG.

Approximately 170 MW (with no duct firing) will be produced by the STG. Cooling water for the STG condenser is provided by circulating water through a wet cooling tower. An additional 50 MW will be available during peak load periods by utilizing duct firing and steam injection power augmentation. At full operating capacity (including power augmentation capability), the LSPP will have a capacity of approximately 560 MW at site average annual ambient temperatures.

The plant will be designed and controlled to meet all applicable air emission standards.  $NO_x$  emissions will be controlled by a combination of the dry low  $NO_x$  (DLN) combustors in the CTs and an SCR system in the HRSG. CO and VOC emissions will be controlled by an oxidation catalyst system.

The CTs will be assumed to be operating at normal loads whenever they are not in startup or shutdown. Normal loads are defined as CT loads from 70 to 100 percent, plus duct firing.

During normal operation, the plant will start up and shut down periodically. The amount of time that units are shut down defines whether the subsequent startup is a cold, warm, or hot start (i.e. the longer it is shut down, the colder the temperature of the equipment). For the purpose of calculating annual emissions, 10 cold starts, 50 warm starts, and 210 hot starts per unit are assumed.

The auxiliary boiler will be operated when the plant is not operational. This boiler will provide low pressure steam to the steam turbine gland seals and HRSG drums to maintain minimum system

temperatures. The benefit of the auxiliary boiler is reduced startup times.

#### I.5 NATURAL GAS FUEL

The CT/HRSGs, auxiliary boiler, and fuel heater will be fired exclusively with pipeline natural gas. Table I-2 presents the chemical properties used as the basis for the application.

Constituent	Mole Percent					
Methane	95.6					
Ethane	2.1					
Propane	0.3					
Nitrogen	0.3					
Carbon Dioxide	1.7					

### TABLE I-2ASSUMED CHEMICAL CHARACTERISTICSOF NATURAL GAS FUEL

#### I.6 EMISSION CONTROL AND MONITORING

Air emissions from the combustion of natural gas in the CTs and duct burners will be controlled using selective catalytic reduction (SCR) and catalytic oxidation as add-on controls. Emissions that will be controlled include  $NO_x$ , CO, and VOCs. To ensure that the systems perform correctly, continuous emissions monitoring (CEM) will be performed.

#### I.7 NO<sub>x</sub>, CO, AND VOC EMISSION CONTROLS

DLN combustors and SCR will be used to control  $NO_x$  concentrations in the exhaust gas emitted to the atmosphere. The SCR process will use aqueous ammonia. Ammonia slip, or the concentration of unreacted ammonia in the exiting exhaust gas, will be limited to less than 10 ppm. The SCR equipment will include a reactor chamber, catalyst modules, ammonia storage system, ammonia vaporization and injection system, and monitoring equipment and sensors. Emissions of CO and VOC from the CT combustors and HRSG duct burners will be controlled with an oxidation catalyst. Emissions limits and control technologies will be BACT/LAER, as per Utah and federal EPA requirements.

#### **I.8 PARTICULATE EMISSION CONTROL**

Particulate emissions will be controlled using combustion air filtration and pipeline quality natural gas. This natural gas is low in sulfur and particulates, and will be the sole fuel for the CTs and duct burners.

#### I.9 CONTINUOUS EMISSION MONITORING (CEM)

CEM systems will sample, analyze, and record fuel gas flow rate,  $NO_x$  and CO concentration levels, and percentage of  $O_2$  in the exhaust gas from the two HRSG stacks. This system will generate reports of emissions data in accordance with permit requirements and will send alarm signals to the plant control system and control room when the level of emissions approaches or exceeds pre-selected limits.

#### I.10 PROJECT EMISSION DATA

Predicted hourly and annual emission rates are presented in Tables I-3 and I-4 for the CT/HRSGs, cooling tower, auxiliary boiler, emergency fire pump, standby generator, and the fuel dew point heater.

				· · · ·	
Source	NO <sub>x</sub>	CO	VOC	<b>PM</b> <sub>10</sub> <sup>a</sup>	SO <sub>2</sub>
CT/HRSG 1 <sup>b</sup>	46.72	865.35	85.79	10.80	3.09
CT/HRSG 2 <sup>b</sup>	46.72	865.35	85.79	10.80	3.09
Auxiliary Boiler	1.71	1.81	0.78	0.49	0.08
Fuel Dew Pt Heater	0.44	0.37	0.02	0.03	0.01
Fire Pump	3.64	0.16	0.05	0.04	0.54
Standby Generator	19.69	1.44	0.39	0.16	2.75
Cooling Tower	0.00	0.00	0.00	0.62	0.00
Facility Total	117.9	1734.4	172.8	22.9	9.6

TABLE I-3 MAXIMUM CT/HRSG EMISSIONS (LB/HR)

a. Particulates include front and back half values

b. Startups included in values

#### TABLE I-4 MAXIMUM ANNUAL CT/HRSG EMISSIONS (TON/YR)

Source	NO <sub>x</sub>	CO	VOC	<b>PM</b> <sub>10</sub> <sup>a</sup>	SO <sub>2</sub>
CT/HRSG 1 <sup>b</sup>	63.3	268.8	34.6	45.4	12.9
CT/HRSG 2 <sup>b</sup>	63.3	268.8	<mark>34.6</mark>	<mark>45.4</mark>	12.9
Auxiliary Boiler	7.49	7.84	3.43	2.15	0.34
Fuel Dew Pt Heater	1.93	1.62	0.106	0.146	0.028
Fire Pump	0.36	0.016	0.005	0.004	0.054
Standby Generator	1.97	0.14	0.04	0.02	0.28
Cooling Tower	0.00	0.00	0.00	2.73	0.00
Facility Total	138.3	547.1	72.8	95.8	26.5

a. Particulates include front and back half values

b. Startups included in values

#### I.10.1. CT/HRSGs Emissions

CTG/HRSG operating parameters for a variety of operating conditions are presented in Appendix B. These engineering data define the parameters for normal operations and were provided by Siemens Westinghouse. Tables I-5 and I-6 present the maximum normal CT/HRSG emission rates.

### TABLE I-5MAXIMUM NORMAL EMISSION RATESWITHOUT DUCT FIRING

Pollutant	ppmvd @ 15% O <sub>2</sub> <sup>a</sup>	lb/hr <sup>a</sup>
NO <sub>x</sub>	2	13.0
СО	4	17.6
VOC (as CH <sub>4</sub> )	1.4	3.3
SO <sub>2</sub> <sup>b</sup>		2.9

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$PM_{10}^{c}$	_	10.0
NH <sub>3</sub>	10	26.6

### TABLE I-6MAXIMUM NORMAL EMISSION RATES WITH<br/>DUCT FIRING

Pollutant	ppmvd @ 15% O <sub>2</sub> <sup>a</sup>	lb/hr <sup>a</sup>
NO <sub>x</sub>	2	14.9
СО	4	18.7
VOC (as CH <sub>4</sub> )	1.7	4.1
SO <sub>2</sub> <sup>b</sup>	_	3.1
$PM_{10}^{c}$		10.8
NH <sub>3</sub>	10	28.5

During normal operation, the turbines will start up and shut down periodically. For the analysis of annual emissions, it is assumed that an upper bounding limit of startups will be 10 cold starts, 50 warm starts, 210 hot starts, and 270 shutdowns per year, per unit. The lower bounding limit will be no starts, i.e., operating continuously 8,760 hours per year.

Of these annual operating hours, it is assumed that 4,000 hours will also include maximum duct firing. Annual emissions are calculated for both extremes of operation with the understanding that the selected operational schedule, subject to market forces, will be between the two bounding limits. For ambient air impact analysis, modeling will be based on the maximum emissions for each applicable averaging period considering both scenarios.

#### I.10.2. Startup/Shutdown Emissions

Emissions and time durations for cold, warm, and hot startups and for shutdowns were provided by Siemens Westinghouse and are presented in Table I-7. A cold start represents a HRSG shutdown for a period greater than 48 hours. A warm start represents a HRSG shutdown for a period between 8 and 48 hours. A hot start represents a HRSG shutdown for a period between 0 and 8 hours.

											/
Start Start	N	<mark>Ox</mark>	C	0	VC	<mark>)C</mark>		SO <sub>2</sub>	P	M <sub>10</sub>	<b>Duration</b>
<mark>Туре</mark>	<mark>lbs</mark>	<mark>lb/hr</mark>	<mark>lbs</mark>	<mark>lb/hr</mark>	<mark>lbs</mark>	lb/hr	<mark>lbs</mark>	lb/hr	<mark>lbs</mark>	<mark>lb/hr</mark>	minutes
Cold	102	<mark>37.3</mark>	1267	<mark>464</mark>	<mark>164</mark>	60.0	2	0.8	22	<mark>8.0</mark>	<mark>164</mark>
Warm	<mark>.97</mark>	<mark>45.5</mark>	1260	<mark>591</mark>	163	76.4	2	0.9	<mark>19</mark>	<mark>8.9</mark>	128
Hot	77	<mark>42.0</mark>	1062	<mark>579</mark>	126	68.7	2	<mark>0.9</mark>	<mark>16</mark>	<mark>8.7</mark>	110
Shutdown	18	<mark>51.4</mark>	403	1151	<mark>36</mark>	102.9	1	3.1	4	11.4	21

#### TABLE I-7 CT STARTUP AND SHUTDOWN EMISSIONS (PER CT)

#### I.10.3. Cooling Tower Emissions

A mechanical draft cooling tower is required for the steam condensing portion of the steam turbine cycle. The cooling tower employs water to cool the process water and results in an increase in both the temperature and moisture content of the air passing through it. Entrained liquid droplets in this air, known as "drift," may be carried out of the tower through the exhaust fan duct. Following evaporation of the water droplets, the dissolved solids present in the drift may be classified as PM emissions.

To calculate  $PM_{10}$  emissions, it is assumed that the drift droplet total dissolved solids (TDS) content is the same as the circulating water. As a conservative estimate of TDS, a value of 2,100 milligrams per liter (mg/l or parts per million, or ppm) was used based on a water quality analysis of the ground water supply. This analysis indicated a maximum TDS concentration of 300 mg/l for the makeup water. The circulating water is cycled seven times. This results in a calculated circulating water concentration of 300 mg/l multiplied by seven cycles for a total of 2,100 mg/l.

Cooling tower particulate emissions are estimated based on a mass-balance emission calculation. Highefficiency drift eliminators will limit escaping water particles to 0.0005 percent of the circulating water rate. The high-efficiency drift eliminators minimize cooling tower mist and associated PM drift from the cooling tower and represent a significant increase in the control of these emissions over standard mist eliminators.

#### I.10.4. Auxiliary Boiler and Fuel Dew Point Heater

A small (49 MMBTU/hr) auxiliary boiler will provide seal steam to the steam turbine and maintain optimal temperature in the HRSG during downtimes. It will operate when the CT/HRSG units are in startup or are not operating. The use of an auxiliary boiler allows for quick startup of the CT/HRSGs.

A 3.67 MMBTU/hr fuel dew point heater will treat incoming fuel to keep entrained liquids from condensing as a result of fuel pressure reduction. This heater will be fired with natural gas. This source will operate continuously.

#### I.10.5. Diesel Fire Pump and Standby Generator

A diesel-fired 290-horsepower fire pump will be located on the facility for emergency situations. The pump will be tested for a one-hour period once per week and may be operated up to 200 hours per year.

A diesel-fired 1490-horsepower standby generator will also be located on the facility to provide power during utility power outages. The generator will be tested for a one-hour period once per week and may be operated up to 200 hours per year.

#### II. EMISSION SUMMARY

The emissions from the Lake Side Power Plant will be as follows:

	<b>Current Emissions</b>	<b>Emission Increases</b>	<b>Total Emissions</b>
<u>Pollutant</u>	tons/year	tons/year	tons/year

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$PM_{10}$			 
10			
NOx		0.00	 
CO			 
VOC		0.00	 
HAPs			
For	maldehyde	0.00	 6.2

#### TABLE II-1 MAXIMUM ANNUAL CT/HRSG EMISSIONS (TON/YR)

Source	NO <sub>x</sub>	CO	VOC	<b>PM</b> <sub>10</sub> <sup>a</sup>	SO <sub>2</sub>
CT/HRSG 1 <sup>b</sup>	63.3	268.8	34.6	45.4	12.9
CT/HRSG 2 <sup>b</sup>	63.3	268.8	34.6	45.4	12.9
Auxiliary Boiler	7.49	7.84	3.43	2.15	0.34
Fuel Dew Pt Heater	1.93	1.62	0.106	0.146	0.028
Fire Pump	0.36	0.016	0.005	0.004	0.054
Standby Generator	1.97	0.14	0.04	0.02	0.28
Cooling Tower	0.00	0.00	0.00	2.73	0.00
Facility Total	138.3	547.1	72.8	95.8	26.5

The facility totals show the potential to emit (PTE) of the plant. As this is a new source, this PTE classifies the LSPP as a major NSR source.

### III. <u>BEST AVAILABLE CONTROL TECHNOLOGY/LOWEST ACHIEVABLE EMISSION</u> RATE (BACT/LAER) ANALYSIS

Pursuant to Utah DEQ NSR-PSD provisions found in R307-403 and R307-405 of the UDAQ rules and EPA PSD regulations (40 CFR Part 51.165 and 51.166), the following control evaluations are required for significant criteria pollutant emissions from major sources:

For significant emissions of pollutants for which the area is designated as attainment, a Best Available Control Technology (BACT) implementation is required.

For significant emissions of pollutants for which the area is designated as non-attainment, the Lowest Achievable Emission Rate (LAER) must be applied. LAER is more stringent than BACT in that LAER requires the most effective technology achieved in practice without consideration of energy or economic impacts.

The Utah County region is designated as attainment area for ozone, nitrogen dioxide, and sulfur dioxide, and as non-attainment area for  $PM_{10}$ . Carbon monoxide is considered non-attainment in the Provo-Orem urban area only, and the remainder of county, where the LSPP site is located is attainment for CO. Hence, BACT would apply to sources with significant emissions increases of CO and VOC (attainment pollutants) and LAER would apply to sources with significant increases of  $PM_{10}$ ,  $SO_x$ , and  $NO_x$  (because  $SO_x$  and  $NO_x$  are considered as precursors to  $PM_{10}$  formation under the Utah SIP and Utah County is nonattainment for  $PM_{10}$ ).

#### III.1 BACT AND LAER DEFINITIONS

The definition of BACT is presented in R307-101-2:

"Best Available Control Technology (BACT)" means an emission limitation and/or other controls to include design, equipment, work practice, operation standard or combination thereof, based on a maximum degree of reduction of each pollutant subject to regulation under the Clean Air Act and/or the Utah Air Conservation Act emitted from or which results from any emitting installation, which the Air Quality Board, on a case-by-case basis taking into account energy, environmental and economic impacts and other costs, determines is achievable for such installation through application of production process and available methods, systems and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of each such pollutant. In no event shall application of BACT result in emission of pollutants which will exceed the emissions allowed by section 111 or 112 of the Clean Air Act."

LAER is defined as follows (40 CFR 165(a)(1)(xiii)):

"...for any source, that rate of emissions which reflects; (a) the most stringent emissions limitation which is contained in the implementation plan of any state for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or (b) the most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent. In no event shall the application of this term permit a proposed new source to emit any pollutant in excess of the amount allowable under applicable new source standards of performance."

BACT applies to the following pollutants: CO and VOC. SO<sub>2</sub> emissions are well below the major source threshold as well as the significant increase values per R307-101-2 Definitions.

LAER applies to the following pollutants:  $PM_{10}$  and  $NO_x$ . Per Section 189(e) of the Clean Air Act of 1990, the LAER control requirements must apply to  $PM_{10}$  precursors, which are emitted in significant amounts, as listed in Table III-1.  $PM_{10}$  and  $NO_x$  are emitted in significant amounts. SO<sub>2</sub> emissions are below the pollutant-specific significant net emissions increase values, per R307-10.

Pollutant	Significant Net Increase (ton/yr)	Proposed CTG/HRSGs Emissions (ton/yr)	Control Level Required
СО	100	547.1	BACT
NO <sub>x</sub>	40	138.3	LAER
SO <sub>x</sub>	40	26.5	BACT
PM <sub>10</sub>	15	95.8	LAER
PM	25	95.8	LAER
Ozone (VOCs)	40	72.8	BACT
Lead	0.6	0.0	N/A

TABLE III-1	CTG/HRSG REQUIRED CONTROL LEVEL BY POLLUTANT
-------------	--

N/A = Not applicable

This section presents the BACT/LAER analyses, with proposed emission controls and limits for the project's new emission units. The emissions units covered by the BACT/LAER control technology

review are the two combustion turbines, HRSG duct burners, the 10-cell mechanical draft evaporative cooling tower, the auxiliary boiler, the fuel dew point heater, the standby diesel generator engine, and diesel fire pump engine.

The BACT/LAER analysis must include a review of applicable federal regulations as well as a "topdown" analysis (described below in Section III.2) of all applicable control strategies. A review of federal regulations is contained in Section 4.0 of this application. Potential sources of previous BACT/LAER determinations for the top down analysis include the EPA RACT /BACT/LAER Clearinghouse (RBLC); determinations made by Utah DAQ for other Utah projects, determinations made by other agencies; and published, independently verified equipment performance and operating data.

#### III.2 THE TOP-DOWN BACT AND LAER ANALYSES APPROACH

A top-down BACT analysis can be described as a progression of five analytical steps. LAER would be identified at the third step of this process, and the final two steps would justify whether BACT needs to be as stringent as LAER.

This top-down BACT analysis consists of the following five steps:

• Step 1. Identify potential control technologies, including combinations of control technologies for each pollutant subject to PSD standards.

All control technologies for each emission identified that are technologically feasible are identified. Inherently lower-emitting processes, add-on controls, and combinations of the two are considered. Control technologies achieved in practice and potentially applicable control technologies are presented in Step 1. The sources of information for identifying control technologies include the EPA's RACT/BACT/LAER Clearinghouse (RBLC), and reviews of existing permits.

• Step 2. Evaluate each control technology for technical feasibility and eliminate those deemed technically infeasible.

The control options identified in Step 1 are evaluated based on physical, chemical, and engineering principles. Control options determined to be technically infeasible are removed from further consideration. Step 2 is straightforward for control technologies that have been demonstrated. For control technologies that have not been demonstrated, the availability and the applicability of the technology in question must be considered.

A technology is defined as available if it has reached the licensing and commercial sale stage of development. A technology is considered applicable if it can reasonably be installed and operated. It is not technically feasible for operators to be required to implement control technologies that would force extended delays, resource penalties, or extended trials. Technologies that force undue delays, resource penalties, or extended technically available and, therefore, are considered technically infeasible.

• Step 3. Rank the remaining technically feasible control technologies in order of control effectiveness.

The control technologies remaining after Step 2 is complete are ranked in order of control effectiveness.

LAER would be the top ranked control technology. LAER is defined as "the most stringent emissions limitation achieved in practice by any such class or category of stationary sources." This is the step where LAER is selected.

• Step 4. Assume the highest-ranking and technically feasible control represents BACT, unless it can be shown to result in adverse environmental, energy, or economic impacts.

If the top candidate is determined to be less satisfactory than controls that rank below it, the rationale for this conclusion is presented as public record. A thorough documentation of the source-specific environmental, energy, or economic impact must be presented that demonstrates how alternate technologies are appropriate as BACT for a top-listed control technology to be deferred for a lower-listed technology.

• Step 5. Select BACT.

The most effective control technology that was not eliminated in Step 4 is selected as BACT for the pollutant and emission unit reviewed.

#### III.3 PROPOSED BACT/LAER

Table III-2 presents the current summary of the proposed BACT and LAER limits for the LSPP. This summary provides the BACT/LAER evaluation results for emissions of NO<sub>x</sub>, CO, VOC, SO<sub>2</sub>, and PM<sub>10</sub>.

In this section, all concentration limits for NO<sub>x</sub>, CO, and VOC are presented in units of parts per million dry volume corrected to fifteen percent oxygen (ppmvd @ 15% O2). The abbreviation "ppm" is used to represent "ppmvd @ 15% O2".

Source	Pollutant	Control Technology	Emission Level
Combustion Turbines	NO <sub>x</sub> (LAER)	DLN with SCR	2 ppm, 3-hour average
	CO (BACT)	CT design, proper combustion, oxidation catalyst	3 ppm, 3-hour average
	VOC (BACT)	CT design, combustion control, oxidation catalyst	2 ppm, 3-hour average
	PM <sub>10</sub> (LAER)	CT design, combustion	10.8 lb/hr
		control, low sulfur fuel	0.01 lb/MMBTU
	SO <sub>2</sub> (BACT)	Low Sulfur Fuel	3.1 lb/hr
			0.0016 lb/MMBTU
Auxiliary Boiler	NO <sub>x</sub> (LAER)	Low NO <sub>x</sub> burner and	$NO_x = 0.035 \text{ lb/MMBTU*}$
-	CO (BACT)	good combustion	CO = 0.037 lb/MMBTU*
	VOC (BACT)	practices	VOC = 0.016 lb/MMBTU(
	PM <sub>10</sub> (LAER)	-	$PM_{10} = 0.01 \text{ lb/MMBTU*}$
	SO <sub>2</sub> (BACT)		SO <sub>2</sub> = 0.002 lb/MMBTU*

#### TABLE III-2 LSPP BACT SUMMARY

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Fuel Dew Point Heater	NO <sub>x</sub> (LAER) CO (BACT) VOC (BACT)	Low NO <sub>x</sub> burner and good combustion practices	$NO_x = 0.110 \text{ lb/MMBTU*}$ CO = 0.092  lb/MMBTU* VOC = 0.006  lb/MMBTU*
	$\frac{PM_{10} (LAER)}{SO_2 (BACT)}$		PM <sub>10</sub> = 0.008 lb/MMBTU* SO <sub>2</sub> = 0.002 lb/MMBTU *
Emergency Fire Pump	$\begin{array}{c} NO_{x} (LAER) \\ CO (BACT) \\ VOC (BACT) \\ PM_{10} (LAER) \\ SO_{2} (BACT) \end{array}$	Good combustion practices, inlet air filter, limit operation to 200 hrs/yr	$NO_x = 5.7 \text{ gm/hp-hr*}$ CO = 0.25  gm/hp-hr* VOC = 0.08  gm/hp-hr* $PM_{10} = 0.07 \text{gm/hp-hr*}$ $SO_2 = 1.17 \text{ gm/hp-hr*}$
Standby Generator	$\begin{array}{c} \text{NO}_{x} (\text{LAER}) \\ \text{CO} (\text{BACT}) \\ \text{VOC} (\text{BACT}) \\ \text{PM}_{10} (\text{LAER}) \\ \text{SO}_{2} (\text{BACT}) \end{array}$	DLN, good combustion practices, limit operation to 200 hrs/yr,	$NO_x = 6.0 \text{ gm/hp-hr*}$ CO = 0.44  gm/hp-hr* VOC = 0.12  gm/hp-hr* $PM_{10} = 0.05 \text{ gm/hp-hr*}$ $SO_2 = 0.84 \text{ gm/hp-hr*}$
Cooling Tower	PM <sub>10</sub> (LAER)	High Efficiency Drift Eliminators	0.0005% drift*

#### TABLE III-2 LSPP BACT SUMMARY

Estimated emission level, not an emission limitation

\*

#### III.4. TECHNOLOGY ASSESSMENT TO CONTROL NO<sub>X</sub> EMISSIONS

Methods to control  $NO_x$  can be divided into two categories: control of formation of  $NO_x$  in the combustion zone and post-combustion control of  $NO_x$ . In combustion turbines, formation of  $NO_x$  in the combustion zone can be limited by lowering combustion temperatures and by staging combustion (that is, a reducing atmosphere followed by an oxidizing atmosphere).  $NO_x$  formed by the combustion process can be further reduced by the use of post-combustion control technologies, such as catalysts that promote the breakdown of nitrogen oxide (NO) and NO<sub>2</sub> to N<sub>2</sub> and water.

Table D-1 in Appendix D present BACT/LAER identified since 2000 for combustion turbines. This table shows several facilities that have been permitted at the 2.0 to 2.5 ppm level. It is likely that operations in this range of emissions have been permitted in PM10 and ozone non-attainment areas.

The LSPP is proposing a NO<sub>x</sub> BACT/LAER limit of 2 ppm, based on a 3-hour rolling average, and excluding periods of start-up and shutdown. This level of emission control will be achieved using DLN and SCR.

The emission limits included in this analysis are based on the evaluation of all available control technologies, and the feasibility of reducing emissions to the 2 ppm level.

- This is current state-of-the-art for NO<sub>x</sub> control technology for F Class combined cycle power plants,
- A limit of 2 ppm using DLN/SCR is consistent with recent LAER determinations throughout the United States and in Utah,
- Conservative air quality dispersion modeling with the 2 ppm normal NOx emission rate has shown insignificant impacts.

#### III.4.1. Step 1. Identify All Technologies to Control Emissions of NO<sub>x</sub>

The following NO<sub>x</sub> control technologies were evaluated for their technical feasibility.

- DLN combined with Selective Catalytic Reduction DLN/SCR
- EMx (formerly SCONOx)
- Xonon
- DLN Combustion
- Flue Gas Recirculation (FGR)
- Selective Non-Catalytic Reduction (SNCR)
- Water Steam Injection

#### III.4.1.1. DLN with SCR

The combination of DLN controls followed by SCR is the most stringent control technology that is currently commercially available and achieved in practice for F Class turbines.

SCR is a post combustion gas treatment technique used for reducing NO and NO<sub>2</sub> to molecular  $N_2$  and water in the turbine exhaust stream. Aqueous ammonia (NH<sub>3</sub>) is typically used as the reducing agent. The basic reactions are:

 $\begin{array}{l} 4NH_3+4NO+O_2 \rightarrow \ 4N_2+6H_2O\\ 8NH_3+6NO_2 \rightarrow \ 7N_2+12H_2O \end{array}$ 

The reactions take place on the surface of a catalyst. The function of the catalyst is to effectively lower the activation energy of the  $NO_x$  decomposition reaction. Technical factors related to this technology include the design of the catalyst, optimum operating temperature, sulfur content of the fuel, and design of the NH3 injection system.

An SCR system is composed of an aqueous ammonia storage tank, forwarding pumps, and controls; an injection grid (a system of nozzles that spray aqueous ammonia into the exhaust gas ductwork); a reactor that contains the catalyst; and instrumentation and electronic controls. An injection grid disperses  $NH_3$  in the flue gas upstream of the catalyst and  $NH_3$  and  $NO_x$  are reduced to  $N_2$  and water in the catalyst reactor. This control technique reduces both thermal and fuel  $NO_x$  in the exhaust streams.

The performance and effectiveness of SCR systems directly depend on the temperature of the flue gas when it passes through the catalyst. The optimum temperature range for flue gas in SCR operation, using a conventional vanadium/titanium catalyst, is 600 to 750 °F. For combined cycle units, this temperature window occurs at an intermediate point in the HRSG.

DLN combined with SCR is a proven and feasible  $NO_x$  control technology on F Class combined cycle systems. This system has been demonstrated on similar power plants over the last five years. DLN/SCR is considered a technically feasible alternative to control  $NO_x$  emissions to 2 ppm.

#### **III.4.1.2. EM**x

EMx (previously referred to as SCONOx) is a post combustion control system produced by EmeraChem,

LLC. A demonstration project is currently operating at the Federal Plant owned by Sunlaw Cogeneration Partners. This plant uses a GE LM2500 combined cycle power plant with a nominal capacity of 34 MW which is roughly one fifth the capacity of each of the proposed LSPP CT/HRSG units. The GE LM2500 is the largest CT that has been used to demonstrate this control technology at this time.

The EMx system uses a coated oxidation catalyst installed in the flue gas to remove both  $NO_x$  and CO without a reagent such as ammonia. The emissions of  $NO_x$  are oxidized to  $NO_2$  and then absorbed onto the catalyst. A dilute hydrogen gas is passed through the catalyst periodically. This gas desorbs the  $NO_2$  from the catalyst and reduces it to  $N_2$  before it exits the stack. CO is oxidized to  $CO_2$ . VOCs are also oxidized by this control technology.

EMx operates in a temperature range between  $300^{\circ}$  F and  $700^{\circ}$  F. The catalyst uses a potassium carbonate coating that reacts to form potassium nitrates and nitrites on the surface of the catalyst. When all of the carbonate coating on the surface of the catalyst has reacted to form nitrogen compounds, NO<sub>2</sub> is no longer absorbed, and the catalyst must be regenerated. Dampers are used to isolate a portion of the catalyst for regeneration. The regenerative gas is passed through the isolated portion of the catalyst while the remaining catalyst stays in contact with the flue gas. After the isolated portion has been regenerated, the next set of dampers closes to isolate and regenerate the next portion of the catalyst. This cycle repeats continuously. As a result, each section of the catalyst is regenerated about once every 15 minutes.

Current emissions data (December 1996 through August 2000) show that the Federal Plant is controlling  $NO_x$  emissions to 1.3 ppm and CO to 1 ppm on a periodic basis for a LM2500 application (excluding start up, shutdown, and frequent maintenance).

#### III.4.1.3. Xonon

The Xonon combustion system, developed by Catalytica, improves the combustion process by lowering the peak combustion temperature to reduce the formation of  $NO_x$ , while further controlling CO and VOC emissions.

Most emission control technologies for CTs remove contaminants from exhaust gas before they are released to the atmosphere. In contrast, the overall process in the Xonon system involves partial combustion of the fuel in the catalyst module followed by complete combustion downstream of the catalyst. In the catalyst module, a portion of the fuel is combusted without a flame (thus, at relatively low temperatures and lowered NOx formation). A homogeneous combustion region is located immediately downstream where the remainder of the fuel is combusted.

The key feature of the Xonon combustion system is a proprietary catalytic component, called the Xonon Module, which is integral to the CT combustor. Xonon combusts the fuel without a flame, thus eliminating the peak flame temperatures that lead to formation of  $NO_x$ .

Because it prevents the formation of  $NO_x$  rather than cleaning up  $NO_x$  after it is produced, no expensive add-on recovery systems are required. The Xonon combustion system consists of four sections:

- The preburner for start-up, acceleration of the CT, and adjustment of the catalyst inlet temperature, if required.
- The fuel injection and fuel-air mixing system that achieves a uniform fuel-air mixture to the

catalyst.

- The Xonon flameless catalyst module, where a portion of the fuel is combusted in a flameless reaction without creating  $NO_x$  because the temperature remains below the level where  $NO_x$  will form.
- The remainder of the fuel is combusted in the burnout zone and CO and unburned hydrocarbons are burned out. This process also is flameless.

Xonon is an innovative technology that is currently being commercialized on small scale projects with support from the U.S. Department of Energy, the California Energy Commission (CEC), and the California Air Resources Board (CARB). CARB has reported on the pilot effort under way in Santa Clara where the Xonon system is operating at a 1.5 MW simple cycle pilot facility. The CARB indicated in its June 1999 Stationary Source Division Report Guidance for Power Plant Siting and Best Available Control Technology (CARB 1999), page 23: "Emission levels from 1.33 to 4.04 ppmvd NO<sub>x</sub>, at 15 percent oxygen (O2) have been achieved at Silicon Valley Power utilizing the Xonon technology". But CARB further indicates, "There is not sufficient operating experience to ensure reliable performance on large gas turbines."

#### III.4.1.4. DLN Combustion

Virtually all gas turbine manufacturers are continuing to research and improve on advanced combustion technologies, because they represent the most cost effective approach to  $NO_x$  reduction for some turbines. With natural gas combustion, control of  $NO_x$  through design of the combustor is attractive because thermal formation of  $NO_x$  is the primary mechanism for  $NO_x$  formation.

The thermal NO<sub>x</sub> reaction converts atmospheric N<sub>2</sub> and O<sub>2</sub> to NO<sub>x</sub> at the high temperatures of combustion. DLN combustion results in NO<sub>x</sub> emission rates of 9 to 25 ppm. With DLN, the W501F can control NO<sub>x</sub> emissions within the range of 15 to 25 ppm.

#### III.4.1.5. FGR

FGR is the process of rerouting exhaust gases into the combustion zone. This results in lowering the combustion zone temperature and oxygen concentrations thus lowering the formation of  $NO_x$ .

#### III.4.1.6. SNCR

The selective non-catalytic reduction (SNCR) process injects ammonia or urea into the exhaust steam. The ammonia or urea reacts with the NO in a series of reactions that reduce the NO to N<sub>2</sub>. To be effective, this reaction must take place within a narrow range of high temperatures  $(1,500^{\circ} \text{ F} - 2,000^{\circ} \text{ F})$ . At temperatures below this range there is increased ammonia slip, and at temperatures above this range the ammonia or urea can be oxidized to form NO.

#### III.4.1.7. Water or Steam Injection

Like FGR, water or steam injection technology results in lowering the combustion zone temperature an oxygen concentrations thus lowering the formation of  $NO_x$ .

#### **III.4.2.** Step 2. Eliminate Technically Infeasible Options to Control NO<sub>x</sub>

The following technologies have been determined to be technically infeasible to control NOx emissions to levels that would qualify as BACT/LAER:

- Water or Steam Injection
- SNCR
- FGR
- Xonon
- EMx

The discussions below summarize this evaluation of the technologies.

#### III.4.2.1. Water or Steam Injection

Water or steam injection cannot reduce concentrations of  $NO_x$  to the levels that would qualify as BACT. Therefore, water steam injection is not an effective control technology for the proposed LSPP turbines and is eliminated as a technically feasible alternative.

#### III.4.2.2. SNCR

A review of EPA's RBLC database, and of EPA's National Combustion Turbine Spreadsheet has shown that SNCR has never been demonstrated on a combined cycle system. The temperature range required for effective operation of this technology is above the peak temperature for combined cycle systems. The maximum CT exhaust temperature would be approximately 1,200° F. Therefore, SNCR is an infeasible control technology for the LSPP.

#### III.4.2.3. FGR

There is no documentation of FGR being used on combined cycle CTs. Therefore, it has been determined that this technology is not feasible. The RBLC database and EPA's spreadsheet show that flue gas recirculation has never been demonstrated on combined cycle CTs. Therefore, this technology is not considered feasible for the LSPP.

#### III.4.2.4. Xonon

The basic research and development of the Xonon combustion system has been completed, and the technology has been confirmed with tests performed on a 1.5 MW turbine at the Silicon Valley Power facility in Santa Clara, California. To date, this technology has not been demonstrated on larger turbines, such as the SW501F. Because the technology has not been demonstrated in practice it does not currently represent BACT.

Xonon is an emerging technology and is not commercially available at this time for CTs of the size proposed for this project (F Class CTs). In addition, Xonon has not demonstrated feasibility for long-term operations. Current results for this technology involve limited operations of up to 8,100 hours (reflecting equivalent operations of less than one year) and has been limited to systems with smaller CTs. Therefore, the Xonon catalytic system was rejected because it has not been shown to be technically feasible for F Class CTs or long term operation.

#### III.4.2.5. EMx

Although EMx technology represents a significant potential advancement in the future of  $NO_x$  control, it has not been demonstrated in combustion turbines equivalent to the units proposed for the LSPP Project. Recently, Redding Power in California selected EMx as the emission control technology for use on an Alstom GTX 100 with a nominal rating of 43 MW with a 13 MW HRSG. This plant began operation in June 2002. Therefore, there is little data on the long-term viability of this system. Additionally, because of its smaller capacity, the Alstom GTX 100 does not demonstrate the feasibility of EMx for larger turbine systems.

EMx has been demonstrated in operations with small CTs, and has been considered for F Class CTs. However, there are no operational data at this time that demonstrate that this technology is feasible for an F Class CT. EMx has never been installed or operated on an F Class CT for either combined or simple cycle operations.

In the EMx system, a system of multiple dampers create seals for the sections of catalyst that are regenerating, and the exhaust flow is directed to the active sections of catalyst. If the dampers do not seal, the catalyst within this section will not regenerate and the effectiveness of this section's emissions control will deteriorate. To resolve this problem it may be necessary to shutdown the power generation system.

For the smaller units where EMx is employed the dampers are less than 15 feet in length. The LSPP F Class CTs would be much larger than the CTs where EMx is currently being demonstrated. The width of the proposed LSPP HRSGs would be approximately 45 feet. Also, EMx is currently operating in HRSGs that contain only one module, but the width of the HRSGs associated with F Class CTs would require at least two modules or, possibly, three modules. Because of the larger area required for the exhaust flow, this would present an even greater problem in sealing the dampers and making catalyst regeneration reliable.

In addition, the height of the LSPP HRSGs would be approximately 82 feet, and EMx has only been used in units with heights less than 70 feet. Therefore the LSPP HRSGs would require a greater number of dampers, and, consequently, more potential for damper failure.

#### III.4.3. Step 3. Rank Remaining Technologies – Select LAER

The remaining technologies are ranked from most feasible to least feasible for achieving NO<sub>x</sub> emission levels that would qualify as BACT/LAER:

- DLN combined with SCR is the only feasible technology with a long-term record of performance on F Class CT technology.
- EMx has no proven feasibility on F Class CT technology.

USEPA Region 9 and the California South Coast Air Quality Management District (SCAQMD) have determined that a  $NO_x$  emission limit of 2 ppm has been demonstrated in practice for F Class combined cycle projects. Because this is the most stringent limit that has been demonstrated in practice, this represents LAER and would be applied to projects in non-attainment areas (the South Coast Air Basin is an extreme non-attainment area for ozone).

The ANP Blackstone power plant in Blackstone, Massachusetts (also in a serious ozone non-attainment area) has been operating under a 2 ppm emission limit since June, 2001.

Achieving a 2 ppm  $NO_x$  limit has recently been demonstrated, and the demonstration period is consistent with other recently permitted F Class combined cycle sources (Table III-3).

# TABLE III-3PROPOSED CT NO<sub>X</sub> EMISSION RATES AND OTHER<br/>DETERMINATIONS SINCE 2000

Emission Rates (ppm)						
LSPP Proposed Recent Minimum Recent Maximum Recent Average Recent Std. Deviation						
2	2	27	5.1	4.9		

The proposed BACT emission limit for ammonia slip from the SCR operation is 10 ppmvd averaged over 3 hours.

#### III.5 TECHNOLOGY ASSESSMENT TO CONTROL CO AND VOC EMISSIONS

CO is formed during the combustion process by the incomplete oxidation of fuel. Formation of CO can be limited by ensuring complete and efficient combustion of the fuel. High combustion temperatures, adequate excess air, and good air/fuel mixing during combustion minimize emissions of CO. However, lowering combustion temperatures and staging combustion to limit NOx formation can result in increased CO emissions. CT manufacturers have optimized DLN combustors such that the tradeoffs associated with the formation of NOx, and CO emissions are reduced to the maximum extent feasible. Post-combustion CO controls, such as oxidizing catalysts, can also be used to reduce CO emissions.

Current control technology used in practice to control or reduce the emission of VOCs includes good combustion controls and catalytic oxidation.

The LSPP is proposing to install an oxidizing catalyst to control emissions of CO and VOC. This control equipment will also reduce emissions of HAPs.

LSPP proposes to control CO emissions to 3 ppm with a 3-hour averaging period. VOC emissions will be controlled to 2 ppm with a 3-hour averaging period. These steady state emission limits will be achieved using an oxidation catalyst. These limits are consistent with recent CO and VOC BACT/LAER determinations for F Class combined cycle operations, and are based on the following factors:

- An oxidation catalyst represents current state-of-the-art for CO and VOC emission control technology for large commercial combined cycle power plants,
- It is consistent with recent BACT/LAER determinations for F Class combined cycle throughout the United States and in Utah, and
- Conservative air quality dispersion modeling has shown no impacts of concern relative to established air quality standards.

#### III.5.1. Step 1. Identify All Technologies to Control Emissions of CO and VOCs

A BACT/LAER analysis for CO and VOC emission control is presented below. As with  $NO_x$ , CO and VOCs can be controlled at the turbine combustion zone and by employing additional oxidation after the turbine combustion zone (post-combustion zone). The EPA RBLC and recent PSD permits indicate that the following control technologies are currently used to achieve BACT/LAER for CO and VOCs:

- Combustion design and control
- Oxidation catalyst
- EMx

#### III.5.1.1. Combustion Design and Control

F Class combined cycle CT combustion technology has significantly improved in recent years. Efficient combustion systems have been able to achieve CO emissions in the 9 to 15 ppm range. Efficient combustion also minimizes the formation of VOC and HAP emissions.

#### III.5.1.2. Oxidizing Catalyst

Catalytic oxidation is a post-combustion method for reduction of CO and VOC emissions which has been successfully applied to natural gas-fired turbines in cogeneration and combined cycle systems for about 10 years. Excess oxygen in the turbine exhaust reacts with CO and VOC over the catalyst bed to promote oxidation to  $CO_2$  and  $H_2O$ . No injection of reagent is necessary. The catalyst must to be replaced when it deteriorates to the point where emissions increase above allowable levels. None of the components of the catalyst are considered toxic. Oxidizing catalysts have been used extensively and there is significant experience with the technology.

#### III.5.1.3. EMx

The EMx system, which has been evaluated as a control technology for emissions of  $NO_x$ , also removes emissions of CO and VOC by oxidizing these to  $CO_2$  and  $H_2O$ .

#### III.5.2. Step 2. Eliminate CO and VOC Control Options that are Technically Infeasible

The following technologies have been determined to be technically infeasible to control CO and VOC emissions to levels that would qualify as BACT:

- Combustion design and control
- EMx

#### III.5.2.1. Combustion Design and Control

For combustion turbine systems, combustion design and control cannot achieve the level of CO and VOC reduction that would qualify as BACT.

#### III.5.2.2. EMx

As discussed in detail in Section III.4.2.5, EMx performance on F Class CTs has not been demonstrated at this time. Although EMx has been demonstrated in operations with small CTs, and has been considered as a potentially feasible technology for other permit applications for F Class CTs, there are no operational data at this time that demonstrate that this technology is feasible for an F Class CT.

### III.5.3.Step 3. Rank Remaining CO and VOC Control Technologies by ControlEffectiveness

The following technologies are ranked from most feasible to least feasible to achieve CO and VOC emission levels that would quality as BACT/LAER:

- An oxidation catalyst is the only feasible technology with a long-term record of performance on F Class CT technology.
- EMx has no proven feasibility on F Class CT technology

#### III.5.4. Step 4. Evaluate Most Effective Technologies to Control CO and VOCs

Because the use of an oxidation catalyst represents the most stringent control technology, it is determined that this technology represents BACT/LAER for CO and VOC emissions from the LSPP CTs. EMx is not a proven technology for F Class CTs, therefore it cannot be considered as BACT.

#### III.5.4.1. Discussion of Energy and Environmental Impacts

Pressure losses across the oxidation catalyst would result in additional operating costs relative to systems with no add-on controls.

Spent catalysts must be disposed of or regenerated and can result in additional environmental impacts.

#### III.5.5. Step 5. BACT/LAER Decision for Technologies to Control CO and VOCs

Based on a review of current CO and VOC emission control technologies that are in use, catalytic oxidation has been generally used to achieve BACT for F Class combined cycle systems.

Table III-4 compares the proposed BACT/LAER levels for the LSPP with other CT regulatory levels that have been established since 1998.

### TABLE III-4 PROPOSED CT CO AND VOC EMISSION RATES AND OTHERDETERMINATIONS SINCE 2000

		Emission Rates (ppm)					
Pollutant	LSPP Proposed	Recent Minimum	Recent Maximum	Recent Average	Recent Std. Deviation		
СО	3	2.0	9.0	5.7	2.6		
VOC	2	0.4	9.6	2.9	2.0		

It is proposed that an oxidation catalyst will be installed to control CO and VOC emissions to 3 ppm and 2ppm, respectively. These limits are consistent with the lowest proposed control efficiencies for recently permitted F Class combined cycle facilities, including similar facilities in Utah.

The proposed averaging period for CO is 3-hour. The proposed averaging period for VOC is 3-hour as determined by a performance test.

#### III.6 TECHNOLOGY ASSESSMENT TO CONTROL EMISSIONS OF PM<sub>10</sub>

Emissions of  $PM_{10}$  from CTs are generally related to condensable sulfur compounds. Thus the use low sulfur fuels such as natural gas minimizes the formation of  $PM_{10}$ . Some  $PM_{10}$  also results from particulates entrained in the CT inlet air.

#### III.6.1. Step 1. Identify All Technologies to Control PM<sub>10</sub>

Although added controls for  $PM_{10}$  emissions have never been required for natural gas combustion sources, various technologies are available to control them. These control technologies include:

- Baghouses (Fabric Filters)
- Electrostatic Precipitators (ESP)
- Wet Scrubbers
- Use of Low Sulfur Fuel

#### III.6.1.1. Baghouses

Baghouses use arrays of fabric filters to capture dust particles in the exhaust stream. The filters are cleaned periodically and the collected material is either disposed as waste or recycled back into the process. The effectiveness of a baghouse depends on particle size and on a "cake" of particulate that forms on the upstream side of the filter. The periodic cleaning of the filter maintains the cake, pressure loss, and efficiency at a desired level.

#### III.6.1.2. ESPs

ESPs ionize particles and liquid droplets in the exhaust, which are collected on charged plates. The plates are periodically cleaned to maintain the efficiency of the system. The material collected is subsequently disposed as waste. Although this system can be highly efficient, it also requires large amounts of electricity and space.

#### III.6.1.3. Wet Scrubbers

A variety of wet scrubbers can be used to control emissions of  $PM_{10}$  including spray chambers and venturi scrubbers. Like baghouses, the efficiency of a wet scrubber depends on the size of the particulate. The slurry of water and collected material is subsequently disposed as waste.

#### III.6.1.4. Use of Low Sulfur Fuel

Emissions of PM<sub>10</sub> from combustions turbines is primarily related to the formation of sulfates in the

exhaust. Thus, the use of low sulfur fuel lowers formation of sulfate.

#### III.6.2. Step 2. Eliminate Technically Infeasible Options to Control Emissions of PM<sub>10</sub>

Although substantial ancillary facilities would be constructed to implement the add-on control strategies discussed in Section III.6.1, it is assumed that it would be feasible to implement them.

#### III.6.3. Step 3. Rank Remaining Technologies to Control Emissions of PM<sub>10</sub>

It is possible that the control effectiveness of add-on control technologies discussed in Section III.6.1 may all be similar, although wet scrubbers are typically expected to be the least efficient. Based on the lack of empirical data, it is impossible to estimate the control efficiencies. Data that have been collected and control efficiencies that have been identified for exhausts with high particulate loadings (such as mineral processing and coal fired combustion sources) are not applicable to an exhaust with a significantly lower particulate loading.

Particulate emissions related to natural gas combustion are not efficiently removed using controls such as baghouses and wet scrubbers. ESPs may be more effective but require a large amount of electricity and space.

Without data to assess or support any add-on controls for removal of  $PM_{10}$ , these efficiencies cannot be evaluated. The potential costs and risks are unknown without empirical data. It can also be assumed that all the add-on control technologies would require substantial additional facilities.

The use of low sulfur fuel is selected as BACT/LAER for control of  $PM_{10}$ . Add-on controls cannot be selected as BACT/LAER based on the following:

- Lack of data on control effectiveness,
- Significant additional facilities that are required to operate these systems,
- Significant energy requirements, and
- Environmental impacts associated with waste handling.

Table III-5 compares the proposed BACT/LAER levels for the LSPP with other regulatory levels for combustion turbines that have been established since 2000. The determinations in this table do not require the use of add-on controls. The variability of data on this table is related to a wide range of turbine sizes and to the fact that both front-half and total  $PM_{10}$  values are presented in the RBLC data.

### TABLE III-5PROPOSED CT PM10EMISSION RATES AND OTHERDETERMINATIONS SINCE 2000

		PM <sub>10</sub> Emission Rates					
Emission Rate Units	LSPP Proposed	Recent Minimum	Recent Maximum	Recent Average	Recent Std. Deviation		
lb/hr	10.8	1.1	30.4	17.4	6.6		

#### III.7 TECHNOLOGY ASSESSMENT TO CONTROL SO2

Emissions of  $SO_2$  result from the combustion of fuel-bound sulfur. Fuels such as natural gas have the lowest concentrations of sulfur compounds.

This section evaluates BACT/LAER for the control of SO<sub>2</sub> emissions from natural gas fired CTs.

#### III.7.1. Control Technologies for SO<sub>2</sub> Emissions

Add-on controls for emissions of  $SO_2$  have never been required for natural gas fired CTs. Various technologies have been developed to control these emissions from combustion sources that use fuel oil and coal. These control technologies include:

- Wet Limestone Scrubbers
- Dry Limestone Scrubbers
- Use of Low Sulfur Fuel

Although fuel desulfurization is also considered as a control technology for  $SO_2$ , it is assumed that it would not be applicable for a low-sulfur fuel such as natural gas.

#### III.7.1.1. Wet Limestone Scrubbers

Wet scrubbers use a spray of limestone slurry to absorb the sulfur compounds in the flue gases. The reaction between the slurry and the exhaust occurs in a spray tower where the slurry flows counter-current to the exhaust gases. The reacted slurry contains calcium sulfite and calcium sulfate that must be removed from the process and disposed as waste.

#### III.7.1.2. Dry Limestone Scrubbers

Dry limestone scrubbers use a similar process as the wet scrubbers. The difference is the amount of water in the slurry. In dry scrubbing, the water is evaporated during the reaction process, leaving fine particulates of calcium sulfite and calcium sulfate that must, subsequently, be removed from the exhaust.

#### III.7.1.3. Low Sulfur Fuel

This control strategy involves the use of low sulfur fuels such as natural gas in lieu of other fuels such as fuel oil.

#### III.7.2. Assessment of Technologies to Control Emissions of SO<sub>2</sub>

A review of recently permitted natural gas fired CTs shows that exhaust scrubbing controls have never been used on these plants. Because of this lack of evidence for the feasibility of the scrubbing controls, these controls are eliminated as potential BACT for this application.

Energy loss impacts would result from the operation of the scrubbers. Wet and dry scrubbers cause additional pressure drops, and the dry scrubbers cause additional energy losses across the baghouse. In addition, energy losses also result from the various pumps and motors that are required to drive these

systems.

Environmental impacts are associated with the operation of scrubbers. Both wet and dry scrubbers require disposal of the calcium sulfites and calcium sulfates that are generated by these processes. In addition, both systems would result in higher water use at the facility.

Therefore, wet or dry scrubbing systems cannot be selected as BACT for the following reasons:

- Lack of data on feasibility,
- Significant additional facilities that are required to operate these systems,
- Significant energy requirements, and
- Environmental impacts associated with waste handling.

The use of low sulfur fuel is selected as BACT/LAER for controlling  $SO_2$  emissions from the LSPP CTs. Table III-6 compares the proposed BACT/LAER levels for the LSPP with other regulatory levels for CTs that have been established since 2000. None of the determinations in these tables required the use of add-on controls.

### TABLE III-6PROPOSED CT SO2 EMISSION RATES AND OTHER<br/>DETERMINATIONS SINCE 2000

		SC	D <sub>2</sub> Emission Rat	es	
Emission Rate Units	LSPP Proposed	Recent Minimum	Recent Maximum	Recent Average	Recent Std. Deviation
lb/hr	3.1	0.1	28.2	8.0	6.4

#### III.8. BACT/LAER DETERMINATIONS FOR ANCILLARY SOURCES

The ancillary sources at LSPP considered in this analysis include:

- An auxiliary boiler,
- A fuel dew point heater,
- A fire pump,
- A standby generator, and
- A ten-cell cooling tower.

#### III.8.1. Auxiliary Boiler and Fuel Dew Point Heater

This analysis supports the selection of BACT and LAER for the LSPP auxiliary boiler and fuel dew point heater for control of emissions of NO<sub>x</sub>, PM<sub>10</sub>, CO, SO<sub>2</sub>, and VOCs.

The auxiliary boiler is a natural gas-fired industrial package boiler that has a maximum fuel burn rate of 49 MMBTU/hr. To ensure operational flexibility, the current application proposes that the auxiliary boiler will operate a maximum of 8,760 hours per year.

The fuel dew point heater is a natural gas-fired water bath heater that has a maximum fuel burn rate of 4.0

MMBTU/hr. This source is expected to operate continuously (i.e. 8760 hours per year).

#### III.8.1.1. Proposed Emissions and Recent Determinations

Tables III-7 and III-8 present the proposed emission rates for the auxiliary boiler and fuel dew point heater at the LSPP. These tables also present a summary of recent RBLC data.

### TABLE III-7PROPOSED AUXILIARY BOILER EMISSION RATES AND RBLCDETERMINATIONS SINCE 2000 (10 MMBTU/HR – 100 MMBTU/HR)

		Emission Rates (Ib/MMBTU)					
Pollutant	Proposed	Recent Minimum	Recent Maximum	Recent Average	Standard Deviation		
NO <sub>x</sub>	0.035	0.009	0.913	0.083	0.096		
СО	0.037	0.011	0.824	0.095	0.105		
VOC	0.016	0.002	0.045	0.010	0.008		
$PM_{10}$	0.010	0.001	0.794	0.032	0.118		
SO <sub>2</sub>	0.002	0.001	4.000	0.374	1.050		

# TABLE III-8PROPOSED FUEL DEW POINT HEATER EMISSION RATES AND RBLC<br/>DETERMINATIONS SINCE 2000 (LESS THAN 10 MMBTU/HR)

		E	mission Rates	(Ib/MMBTU)	
Pollutant	Proposed	Recent Minimum	Recent Maximum	Recent Average	Standard Deviation
NO <sub>x</sub>	0.110	0.015	0.150	0.057	0.052
СО	0.092	0.037	0.082	0.064	0.021
VOC	0.006	0.005	0.005	0.005	-
$PM_{10}$	0.008	0.008	0.010	0.008	0.001
$SO_2$	0.002	0.001	0.001	0.001	-

These data show that the proposed emission rates for the LSPP sources are within the range of limits that have been proposed for other boilers in the U.S.

#### **III.8.1.2.** Control Alternatives for the Control of Emissions of NO<sub>x</sub>

 $NO_x$  emission control methods are divided into two categories: in-furnace combustion control, and postcombustion emission reduction. In-furnace  $NO_x$  formation control processes reduce the quantity of  $NO_x$ formed during the combustion process. Post-combustion  $NO_x$  control systems can subsequently reduce a portion of the  $NO_x$  that exits the boiler.

#### **III.8.1.2.1.** In-Furnace NO<sub>x</sub> Formation Control

In-furnace  $NO_x$  formation can be limited by lowering combustion temperatures, minimizing excess combustion air, staging combustion, and recirculating flue gas.
The package boiler industry has been successful in developing burner technology that significantly reduces emissions of  $NO_x$  from boilers. Low  $NO_x$  burners create a reducing atmosphere at the burner nozzle, which helps limit the formation of  $NO_x$  during primary combustion of the fuel. The basic concept of low  $NO_x$  burners is a two-stage combustion process. During the first stage, a fuel-rich condition prevents conversion of fuel-bound nitrogen to  $NO_x$  by forcing the fuel nitrogen compounds into the gas phase. Under this condition, there is a deficiency of oxygen and the intermediate nitrogen compounds decay at a maximum rate into molecular nitrogen. The remaining combustion air is used in the second stage. This slow burning rate reduces flame temperature, thereby limiting the amount of thermal  $NO_x$  formed during later stages of combustion.

Flue gas recirculation is another method of controlling formation of  $NO_x$ . Flue gas recirculation has historically been used to control steam temperature. Flue gas is drawn from the economizer outlet and reintroduced into the wind box of the burner using a fan and ductwork. The recirculation of flue gas to the furnace area lowers the flame temperature and increases the mass flow of flue gas. The lowered flame temperature leads to reduced heat absorption by the furnace and a slightly increased flue gas temperature. This increased flue gas temperature and gas flow raise the temperature of steam in the backpass section. However, the lowered flame temperature reduces thermal formation of  $NO_x$  in the furnace.

Low combustion temperatures primarily limit the formation of thermal  $NO_x$ , and staged combustion (creating a reducing atmosphere near the burner tip) inhibits the formation of fuel  $NO_x$ , but may result in incomplete combustion. Increased emissions of CO and VOC result from incomplete combustion of the fuel. Therefore, combustion staging and lowering combustion temperature to control  $NO_x$  can be counterproductive for controlling emissions of CO and VOCs.

#### **III.8.1.2.2. Post-Combustion Emissions Control**

Post-combustion  $NO_x$  control processes are based on conversion of  $NO_x$  to nitrogen and water. SCR and SNCR are the only technologies that could be considered for installation on an auxiliary boiler. Both processes selectively reduce  $NO_x$  into nitrogen and water vapor by reaction with ammonia. The distinction between these two technologies is that SCR systems require a catalyst to initiate the reaction, while SNCR systems rely on the appropriate location for the reagent injector and temperature to achieve reduction in  $NO_x$ .

#### III.8.1.2.3. Selective Catalytic Reduction Systems

The SCR technology for boilers is similar to the SCR previously discussed in Section III.4.1.1 for the combustion turbine.

A review of RBLC data for boilers and heaters with capacities less than 10 MMBTU/hr shows that SCR has never been used for units in this class. Therefore SCR is not considered a feasible technology for the fuel dew point heater.

The auxiliary boiler will be an industrial package model. Thus the design of this unit will be based on standardized design and construction. Because exhaust temperatures of the auxiliary boiler are expected to be well below the effective SCR temperatures (600 to 800 °F), therefore, SCR technology is not a technically feasible option for the auxiliary boiler.

#### III.8.1.2.4. Selective Noncatalytic Reduction Systems

Selective noncatalytic  $NO_x$  reduction systems rely on the appropriate injection temperature for the reagent and reagent/flue gas mixing rather than a catalyst to achieve reductions in  $NO_x$ . SNCR systems can use either ammonia or urea as a reagent. The ammonia is received and stored as a liquid. The ammonia is vaporized before it is injected into the boiler. Injection is accomplished using either compressed air or steam as a carrier. The injected ammonia then reacts with  $NO_x$  in the flue gas to form nitrogen and water.

Urea is stored as a 50 percent solution in water. This solution is atomized at the injection point to optimize mixing. In this process, the urea molecule dissociates to form two molecules of ammonia that react with  $NO_x$  in the flue gas to form nitrogen and water. Requirements for location of the injector would be similar for both ammonia- and urea-based SNCR systems.

SNCR systems require a fairly narrow temperature range for reagent injection to achieve a specific  $NO_x$  reduction efficiency. The optimum temperature range for injection of ammonia or urea is 1,500 °F to 2,000 °F. This optimum temperature range occurs in the backpass portion of the boiler. This temperature range will occur at different locations within the boiler, depending on boiler load. Therefore, multiple sets of injection nozzles are required in order to follow the location of the optimum temperature as boiler load changes during normal operation. The  $NO_x$  reduction efficiency of an SNCR system decreases rapidly at temperatures outside the optimum temperature range. Operation below this temperature range results in excessive emissions of ammonia (slip). Operation above the temperature range results in increased emissions of  $NO_x$ . Injection of hydrogen or other additives can increase the effective temperature range required for operation of the SNCR. However, regardless of the magnitude of the temperature window, residence times for a specific temperature range are limited, resulting in less than optimum performance.

Compared with SCR systems, the SNCR process requires more than twice the theoretical amount of reagent to achieve similar  $NO_x$  reduction levels. A portion of the ammonia used or generated by the SNCR process reacts with  $NO_x$  in the flue gas and decomposes into nitrogen and water. The remaining unreacted ammonia exits the system as ammonia slip. Control of ammonia in an SNCR system is difficult. Continuous emissions monitors for measuring ammonia have proven unreliable. Without reliable, accurate monitors, feedback control is compromised and ammonia injection rates cannot be precisely controlled, potentially resulting in excess ammonia slip. Therefore, the use of an SNCR system could result in stack emissions of between 20 and 50 ppm of ammonia.

An SNCR system will also increase energy requirements for a given application, requiring fans, air compressors, or a source of steam to provide the necessary motive energy for dilution, atomization, and injection of reagent into the flue gas stream. These additional energy requirements will result in increased annual emissions of other pollutants.

In light of the major site-specific considerations such as temperature profile of the package boiler, residence time, and geometry of the boiler (affecting reagent distribution), the potential for reductions of NO<sub>x</sub> emissions of SNCR systems is severely limited. To date, SNCR systems have not been used on package-type boilers and heaters and are not considered feasible for this application.

#### III.8.1.2.5. Auxiliary Boiler and Fuel Dew Point Heater NO<sub>x</sub> LAER Conclusions

SCR and SNCR control technologies are not technically feasible for package boiler and heater applications. Although flue gas recirculation may reduce  $NO_x$ , incomplete combustion may result in higher emissions of CO and VOCs, thus negating the overall benefit. Low  $NO_x$  burners and good combustion practices are therefore proposed as BACT for  $NO_x$  emissions. The auxiliary boiler will have approximate controlled  $NO_x$  emissions of 30 ppm.

Tables III-9 and III-10 presents the range of control costs associated with DLN and ultra-dry-low  $NO_x$  (UDLN) control technology for the auxiliary boiler. These costs are related to initial capital and installation costs. The capital recovery factor is base on an expected equipment life of 10 years and an interest rate of 7 percent.

Table III-10 demonstrates the excessive incremental cost effectiveness related to using UDLN to control auxiliary boiler  $NO_x$  emissions to 9 ppm.

No <sub>x</sub> Emis	No <sub>x</sub> Emissions		Capital Recovery	Annual Cost	
Ppm	Tons/Yr	U.S. Dollars	Factor	U.S. Dollars	
120	30.0	Base	-	-	
100	25.0	\$9,400	0.14	\$1,338	
30	7.5	\$18,800	0.14	\$2,677	
9	2.3	\$137,700	0.14	\$19,605	

#### TABLE III-9 AUXILIARY BOILER NO<sub>X</sub> CONTROL COSTS

#### TABLE III-10AUXILIARY BOILER NO<sub>X</sub> INCREMENTAL CONTROL COSTS

NC	D <sub>x</sub> Emissions		Incremental Cost	
Total	Incremental Reduction	Incremental Cost	Efficiency	
tons/yr	tons/yr	U.S. dollars	U.S. dollars/ton	
25.0	5.0	\$1,338	\$268	
7.5	17.5	\$1,339	\$77	
2.3	5.2	\$16,928	\$3,255	

It is not considered cost effective for the auxiliary boiler to have emissions below 30 ppm using UDLN combustion technology. This technology requires a complex  $O_2$  trim control system and auxiliary operating equipment.

#### III.8.1.3. Control Alternatives for Emissions of CO and VOC

Emissions of CO and VOCs are formed as a result of incomplete combustion of the fuel. High combustion temperatures, adequate excess air, and good fuel/air mixing during combustion minimize emissions of CO and VOCs. Lower emissions of CO and VOC are possible if boiler temperatures are increased. However, NOx formation could increase beyond the levels proposed in Section III.7.1. Therefore, limiting production of CO and VOCs through increased combustion temperature is not a technically feasible option.

An oxidation catalytic emission reduction system is available for use on the exhaust from combustion turbines. The oxidation catalyst could be installed at the boiler exit. However, the temperature of flue gas that exits the proposed package boiler will be approximately 400°F. As previously noted, the optimum temperature range of flue gas for operation of a catalyst to reduce emissions of CO and VOCs is between 700°F and 900°F. Accordingly, the range of temperatures available in an auxiliary boiler is less than optimum for the oxidation catalyst, making the oxidation catalyst an undesirable option.

The RBLC data indicate that catalytic oxidation has not been required in previous BACT or LAER determinations for boilers and heaters with capacities below 10 MMBTU/hr. Therefore an oxidation catalyst is not considered a feasible technology for the fuel dew point heater.

## III.8.1.3.1.BACT/LAER Conclusions for Auxiliary Boiler and Fuel Dew Point Heater CO and<br/>VOC

An oxidation catalyst control system is not considered technically feasible for the auxiliary boiler and fuel dew point heater. Therefore the CO and VOC BACT/LAER proposed for these sources include the use of good combustion control with no add-on controls.

#### III.8.1.4. Control Alternatives for Emissions of PM<sub>10</sub> and BACT/LAER Conclusions

The RBLC Clearinghouse database does not list any particulate control equipment requirements for 40 CFR Subpart Dc classification boilers that burn natural gas except for the use of good combustion controls. The use of natural gas is proposed as BACT/LAER for emissions of PM<sub>10</sub>.

#### III.8.1.5. Control Alternatives for Emissions of SO<sub>2</sub> and BACT/LAER Conclusions

Because the natural gas fuel for the auxiliary boiler and fuel dew point heater is inherently low in sulfur content, additional emissions controls have not been required or developed to reduce emissions further. The use of natural gas is proposed as BACT/LAER for emissions of  $SO_2$  from these sources.

#### III.8.2. Emergency Diesel-fueled Fire Pump and Standby Generator

This analysis supports selection of BACT/LAER for the LSPP diesel-fueled fire pump and standby diesel generator to control emissions of  $NO_x$ ,  $PM_{10}$ ,  $SO_2$ , CO, and VOCs. An emergency diesel-fueled fire pump will be a nominal 290 horsepower (hp) engine and the diesel-fueled standby generator will be a nominal 1490 hp engine. These engines are expected to operate once per week for required testing, and each is expected to operate up to 200 hours annually.

#### III.8.2.1. Proposed Emissions and Recent Determinations

Tables III-11 and III-12 present the proposed emission rates for the LSPP standby diesel generator fire pump. This table also presents a summary of recent RBLC data for diesel-fueled fire pumps.

With the exception of CO and  $PM_{10}$ , which are slightly less than the RBLC minimum, these data show that the proposed emissions are within the range of limits that have been proposed for other diesel-fueled engines.

#### TABLE III-11PROPOSED STANDBY DIESEL GENERATOR EMISSION RATES AND RBLC DETERMINATIONS SINCE 2000 (LESS THAN 2000 HP)

		Emission Rates (gm/hp-hr)								
Pollutant	Proposed	Recent Minimum	Recent Maximum	Recent Average	Standard Deviation					
NO <sub>x</sub>	6.00	5.0	16.8	11.7	3.5					
CO	0.44	1.1	31.0	6.3	6.6					
VOC	0.12	0.3	1.2	1.1	0.2					
PM <sub>10</sub>	0.05	0.2	1.1	0.8	0.3					
SO <sub>2</sub>	0.84	0.2	1.0	0.7	0.4					

#### TABLE III-12PROPOSED EMERGENCY FIRE PUMP EMISSION RATES AND RBLC DETERMINATIONS SINCE 2000 (LESS THAN 2000 HP)

		Emission Rates (gm/hp-hr)								
Pollutant	Proposed	Recent Minimum	Recent Maximum	Recent Average	Standard Deviation					
NO <sub>x</sub>	5.70	5.0	16.8	11.7	3.5					
СО	0.25	1.1	31.0	6.3	6.6					
VOC	0.08	0.3	1.2	1.1	0.2					
PM <sub>10</sub>	0.07	0.2	1.1	0.8	0.3					
SO <sub>2</sub>	1.17	0.2	1.0	0.7	0.4					

#### III.8.2.2. Control Alternatives for Emissions of NO<sub>x</sub>

One objective of the analysis is to identify BACT/LAER for emissions of  $NO_x$  from the emergency fire pump and standby generator engines. This section discusses two methods to control emissions of  $NO_x$ . SCR is a post-combustion control technology used to reduce emissions of  $NO_x$ . A detailed discussion of SCR is included in Section III.4.1 of this document. This technology represents the lowest achievable emission rate for the diesel engine. However, SCR is not considered a cost-effective control device for emissions of  $NO_x$  from the diesel engine on this project because these engines would be tested only once per week and then used only during emergencies. In all cases, each engine would operate less than 200 hours per year. Additionally, an SCR does not operate properly until optimal exhaust temperatures are achieved. Since the pump would typically be operated for only 1 hour per operating event, a portion of the emissions would be uncontrolled until the optimal operating temperature is reached. Therefore, SCR is not a technically feasible control technology, and is not considered further in this analysis.

Fuel injection timing retardation (FITR) delays the start of fuel injection to reduce the engine's maximum combustion pressure and, therefore, lower the combustion temperature. Typically, timing on fuel injection for units of this size and service is retarded by 3 to 4 degrees. The maximum amount of retardation possible is controlled by factors such as piston, cylinder, and manifold shape and materials, expected unit life, and the impact of modifying the combustion process on other pollutant emissions.

Retarding the timing of fuel injection can reduce emissions of  $NO_x$  by 20 to 30 percent, depending on the unit service, size, and design. However, combustion efficiency of a diesel engine decreases with an increase in timing retardation, thereby reducing the maximum efficiency of the fire pump when it is needed in emergencies. Additionally, this method increases the emissions of other pollutants such as CO, VOCs, and particulate matter. Therefore, FITR is not a technically feasible control technology, and is not considered further in this analysis.

#### III.8.2.2.1. Fire Pump and standby Generator BACT/LAER Conclusions for Emissions of NO<sub>x</sub>

SCR is not considered a cost-effective alternative for reduction in  $NO_x$  for the diesel fueled engines because each will operate only a maximum of 200 hours per years. FITR is not considered because it would reduce the efficiency of the engines when they are needed most during emergencies and because the reduction in annual emissions and ambient air impacts would be minimal compared with cost. For these reasons, proper combustion control is proposed as BACT/LAER for  $NO_x$  emissions.

#### III.8.2.3. Alternatives for Control Emissions of CO and VOC

CO and VOCs are formed as a result of incomplete oxidation of hydrocarbons contained in the fuel. Combustion controls such as high combustion temperatures, adequate excess air, and good fuel/air mixing during combustion will minimize formation of CO and VOCs. Formation of NO<sub>x</sub> however, is increased by combustion control efforts to minimize emissions of CO and VOCs. Because of this inverse relationship, increased NO<sub>x</sub> emissions must always be considered when identifying CO and VOC emissions controls.

Post-combustion control technologies, such as an oxidation catalyst, could reduce emissions of CO and VOCs. An oxidation catalyst could be located at the diesel engine exhaust. This option could reduce emissions of CO and VOCs by 50 to 80 percent. Catalytic oxidation is not considered a cost-effective emission control device for CO and VOCs from the diesel engines based on the intermittent and limited operating hours. Because oxidation catalysts operate in an optimal temperature range, they would not be as effective for this type of source that operates intermittently and for very short periods. Therefore, catalytic oxidation is not considered further in this analysis.

# III.8.2.3.1. BACT/LAER Conclusions for Emissions of CO and VOCs from the Fire Pump and Standby Generator

Proper combustion controls are proposed as CO and VOC BACT/LAER for the emergency diesel-fueled fire pump.

#### III.8.2.4. Control Alternatives for Emissions of PM<sub>10</sub> and BACT/LAER Conclusions

Based on the limited operating hours, it is anticipated that uncontrolled emissions of  $PM_{10}$  from these engines will be minimal and will be controlled by ensuring complete combustion of the fuel, as recommended by the manufacturer's standard operating procedures. Accordingly, inlet air filtering and good combustion control are proposed as BACT/LAER for the LSPP fire pump and standby generator for controlling emissions of  $PM_{10}$ .

#### III.8.2.5. Control Alternatives for Emissions of SO<sub>2</sub> and BACT/LAER Conclusions

Based on the limited operating hours, it is anticipated that uncontrolled emission of  $SO_2$  from the standby diesel generator and the emergency diesel-fueled fire pump will be minimal and will be controlled by limiting annual operations for this source. Accordingly, limiting annual operations to 200 hours per year is proposed as BACT/LAER for controlling emissions of the  $SO_2$  from these sources.

#### III.8.3. Control Technologies for Assessment of PM<sub>10</sub> from Cooling Tower

Table III-13 presents a summary of the national cooling tower determinations. Although it is not specified in the data, the lowest values in the RBLC data are probably related to individual cell emissions rather than those for the entire tower. In addition, cooling tower mass emissions can vary depending on the volume of circulating water. These data still show that the proposed LSPP emission rate is well below the average of determinations since 2000.

#### TABLE III-13PROPOSED COOLING TOWER EMISSION RATES AND RBLC DETERMINATIONS SINCE 2000

	Emission Rates (lb/hr)						
Pollutant	Proposed	Recent Minimum	Recent Maximum	Recent Average	Standard Deviation		
PM <sub>10</sub>	0.62	0.04	17.5	2.4	3.3		

Table III-14 presents recent determinations relative to the drift elimination efficiency. This table shows that 0.0005 percent drift is the lowest drift rate that has recently been permitted for combined cycle power plants.

#### TABLE III-14RECENT BACT/LAER COOLING TOWER DRIFT RATE DETERMINATIONS (SINCE 2000)

Facility	Drift Rate (percent)
Three Mountain Power	0.0005
Contra Costa Unit 8 Power Project	0.0005
Metcalf Energy Center	0.0005
Blythe Energy Project II	0.0005
Mountainview Power Project	0.0006
Blythe Energy Project	0.0006
Western Midway Sunset Power Project	0.0006
Delta Energy Center	0.0006

Therefore a mechanical wet cooling tower with a drift elimination efficiency of 0.0005 percent is proposed as LAER for the control of  $PM_{10}$  emissions.

#### III.9. MODELING ANALYSIS

The following modeling analysis is based on the original NOI prepared by Greystone Environmental Consultants, Inc. of Greenwood Village, Colorado. It was submitted on behalf of the Applicant and received by the Division on May 21, 2004. One change from the modeling analysis is in terms of CO, which was changed to 3.0 ppm on a 3-hour average as discussed in the BACT review given above.

#### III.9.1. OBJECTIVE

The facility will consist of two combustion turbines and one heat recovery steam generator (HRSG) with a gross capacity of 500 MW. The proposed increase in emissions associated with the construction of this unit constitutes a new major source subject to the Prevention of Significant Deterioration (PSD) permitting rules. The rules require the Applicant to include an air quality impact analysis (AQIA) of the proposed project's impact on federal air quality standards and air quality related values, as part of a complete NOI.

This report prepared by the Staff of the Technical Analysis Section (TAS) contains a review of the Applicant's AQIA including the methodology, data sources, assumptions and modeling results used to determine compliance with State and Federal air quality standards. The AQIA document reviewed and referenced in this report is the "Notice of Intent and Prevention Of Significant Deterioration Air Quality Application – Lake Side Power Plant."

#### III.9.2. APPLICABLE RULES AND ANALYSES

#### III.9.2.1. Utah Air Quality Rules

UDAQ has determined that the Applicant's NOI is subject to the following rules for conducting an AQIA:

R307-401-2	Notice of Intent Requirements
R307-401-6	Condition for Issuing an Approval Order
R307-403-3	Review of Major Sources of Air Quality Impact
R307-405-6	PSD Areas – New Sources and Modifications
R307-406-2	Visibility – Source Review
R307-410-2	Use of Dispersion Models
R307-410-3	Modeling of Criteria Pollutant Impacts in Attainment Areas
R307-410-4	Documentation of Ambient Air Impacts for Hazardous Air Pollutants (HAPs)

#### III.9.2.2. Applicability

The proposed increases in emissions of NO<sub>x</sub>, CO, and formaldehyde exceed the emission thresholds outlined in R307-406-5, R307-410-3, and R307-410-4. Therefore, an AQIA consistent with the requirements of R307-405-6, R307-406-2, R307-410-2, and R307-410-4 was submitted as part of the Applicant's NOI. R307-410-2 and 3 provides further clarification by assigning the burden for conducting AQIAs, and establishes the U. S. Environmental Protection Agency (US EPA) – Guideline on Air Quality Models as a formal basis for defining the scope of the analysis, as well as the model's construction. The results of the AQIA are required to demonstrate the proposed project's impact on state and federal air quality standards, acceptable levels of impact, and action triggering thresholds referenced or listed in R307-401-6(2), R307-401-6(3), R307-403-3(1), R307-403-5(1)(a), R307-405-4(1), R307-405-6(2),

R307-405-6(6), and R307-410-4(1)(d). Annual emissions for criteria pollutants and HAPs requiring an AQIA are listed in Table III-15.

Pollutant	Proposed LSPP Total (TPY)
NO <sub>x</sub>	138.3
SO <sub>2</sub>	26.5
PM <sub>10</sub>	95.8
СО	547.1
VOC	72.8
Formaldehyde	12.4

#### TABLE III-15: PROPOSED EMISSIONS FOR LSPP

#### III.9.2.3. Required Analyses

R307-405-6(2)(a)(i)(B) requires the Applicant to perform a pre-construction modeling analysis for all pollutants emitted in a significant quantity. The purpose of the analysis is to determine if the extent of the source's impact is significant enough to warrant an on-site measurement of the ambient background concentration levels. This data would be included in the National Ambient Air Quality Standards (NAAQS) analysis to represent the quality of the air prior to the construction of the proposed project. The Applicant included a pre-construction modeling analysis for NO<sub>2</sub>, and CO as part of the NOI. An analysis for PM<sub>10</sub> is not required since the proposed project's location is in an area designated as non-attainment for this pollutant, and the PM10 emissions would be covered under the offset rules. The estimated new emissions of SO<sub>2</sub> and lead were insignificant under the rule, and did not require a pre-construction analysis.

R307-401-6(2) requires the Division to determine that the proposed project will comply with the NAAQS prior to the issuance of an Approval Order (AO). R307-405(6)(2)(a)(i)(B) requires the Applicant to perform a NAAQS analysis for all pollutants emitted in a significant quantity. A NAAQS modeling analysis for NO<sub>2</sub>, and CO was included in the NOI. An analysis for PM<sub>10</sub> is not required since the proposed project's location is in an area designated as non-attainment for this pollutant. The estimated new emissions of SO<sub>2</sub> and lead were insignificant under the rule, and did not require a NAAQS analysis. The analysis is to include all emissions at the proposed site under normal operating conditions using maximum anticipated short-term release and annual release rates. Consistent with UDAQ policy, a cumulative analysis to include the ambient background concentration and any contribution from other nearby sources is not required if the proposed project's impact does not exceed the PSD Class II Significant Impact Level (SIL).

R307-401-6(2) requires the Division to determine that the proposed project will comply with PSD increments prior to the issuance of an AO. Under R307-405(6)(2)(a)(i)(B), the Applicant is required to perform a PSD Class I and II increment consumption analysis for all pollutants emitted in significant quantities. The purpose of this analysis is to quantify any degradation in air quality since the major source baseline date. The major source NO<sub>2</sub> baseline date for this analysis is April 21, 1988. An analysis for PM<sub>10</sub> is not required since the proposed project is located in an area designated as non-attainment for

this pollutant. New emissions of  $SO_2$  were insignificant under the rule, and did not require an increment analysis. The analysis is to include all increment consuming emissions at the proposed site under normal operating conditions using maximum anticipated short-term and annual release rates. A cumulative analysis to include contributions associated with growth and other increment consuming sources is not required if the proposed project's impact does not exceed the PSD Class I or II SIL.

R307-410-4 requires the Applicant to perform a HAPs analysis for any pollutant emitted above a pollutant specific emission threshold value. This analysis is to include all emissions of the pollutants resulting from the proposed modification under normal operating conditions using maximum anticipated one-hour release rates. The Applicant included an analysis for formaldehyde as part of the NOI.

Under R307-405-6(2)(a)(i)(B) and R307-406-2, the Applicant is required to perform a plume blight and regional haze analysis to address impacts from the proposed project on visibility in the Class I areas of concern. A plume blight analysis is required to determine if plumes emanating from the proposed project would be visible inside the Class I area. A regional haze analysis is required to determine if the plumes would reduce the visual range of an observer inside the Class I area. The plume blight analysis is to include all emissions of NO<sub>2</sub> and SO<sub>4</sub>. The regional haze analysis is to include all emissions of SO<sub>2</sub>, SO<sub>4</sub>, and NO<sub>2</sub>. Contributions to model predicted plume visibility and haze-induced reductions in background visual range inside the Class I areas resulting from PM<sub>10</sub> emissions, are exempt from the analyses, since the source is proposing to locate in a PM<sub>10</sub> non-attainment area. Both analyses are to include emissions from the proposed project under normal operating conditions with maximum anticipated 24-hour emission rates.

R307-405-6(2)(a)(i)(D) requires the Applicant to perform a soils and vegetation analysis. The analysis should quantify deposition rates for nitrate and sulfate in the Class I areas. This analysis is to include all emissions of  $NO_2$  at the proposed site under normal operating conditions with maximum anticipated annual emission rates.

#### III.10. ON-SITE PRE-CONSTRUCTION MONITORING

#### III.10.1. Meteorological Data

Consistent with the US EPA - Meteorological Monitoring Guidance for Regulatory Modeling Applications, on-site data collection using a 10-meter tower was conducted throughout the 1990s by Geneva Steel at a site two kilometers south-southeast of the proposed LSPP site. Parameters collected onsite included wind speed and direction, standard deviation of the wind direction (sigma theta), and temperature. For the purpose of this analysis, five years of meteorological data (1995 and 1997 through 2000) from this site was used to simulate dispersion in the near-field analyses. On-site 1996 data was excluded due to equipment malfunctions that resulted in PSD quality control deficiencies (data collection rate less than 90%).

#### III.10.2. Ambient Pollutant Data

A preliminary analysis was conducted to determine the necessity for pre-construction ambient pollutant monitoring. The modeling results were compared against R307-405-6(6) – Exemptions - Monitoring Requirements. The results indicated that NO<sub>2</sub> and CO concentrations were less than the monitoring

trigger level listed in the rule; and therefore, no pre-construction monitoring was required for either pollutant.

#### III.11. MODEL SELECTION

The Industrial Source Complex Short Term -Version 3 (ISCST3) is the preferred model specified in the US EPA – Guideline on Air Quality Models to predict air pollutant concentrations in the near field (within 50 kilometers of the source). The US EPA - CALPUFF - Version 5.5 model is the preferred model to predict concentrations in the far field (long range transport conditions beyond 50 kilometers from the source).

#### III.12. MODELING INPUTS AND ASSUMPTIONS

#### III.12.1. Technical Options

The regulatory default options were selected in ISCST3 - PRIME by the Applicant to quantify all concentrations. The CALPUFF model options and assumptions used in the analysis are discussed in Section 7 of the NOI.

#### III.12.2. Urban or Rural Area Designation

A review of the appropriate 7.5-minute quadrangles determined that the area should be classified as "rural" for air modeling purposes.

#### III.12.3. Topography/Terrain

The Plant is at an elevation of 4510 feet with distant terrain features that have little affect on concentration predictions.

- Zone: 12
- Location: UTM (NAD27): 435955 meters East, 4464582 meters North

#### III.12.4. Ambient Air

It was determined that the Plant boundary used in the AQIA meets the State's definition of an ambient air boundary.

#### III.12.5. Receptor and Terrain Elevations

The near-field modeling domain (20 km x 20 km) used by the Applicant consisted of  $\sim$ 22,000 Cartesian grid receptors including property boundary receptors. The modeling domain has simple and complex terrain features in the near field. Therefore, receptor points representing actual terrain elevations from the area were used in the analysis.

The far-field modeling domain consisted of the area covered under an arc extending  $\pm 45^{\circ}$  either side of the vector from the proposed site to the Class I areas being evaluated, and having a radius equal to the distance between the two points plus 50 kilometers. Three receptor rings were created for each of the

three Class I area located within 300 kilometers of the LSPP site (Arches NP- ~254 km, Canyonlands NP- 259 km, and Capital Reef NP- 214 km). Receptors were placed at one-degree intervals along rings representing the nearest, middle, and farthest distances from the project site to a location within the park. The elevations of the receptors were equal to the average elevation along the arc crossing through the Class I area. Elevation data was obtained from the United States Geological Survey's (USGS) Digital Elevation Model (DEM) in NAD 27 format. The terrain data consisted of one-degree quadrangles with a scale of 1:250,000 and a horizontal resolution of 90-meters.

#### III.12.6. Emission Rates and Release Parameters

The emission estimates and source parameters for all point sources at the LSPP site in the analysis are presented in Sections 3, 6, and Appendix B of the NOI. There are several combinations of operating the facility under simple and combined cycle mode at various temperatures (-16°F, 52°F, 105°F) and at various operating loads (peak, base, minimum). The peak-operating load at 52°F was found to produce the highest impacts (Scenario CP1201).

#### III.12.7. Building Downwash

The Applicant used the US EPA Building Profile Input Program (BPIP) to determine Good Engineering Practice (GEP) stack heights and cross-sectional building dimensions for input into the ISCST3 model. The output from BPIP showed all stacks to be less than GEP formula stack height; thereby, requiring a wake effect evaluation.

#### III.12.8. Ambient Background Concentrations

Utah County is in attainment for  $NO_2$  and CO. The nearby city of Provo is non-attainment for CO. Background concentrations of  $NO_2$  and CO were obtained from the UDAQ's databases for ambient pollutant monitoring. The background values used in the NAAQS analysis are presented in Table III-16.

#### TABLE III-16: BACKGROUND CONCENTRATIONS FOR THE LSPP ANALYSIS

Pollutant	Averaging Period	Background Concentration (µg/m <sup>3</sup> )		
NO <sub>2</sub>	Annual	46		
$\mathbf{PM}_{10}$		n PM <sub>10</sub> non-attainment area – modeling analysis required.		
60	1-Hour	15,554		
CO	8-Hour	8,888		

#### III.12.9. Meteorological Data Processing

For the ISCST3 model, on-site wind speed, direction, sigma theta, and temperature data was combined with National Weather Service (NWS) surface and upper air data collected at the Salt Lake City International Airport (SLCIA) for the same period using the US EPA- Meteorological Preprocessor for

Regulatory Models - Version 99349.

The CALPUFF model was used in the screening mode for PSD Class I increment and regional haze. For the increment analysis, on-site wind speed, direction, sigma theta, and temperature data was combined with NWS surface collected at the SLCIA for the five-year period 1995, and 1997 through 2000 was used. For the regional haze analysis, Solar and Meteorological Surface Observation Network hourly surface observations including wind speed, wind direction, temperature, cloud cover, ceiling height, surface pressure, relative humidity, and precipitation collected at the SLCIA for the five-year period 1986 through 1990 was used. Twice-daily upper air sounding data for the same periods used in the analysis was provided by the National Climatic Data Center for Salt Lake City, Utah.

#### III.13. RESULTS AND CONCLUSIONS

The Applicant performed a series of analyses to estimate the impact from the proposed project. Modeling results and conclusions from the review of the analyses are outlined in detail below.

#### III.13.1. Pre-Construction Monitoring Modeling

The Applicant performed a preliminary criteria pollutant analysis of the proposed addition of the LSPP. Table III-17 provides a comparison of the predicted air quality concentrations and monitoring trigger levels.

Air Pollutant	Period	Prediction	Monitoring Exemption Level	Monitoring Required?		
NO <sub>2</sub>	Annual	$(\mu g/m^3)$	<b>(μg/m<sup>3</sup>)</b> 14	NO		
NO <sub>2</sub>						
$PM_{10}$	Source proposes to locate in PM <sub>10</sub> non-attainment Offset rules apply, and no monitoring require					
CO	1-Hour	1342				
0	8-Hour	166.1	575	NO		

# TABLE III-17: MODEL PREDICTED PRE-CONSTRUCTION MONITORING CONCENTRATIONS

This analysis, based on the use of five years of on-site meteorological data, indicated that potential increases in concentration levels of  $NO_2$  and CO were less than the pre-construction monitoring trigger levels listed in R307-405(6)(2)(a)(i)(B). Therefore, no additional pre-construction monitoring was required.

#### III.13.2. National Ambient Air Quality Standards Analysis

The Applicant performed an ISCST3 modeling analysis to determine if the combined impact from the

Engineering Review: Summit Vineyard, LLC. Lake Side Power Plant October 25, 2004 Page 41 proposed source, other industrial sources operating in the area, and ambient background would comply with federal NAAQS. The NAAQS analysis was reviewed by the Division and determined to be consistent with the requirements of R307-410-2. For the 8-hour CO and annual NO<sub>2</sub> averaging periods, the Applicant's analysis indicated that the predicted impact from the addition of the LSPP were insignificant, and do not warrant a cumulative effects analysis.

Table III-18 provides a comparison of the Applicant's predicted air quality concentrations and the NAAQS.

Air Pollutant	Period	Prediction	Class II Significant Impact Level	Background*	Nearby Sources*	Total*	NAAQS	Percent
		$(\mu g/m^3)$	$(\mu g/m^3)$	$(\mu g/m^3)$	$(\mu g/m^3)$	$(\mu g/m^3)$	$(\mu g/m^3)$	NAAQS
NO <sub>2</sub>	Annual	0.88	1				100	
PM <sub>10</sub>	Source proposes to locate in $PM_{10}$ non-attainment area – Offset rules apply, and no modeling analysis required.							
<u> </u>	1-Hour	1342	2000				40000	
СО	8-Hour	166	500				10,000	

TABLE III-18: MODEL PREDICTED NAAQS CONCENTRATIONS

\* Note: Only included nearby sources and background if source impact was above Class II SIL

#### III.13.3. PSD Class II Increments

The Applicant performed an ISCST3 analysis to determine if the impact from the proposed source would comply with PSD Class II increments. The analysis was reviewed by the Division and determined to be consistent with the requirements of R307-410-2. The analysis indicated that the proposed project's  $NO_2$  impact from the addition of the LSPP was insignificant and did not warrant a cumulative effects analysis. Table III-19 provides a comparison of the predicted  $NO_2$  annual concentrations and the PSD Class II increment.

#### TABLE III-19: MODEL PREDICTED PSD CLASS II INCREMENT CONCENTRATIONS

Air Pollutant	Period	Prediction	Class II Significant Impact Level	Nearby Sources*	Total*	Increment	Percent
		$(\mu g/m^3)$	(µg/m <sup>3</sup> )	$(\mu g/m^3)$	$(\mu g/m^3)$	$(\mu g/m^3)$	PSD
NO <sub>2</sub>	Annual	0.88	1			25	

PM <sub>10</sub>	Source proposes to locate in $PM_{10}$ non-attainment area – Offset rules apply, and no modeling analysis required.
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\* Note: Only included nearby sources if source impact was above Class II SIL

The increment analysis also indicated that the amount of  $NO_2$  increment consumed by the proposed project was less than 50% of the standard; therefore, approval under R307-401-6(3) from the Utah Air Quality Board would not be required.

#### III.13.4. Hazardous Air Pollutants

The Applicant performed an ISCST3 modeling analysis to determine the impact from HAPs released by the proposed source on the surrounding area. Table III-20 provides a comparison of the predicted HAP concentrations and UDAQ-TSLs. The analysis was reviewed by the Division and determined to be consistent with the requirements of R307-410-2. The analysis indicated that the predicted concentration for formaldehyde from the proposed project would be less than the UDAQ-Toxic Screening Level, and no further documentation of impacts would be required.

#### TABLE III-20: MODEL PREDICTED HAZARDOUS AIR POLLUTANT CONCENTRATIONS

Air Pollutant	Period	Prediction	Toxic Screening Level	Percent
		$(\mu g/m^3)$	$(\mu g/m^3)$	
Formaldehyde	1-Hour	2.07	37	5.59%

#### III.13.5. PSD Class I Increment Consumption Analysis

The Applicant performed a CALPUFF analysis to determine if the impact from the proposed source along with other increment consuming sources would comply with federal PSD Class I increments. The analysis was reviewed by the Division and determined to be consistent with the requirements of R307-410-2. The results from Capitol Reef had the highest impacts, and are provided in Table III-21.

# TABLE III-21: MODEL PREDICTED PSD CLASS I INCREMENT CONCENTRATIONS

Air	Period	Prediction	Class I Significant Impact Level	Nearby Sources*	Total*	Increment	Percent
Pollutant		$(\mu g/m^3)$	$(\mu g/m^3)$	(µg/m <sup>3</sup> )	$(\mu g/m^3)$	$(\mu g/m^3)$	PSD

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Capitol Reef							
NO <sub>2</sub>	Annual	0.001	0.1			2.5	
PM <sub>10</sub>	24-Hour	0.040	0.3			8	
1 14110	Annual	0.005	0.2			4	

\* Note: Only included nearby increment consuming sources if source impact was above Class I SIL

Since the proposed project's model predicted impacts at the Class I areas were less than the PSD Class I significance levels, a cumulative analysis was not warranted.

#### III.13.6. Visibility – Plume Blight

The Applicant performed a VISCREEN-Level 1 analyses to determine if plumes emanating from the proposed project would be visible from the five Class I areas. The analysis was reviewed by the Division and determined to be consistent with the requirements of R307-410-2. Results and discussion of the analysis included in Section 6 of the NOI indicate that plume visibility from the proposed project is within acceptable limits inside the Class I areas.

#### III.13.7. Visibility – Regional Haze

The Applicant did not perform a regional haze analysis. This requirement for such an analysis was discussed with the National Park Service (NPS) prior to conducting the modeling. The NPS did not feel the size of the source warranted a regional haze analysis, especially since the emissions were being offset with emission credits from Geneva Steel.

#### III.13.8. Soils and Vegetation Analysis

The Applicant did not perform an  $NO_2$  analysis to determine the extent of impacts from the proposed source on soil and vegetation in the Class I areas. Predicted  $NO_2$  concentrations in the Class I areas were insufficient to warrant a detailed discussion or analysis of impacts on soils and vegetation in those areas.

#### **III.14. STARTUP AND SHUTDOWN BACT/LAER ANALYSIS**

During periods of startup and shutdown, emission rates may exceed those of normal operations. The catalysts used to control emissions of CO and  $NO_x$  work within a set temperature range, which may not be the exhaust temperature during startup or shutdown. In order to limit emissions during these periods (in effect setting BACT/LAER) outside of normal operations, a threefold approach was taken.

- The total length of startup and shutdown periods per year was limited.
- The duration of all startup and shutdown periods per day was similarly limited.
- A total daily emission values for NO<sub>x</sub> and CO were imposed.

The last restriction is easily met by the source during normal operations, and during those periods would be an extraneous limitation. However, during periods of long startup or shutdown, this condition places a restriction on the total amount of  $NO_x$  and CO that the source is allowed to emit. This condition is similar

to those being imposed on similar sources elsewhere in the country. These conditions are as follows:

- Total yearly hours of startup and shutdown operations = 613.5 hours/year
- Total daily hours of startup and shutdown operations = 14 hours/day
- Total daily emissions of  $NO_x = 744 \text{ lbs/day}$
- Total daily emissions of CO = 9,182 lbs/day

#### **III.15. ALTERNATIVE SITES ANALYSIS**

This analysis is intended to comply with the requirements of Utah Administrative Code section R307-401-8, nonattainment and maintenance areas. This regulation requires an owner or operator of a major new stationary source of air emissions or a source undergoing a major modification affecting its air emissions to analyze alternative sites, sizes, production processes, and environmental control techniques if the proposed project is located in an area that is not in attainment of National Ambient Air Quality Standards (NAAQS). The required analysis is intended to identify the environmental and social costs of the proposed project and compare them to the overall benefits of the project. This analysis must demonstrate that the benefits of the expansion significantly outweigh the environmental and social costs.

#### III.15.1 Project Objectives

The need for the new facility is a result of a significant increase in the electrical demand of the Salt Lake Valley, specifically during the hot summer months. The Salt Lake Valley is 'line limited'; electrical transmission lines into the Salt Lake Valley from distant power plants are operating at capacity and are incapable of carrying the additional power. It is necessary to provide generation near load centers for ancillary services such as voltage support as well as to provide generation in a time efficient manner. It is intended that this generation act as a hedge against high prices for independent operators in the Utah area as well as providing voltage support.

#### III.15.2 Dismissed Alternative Sites

The following alternative sites were considered and rejected:

• Elberta:

Elberta is the future location of Questar's 104 natural gas pipeline expansion tie-in to the Kern River Pipeline. Therefore, natural gas would be readily available. However, greenfield site development would be required prior to plant construction. Only 345 kV transmission is available. Water supply would be a problem for short-term development. Distance from load centers would result in less voltage support benefits.

• Kennecott North:

The existing Kennecott power facility would readily enable a transmission interconnection. The natural gas supply would be adequate if Kennecott were to curtail power production from natural gas. This option would be viable, but Kennecott is not interested in a joint development in this type of project.

• Kennecott South:

Locating a plant neat the Copper Mine would offer sufficient transmission access and load, but natural gas availability is inadequate. With an expanded natural gas connection, this option would be viable, but Kennecott is not interested in a joint development at the current time.

• Central and Southern Utah:

Location of the additional generation at other existing plants in Carbon and Emery counties was not seriously considered for a number of reasons. Natural gas and water availability are questionable. Altitudes over 6,000 feet would impact plant output and performance. Additionally, the distance from the Salt Lake Valley would considerably reduce the voltage support benefit.

#### III.15.3 Chosen Site

• Geneva Steel Location:

This location is adequately serviced by electrical transmission lines, and it is proximate to both 138 kV and 345 kV connections. Natural gas availability was formerly questionable due to Geneva's operational use of the fuel, but is greatly improved with both the permanent shut down of steel operations, and available tie-ins to the nearby Kern River Pipeline. Water availability is good, and altitudes are less than 6000 feet. Geneva Steel has both the available land and the emission offset credits available for this project. As the location is already zoned for heavy industrial use, and is in fact located on the former site of the steel mill, noise, equipment access, truck use, and other social issues are extremely limited.

#### IV. <u>APPLICABILITY OF FEDERAL REGULATIONS AND UTAH ADMINISTRATIVE</u> <u>CODES (UAC)</u>

The Notice of Intent submitted is for a new source. At the time of this review the Utah Administrative Code Rules 307 (UAC R307) and federal regulations have been examined to determine their applicability to this Notice of Intent. The following rules have been specifically addressed.

- 1. R307-101-2, <u>Major Modification</u> means any physical change in or change in the method of operation of a major source that would result in a significant net emissions increase of any pollutant.
- 2. R307-107, UAC Unavoidable breakdown reporting requirements
- 3. R307-150 Series, UAC Inventories, Testing and Monitoring. These rules cover emission inventory reporting requirements and require the owner or operator of sources of air pollution to submit an emissions inventory report:

R307-150. Emission Inventories R307-155. Hazardous Air Pollutant R307-158. Emission Statement Inventory.

4. R307-201-1(2), UAC - 20% maximum opacity limitation at all emission points. Visible

emissions from installations constructed after April 25, 1971, except internal combustion engines, or any incinerator shall be of a shade or density no darker than 20% opacity, except as otherwise provided in these regulations.

- 5. R307-201-1(9), UAC Opacity Observation.
- 6. R307-203-1(1), UAC Commercial and Industrial Sources. Any coal, oil, or mixture thereof, burned in any fuel burning or process installation not covered by New Source Performance Standards for sulfur emissions shall contain no more than 1.0 pound sulfur per million gross Btu heat input for any mixture of coal nor .85 pounds sulfur per million gross Btu heat input for any oil.
- 7. R307-205 (UAC) Emission Standards: Fugitive Emissions and Fugitive Dust.
- 8. R307-206, UAC Abrasive Blasting Requirements Opacity limitations and performance standards for <u>abrasive blasting</u>.
- 9. R307-305-5(1), UAC Existing sources located in or affecting areas of non-attainment shall use reasonably available control measures to the extent necessary to insure the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS).
- 10. R307-325-1(1) R307-325 applies to all sources in R307-326 through 341, major sources as defined and outlined in section 182 of the Clean Air Act and non-major sources located in Davis and Salt Lake Counties and in any non-attainment area for ozone as defined in the State Implementation Plan.
- 11. R307-401-7, UAC Rules for relocation of temporary sources.
- 12. R307-401-10(1), UAC All sources excluding non-commercial residential dwellings shall install oxides of nitrogen control/low oxides of nitrogen burners or controls resulting from application of an equivalent technology, as determined by the Executive Secretary, whenever existing fuel combustion burners are replaced, unless such replacement is not physically practical or cost effective. The request for an exemption shall be presented to the Executive Secretary for review and approval.
- 13. R307-403-3, UAC Every major new source or major modification must be reviewed by the Executive Secretary to determine if a source will cause or contribute to a violation of the NAAQS.
- 14. R307-403-5(1)(b), UAC Enforceable offsets of  $\underline{1.2:1}$  are required for new sources or modifications that would produce an emission increase greater than or equal to 50 tons per year of any combination of PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub>.
- 15. R307-403-5(1)(c), UAC Enforceable offsets of  $\underline{1:1}$  are required for new sources or modifications that would produce an emission increase greater than or equal to 25 tons per year but less than 50 tons per year of any combination of PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub>.

- 16. R307-405, UAC Permits: Prevention of Significant Deterioration of Air Quality (PSD)
  - 405-1. Definitions
  - 405-2. Area Designations
  - 405-3. Area Redesignation
  - 405-4. Increments and Ceilings
  - 405-5. Baseline Concentration and Date
  - 405-6. PSD Areas New Sources and Modifications
  - 405-7. Increment Violations
  - 405-8. Banking of Emission Offset Credit in PSD Areas
- 17. R307-406, UAC Visibility

406-1.(1) The Executive Secretary shall review any new major source or major modification proposed in either an attainment area or area of non-attainment area for the impact of its emissions on visibility in any mandatory Class I area.

- 18. R307-410, UAC Permits: Emissions Impact Analysis (Air Quality Modeling)
- 19. R307-413, UAC Permits: Exemptions and Special Provisions
  - 413-1. Definitions and General Requirements
  - 413-2. Small Source Exemptions De minimis Emissions
  - 413-3. Flexibility Changes
  - 413-4. Other Exemptions
  - 413-5. Replacement-in-Kind Equipment
  - 413-6. Reduction of Air Contaminants
  - 413-7. Exemption from Notice of Intent Requirements for Used Oil Fuel Burned for Energy Recovery
  - 413-8. De minimis Emissions From Air Strippers and Soil Venting Projects
  - 413-9. De minimis Emissions From Soil Aeration Projects.
- 20. R307-420, UAC Permits: Ozone Offset Requirements in Davis and Salt Lake Counties.
- 21. 40 CFR, Part 50 National Ambient Air Quality Standards (NAAQS). The following areas are Non-attainment areas:
  - PM<sub>10</sub> Salt Lake and Utah Counties, and the city of Ogden
  - SO<sub>2</sub> Salt Lake County and The Oquirrh Mountains above 5,600 feet in Eastern Tooele County
  - CO Provo

The following areas are Maintenance Areas:

- Ozone Salt Lake and Davis Counties
- CO Ogden and Salt Lake City
- 22. 40 CFR 60.15, <u>Definition of Reconstruction</u> the replacement of components of an existing facility to such an extent that:

- A. The fixed capital cost of the new components exceeds 50% of the fixed capital cost that would be required to construct a comparable entirely new facility and
- B. It is technologically and economically feasible to meet the applicable standards set forth in this part.

#### V. <u>RECOMMENDED APPROVAL ORDER CONDITIONS</u>

#### **General Conditions:**

1. This Approval Order (AO) applies to the following company:

Site Office	Corporate Office Location
Summit Vineyard LLC	Summit Vineyard LLC
1825 North Pioneer Lane	6682 W. Greenfield Ave
Vineyard, UT 84058	West Allis, WI 53214
Phone Number	(414) 475-2015
Fax Number	(414) 475-4552

PacifiCorp (or the appropriate PacifiCorp entity) will become the Owner and Operator of the Lake Side Power Plant upon UDAQ receiving notice countersigned by Summit Vineyard, LLC and PacifiCorp requesting the company name change be made.

The equipment listed in this AO shall be operated at the following location:

1825 North Pioneer Lane, the project is located on the south side of 200 South Road, between North Pioneer Lane and 250 West (Proctor) Road.

Universal Transverse Mercator (UTM) Coordinate System: UTM Datum NAD27 4,464.5 kilometers Northing, 436.0 kilometers Easting, Zone 12

- 2. All definitions, terms, abbreviations, and references used in this AO conform to those used in the Utah Administrative Code (UAC) Rule 307 (R307) and Title 40 of the Code of Federal Regulations (40 CFR). Unless noted otherwise, references cited in these AO conditions refer to those rules.
- 3. The limits set forth in this AO shall not be exceeded without prior approval in accordance with R307-401.
- 4. Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved in accordance with R307-401-1.
- 5. All records referenced in this AO or in applicable NSPS standards, which are required to be kept by the owner/operator, shall be made available to the Executive Secretary or Executive Secretary's representative upon request, and the records shall include the two-year period prior to the date of the request. Records shall be kept for the following minimum periods:
  - A. Emission inventories Five years from the due date of each emission statement or until the next inventory is due, whichever is longer.

- B. All other records Five years
- 6. Summit Vineyard LLC (Summit) shall install and operate the Lake Side Power Plant and shall conduct its operations of the same in accordance with the terms and conditions of this AO, which was written pursuant to Summit's Notice of Intent submitted to the Division of Air Quality (DAQ) on May 24, 2004.
- 7. The approved installations shall consist of the following equipment or equivalent\*:
  - A. Two (2) Siemens-Westinghouse\* 501F natural gas-fired dry low-NO<sub>x</sub>, combined cycle turbines, each with 130 foot stack (as measured from the base of the stack)
  - B. Two (2) heat recovery steam generators (HRSGs), equipped with low NO<sub>x</sub> duct burners (184 MMBtu/hr each)
  - C. Two (2) CO catalysts, one for each turbine/HRSG set
  - D. Two (2) Selective Catalytic Reduction (SCR) systems with ammonia injection, one for each turbine/HRSG set
  - E. One (1) steam turbine\*\*
  - F. One (1) natural gas-fired 49 MMBtu/hr auxiliary boiler with 40 ft. boiler stack (as measured from the base of the stack)
  - G. One (1) 1,490 hp diesel-fired emergency generator
  - H. One (1) 290 hp diesel-fired fire pump
  - I. One (1) 3.67 MMBtu/hr fuel dew point heater
  - J. One (1) 10 Cell mechanical draft evaporative cooling tower with drift elimination
  - K. Water treatment and storage facilities\*\*
  - L. Aqueous ammonia storage and handling equipment\*\*
  - \* Equivalency shall be determined by the Executive Secretary.
  - \*\* This equipment is listed for informational purposes only. There are no emissions from this equipment.
- 8. Summit shall notify the Executive Secretary in writing when the installation of the equipment listed in Condition #7 has been completed and is operational, as an initial compliance inspection is required. To insure proper credit when notifying the Executive Secretary, send your correspondence to the Executive Secretary, attn: Compliance Section.

If construction and/or installation has not been completed within eighteen months from

the date of this AO, the Executive Secretary shall be notified in writing on the status of the construction and/or installation. At that time, the Executive Secretary shall require documentation of the continuous construction and/or installation of the operation and may revoke the AO in accordance with R307-401-11.

#### **Limitations and Tests Procedures**

10.

9. Emissions to the atmosphere at all times from the indicated emission point(s) shall not exceed the following rates and concentrations:

Source: Each Turbine/HRSG Stack

<u>Pollutant</u>	Limitations* at 15% O <sub>2</sub>	Averaging Period
PM <sub>10</sub>	10.8 lb/hour (0.01 lb/MMBtu)	24-hour**
NO <sub>x</sub>	2 ppmvd (14.9 lb/hr)	3-hour
СО	3 ppmvd (14.1 lb/hr)	3-hour

- \* Under steady state operation.
- \*\* Based on a 24-hour test run or any method approved by the Executive Secretary, which will provide 24-hour data

Source: Both Turbine/HRSG Stacks Combined

<u>Pollutant</u> NO <sub>x</sub> CO			44 lb		
Source: Each Turbine (NSPS Subpart GG Limitation)					
<u>Pollutant</u> NO <sub>x</sub>	Limitation at 15% O <sub>2</sub> 112 ppmvd	Av	eraging Period ***		
*** NSPS Subpart GG Lin	nitation (see Condition	#18)			
Stack testing to show compliance with the emission limitations stated in the above condition shall be performed as specified below:					
A. <u>Emissions Point</u>	<u>Pollutant</u>	Testing <u>Status</u>	Test <u>Frequency</u>		

Emissions Point	Pollutant	<u>Status</u>	Frequenc
Each HRSG Stack		* *	
		*	

B. <u>Testing Status</u> (To be applied to the source listed above)

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- \* Initial compliance testing is required. The initial test date shall be performed as soon as possible and in no case later than 180 days after the start up of a new emission source, an existing source without an AO, or the granting of an AO to an existing emission source that has not had an initial compliance test performed. If an existing source is modified, a compliance test is required on the modified emission point that has an emission rate limit.
- \$ Test every year or testing may be replaced with parametric monitoring if approved by the Executive Secretary
- Compliance shall be demonstrated through use of a Continuous
   Emissions Monitoring System (CEM) as outlined in Conditions #14.A
   and #21 below. The Executive Secretary may require testing at any time.
- C. Notification

The Executive Secretary shall be notified at least 30 days prior to conducting any required emission testing. A source test protocol shall be submitted to DAQ when the testing notification is submitted to the Executive Secretary.

The source test protocol shall be approved by the Executive Secretary prior to performing the test(s). The source test protocol shall outline the proposed test methodologies, stack to be tested, and procedures to be used. A pretest conference shall be held, if directed by the Executive Secretary.

#### D. <u>Sample Location</u>

The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, or other methods as approved by the Administrator. An Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approved access shall be provided to the test location.

#### E. <u>Volumetric Flow Rate</u>

40 CFR 60, Appendix A, Method 2 or EPA Test Method No. 19 "SO<sub>2</sub> Removal & PM, SO<sub>2</sub>, NO<sub>x</sub> Rates from Electric Utility Steam Generators" or other testing methods approved by the Administrator.

F. <u>PM<sub>10</sub></u>

For stacks in which no liquid drops are present, the following methods shall be used: 40 CFR 51, Appendix M, Methods 201, 201a and 202, or other testing methods approved by the Administrator. All particulate captured shall be considered  $PM_{10}$ . The back half condensibles shall be used for compliance demonstration as well as for inventory purposes.

For stacks in which liquid drops are present, methods to eliminate the liquid drops should be explored. If no reasonable method to eliminate the drops exists, then the following methods shall be used: 40 CFR 60, Appendix A, Method 5, 5a, 5d, or 5e as appropriate, or other testing methods approved by the Administrator. The back half condensibles shall also be tested using the method specified by the Administrator. The portion of the front half of the catch considered  $PM_{10}$  shall be based on information in Appendix B of the fifth edition of the EPA document, AP-42, or other data acceptable to the Administrator.

G. <u>Nitrogen Oxides (NO<sub>x</sub>)</u>

40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other testing methods approved by the Administrator.

H. <u>Carbon Monoxide (CO)</u>

40 CFR 60, Appendix A, Method 10, or other testing methods approved by the Administrator.

I. <u>Calculations</u>

To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Executive Secretary, to give the results in the specified units of the emission limitation.

- 11. Compliance with the 3-hour NO<sub>x</sub> and CO emission limitations specified in Condition #9 shall not be required during short-term excursions, limited to a cumulative total of 160 hours annually. Short-term excursions are defined as 15-minute periods designated by the Owner/Operator that are the direct result of transient load conditions, not to exceed four consecutive 15-minute periods, when the 15-minute average NO<sub>x</sub> and CO concentrations exceed 2.0 ppmv and 3.0 ppmv, dry @ 15% O<sub>2</sub>, respectively. Transient load conditions include the following:
  - (1) Initiation/shutdown of combustion turbine inlet air-cooling
  - (2) Rapid combustion turbine load changes
  - (3) Initiation/shutdown of HRSG duct burners
  - (4) Provision of Ancillary Services and Automatic Generation Control

During periods of transient load conditions, the  $NO_x$  concentration shall not exceed 25 ppmv and the CO concentration shall not exceed 50 ppmv, dry @ 15% O<sub>2</sub>. All NO<sub>x</sub> and CO emissions during these events shall be included in all calculations of annual mass emissions as required by this permit.

12. Startup is defined as the period beginning with turbine initial firing until the unit meets

the ppmvd emission limits in the first table of Condition #9 for steady state operation. Shutdown is defined as the period beginning with the initiation of turbine shutdown sequence and ending with the cessation of firing of the gas turbine engine. Startup and shutdown events shall not exceed 613.5 hours per turbine per calendar year and are counted toward the applicable annual emission limitations.

The total startup and shutdown period shall not exceed 14-hours in any one calendar day, commencing at midnight. Emissions during startup and shutdown periods must be counted toward the applicable annual emission limitations.

- 13. Visible emissions from the following emission points shall not exceed the following values:
  - A. All natural gas combustion exhaust stacks 10% opacity
  - B. All other points 20% opacity

Opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9.

14. The following limits shall not be exceeded:

Combined emissions of  $PM_{10}$ +  $NO_x$  +  $SO_2$  shall not be greater than 260.9 tons per calendar year (from the plant-gas turbines, the duct burners, fire pump, auxiliary boiler, cooling tower and emergency generator)

Compliance with the above emission limitation for required offsets shall be determined as follows:

- A. NO<sub>x</sub> from the gas turbine and the duct burner shall be obtained from CEMS recorded data
- B PM<sub>10</sub> from the gas turbine and the duct burner shall be obtained from the latest emission test record data
- C.  $SO_2$  from the gas turbine and the duct burner shall be from the latest emission test or if testing is not required by the other alternative method as approved by the Executive Secretary or Administrator.
- D.  $NO_{x,} PM_{10}$  and  $SO_2$  for auxiliary boiler, emergency generator, cooling tower and fire pump shall be obtained from the U.S. EPA's compilation of air pollutants emission factors, AP-42.

To determine compliance with the combined annual limit the owner/operator shall calculate average hourly rate (using CEMS recorded data as outlined in Condition #21, test results and AP-42 calculations) and sum them over calendar year.

15. Emergency generators shall be used for electricity producing operation only during the

periods when electric power from the public utilities is interrupted, and for regular maintenance and testing. Records documenting generator usage shall be kept in a log and they shall show the date the generator was used, the duration in hours of the generator usage, and the reason for each generator usage.

#### Fuels

- 16. The owner/operator shall use natural gas as fuel in the combustion turbines, duct burners and auxiliary boiler.
- 17. The owner/operator shall use a combination of #2 fuel oil or diesel fuel in the emergency generators and fire pump.

The sulfur content of any #2 fuel oil or diesel fuel burned shall not exceed 0.05 percent by weight. Sulfur content shall be determined by ASTM Method D-4294-89, or approved equivalent. Certification of fuels shall be either by the owner/operator's own testing or test reports from the fuel marketer. For purposes of demonstrating compliance with this limitation, the owner/operator may obtain the above specifications by testing each purchase of fuel in accordance with the required methods; by inspection of the specifications provided by the vendor for each purchase of fuel; or by inspection of summary documentation of the fuel sulfur content from the vendor; provided that the above specifications are available from the vendor for each purchase if requested.

#### **Federal Limitations and Requirements**

18. In addition to the requirements of this AO, all applicable provisions of 40 CFR 60, New Source Performance Standards (NSPS) Subpart A, 40 CFR 60.1 to 60.18; Subpart GG, 40 CFR 60.330 to 60.334 (Standards of Performance for Stationary Gas Turbines); Subpart Db, 40 CFR 60.40b to 60.49b (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units); and Subpart Dc, 40 CFR 60.40c to 60.49c (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) – apply to this installation as follows:

Subpart Db:Heat Recovery Steam Generators (HRSGs)Subpart Dc:Auxiliary BoilerSubpart GG:Combustion Turbines

 In addition to the requirements of this AO, all applicable provisions of 40 CFR Part 72, 73, 75, 76, 77 and 78, Federal Regulations for the Acid Rain Program under Clean Air Act Title IV apply to this installation.

#### **Monitoring - Continuous Emissions Monitoring**

20. The owner/operator shall install, calibrate, maintain, and operate a continuous emissions monitoring system on each of the HRSG stacks. Summit shall record the output of the system, for measuring the NO<sub>x</sub> and CO emissions. The monitoring system shall comply with all applicable sections of R307-170; 40 CFR 13; and 40 CFR 60, Appendix B.

All continuous emissions monitoring devices as required in federal regulations and state rules shall be installed and operational prior to placing the affected source in operation.

Except for system breakdown, repairs, calibration checks, and zero and span adjustments required under paragraph (d) 40 CFR 60.13, the owner/operator of an affected source shall continuously operate all required continuous monitoring systems and shall meet minimum frequency of operation requirements as outlined in 40 CFR 60.13 and Section R307-170.

#### **Records & Miscellaneous**

- 21. At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this Approval Order including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Executive Secretary which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded.
- 22. The owner/operator shall comply with R307-150 Series. Inventories, Testing and Monitoring.
- 23. The owner/operator shall comply with R307-107. General Requirements: Unavoidable Breakdowns.

The Executive Secretary shall be notified in writing if the company is sold or changes its name.

Under R307-150-1, the Executive Secretary may require a source to submit an emission inventory for any full or partial year on reasonable notice.

This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including R307.

A copy of the rules, regulations and/or attachments addressed in this AO may be obtained by contacting the Division of Air Quality. The Utah Administrative Code R307 rules used by DAQ, the Notice of Intent (NOI) guide, and other air quality documents and forms may also be obtained on the Internet at the following web site:

http://www.airquality.utah.gov/

The annual emissions estimations below are for the purpose of determining the applicability of Prevention of Significant Deterioration, non-attainment area, maintenance area, and Title V source requirements of the R307.

They are not to be used for determining compliance.

The Potential To Emit (PTE) emissions for this source are currently calculated at the following values:

	Pollutant	Tons/yr
A.	PM <sub>10</sub>	
B.	SO <sub>2</sub>	
C.	NO <sub>x</sub>	
D.	СО	
E.	VOC	
F.	HAPs	
	Formaldehyde	6.2

Offsets requirements of 260.6 x 1.2 = 312.72 tons, of which  $PM_{10} = 114.96$ ,  $SO_2 = 31.8$ ,  $NO_x = 195.96$ 



State of Utah

#### Department of Environmental Quality

Dianne R. Nielson, Ph.D. Executive Director

DIVISION OF AIR QUALITY Richard W. Sprott Director JON M. HUNTSMAN, JR. Governor

> GARY HERBERT Lieutenant Governor

# FILE COPY

DAQE-AN3031001-05

January 6, 2005

Tom Cameron Summit Vineyard LLC 6682 W. Greenfield Ave, Suite 109 West Allis, WI 53214

Dear Mr. Cameron:

Re: Approval Order: Approval for Lake Side Power Plant, Utah County, CDS A; NA; NSPS, NESHAPS, HAPs, TITLE V MAJOR, PSD MAJOR, NAA/NSR MAJOR Project Code: N3031-001

The attached document is the Approval Order (AO) for the above-referenced project.

Future correspondence on this Approval Order should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. Please direct any technical questions you may have on this project to Mr. John D. Jenks. He may be reached at (801) 536-4459.

Sincerela

Richard W. Sprott, Executive Secretary Utah Air Quality Board

RWS:JJ:jc

cc: Utah County Health Department

Mike Owens, EPA Region VIII



## STATE OF UTAH

### **Department of Environmental Quality**

## **Division of Air Quality**

## **APPROVAL ORDER:** Approval for Lake Side Power Plant

Prepared By: John D. Jenks, Engineer (801) 536-4459 Email: jjenks@utah.gov

#### **APPROVAL ORDER NUMBER**

DAQE-AN3031001-05

Date: January 6, 2005

Summit Vineyard LLC Source Contact Tom Cameron (414) 475-2015

> Richard W. Sprott Executive Secretary Utah Air Quality Board

#### Abstract

Summit Vineyard LLC, has submitted a Notice of Intent (NOI) to install and operate a 560 MW electric generation plant in Utah County. The plant would be located on the site of the old Geneva Steel facility, and would consist of two (2) combustion turbine and heat recovery steam generator (HRSG) arrangements and a single steam turbine generator. The combustion turbines and HRSG units will be equipped with CO catalysts, SCR, and combustion controls featuring dry-low  $NO_x$  burners. This source is major under both the Prevention of Significant Deterioration (PSD) and Non-attainment Area New Source Review (NAA/NSR) regulations. Utah County is a Non-attainment area of the National Ambient Air Quality Standards (NAAQS) for PM<sub>10</sub>. New Source Performance Standards (NSPS) A, Db, Dc, and GG regulations apply to this source. The Acid Rain Program (Title IV) of the Clean Air Act applies to this source. Title V of the 1990 Clean Air Act applies to this source, with the requirement that the source submit a Title V Operating Permit application within one year of beginning operations.

The emissions, in tons per year, will be as follows:  $PM_{10}$  95.8,  $NO_x$  138.3,  $SO_2$  26.5, CO 547.1, VOC 72.8, HAPs (Formaldehyde) 6.2.

Offsets requirements of 260.6 x 1.2 = 312.72 tons, of which  $PM_{10} = 114.96$ ,  $SO_2 = 31.8$ ,  $NO_x = 165.96$ . This is referenced in DAQE-040-05.

The project has been evaluated and found to be consistent with the requirements of the Utah Administrative Code Rule 307 (UAC R307). A public comment period was held in accordance with UAC R307-401-4 and comments were received. The comments were evaluated and no comment was found to be adverse to the proposed AO. This air quality Approval Order (AO) authorizes the project with the following conditions, and failure to comply with any of the conditions may constitute a violation of this order.

#### **General Conditions:**

1. This Approval Order (AO) applies to the following company:

Site Office	Corporate Office Location
Summit Vineyard LLC	Summit Vineyard LLC
1825 North Pioneer Lane	C/O PEC, Suite 109
Vineyard, UT 84058	6682 W. Greenfield Ave
	West Allis, WI 53214
Phone Number	(414) 475-2015
Fax Number	(414) 475-4552

The equipment listed in this AO shall be operated at the following location:

1825 North Pioneer Lane, the project is located on the south side of 200 South Road, between North Pioneer Lane and 250 West (Proctor) Road.

Universal Transverse Mercator (UTM) Coordinate System: UTM Datum NAD27 4,464.5 kilometers Northing, 436.0 kilometers Easting, Zone 12

- 2. All definitions, terms, abbreviations, and references used in this AO conform to those used in the Utah Administrative Code (UAC) Rule 307 (R307) and Title 40 of the Code of Federal Regulations (40 CFR). Unless noted otherwise, references cited in these AO conditions refer to those rules.
- 3. The limits set forth in this AO shall not be exceeded without prior approval in accordance with R307-401.
- 4. Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved in accordance with R307-401-1.
- 5. All records referenced in this AO or in applicable NSPS standards, which are required to be kept by the owner/operator, shall be made available to the Executive Secretary or Executive Secretary's representative upon request, and the records shall include the two-year period prior to the date of the request. Records shall be kept for the following minimum periods:
  - A. Emission inventories Five years from the due date of each emission statement or until the next inventory is due, whichever is longer.
  - B. All other records Five years
- 6. Summit Vineyard LLC (Summit) shall install and operate the Lake Side Power Plant and shall conduct its operations of the same in accordance with the terms and conditions of this AO, which was written pursuant to Summit's Notice of Intent submitted to the Division of Air Quality (DAQ) on May 24, 2004.
- 7. The approved installations shall consist of the following equipment or equivalent\*:
  - A. Two (2) Siemens-Westinghouse\* 501F natural gas-fired dry low-NO<sub>x</sub>, combined cycle turbines, each with 130 foot stack (as measured from the base of the stack)
  - B. Two (2) heat recovery steam generators (HRSGs), equipped with low NO<sub>x</sub> duct burners (184 MMBtu/hr each)
  - C. Two (2) CO catalysts, one for each turbine/HRSG set
  - D. Two (2) Selective Catalytic Reduction (SCR) systems with ammonia injection, one for each turbine/HRSG set
  - E. One (1) steam turbine\*\*
  - F. One (1) natural gas-fired 49 MMBtu/hr auxiliary boiler with 40 ft. boiler stack (as measured from the base of the stack)
  - G. One (1) 1,490 hp diesel-fired emergency generator
  - H. One (1) 290 hp diesel-fired fire pump

- I. One (1) 3.67 MMBtu/hr fuel dew point heater
- J. One (1) 10 Cell mechanical draft evaporative cooling tower with drift elimination
- K. Water treatment and storage facilities\*\*
- L. Aqueous ammonia storage and handling equipment\*\*
- \* Equivalency shall be determined by the Executive Secretary.
- \*\* This equipment is listed for informational purposes only. There are no emissions from this equipment.
- 8. Summit shall notify the Executive Secretary in writing when the installation of the equipment listed in Condition #7 has been completed and is operational, as an initial compliance inspection is required. To insure proper credit when notifying the Executive Secretary, send your correspondence to the Executive Secretary, attn: Compliance Section.

If construction and/or installation has not been completed within eighteen months from the date of this AO, the Executive Secretary shall be notified in writing on the status of the construction and/or installation. At that time, the Executive Secretary shall require documentation of the continuous construction and/or installation of the operation and may revoke the AO in accordance with R307-401-11.

#### **Limitations and Tests Procedures**

9. Emissions to the atmosphere from the indicated emission point(s) shall not exceed the following rates and concentrations:

Source: Auxiliary Boiler

Pollutant	Limitations at 15% O <sub>2</sub>	Averaging Period
PM <sub>10</sub>	0.01 lb/MMBtu	3-hour
NO <sub>x</sub>	0.017 lb/MMBtu	3-hour
СО	0.037 lb/MMBtu	3-hour

Source: Each Turbine/HRSG Stack

<u>Pollutant</u>	Limitations at 15% O <sub>2</sub>	Averaging Period
PM <sub>10</sub>	10.8 lb/hour (0.01 lb/MMBtu)	24-hour**
NO <sub>x</sub>	2.0 ppmvd (14.9 lb/hr)*	3-hour
СО	3.0 ppmvd (14.1 lb/hr)*	3-hour

\* Under steady state operation.

\*\* Based on a 24-hour test run or any method approved by the Executive Secretary, which will provide 24-hour data

A.

Source: Each Turbine/HRSG Stack

CO	Emission Limit at 15% O <sub>2</sub> 	<u>Averaging Period</u> 24-hour 8-hour
<u>Pollutant</u> NO <sub>x</sub>	<u>Limitation at 15% O<sub>2</sub></u> 112.0 ppmvd	Averaging Period ***
*** NSPS Subpart	GG Limitation (see Condition #18)	

NSPS Subpart GG Limitation (see Condition #18)

10. Stack testing to show compliance with the emission limitations stated in the above condition shall be performed as specified below:

		Testing	Test
Emissions Point	Pollutant	<u>Status</u>	Frequency
HRSG Stack(s)	PM <sub>10</sub>	*	. \$
	NO <sub>x</sub>	*	.#
	СО	. *	.#
Auxiliary Boiler	PM <sub>10</sub>	*	.%
	NO <sub>x</sub>	*	.%
	СО	*	.%

- B. Testing Status (To be applied to the source listed above)
  - \* Initial compliance testing is required. The initial test date shall be performed as soon as possible and in no case later than 180 days after the start up of a new emission source, an existing source without an AO, or the granting of an AO to an existing emission source that has not had an initial compliance test performed. If an existing source is modified, a compliance test is required on the modified emission point that has an emission rate limit.
  - \$ Test every year or testing may be replaced with parametric monitoring if approved by the Executive Secretary
  - % Test every five (5) years or testing may be replaced with parametric monitoring if approved by the Executive Secretary
  - # Compliance shall be demonstrated through use of a Continuous Emissions Monitoring System (CEM) as outlined in Conditions #14.A and #20 below. The Executive Secretary may require testing at any time.
# C. <u>Notification</u>

The Executive Secretary shall be notified at least 30 days prior to conducting any required emission testing. A source test protocol shall be submitted to DAQ when the testing notification is submitted to the Executive Secretary.

The source test protocol shall be approved by the Executive Secretary prior to performing the test(s). The source test protocol shall outline the proposed test methodologies, stack to be tested, and procedures to be used. A pretest conference shall be held, if directed by the Executive Secretary.

# D. <u>Sample Location</u>

The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, or other methods as approved by the Administrator. An Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approved access shall be provided to the test location.

# E. <u>Volumetric Flow Rate</u>

40 CFR 60, Appendix A, Method 2 or EPA Test Method No. 19 "SO<sub>2</sub> Removal & PM, SO<sub>2</sub>, NO<sub>x</sub> Rates from Electric Utility Steam Generators" or other testing methods approved by the Administrator.

F. <u>PM</u><sub>10</sub>

For stacks in which no liquid drops are present, the following methods shall be used: 40 CFR 51, Appendix M, Methods 201, 201a and 202, or other testing methods approved by the Administrator. All particulate captured shall be considered  $PM_{10}$ . The back half condensibles shall be used for compliance demonstration as well as for inventory purposes.

For stacks in which liquid drops are present, methods to eliminate the liquid drops should be explored. If no reasonable method to eliminate the drops exists, then the following methods shall be used: 40 CFR 60, Appendix A, Method 5, 5a, 5d, or 5e as appropriate, or other testing methods approved by the Administrator. The back half condensibles shall also be tested using the method specified by the Administrator. The portion of the front half of the catch considered  $PM_{10}$  shall be based on information in Appendix B of the fifth edition of the EPA document, AP-42, or other data acceptable to the Administrator.

G. <u>Nitrogen Oxides  $(NO_x)$ </u>

40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other testing methods approved by the Administrator.

H. <u>Carbon Monoxide (CO)</u>

40 CFR 60, Appendix A, Method 10, or other testing methods approved by the Administrator.

I. <u>Calculations</u>

To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Executive Secretary, to give the results in the specified units of the emission limitation.

- 11. Compliance with the 3-hour  $NO_x$  and CO emission limitations specified in Condition #9 shall not be required during short-term excursions, limited to a cumulative total of 160 hours annually. Short-term excursions are defined as 15-minute periods designated by the Owner/Operator that are the direct result of transient load conditions, not to exceed four consecutive 15-minute periods, when the 15-minute average  $NO_x$  and CO concentrations exceed 2.0 ppmv and 3.0 ppmv, dry @ 15%  $O_2$ , respectively. Transient load conditions include the following:
  - (1) Initiation/shutdown of combustion turbine inlet air-cooling
  - (2) Rapid combustion turbine load changes
  - (3) Initiation/shutdown of HRSG duct burners
  - (4) Provision of Ancillary Services and Automatic Generation Control

During periods of transient load conditions, the  $NO_x$  concentration shall not exceed 25 ppmv and the CO concentration shall not exceed 50 ppmv, dry @ 15%  $O_2$ . All  $NO_x$  and CO emissions during these events shall be included in all calculations of annual mass emissions as required by this permit.

12. Steady state operation means all periods of combustion turbine operation, except for periods of startup and shutdown as defined below, and periods of transient load conditions as defined in condition 11. Startup is defined as the period beginning with turbine initial firing until the unit meets the ppmvd emission limits in the first table of Condition #9 for steady state operation. Shutdown is defined as the period beginning with the initiation of turbine shutdown sequence and ending with the cessation of firing of the gas turbine engine. Startup and shutdown events shall not exceed 613.5 hours per turbine per calendar year and are counted toward the applicable annual emission limitations.

The total startup and shutdown period shall not exceed 14-hours in any one calendar day, commencing at midnight. Emissions during startup and shutdown periods must be counted toward the applicable annual emission limitations.

- 13. Visible emissions from the following emission points shall not exceed the following values:
  - A. All natural gas combustion exhaust stacks 10% opacity
  - B. All other points 20% opacity

Opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9.

14. The following limits shall not be exceeded:

Combined emissions of  $PM_{10}$ +  $NO_x$  +  $SO_2$  shall not be greater than 260.6 tons per calendar year (from the plant-gas turbines, the duct burners, fire pump, auxiliary boiler, cooling tower and emergency generator)

Compliance with the above emission limitation for required offsets shall be determined as follows:

- A.  $NO_x$  from the gas turbine and the duct burner shall be obtained from CEMS recorded data
- B  $PM_{10}$  from the gas turbine and the duct burner shall be obtained from the latest emission test record data
- C.  $SO_2$  from the gas turbine and the duct burner shall be from the latest emission test or if testing is not required by the other alternative method as approved by the Executive Secretary or Administrator.
- D.  $NO_{x}$ ,  $PM_{10}$  and  $SO_2$  for auxiliary boiler, emergency generator, cooling tower and fire pump shall be obtained from the U.S. EPA's compilation of air pollutants emission factors, AP-42.

To determine compliance with the combined annual limit the owner/operator shall calculate average hourly rate (using CEMS recorded data as outlined in Condition #21, test results and AP-42 calculations) and sum them over calendar year.

15. Emergency generators shall be used for electricity producing operation only during the periods when electric power from the public utilities is interrupted, and for regular maintenance and testing. Records documenting generator usage shall be kept in a log and they shall show the date the generator was used, the duration in hours of the generator usage, and the reason for each generator usage.

# <u>Fuels</u>

- 16. The owner/operator shall use natural gas as fuel in the combustion turbines, duct burners and auxiliary boiler.
- 17. The owner/operator shall use a combination of #2 fuel oil or diesel fuel in the emergency generators and fire pump.

The sulfur content of any #2 fuel oil or diesel fuel burned shall not exceed 0.05 percent by weight. Sulfur content shall be determined by ASTM Method D-4294-89, or approved equivalent. Certification of fuels shall be either by the owner/operator's own testing or test reports from the fuel marketer. For purposes of demonstrating compliance with this limitation, the owner/operator may obtain the above specifications by testing each

purchase of fuel in accordance with the required methods; by inspection of the specifications provided by the vendor for each purchase of fuel; or by inspection of summary documentation of the fuel sulfur content from the vendor; provided that the above specifications are available from the vendor for each purchase if requested.

# **Federal Limitations and Requirements**

18. In addition to the requirements of this AO, all applicable provisions of 40 CFR 60, New Source Performance Standards (NSPS) Subpart A, 40 CFR 60.1 to 60.18; Subpart GG, 40 CFR 60.330 to 60.334 (Standards of Performance for Stationary Gas Turbines); Subpart Db, 40 CFR 60.40b to 60.49b (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units); and Subpart Dc, 40 CFR 60.40c to 60.49c (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) – apply to this installation as follows:

Subpart Db:Heat Recovery Steam Generators (HRSGs)Subpart Dc:Auxiliary BoilerSubpart GG:Combustion Turbines

19. In addition to the requirements of this AO, all applicable provisions of 40 CFR Part 72, 73, 75, 76, 77 and 78, Federal Regulations for the Acid Rain Program under Clean Air Act Title IV apply to this installation.

# **Monitoring - Continuous Emissions Monitoring**

20. The owner/operator shall install, calibrate, maintain, and operate a continuous emissions monitoring system on each of the HRSG stacks. The owner/operator shall record the output of the system, for measuring the NO<sub>x</sub> and CO emissions. The monitoring system shall comply with all applicable sections of R307-170; 40 CFR 13; and 40 CFR 60, Appendix B.

All continuous emissions monitoring devices as required in federal regulations and state rules shall be installed and operational prior to placing the affected source in operation. Except for system breakdown, repairs, calibration checks, and zero and span adjustments required under paragraph (d) 40 CFR 60.13, the owner/operator of an affected source shall continuously operate all required continuous monitoring systems and shall meet minimum frequency of operation requirements as outlined in 40 CFR 60.13 and Section R307-170.

# **Records & Miscellaneous**

21. At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this Approval Order including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Executive Secretary which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded.

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22. The owner/operator shall comply with R307-150 Series. Inventories, Testing and Monitoring.

The Executive Secretary shall be notified in writing if the company is sold or changes its name.

Under R307-150-1, the Executive Secretary may require a source to submit an emission inventory for any full or partial year on reasonable notice.

This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including R307.

A copy of the rules, regulations and/or attachments addressed in this AO may be obtained by contacting the Division of Air Quality. The Utah Administrative Code R307 rules used by DAQ, the Notice of Intent (NOI) guide, and other air quality documents and forms may also be obtained on the Internet at the following web site:

http://www.airquality.utah.gov/

The annual emissions estimations below are for the purpose of determining the applicability of Prevention of Significant Deterioration, non-attainment area, maintenance area, and Title V source requirements of the R307.

They are not to be used for determining compliance.

The Potential To Emit (PTE) emissions for this source are currently calculated at the following values:

Pollutant	Tons/yr
PM <sub>10</sub>	
SO <sub>2</sub>	
CO <sup>^</sup>	
VOC	72.8
HAPs	
Formaldehyde	6.2
	PM <sub>10</sub> SO <sub>2</sub> NO <sub>x</sub> CO VOC HAPs

Offsets requirements of 260.6 x 1.2 = 312.72 tons, of which  $PM_{10} = 114.96$ ,  $SO_2 = 31.8$ ,  $NO_x = 165.96$ 

Approved

Richard W. Sprott, Executive Secretary Utah Air Quality Board

# Memorandum

То:	File
From:	John D. Jenks, Environmental Engineer
Through:	Rusty Ruby
Date:	1/13/2005
Re:	Response to Comments received on Summit Vineyard LLC Project (N3031-001)

Beginning on October 25, 2004, a public comment period was held to solicit comments regarding Summit Vineyard's Lake Side Power Plant, a 560-MW, natural gas-fired, turbine project located in the town of Vineyard, Utah. The Division of Air Quality received three written comment letters, which included several individual comments. These comments are each addressed below.

1. I am opposed to a new electrical generation facility in Utah Valley. As you know, the air pollution here in Utah Valley is already terrible in the winter - even with Geneva Steel having been shut down for the past few years. I do realize that, as a user of electricity, it is somewhat unfair for me to take a "not in my backyard" stance on the issue. However, I understand that Utah already produces substantially more electric power than it uses. We as Utahns are already are bearing more than our "share" of the negative side effects that come from our demands for electric power. Even if another power plant was desperately needed to supply local residents, a more suitable location could easily be found. It just doesn't make sense to place the plant in the center of a major population base already struggling with air quality problems. Please understand that I am not a typical "environmentalist" - I am generally in favor of activities such as logging, mining, off-road vehicles, oil exploration, etc. On this particular issue, however, I feel strongly that it is not in Utah Valley's best interest to allow this power generation plant. I encourage your office to reject the proposal to build the plant.

# UDAQ response:

The comment raises the question of an alternative sites analysis, which is required under the Major New Source Review requirements for locating a new major source within a non-attainment area. It also hints at the inclusion of existing sources within such an analysis.

The alternative sites analysis has been included as part of the New Source Plan Review (NSPR). It states, in part, that there are a limited number of locations in which a new power generation project can be located. The Salt Lake Valley, which this source would serve, is line-limited, meaning that transmission capability is a major deciding factor in project location. There is also the question of water and fuel supply availability.

At the time of this response to comments, only five total locations were identified as having some or all of the project requirements. Most of those required locating the source at a site adjacent to another existing power generation facility. These were rejected primarily because they were located too close to these other existing projects. The modeling becomes more complex the closer that two major sources are to each other. The three locations not locating next to an existing power generation facility were all located in an area of moderate non-attainment for PM10 – specifically Salt Lake and

Utah Counties. The question of alternative site analysis would apply in all three cases, and given that each area is the same severity of non-attainment, the decision is then one of other resources. The Vineyard location was chosen as preferable to the others given its proximity to fuel and water sources, the availability of land, the availability of emission offset credits, and the line capacity of the nearby substation.

The remaining point, that of including existing sources in an analysis, is addressed in the modeling memorandum. As a Prevention of Significant Deterioration (PSD) source, Summit Vineyard is required to include existing sources in their modeling analysis. Summit Vineyard performed this analysis which was reviewed and approved by the Technical Analysis Section of UDAQ, on August 27, 2004.

- 2. COMMENT Section I.7 of the Engineering Review (ER) states (in part), "The SCR process will use aqueous ammonia. Ammonia slip, or the concentration of unreacted ammonia in the exiting exhaust gas, will be limited to less than 10 ppm". Section III.4.3 states (in part), "The proposed BACT emission limit for ammonia slip from the SCR operation is 10 ppmvd averaged over 3 hours."
  - A. There is no limit on ammonia slip in the ITA.
  - B. New York State, in a recent permit action, on pg 5-13 states "To meet NYSDEC guidelines for ammonia (NH3) slip, combined-cycle stack emissions of NH3 will be limited to 5 ppm by controlling the NH3 injection rate"
  - C. In the same permit action, NY states on pg 5-50, "The use of urea pellets eliminates the potential hazard of on-site ammonia storage.
  - D. The ER does not quantify ammonia emissions in lbs per hour or tons per year, as other emissions are in Section II.

This ITA should: A) contain limits for ammonia slip; B) the basis for those limits should be discussed in the ER; C) the ER should discuss, why liquid ammonia, with its greater risks during transport and storage as compared with urea pellets, is permitted; and D) the predicted emissions of ammonia should be quantified for public review.

#### UDAQ response:

Ammonia is used to reduce emissions of oxides of nitrogen  $(NO_x)$  by combining with  $NO_x$  in the presence of a catalyst at the elevated temperatures found in the exhaust gas stack coming from both the combustion turbines (CTs) and heat recovery steam generators (HRSGs). The commenter has a number of questions relating to the amount of ammonia 'slip', the un-reacted ammonia that passes through the catalyst bed and is released to the atmosphere.

At this time UDAQ has no authority to regulate ammonia emissions under the PSD regulations. UDAQ agrees that the predicted emissions of ammonia should be quantified and that estimate should be included in the NSPR. The amount of ammonia slip for this project is estimated to be less than 10 ppm. The use of ammonia in any form is included as part of the BACT review for the source, and is included in the NSPR. However, UDAQ does not have any authority to regulate which form that ammonia must be stored, transported, or injected. The source chose to use liquid ammonia for ease of storage and for reasons of cost. In fact, the ammonia storage system is only included in the Intent to Approve (ITA) for informational purposes. It will continue to be listed as such in the final Approval Order. The listing in sections I.7 and III.4.3 of the NSPR mentions BACT for ammonia slip. This is an unfortunate case of re-listing the information found within the Notice of Intent. This memo serves as clarification of those two sections of the NSPR.

3. In the April 18, 2002 letter from Utah DAQ to EPA Region 8, regarding the PM10 SIP revision, Utah agreed to work "in good faith to develop approvable SIP revisions, which address the following issues... (5) Enforceable emission limits for the SIP or maintenance plan, including enforceable 24-hour emission limits for major sources..." The current ITA has 24 hour limits for NOx and CO; it must also have a 24 hour limit for PM10.

### UDAQ response:

It appears that the commenter is specifically referring to the 24-hour limits for  $NO_x$  and CO that were included in condition #9 of the ITA. The ITA also specifies a limit for  $PM_{10}$  in the previous paragraph of condition #9. The limit for  $PM_{10}$  of 10.8 lb/hour is more stringent than a 24-hour limitation. The paragraph of daily values for  $NO_x$  and CO was included as part of the startup/shutdown limitations for the source. As the relative amount of  $PM_{10}$  emissions does not vary during startup or shutdown operating conditions with the same magnitude as  $NO_x$  and CO, UDAQ does not feel an additional 24-hour  $PM_{10}$  emission limitation is warranted.

4. On June 14, 2004, Region 9 issued a construction permit for a project very similar to the Utah Summit proposal; Moapa Paiute Energy Center Project. Moapa has 3 turbines, while Summit has 2, but otherwise the projects are similar. The Moapa project NOx limit is 2 ppm on a 1 hour average, vs the ITA's proposed limit of 2 ppm on a 3 hour average. Moapa is located in an attainment area, while Summit is located in a non-attainment area and is subject to LAER for NOx.

# UDAQ response:

This comment is extremely similar to one made by another commenter. This second comment is listed below as #10. This second comment also includes additional examples of emission limitations found throughout the country. Please see UDAQ's response to comment #10.

5. TABLE III-2 – BACT SUMMARY states that for the turbines, BACT for VOCs is 2 ppm, 3 hour average, but the ITA contains no limit on VOCs. Summit's PTE for VOCs is listed as 72 tpy, almost double the PSD significance threshold.

The previously referenced NY permitting action on pg 5-18 states, "oxidation catalyst will be used to control VOC emissions to 1.2 ppm." The ITA should A., provide emission limits for VOCs, and B., the ER should discuss how the BACT emission rate for VOCs from the combustion turbines was determined.

#### UDAQ response:

This comment is extremely similar to one made by another commenter. This second comment is listed below as #11. Please see UDAQ's response to comment #11.

6. Condition 9 contains no emission limits for the Auxiliary boiler, nor any initial compliance test. Moapa has PM10, NOx and CO emission limits on the auxiliary boiler, as well as VOC limits on both the turbines and the auxiliary boiler. Utah's permit in a non-attainment area should be no less stringent than Moapa.

### UDAQ response:

A second commenter also mentioned the lack of emission limitations for the auxiliary boiler. UDAQ agrees that the auxiliary boiler needs emission limitations. The AO will include the following as part of condition #9:

Pollutant	Auxiliary Boiler
NOx (LAER)	0.017 lb/MMBTU
CO (BACT)	0.037 lb/MMBTU
PM10 (LAER)	0.01 lb/MMBTU

These limitations would all have a 3-hour averaging period. These emission limits will be met using low-NO<sub>x</sub> combustion technology and good combustion practices. Assuming continuous operation, the annual emissions will be well below significant levels. However, it is unlikely that the auxiliary boiler will operate continuously. This source will only operate when the combustion turbines are not operating or are in startup or shutdown mode. Dispersion modeling addressed both continuous auxiliary boiler operation and auxiliary boiler operation during combustion turbine startup and shutdown events. The modeling showed that these impacts would be below significant impact levels.

UDAQ reviewed the Moapa permit mentioned by the commenter. While emission values were included, UDAQ found it impossible to make a direct comparison of these values with those listed above. The Moapa permit contained no restrictions on boiler size, type or manufacturer. Additionally, a later condition of the Moapa permit lists the specific New Source Performance Standards that apply to the source. As none of the NSPS (40 CFR 60) subparts D through Dc were listed, UDAQ must assume that this boiler is of a much smaller size than the Dc auxiliary boiler being used at the Summit Vineyard location. While a technical support document is available through EPA region IX, when UDAQ contacted region IX we learned that the document is not enforceable, and cannot therefore be used for regulatory comparison purposes. It is interesting to note that this support document includes a 130 MMBtu/hr auxiliary boiler, which is not only much larger than Summit Vineyard's auxiliary boiler, but also well within the size needed to qualify under NSPS subpart Db.

7. EPA policy is that BACT/LAER emission limits must apply at all times. The Moapa permit contains limits for startup and shutdown emissions for the turbines, monitored by CEMs. Utah's ITA proposes to abandon all emission limits during startup and shutdown, and the emission rates used to model startup & shutdown emissions are unverified by testing at this site.

The ITA should contain emission limits for startup and shutdown. Modeling should be done at the rates in the limits, and if testing determines that those rates are unrealistic, the air impact analysis should be redone and new limits set that protect the NAAQS.

#### UDAQ response:

The commenter is referring to condition #9 of the ITA, which mentions, in only the first paragraph of that condition, that the emission limitations only apply during steady state operations. There is an additional paragraph of that condition, which applies during startup and shutdown operation. There is also an additional condition (condition #11), which covers short-term exclusions that are specifically related to rapid load changes on the combustion turbines. Together conditions #9 and 11 cover all periods of operation of the CT/HRSG units.

In regard to the second half of the above comment, which mentions that modeling should be performed at rates verified by testing, the source did perform modeling. The source performed dispersion modeling for a large variety of different loads, operating conditions, and including startup

and shutdown emissions. A specific emission limitation value would not represent maximum possible impact from this source.

A period of startup or shutdown is not a simple linear scaling of emissions. Combustion turbines have a variable emission profile, which is different for each type of startup and for shutdowns. An instantaneous emission limitation might only be applicable for an extremely short period of time. There is also the added complication of both the SCR and oxidation catalyst beds. These two control devices only function properly when they have reached a stable temperature. Attempting to use these to control emissions before this temperature is reached can foul, poison or otherwise damage the catalyst beds. Emission limitations are typically imposed as a representation of the effectiveness of the chosen control technology as being the best available (BACT). BACT for the CT/HRSG units during startup and shutdown operations are good combustion practices, and limiting both the number and duration of these events (see condition #12 of the ITA).

A better measure of the impact this CT/HRSG source has during startup and shutdown conditions is to sum all the startup and shutdown emissions during the averaging period specifically relating to that pollutant. For CO, this averaging period would be the 8-hour CO NAAQS standard (see UDAQ's response to comment #12). For NO<sub>x</sub>, a defined precursor of  $PM_{10}$  in this airshed, this period would be that of the 24-hour  $PM_{10}$  NAAQS standard.

Finally, the highest impact modeled by this source was during a series of startup and shutdown operations, with a load during the remaining short steady state operation period of only 60% of maximum. Compliance testing is typically performed at 90% or higher of maximum load. And while this source has a continuous emissions monitoring system for  $NO_x$  and CO, attempting to show compliance with the odd maximum impact scenario described above would be unnecessarily complex and burdensome on the source and on regulators.

A second commenter brings up the issue of specific emission limitations during startup and shutdown operations separately from the short-term exclusions. These additional comments are listed below as #12 and #13. Please see UDAQ's response to these two conditions for further information.

8. The NSPR should discuss emission offsets, and offsets should be required in the final Approval Order

#### UDAQ response:

The Division agrees with this determination. While condition #14 of the ITA does limit total annual emissions of  $PM_{10}$ ,  $NO_x$  and  $SO_2$  for the purposes of offsets, there is little explanation within the NSRP discussing this. Under R307-403-4(2) emission offsets must be enforceable by the time of construction. Construction is only authorized by the final Approval Order (AO) document, not the ITA or the NSPR. The AO will contain a reference to the exact amount of emission offsets required, and in what ratio. These values are:

$PM_{10}$	114.96 tons of emission offsets
NO <sub>x</sub>	165.96 tons of emission offsets
$SO_2$	31.8 tons of emission offsets

The source has already obtained these emission offset credits in the amounts specified above, and a letter demonstrating this fact has been placed in the source file.

Condition #14 will remain in the final AO, unchanged, as its purpose is to limit the source's total annual emissions. R307-403-5 specifies that emission offsets are required for the combination of total  $PM_{10}$ ,  $NO_x$  and  $SO_2$ . This condition is in place to ensure that no further offsets are required.

The initial ratio of offsets required is set at the time of issuance of the AO, which is based on the emission limitations found in condition #9, and in the estimates of total emissions for the entire plant.

9. No explanation why emission offsets required for this project will provide a positive net air quality benefit.

# UDAQ response:

Summit Vineyard has obtained emission offset credits from those originally created by banking the emissions from the now closed Geneva Steel site. In this particular case, the emission offsets are from a location very close to the proposed plant site. Summit Vineyard has proposed to build on property purchased from Geneva Steel. This property is adjacent to the former steel mill. The emission offsets obtained from the former steel mill are from emission points somewhat similar in height, stack gas temperature, and flow rates. The proposed emissions from Summit Vineyard are also being offset under a 1.2 to 1 ratio, and on a pollutant-by-pollutant basis. The offset ratio and the proximity of the offset credits to the proposed location ensure that a positive net air quality benefit is achieved.

10. The proposed LAER emission limit of 2.0 ppmdv for NOx at the combustion turbines should be on a one-hour average rather than a three-hour average.

#### UDAQ response:

This is a continuation of a previous comment (#4 above). The comment listed above goes on to reference the EPA's national combustion turbine project spreadsheet. The Division and Summit Vineyard reviewed this spreadsheet in conjunction with the Moapa permit (also mentioned in comment #4).

EPA Region IX determined BACT was a NO<sub>x</sub> limit of 2.0 ppm over a 1-hour averaging period for the Maopa Paiute Energy Project in Clark County, Nevada. This facility is not in operation at this time therefore the practicality of this limit has not been determined. Also, because the area was in attainment during the permit review and issuance, no offsets for NO<sub>x</sub> were required. After the permit issuance this area was determined to be non-attainment for the 8-hour ozone NAAQS standard. This is also the only plant in the country using the same make and model combustion turbines with a 2.0 ppm NO<sub>x</sub> limit over a 1-hour averaging period. As this limit has never been demonstrated in practice, assuming that it is achievable would expose the source to increased risk of compliance problems. It would also be a misinterpretation of the definition of LAER, which is Lowest <u>Achievable</u> Emission Rate [emphasis added].

The following table presents the nationwide combined-cycle power plants from EPA Region 4's database (updated 7/20/04) that have been permitted at 2.0 ppm NO<sub>x</sub> with an averaging period of 1-hour.

Plant	Total MW	Number of CTs	Engine Model
Towantic Energy Project	540	2	GE 7241
Fore River Station,			
Weymouth	755	2	Mitsubishi 501G
ANP Bellingham	580	2	ABB GT-24
ANP Blackstone	580	2	ABB GT-24
Sithe Mystic Development	1,550	4	Mitsubishi 501G
Cabot Power	350	1	SW 501G
Athens Generating Co.	1,080	3	SW 501G
Sithe Energy Heritage	800	2	GE 107H

Station
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All of these plants are based on classes of combustion turbines that are different than those proposed for Summit Vineyard. None of these facilities are proposing to use the SW 501F combustion turbine technology. The Mitsubishi 501G, SW 501G, and GE 107H are larger engines. The GE 7241, GE 107H, ABB GT-24, and Mitsubishi 501G engines are developed by manufacturers other than Siemens Westinghouse. While similar in size to the SW501F turbines, the ABB GT-24 engines are no longer available; having been removed from the market because of maintenance and emission problems.

The Sithe Energy Heritage Station and Cabot Power have not commenced operation.

The remaining facilities are located in areas that are non-attainment for the 1-hour ozone NAAQS standard. That these Projects are in ozone non-attainment areas provides additional justification for establishing a 1-hour averaging period for these facilities.

In addition, Summit Vineyard Lake Side Power Plant (LSPP) will be operating at a higher altitude (approximately 4500 feet above Mean Sea Level) than the combustion turbines listed in the above table. Combustion turbine performance may be sensitive to differences in altitude. Therefore, it would be difficult to compare the performance of turbines that are located in different altitudes.

A 2.0 ppm NO<sub>x</sub> limit for each combustion turbine at LSPP over a 3-hour averaging period is the lowest of the BACT/LAER determinations found for SW 501F turbines within the spreadsheet. A 1-hour averaging period has not been demonstrated in practice for the Siemens Westinghouse 501F combustion turbines.

As a final note, while  $NO_x$  has been defined as a precursor to  $PM_{10}$  emissions, Summit is offsetting the  $NO_x$  emissions from the LSPP (see comments #8 and 9 above). The  $PM_{10}$  NAAQS is on a 24-hour averaging period, while the  $NO_x$  NAAQS is an annual average. A 3-hour averaging period is protective of these standards.

11. BACT emission limit should be established for the combustion turbines for volatile organic compounds.

# UDAQ response:

This is a continuation of a previous comment (#5 above). The comment continues with a discussion of BACT requirements under 40 CFR 51.116(j)(2). It also requests that a stack test, or other verification of compliance method, be included as well.

UDAQ disagrees with this comment. The projected annual emission totals of volatile organic compounds (VOCs) for the entire plant (including the CT/HRSG units, auxiliary boiler, and other minor emission points) are estimated to be only 72.8 tons per year, below the major source threshold of 100 tons per year (the area is attainment for ozone, of which VOC is a defined precursor). Federal BACT requirements, as listed in 40 CFR 51.116(j)(2), only apply to major sources or sources undergoing a major modification for the pollutant in question. The previous commenter included a mention that the VOC emissions were above the federal PSD significance level of 40 tons per year. This is correct, as a statement of fact. However, federal BACT requirements are only triggered by the significance level if the source is undergoing a major modification. As a new source, the major source threshold of 100 tons per year still applies – even though the source is major for other pollutants.

Summit Vineyard is proposing good combustion practices as primary for state BACT requirements, although some emission reductions will also be obtained from the oxidation catalyst being used for control of CO emissions. The catalyst is not optimized for VOC emissions, and installation of an additional VOC catalyst is technically infeasible due to logistics of placement in the exhaust stream and stack gas temperature and flow characteristics upstream or downstream of the existing oxidation catalyst. The CO oxidation catalyst is required to be installed under BACT.

VOC emissions are primarily the result of incomplete combustion, which increase whenever the CT/HRSG units are operated outside of standard operating practices. They can also increase whenever incomplete combustion occurs as a result of lack of proper maintenance. In both cases, emissions of other pollutants will also increase, which serves as an adequate indicator of combustion practices and regular maintenance.

UDAQ feels that setting a VOC limit, along with some form of periodic testing or compliance verification, would serve only as an additional indicator of proper combustion practices and maintenance requirements. Both are adequately covered by existing conditions of the ITA. Adding additional requirements would simply increase the compliance and regulatory burdens on both the source and the state.

12. Need for alternate BACT/LAER emission limits for periods other than steady state operation has not been adequately justified.

#### UDAQ response:

There are two parts to this response. The first is the discussion of startup and shutdown emissions. UDAQ's response to comment #7 demonstrates the logic the Division used when setting emission limitations during startup and shutdown. One change in condition #9 only lightly discussed above is the change in averaging periods being used for CO emissions during startup and shutdowns.

The following emission limits, on a per-turbine basis, are proposed as BACT/LAER for startup and shutdown events:

24-hour NO <sub>x</sub> limit:	744 lb/24 hours
8-hour CO Limit:	3,182 lb/8 hours

The 24-hour  $NO_x$  and the 8-hour CO emission limits along with limits on daily and annual startup and shutdown hours are effective as BACT or LAER. The 24-hour  $NO_x$  emission limit serves to protect air quality in the PM10 non-attainment area. The 8-hour CO limit serves to protect the 8-hour CO NAAQS.

These are effective BACT/LAER limits for startups and shutdowns for the following reasons:

- The NO<sub>x</sub> emission limit and daily startup limits address local 24-hour PM10 concerns,
- The 8-hour CO emission limit will protect the CO NAAQS,
- Monitoring for compliance will be fairly simple, and
- These limits are based on startup and shutdown emission rates and schedules that were included in the NOI dispersion modeling.

EPA has applied the following ruling for applying startup and shutdown BACT limits from Environmental Administrative Decisions, In Re RockGen Energy Center, PSD Appeal No. 99–1:

"If WDNR [Wisconsin Department of Natural Resources] determines that compliance with the permit cannot be achieved during startup and shutdown despite best efforts, it should specify and carefully circumscribe in the permit the conditions under which RockGen would be permitted to exceed otherwise applicable emissions limits and establish that such conditions are nonetheless in compliance with applicable requirements, including NAAQS and increment provisions. Under such circumstances, a secondary PSD limit may also be considered, provided it is made part of the PSD permit and justified as BACT."

Startup and shutdown emissions were included in the ambient air quality dispersion modeling for LSPP and demonstrated the impacts would be below significant impact levels. Daily  $NO_x$  and 8-hour CO emission limits for all operating conditions, and time restrictions for daily and annual startups and shutdowns will be sufficient to ensure that there will be no violations of the NAAQS.

UDAQ agrees with the commenter that the PM10 emission limitation, which is already on a 24-hour averaging period, does not need to be excluded during startup and shutdown events. A change in the final AO will be made to denote this fact.

For transient load conditions, UDAQ disagrees with the commenter that exclusions would only be applicable in cases where a shorter averaging time would be used for compliance with a steady state emission limitation. The source is required to install and operate a continuous emissions monitoring system (CEM) for monitoring of both CO and NO<sub>x</sub> emissions on a continuous basis. UDAQ rules do not allow a source to average all CEM emissions over a 3-hour period. Since emissions data can and will be recorded throughout a transient load event, such an exclusion is a legitimate means of ensuring compliance. In fact, there is nothing the source can do during these short-term events in order to reduce emissions further than by using good combustion practices. The catalyst beds serve to reduce emissions extremely well during steady state operation. Rapid increases or decreases in temperature, flow rate, and emission rates cannot be compensated for by a passive control system like a catalyst. While the source can and will adjust their use of ammonia during these periods to minimize emissions, such adjustments can only go so far – especially given the short time period in question.

Instead UDAQ took the approach of limiting the total number and duration of each event, and imposing a hard upper limit on emissions equal to that of the equipment without add-on control devices. The emission limits for  $NO_x$  and CO during transient load periods are steady state limits, and would not be appropriate values for startup and shutdown events, as previously discussed.

13. The ITA is unclear on when BACT/LAER emission limits apply for PM<sub>10</sub>, NO<sub>x</sub>, CO and VOC at the combustion turbines.

#### UDAQ response:

The comment specifically refers to the lack of a definition of "steady state operation." An argument can be made that without this definition in place within the permit, that circular reasoning or logic could be used to show that the source was never out of compliance with the permitted emission limits. The Division agrees with this comment. The final AO will include a definition of steady state operation as "Steady state operation means all periods of combustion turbine operation, except for periods of startup and shutdown as defined below, and periods of transient load conditions as defined in condition 11."

It has always been the Division's intention that steady state (or normal) operation was to be all periods or operation except those specifically excluded within the permit. While the above change would still imply a possibility of circular logic, startup and shutdown events are limited to a total

number of hours per year – preventing the source from continually operating in either a startup or shutdown mode.

14. The concept of LAER is not presented in the proper context in the NSPR.

#### UDAQ response:

The comment is referring to the lack of comparison with established SIP limits and with the inclusion of control costs in the LAER discussion. The Division agrees with this comment. At present there are no combustion turbine sources included in the Utah SIP that are comparable with the proposed LSPP source. UDAQ is not aware of a similar type or size of source being listed in the SIP for any other state with lower emission values (please see UDAQ's response to comment #10). As discussed in UDAQ's response to comment #10 above, it is a fallacy to compare limits achievable by one type or size of combustion turbine with those of a different type or size. Physical design characteristics, efficiency ratings, and other similar factors can all contribute to a different source having different emission limitations. That being said, the Summit Vineyard source has tighter emission values than the few other combustion turbine sources listed in the Utah SIP.

The Division also agrees that no discussion on control costs should be included in an LAER analysis. This discussion led to the erroneous removal of emission limits on the auxiliary boiler. These limits have been replaced in the final AO (see UDAQ's response to comment #6 above). For discussion of VOC emission limits, please see UDAQ's response to comment #11.

15. The NSPR lacks adequate explanation of how the LAER emission limit for  $PM_{10}$  for the combustion turbines was determined.

#### UDAQ response:

The Division believes that the commenter is in error with regards to the discussion presented with this comment. The commenter appears to believe that the LAER emission limit for  $PM_{10}$  for the combustion turbines was calculated or derived simply by taking the average of all CT projects and subtracting the standard deviation. This calculation is simply a coincidence. LAER for  $PM_{10}$  for this project, and for every project the Division could find using similar combustion turbines, is simply good combustion practices. The Division is not aware of any add-on control devices or techniques that have been demonstrated for  $PM_{10}$  for this type of project.

The Division found it impossible to make an adequate comparison of all the various emission rates and values reported, as it was often difficult to determine if the source was using similar turbines, if both the front and back half  $PM_{10}$  values would count towards compliance, and if the source is using heat recovery steam generators with similar add-on controls. Given the fact that there is no add-on control technology proposed for use in this specific situation, it makes sense to impose an emission value that has been demonstrated in practice for this type of turbine. The emission rate listed in the ITA does include both front and back half  $PM_{10}$  values.

The commenter goes on to point out differences between this project and the emission values proposed for the Calpine project. Acknowledging that UDAQ was the author of both projects, the level of precision requested in the Calpine project is perhaps excessive. At the time of completion of this response to comments, the AO for the Calpine project has not been issued, and it is the Division's understanding that the AO will not ever be issued. The values listed in that ITA have not been demonstrated in practice for turbines of this type at this altitude. Furthermore, making a comparison with emission values listed in a non-enforceable ITA is not appropriate.

16. For the auxiliary boiler and fuel dew point heater, the NSPR lacks adequate explanation of how the BACT/LAER emission limits were determined, and the limits were omitted from the ITA.

### UDAQ response:

The omitted emission values for the auxiliary boiler have already been discussed in UDAQ's response to comments #6 and 11.

The fuel dew point heater is an extremely small emission point, consuming just 4.0 mmBtu/hr at maximum operation. Sources of this type are exempt from the NOI and AO requirements as discussed in R307-413-4(1). The fuel dew point heater is included in the NSPR for informational purposes. It is not UDAQ's intention to include a set of emission limitations on an emission point that is exempted under Utah rule.

The commenter again brings up the Calpine ITA as showing lower emission values. UDAQ's apparent lack of comparison with that document has already been discussed in the response to comment #15.

17. For the standby generator and emergency fire pump, it is unclear from the NSPR and ITA what the BACT/LAER determination is, and what ITA conditions, if any, are intended to serve as BACT/LAER emission limits.

#### UDAQ response:

The Division agrees that the BACT/LAER discussion in the NSPR is confusing. These two emission units are expected to only be run only for maintenance and testing purposes, or in the event of an actual emergency. They are not intended to operate on a continuous or long-term basis. While it is possible that these two sources will be operated for maintenance or testing purposes while the combustion turbines are also in operation, these emissions were accounted for in the modeling performed by the source.

It has been UDAQ's policy to not impose emission limitations on purely emergency-use-only equipment. UDAQ's rules require that any source with an emission limitation be tested for compliance with that emission limitation. In effect, requiring that the source be operated during the period of the test. Not only does this force the source to produce additional emissions, it requires that additional paperwork, monitoring, recordkeeping and reporting all take place, only increasing the compliance and regulatory burdens on both the source and the state.

18. General dispersion modeling comment – no modeling data were supplied to EPA with the application.

#### UDAQ response:

While all required documentation was submitted to EPA in a timely manner, it is apparent that the original package was lost or delivered incorrectly. In any event, EPA did not receive some of the submitted documentation. The correct modeling files, including inputs, have been sent to EPA for their review.

19. Inadequate explanation for inputs to modeling

UDAQ response:

The comment specifically refers to the inclusion of only one set of operating conditions when the NOI mentions several different operating scenarios. The number of operating scenarios addressed in the modeling was too numerous to include in the modeling memo. That is why the NOI was cited for reference. The modeling files that were re-submitted to EPA (see response to comment #18 above) contains all the scenarios modeled, and therefore can be used to justify the statement that the 60% load scenario produced the highest impacts for CO and for the other pollutants as well.

20. Inadequate discussion of emission offsets.

# UDAQ response:

The comment is similar to comment #9 mentioned above. In addition to the response to that comment, the UACR does not require that a modeling analysis be performed to demonstrate that emission offsets will produce a net air quality benefit. An offset ratio of 1.2:1 is required, since the combined  $NO_x$ ,  $SO_2$ , and  $PM_{10}$  exceeds 50 tons per year. The offset ratio of 1.2:1 eliminates 20% more emissions than the new source will emit. This is the reason why UDAQ claims there will be a net air quality benefit. The word 'net' implies that there may be areas with more or less impact than before, but overall, there will be a decrease of emissions and into the airshed. Since secondary particulates have been identified as the major component in  $PM_{10}$ , and since these impacts occur over a large area, it is appropriate to conclude there will be a net reduction in  $PM_{10}$  due to these offsets.

21.  $PM_{10}$  ambient impacts should be evaluated.

# UDAQ response:

Modeling was performed, pursuant to UACR307-410-4, which only addresses the requirement to model emissions, based on a table of emission threshold values, for attainment areas. There are no Utah regulations that require modeling in non-attainment areas for those pollutants that are not in attainment. Specifically, the offset program is intended to eliminate the need to model for PM10 in non-attainment areas. See also the UDAQ responses to comments #9 and 20.

22. Startup/shutdown/transient load conditions should be factored into modeling.

#### UDAQ response:

As part of the emission scenarios modeled, startup/shutdown emissions were evaluated. Maximum emission rates, as indicated in the NOI, included these scenarios. The transient load scenarios (as outlined in condition #11 of the ITA) were not included in the modeling as the maximum impact values were obtained when a combination of startup and shutdown emissions were combined. The emissions estimated to occur during a transient load scenario are smaller than those obtained during either startup or shutdown.

23. Formaldehyde emission rate discrepancy should be corrected.

When preparing the modeling to be included in the NOI, a typographical error was introduced. This error inadvertently doubled the amount of formaldehyde emissions being modeled. When the NSPR was sent for review, the source pointed out this error and requested that the correct formaldehyde emission value of 6.2 tons/yr be included in that document. As the source had already been modeled for double the amount of emissions at the same operating parameters, no further modeling was necessary. The modeling memorandum, which had already been prepared and reviewed, was not changed.

24. Non-existent annual emission limitations are referenced in the ITA.

#### UDAQ response:

This comment refers to condition #12 of the ITA, which mentions that startup and shutdown emissions are to be included toward applicable annual emission limitations. The commenter believes that no annual emission limitations are included in the ITA, and therefore the statement above is unnecessary and confusing. The Division disagrees with this comment. Condition #14 of the ITA lists the specific annual emission limitation in question. Startup and shutdown emissions are to be included when calculating total annual emissions of  $PM_{10}$ ,  $NO_x$  and  $SO_2$ .

25. ITA condition #23 on unavoidable breakdowns should be removed.

UDAQ response:

The condition on unavoidable breakdowns will be removed from the final AO.

26. ITA and/or NSPR should include a finding regarding compliance.

UDAQ response:

The Division agrees with this comment. R307-403-3(3)(b) does require that all other major sources in the state, which are owned or controlled by the owner or operator, Summit Vineyard in this case, are certified to be in compliance. Summit Vineyard does not own or operate any other sources (either major or minor) within the state of Utah. Summit Vineyard is therefore in compliance with R307-403-3(3)(b).



# PERMIT Under the Environmental Conservation Law (ECL)

### **IDENTIFICATION INFORMATION**

• •	Air State Facility 1-4722-04426/00004 Effective Date: 08/01/2006	Expiration Date: No expiration date
Permit Type: Permit ID:	Title IV (Phase II Acid Rain) 1-4722-04426/00005 Effective Date: 08/01/2006 Expirati	on Date: 07/31/2011
Permit Issued To:	CAITHNESS LONG ISLAND LLC 565 FIFTH AVE 29TH FL NEW YORK, NY 10017	
Contact:	ROSS D AIN CAITHNESS LONG ISLAND LLC 565 FIFTH AVE 29TH FL NEW YORK, NY 10017 (212) 921-9099	
Facility:	CAITHNESS LONG ISLAND ENE ZORN BLVD SCTM# 777-01-28.4 SOUTH YAPHANK, NY	
Contact:	ROSS D AIN CAITHNESS LONG ISLAND LLC 565 FIFTH AVE 29TH FL NEW YORK, NY 10017 (212) 921-9099	

Description: NATURE OF BUSINESS OF THE FACILITY:

Electric power generation.

4911 (primary SIC) - Electric Services

#### TYPE OF EQUIPMENT AND OPERATION AT THE FACILITY:

This facility consists of one Siemens-Westinghouse 501F combustion turbine, which shall fire natural gas as its primary fuel with distillate oil as a back-up fuel. The gas turbine shall operate as a combined cycle unit with a nominal power output of 346 MW. The heat recovery steam generator (HRSG) contains supplemental firing from a natural gas only duct burner. The turbine employs dry low NOx, steam injection, and a selective catalytic reduction unit (SCR) for control of oxides of nitrogen and catalytic



oxidation unit (CO catalyst) for the control of carbon monoxide. The facility also consists of an auxiliary boiler which fires primarily natural gas with distillate oil back-up. The auxiliary boiler employs a low NOx burner and flue gas recirculation (FGR) to control emissions of NOx. Finally the facility has a natural gas fired fuel gas heater, a diesel fire pump, a steam turbine generator, and a 20,000-gallon aqueous ammonia storage tank.

# AIR PERMIT APPLICABILITY:

Air State Facility preconstruction permit for a new combined cycle gas turbine facility. The facility's potential emissions are applicable to Title V.

CAPPING/NON-APPLICABLE RULES:

No.

CONSENT ORDERS OR COMPLIANCE PLANS:

None.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified and any Special Conditions included as part of this permit.

Permit Administrator:	WILLIAM R ADRIANCE
	DIVISION OF ENVIRONMENTAL PERMITS
	625 BROADWAY
	ALBANY, NY 12233-1750

Authorized Signature:

\_\_\_\_\_ Date: \_\_\_ / \_\_\_\_ / \_\_\_\_



# Notification of Other State Permittee Obligations

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.



# LIST OF CONDITIONS

# **DEC GENERAL CONDITIONS**

General Provisions Facility Inspection by the Department Relationship of this Permit to Other Department Orders and Determinations Applications for Permit Renewals and Modifications Permit Modifications, Suspensions and Revocations by the Department Facility Level Submission of Applications for Permit Modification or Renewal-REGION 1 HEADQUARTERS



# DEC GENERAL CONDITIONS \*\*\*\* General Provisions \*\*\*\* GENERAL CONDITIONS - Apply to ALL Authorized Permits.

# Condition 1: Facility Inspection by the Department Applicable State Requirement: ECL 19-0305

# Item 1.1:

The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

# Item 1.2:

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

# Item 1.3:

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

# Condition 2: Relationship of this Permit to Other Department Orders and Determinations Applicable State Requirement: ECL 3-0301.2(m)

# Item 2.1:

Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

# Condition 3: Applications for Permit Renewals and Modifications Applicable State Requirement: 6NYCRR 621.13

# Item 3.1:

The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

# Item 3.2:

The permittee must submit a renewal application at least 180 days before expiration of permits for Title V Facility Permits, or at least 30 days before expiration of permits for State Facility Permits.

# Item 3.3:

Permits are transferrable with the approval of the department unless specifically prohibited by the statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual



transfer of ownership.

# Condition 4: Permit Modifications, Suspensions and Revocations by the Department Applicable State Requirement: 6NYCRR 621.14

# Item 4.1:

The Department reserves the right to modify, suspend, or revoke this permit in accordance with 6NYCRR Part 621. The grounds for modification, suspension or revocation include:

a) materially false or inaccurate statements in the permit application or supporting papers;

b) failure by the permittee to comply with any terms or conditions of the permit;

c) exceeding the scope of the project as described in the permit application;

d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit; e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

# \*\*\*\* Facility Level \*\*\*\*

# Condition 5: Submission of Applications for Permit Modification or Renewal-REGION 1 HEADQUARTERS Applicable State Requirement: 6NYCRR 621.5(a)

Item 5.1:

Submission of applications for permit modification or renewal are to be submitted to:

NYSDEC Regional Permit Administrator Region 1 Headquarters Division of Environmental Permits SUNY Campus, Loop Road, Building 40 Stony Brook, NY 11790-2356 (631) 444-0365



# Permit Under the Environmental Conservation Law (ECL)

# ARTICLE 19: AIR POLLUTION CONTROL - AIR STATE FACILITY PERMIT

# **IDENTIFICATION INFORMATION**

Permit Issued To: CAITHNESS LONG ISLAND LLC 565 FIFTH AVE 29TH FL NEW YORK, NY 10017

Facility: CAITHNESS LONG ISLAND ENERGY CENTER ZORN BLVD|SCTM# 777-01-28.4 SOUTH YAPHANK, NY

Authorized Activity By Standard Industrial Classification Code: 4911 - ELECTRIC SERVICES

Permit Effective Date: 08/01/2006

Permit Expiration Date: No expiration date.

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#### LIST OF CONDITIONS

# FEDERALLY ENFORCEABLE CONDITIONS Facility Level

- 1 6NYCRR 231-2: Compliance Demonstration
- 2 6NYCRR 231-2: Compliance Demonstration
- 3 40CFR 60.4, NSPS Subpart A: EPA Region 2 address.
- 4 40CFR 60.7(a), NSPS Subpart A: Date of construction notification If a COM is not used.
- 5 40CFR 60.7(b), NSPS Subpart A: Recordkeeping requirements.
- 6 40CFR 60.7(c), NSPS Subpart A: Compliance Demonstration
- 7 40CFR 60.7(e), NSPS Subpart A: Monitoring frequency waiver.
- 8 40CFR 60.7(f), NSPS Subpart A: Facility files for subject sources.
- 9 40CFR 60.7(g), NSPS Subpart A: Notification Similar to State or Local Agency
- 10 40CFR 60.8(a), NSPS Subpart A: Performance testing timeline.
- 11 40CFR 60.8(b), NSPS Subpart A: Performance Test Methods Waiver
- 12 40CFR 60.8(c), NSPS Subpart A: Required performance test information.
- 13 40CFR 60.8(d), NSPS Subpart A: Prior notice.
- 14 40CFR 60.8(e), NSPS Subpart A: Performance testing facilities.
- 15 40CFR 60.8(f), NSPS Subpart A: Number of required tests.
- 16 40CFR 60.11, NSPS Subpart A: Opacity standard compliance testing.
- 17 40CFR 60.12, NSPS Subpart A: Circumvention.
- 18 40CFR 60.13, NSPS Subpart A: Monitoring requirements.
- 19 40CFR 60.14, NSPS Subpart A: Modifications.
- 20 40CFR 60.15, NSPS Subpart A: Reconstruction
- 21 40CFR 72: Facility Subject to Title IV Acid Rain Regulations and Permitting
- **Emission Unit Level**

#### EU=U-00001

- 22 6NYCRR 204-1.6: Permit requirements (facilities commencing operation on or after 01/00)
- 23 6NYCRR 204-2.1: Submissions to the Department.
- 24 6NYCRR 204-4.1: Content of reports and compliance certifications.
- 25 6NYCRR 204-4.1: Discretionary report contents.
- 26 6NYCRR 204-4.1: Compliance Demonstration
- 27 6NYCRR 204-7.1: Submission of NOx allowance transfers.
- 28 6NYCRR 204-8.1: General provisions.
- 29 6NYCRR 204-8.1: Prohibitions.
- 30 6NYCRR 204-8.1: Requirements for installation, certification, and data accounting.
- 31 6NYCRR 204-8.2: Requirements for recertification of monitoring systems.
- 32 6NYCRR 204-8.2: Compliance Demonstration
- 33 6NYCRR 204-8.3: Out of control periods.

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- 34 6NYCRR 204-8.4: Compliance Demonstration
- 35 6NYCRR 204-8.7: Compliance Demonstration
- 36 6NYCRR 231-2: Compliance Demonstration
- 37 6NYCRR 231-2: Compliance Demonstration
- 38 6NYCRR 231-2: Compliance Demonstration
- 39 6NYCRR 231-2: Compliance Demonstration
- 40 6NYCRR 231-2: Compliance Demonstration
- 41 6NYCRR 231-2: Compliance Demonstration
- 42 6NYCRR 231-2: Compliance Demonstration
- 43 6NYCRR 231-2: Compliance Demonstration
- 44 6NYCRR 231-2: Compliance Demonstration
- 45 6NYCRR 231-2: Compliance Demonstration
- 46 40CFR 60.334(h)(3), NSPS Subpart GG: Compliance Demonstration

#### EU=U-00001,EP=EP001

47 6NYCRR 227-1.3(a): Compliance Demonstration

#### EU=U-00002

- 48 6NYCRR 231-2: Compliance Demonstration
- 49 6NYCRR 231-2: Compliance Demonstration
- 50 40CFR 60.40c, NSPS Subpart Dc: Applicability of this Subpart to this emission source
- 51 40CFR 60.42c(i), NSPS Subpart Dc: Enforceablity.

#### EU=U-00002,EP=EP002

52 6NYCRR 227-1.3: Compliance Demonstration53 6NYCRR 227-1.3(a): Compliance Demonstration

#### EU=U-00003,EP=EP003

54 6NYCRR 227-1.3(a): Compliance Demonstration55 6NYCRR 231-2: Compliance Demonstration

#### EU=U-00003,EP=EP004

56 6NYCRR 227-1.3(a): Compliance Demonstration57 6NYCRR 231-2: Compliance Demonstration

# STATE ONLY ENFORCEABLE CONDITIONS Facility Level

58 ECL 19-0301: Contaminant List

- 59 6NYCRR 201-1.4: Unavoidable noncompliance and violations
- 60 6NYCRR 201-5: Steady state emission requirements.
- 61 6NYCRR 201-5: Emission Unit Definition
- 62 6NYCRR 201-5: Compliance Demonstration

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63 6NYCRR 201-5: Compliance Demonstration
64 6NYCRR 201-5: Compliance Demonstration
65 6NYCRR 211.2: Air pollution prohibited
Emission Unit Level
66 6NYCRR 201-5: Emission Point Definition By Emission Unit
67 6NYCRR 201-5: Process Definition By Emission Unit

#### EU=U-00001

- 68 6NYCRR 201-5: Compliance Demonstration 69 6NYCRR 201-5: Compliance Demonstration 70 6NYCRR 201-5: Compliance Demonstration 71 6NYCRR 201-5: Compliance Demonstration 72 6NYCRR 201-5: Compliance Demonstration 73 6NYCRR 201-5: Compliance Demonstration 74 6NYCRR 201-5: Compliance Demonstration 75 6NYCRR 201-5: Compliance Demonstration 76 6NYCRR 201-5: Compliance Demonstration 77 6NYCRR 201-5: Compliance Demonstration 78 6NYCRR 201-5: Compliance Demonstration 79 6NYCRR 201-5: Compliance Demonstration 80 6NYCRR 201-5: Compliance Demonstration 81 6NYCRR 201-5: Compliance Demonstration 82 6NYCRR 201-5: Compliance Demonstration 83 6NYCRR 201-5: Compliance Demonstration 84 6NYCRR 201-5: Compliance Demonstration 85 6NYCRR 201-5: Compliance Demonstration 86 6NYCRR 201-5: Compliance Demonstration 87 6NYCRR 201-5: Compliance Demonstration 88 6NYCRR 201-5: Compliance Demonstration 89 6NYCRR 201-5: Compliance Demonstration 90 6NYCRR 201-5: Compliance Demonstration 91 6NYCRR 237-1.4(a): Applicable Units, nameplate capacity of 25 MWe or greater
- 92 6NYCRR 237-1.6(a): Permit requirments to be included in new permits or units
- 93 6NYCRR 237-1.6(c): Compliance Demonstration
- 94 6NYCRR 237-1.6(e): Recordkeeping and Reporting Requirements
- 95 6NYCRR 237-1.6(f): Liability
- 96 6NYCRR 237-1.6(g): Effect on other Authorities
- 97 6NYCRR 237-2: Authorization and responsibilities of the NOx authorized account representative
- 98 6NYCRR 237-4.1: Compliance Demonstration
- 99 6NYCRR 237-7.1: Submission of NOx allowance transfers
- 100 6NYCRR 237-8: Compliance Demonstration
- 101 6NYCRR 238-1.4: Applicability
- 102 6NYCRR 238-1.6(a): Permit Requirments
- 103 6NYCRR 238-1.6(c): Compliance Demonstration

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- 104 6NYCRR 238-1.6(e): Compliance Demonstration
- 105 6NYCRR 238-1.6(f): Liability
- 106 6NYCRR 238-1.6(g): Effect on Other Authorities
- 107 6NYCRR 238-2.1: Submissions to the Department
- 108 6NYCRR 238-4.1: Compliance Demonstration
- 109 6NYCRR 238-7.1: Submission of SO2 allowance transfers
- 110 6NYCRR 238-8: Compliance Demonstration

#### EU=U-00002

111 6NYCRR 201-5: Compliance Demonstration
112 6NYCRR 201-5: Compliance Demonstration
113 6NYCRR 201-5: Compliance Demonstration
114 6NYCRR 201-5: Compliance Demonstration
115 6NYCRR 201-5: Compliance Demonstration
116 6NYCRR 201-5: Compliance Demonstration
117 6NYCRR 201-5: Compliance Demonstration

#### EU=U-00003,EP=EP003

118 6NYCRR 201-5: Compliance Demonstration119 6NYCRR 201-5: Compliance Demonstration

#### EU=U-00003,EP=EP004

- 120 6NYCRR 201-5: Compliance Demonstration
- 121 6NYCRR 201-5: Compliance Demonstration
- 122 6NYCRR 201-5: Compliance Demonstration
- 123 6NYCRR 201-5: Compliance Demonstration
- 124 6NYCRR 201-5: Compliance Demonstration



# FEDERALLY ENFORCEABLE CONDITIONS \*\*\*\* Facility Level \*\*\*\*

# NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS This section contains terms and conditions which are federally enforceable. Permittees may also have other obligations under regulations of general applicability

#### Item A: Sealing - 6NYCRR Part 200.5

The Commissioner may seal an air contamination source to prevent its operation if compliance with 6 NYCRR Chapter III is not met within the time provided by an order of the Commissioner issued in the case of the violation. Sealing means labeling or tagging a source to notify any person that operation of the source is prohibited, and also includes physical means of preventing the operation of an air contamination source without resulting in destruction of any equipment associated with such source, and includes, but is not limited to, bolting, chaining or wiring shut control panels, apertures or conduits associated with such source.

No person shall operate any air contamination source sealed by the Commissioner in accordance with this section unless a modification has been made which enables such source to comply with all requirements applicable to such modification.

Unless authorized by the Commissioner, no person shall remove or alter any seal affixed to any contamination source in accordance with this section.

### Item B: Acceptable Ambient Air Quality - 6NYCRR Part 200.6

Notwithstanding the provisions of 6 NYCRR Chapter III, Subchapter A, no person shall allow or permit any air contamination source to emit air contaminants in quantities which alone or in combination with emissions from other air contamination sources would contravene any applicable ambient air quality standard and/or cause air pollution. In such cases where contravention occurs or may occur, the Commissioner shall specify the degree and/or method of emission control required.

# Item C: Maintenance of Equipment - 6NYCRR Part 200.7

Any person who owns or operates an air contamination

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source which is equipped with an emission control device shall operate such device and keep it in a satisfactory state of maintenance and repair in accordance with ordinary and necessary practices, standards and procedures, inclusive of manufacturer's specifications, required to operate such device effectively.

#### Item D: Unpermitted Emission Sources - 6NYCRR Part 201-1.2

If an existing emission source was subject to the permitting requirements of 6NYCRR Part 201 at the time of construction or modification, and the owner and/or operator failed to apply for a permit for such emission source then the following provisions apply:

(a) The owner and/or operator must apply for a permit for such emission source or register the facility in accordance with the provisions of Part 201.

(b) The emission source or facility is subject to all regulations that were applicable to it at the time of construction or modification and any subsequent requirements applicable to existing sources or facilities.

#### Item E: Emergency Defense - 6NYCRR Part 201-1.5

An emergency constitutes an affirmative defense to an action brought for noncompliance with emissions limitations or permit conditions for all facilities in New York State.

(a) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

 An emergency occurred and that the facility owner and/or operator can identify the cause(s) of the emergency;

(2) The equipment at the permitted facility causing the emergency was at the time being properly operated;

(3) During the period of the emergency the facility owner and/or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

(4) The facility owner and/or operator notified the Department within two working days after the event

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occurred. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding, the facility owner and/or operator seeking to establish the occurrence of an emergency has the burden of proof.

(c) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

#### Item F: Recycling and Salvage - 6NYCRR Part 201-1.7

Where practical, any person who owns or operates an air contamination source shall recycle or salvage air contaminants collected in an air cleaning device according to the requirements of 6 NYCRR.

- Item G: Prohibition of Reintroduction of Collected Contaminants to the Air - 6NYCRR Part 201-1.8 No person shall unnecessarily remove, handle, or cause to be handled, collected air contaminants from an air cleaning device for recycling, salvage or disposal in a manner that would reintroduce them to the outdoor atmosphere.
- Item H: Proof of Eligibility for Sources Defined as Exempt Activities - 6 NYCRR Part 201-3.2(a) The owner and/or operator of an emission source or unit that is eligible to be exempt, may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to 6 NYCRR Subpart 201-3, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.
- Item I:Proof of Eligibility for Sources Defined as Trivial<br/>Activities 6 NYCRR Part 201-3.3(a)<br/>The owner and/or operator of an emission source or unit<br/>that is listed as being trivial in 6 NYCRR Part 201 may be<br/>required to certify that it operates within the specific

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criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to 6 NYCRR Subpart 201-3, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

#### Item J: Required Emission Tests - 6 NYCRR Part 202-1.1

An acceptable report of measured emissions shall be submitted, as may be required by the Commissioner, to ascertain compliance or noncompliance with any air pollution code, rule, or regulation. Failure to submit a report acceptable to the Commissioner within the time stated shall be sufficient reason for the Commissioner to suspend or deny an operating permit. Notification and acceptable procedures are specified in 6NYCRR Part 202-1.

Item K: Visible Emissions Limited - 6 NYCRR Part 211.3 Except as permitted by a specific part of this Subchapter and for open fires for which a restricted burning permit has been issued, no person shall cause or allow any air contamination source to emit any material having an opacity equal to or greater than 20 percent (six minute average) except for one continuous six-minute period per hour of not more than 57 percent opacity.

- Item L: Open Fires 6 NYCRR Part 215 No person shall burn, cause, suffer, allow or permit the burning in an open fire of garbage, rubbish for salvage, or rubbish generated by industrial or commercial activities.
- Item M: Permit Exclusion ECL 19-0305 The issuance of this permit by the Department and the receipt thereof by the Applicant does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against the Applicant for violations based on facts and circumstances alleged to have occurred or existed prior to the effective date of this permit, including, but not

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limited to, any enforcement action authorized pursuant to the provisions of applicable federal law, the Environmental Conservation Law of the State of New York (ECL) and Chapter III of the Official Compilation of the Codes, Rules and Regulations of the State of New York (NYCRR). The issuance of this permit also shall not in any way affect pending or future enforcement actions under the Clean Air Act brought by the United States or any person.

Item N: Federally Enforceable Requirements - 40 CFR 70.6(b) All terms and conditions in this permit required by the Act or any applicable requirement, including any provisions designed to limit a facility's potential to emit, are enforceable by the Administrator and citizens under the Act. The Department has, in this permit, specifically designated any terms and conditions that are not required under the Act or under any of its applicable requirements as being enforceable under only state regulations.

### FEDERAL APPLICABLE REQUIREMENTS The following conditions are federally enforceable.

Condition 1: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 1.1:

The Compliance Demonstration activity will be performed for the facility: The Compliance Demonstration applies to:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY210-00-0 OXIDES OF NITROGEN

#### Item 1.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS Monitoring Description: The facility is limited to 90.3 tons per year of oxides

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of nitrogen emissions. Based on this limit the facility will be required to purchase emissions reduction credits at a ratio of 1.3 to 1 to offset these emissions. The facility will demonstrate compliance by tracking combustion equipment CEM data or fuel use and applying the permitted NOx emission limits (on a lb/mmBtu basis) as follows:

NOx Tons = [CEMCC + HIAB-NG x 0.011 + HIAB-FO x 0.10 + HIGH x 0.058 + HIFP x 1.97] / 2000

where:

CEMCC = combined cycle CEM lb NOx HIAB-NG = auxiliary boiler natural gas heat input HIAB-FO = auxiliary boiler fuel oil heat input. HIGH = fuel gas heater heat input HIFP = diesel fire pump heat input

The data collected shall be maintained on site for a minimum of five years.

Work Practice Type: PROCESS MATERIAL THRUPUT Process Material: FUEL Manufacturer Name/Model Number: NOx Analyzer & Fuel Flow Meter Upper Permit Limit: 90.3 tons per year Reference Test Method: 40 CFR Parts 60 & 75 Monitoring Frequency: CONTINUOUS Averaging Method: ANNUAL MAXIMUM ROLLED DAILY Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

# Condition 2: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 2.1:

The Compliance Demonstration activity will be performed for the facility: The Compliance Demonstration applies to:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY998-00-0 VOC

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#### Item 2.2:

Compliance Demonstration shall include the following monitoring:

#### Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

The facility is limited to 62.9 tons per year of volatile organic compounds emissions. Based on this limit the facility will be required to purchase emissions reduction credits at a ratio of 1.3 to 1 to offset these emissions. The facility will demonstrate compliance by tracking combustion equipment fuel use and applying the permitted VOC emission limits (on a lb/mmBtu basis) as follows:

VOC Tons = [HICC-NG x 0.0016 + HICC- NGwDB x 0.0023 + HICC-FO x 0.0060 + HICC-FOwDB x 0.0110 + HIAB-NG x 0.006 + HIAB-FO x 0.03 + HIGH x 0.011 + HIFP x 0.084] / 2000

where:

HICC-NG = combined cycle heat input on natural gas HICC-NGwDB = combined cycle heat input on natural gas HICC-FO = combined cycle heat input on fuel oil HICC-FOwDB = combined cycle heat input on fuel oil with duct burner HIAB-NG = auxiliary boiler natural gas heat input HIAB-FO = auxiliary boiler fuel oil heat input. HIGH = fuel gas heater heat input HIFP = diesel fire pump heat input

The data collected shall be maintained on site for a minimum of five years.

Work Practice Type: PROCESS MATERIAL THRUPUT Process Material: FUEL Manufacturer Name/Model Number: Fuel Flow Meter Upper Permit Limit: 62.9 tons per year Monitoring Frequency: DAILY Averaging Method: ANNUAL MAXIMUM ROLLED DAILY Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

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### Condition 3: EPA Region 2 address. Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 40CFR 60.4, NSPS Subpart A

#### Item 3.1:

All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the following address:

Director, Division of Enforcement and Compliance Assistance USEPA Region 2 290 Broadway, 21st Floor New York, NY 10007-1886

Copies of all correspondence to the administrator pursuant to this part shall also be submitted to the NYSDEC Regional Office issuing this permit (see address at the beginning of this permit) and to the following address:

NYSDEC Bureau of Quality Assurance 625 Broadway Albany, NY 12233-3258

### Condition 4: Date of construction notification - If a COM is not used. Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 40CFR 60.7(a), NSPS Subpart A

#### Item 4.1:

Any owner or operator subject to this part shall furnish the Administrator with the following information:

1) a notification of the date construction or reconstruction commenced, post marked no later than 30 days after such date;

3) a notification of the actual date of initial start up, post marked within 15 days after such date;

4) a notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless the change is specifically exempted under this part. The notice shall be post marked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capability of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional information regarding the change;

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5) a notification of the date upon which the demonstration of continuous monitoring system performance commences, post marked not less than 30 days prior to such date;

6) a notification of the anticipated date for conducting the opacity observations, post marked not less than 30 days prior to such date.

### Condition 5: Recordkeeping requirements. Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 40CFR 60.7(b), NSPS Subpart A

#### Item 5.1:

Affected owners or operators shall maintain records of occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

### Condition 6: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 40CFR 60.7(c), NSPS Subpart A

#### Item 6.1:

The Compliance Demonstration activity will be performed for the Facility.

#### Item 6.2:

Compliance Demonstration shall include the following monitoring:

#### Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

Affected owners or operators shall submit an excess emissions report and/or a summary report form (as defined in 40 CFR 60.7(d)) semi-annually (or more frequently as required by the applicable Subpart or the Administrator), to the Administrator. These reports shall be post marked no later than 30 days after each calendar quarter (or as appropriate), and shall contain the following information:

1) the magnitude of excess emissions computed, any conversion factors used, the date and time of each occurrence, and the process operating time during the reporting period;

2) specific identification of each period of excess emissions that occur during startup, shutdown, or

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malfunction, where the nature, cause, and corrective action are provided for a malfunction;

3) the date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and

4) when no excess emissions have occurred or when the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be provided in the report.

Monitoring Frequency: CONTINUOUS Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 7: Monitoring frequency waiver. Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable Federal Requirement: 40CFR 60.7(e), NSPS Subpart A

**Item 7.1:** Notwithstanding the frequency of reporting requirements specified in paragraph (c) of this section, an owner or operator who is required by an applicable subpart to submit excess emissions and monitoring systems performance reports (and summary reports) on a quarterly (or more frequent) basis may reduce the frequency of reporting for that standard to semiannual if the conditions in 40 CFR 60.7(e) are met.

## Condition 8:Facility files for subject sources.Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable Federal Requirement: 40CFR 60.7(f), NSPS Subpart A

## Item 8.1:

The following files shall be maintained at the facility for all affected sources: all measurements, including continuous monitoring systems, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part, recorded in permanent form suitable for inspections. The file shall be maintained for at least two years following the date of such measurements, reports, and records.

## Condition 9: Notification Similar to State or Local Agency Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable Federal Requirement: 40CFR 60.7(g), NSPS Subpart A

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### Item 9.1:

If notification substantially similar to that in 40 CFR Part 60.7(a) is required by any other State or local agency, sending the Administrator a copy of that notification will satisfy the requirements of 40 CFR Part 60.7(a).

## Condition 10: Performance testing timeline. Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable Federal Requirement: 40CFR 60.8(a), NSPS Subpart A

### Item 10.1:

Within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup of the facility, the owner or operator of the facility shall conduct performance testing and provide the results of such tests, in a written report, to the Administrator.

## Condition 11: Performance Test Methods - Waiver Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable Federal Requirement: 40CFR 60.8(b), NSPS Subpart A

### Item 11.1:

Performance testing shall be conducted in accordance with the methods and procedures prescribed in 40 CFR Part 60 unless the Administrator (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, (3) approves the use of an alternate method the results of which he has determined to be adequate for indicating whether a specific source is in compliance, (4) waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Administrators satisfaction that the affected facility is in compliance with the standatrd, or (5) approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors.

## Condition 12: Required performance test information. Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable Federal Requirement: 40CFR 60.8(c), NSPS Subpart A

#### Item 12.1:

Performance tests shall be conducted under such conditions specified by the Administrator, based upon representative performance data supplied by the owner or operator of the facility.

## Condition 13: Prior notice. Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable Federal Requirement: 40CFR 60.8(d), NSPS Subpart A

#### Item 13.1:

The owner or operator shall provide the Administrator with prior notice of any performance test at least

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30 days in advance of testing.

## Condition 14: Performance testing facilities. Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable Federal Requirement: 40CFR 60.8(e), NSPS Subpart A

#### Item 14.1:

The following performance testing facilities shall be provided during all tests:

- 1) sampling ports adequate for tests methods applicable to such facility;
- 2) a safe sampling platform;
- 3) a safe access to the sampling platform; and
- 4) utilities for sampling and testing equipment.

### Condition 15: Number of required tests. Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 40CFR 60.8(f), NSPS Subpart A

#### Item 15.1:

Each performance test shall consist of three separate runs, at the specified duration required in the applicable test method. Compliance with all applicable standards shall be determined by using the arithmetic means of the results of the three runs.

#### Condition 16: Opacity standard compliance testing. Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 40CFR 60.11, NSPS Subpart A

#### Item 16.1:

The following conditions shall be used to determine compliance with the opacity standards:

1) observations shall be conducted in accordance with Reference Method 9, in Appendix A of 40 CFR Part 60(or an equivalent method approved by the Administrator including continuous opacity monitors);

2) the opacity standards apply at all times except during periods of start up, shutdown, and malfunction; and

3) all other applicable conditions cited in section 60.11 of this part.

#### Condition 17: Circumvention.

Effective between the dates of 08/01/2006 and Permit Expiration Date

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### Applicable Federal Requirement: 40CFR 60.12, NSPS Subpart A

## Item 17.1:

No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

## Condition 18: Monitoring requirements. Effective between the dates of 08/01/2006 and Permit Expiration Date

### Applicable Federal Requirement: 40CFR 60.13, NSPS Subpart A

#### Item 18.1:

All continuous monitoring systems and devices shall be installed, calibrated, maintained, and operated in accordance with the requirements of section 60.13.

## Condition 19: Modifications. Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 40CFR 60.14, NSPS Subpart A

## Item 19.1:

Within 180 days of the completion of any physical or operational change (as defined in section 60.14), compliance with the applicable standards must be achieved.

## Condition 20: Reconstruction Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable Federal Requirement: 40CFR 60.15, NSPS Subpart A

#### Item 20.1:

The following shall be submitted to the Administrator prior to reconstruction (as defined in section 60.15):

1) a notice of intent to reconstruct 60 days prior to the action;

- 2) name and address of the owner or operator;
- 3) the location of the existing facility;

4) a brief description of the existing facility and the components to be replaced;

5) a description of the existing air pollution control equipment and the proposed air pollution control equipment;

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6) an estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new facility;

7) the estimated life of the facility after the replacements; and

8) a discussion of any economic or technical limitations the facility may have in complying with the applicable standards of performance after the proposed replacements.

## Condition 21: Facility Subject to Title IV Acid Rain Regulations and Permitting Effective between the dates of 08/01/2006 and Permit Expiration Date

#### **Applicable Federal Requirement: 40CFR 72**

**Item 21.1:** This facility is subject to the Title IV Acid Rain Regulations found in 40 CFR Parts 72, 73, 75, 76, 77 and 78. The Acid Rain Permit is an attachment to this permit.

#### \*\*\*\* Emission Unit Level \*\*\*\*

## Condition 22: Permit requirements (facilities commencing operation on or after 01/00) Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 204-1.6

Item 22.1: This Condition applies to Emission Unit: U-00001

**Item 22.2:** The NOx authorized account representative of each NOx budget unit shall submit to the Department a complete NOx Budget permit application (as defined under Section 204-3.3) by May 1, 2002 or 12 months before the date on which the NOx Budget unit commences operation.

#### Condition 23: Submissions to the Department. Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable Federal Requirement: 6NYCRR 204-2.1

**Item 23.1:** This Condition applies to Emission Unit: U-00001

**Item 23.2:** Each submission under the NOx Budget Trading Program shall be submitted, signed and certified by the NOx authorized account representative for each NOx Budget source on behalf of which the submission is made. Each submission shall include a certification statement (as stated in paragraph 204-2.4(a)(4)) by the NOx authorized account representative.

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Condition 24: Content of reports and compliance certifications. Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 204-4.1

Item 24.1:

This Condition applies to Emission Unit: U-00001

**Item 24.2:** The NOx authorized account representative shall include in the compliance certification report the following elements, in a format prescribed by the Administrator, concerning each unit at the source and subject to the NOx Budget emissions limitation for the control period covered by the report:

(1) Identification of each NOx Budget unit; and

(2) In the compliance certification report the NOx authorized account representative shall certify, based on reasonable inquiry of those persons with primary responsibility for operating the source and the NOx Budget units at the source in compliance with the NOx Budget Trading Program, whether each NOx Budget unit for which the compliance certification is submitted was operated during the calendar year covered by the report in compliance with the requirements of the NOx Budget Trading Program applicable to the unit, including:

(i) Whether the unit was operated in compliance with the NOx Budget emissions limitation;

(ii) Whether the monitoring plan that governs the unit has been maintained to reflect the actual operation and monitoring of the unit, and contains all information necessary to attribute NOx emissions to the unit, in accordance with Subpart 204-8;

(iii) Whether all the NOx emissions from the unit, or a group of units (including the unit) using a common stack, were monitored or accounted for through the missing data procedures and reported in the quarterly monitoring reports, including whether conditional data were reported in the quarterly reports in accordance with Subpart 204-8. If conditional data were reported, the owner or operator shall indicate whether the status of all conditional data has been resolved and all necessary quarterly report resubmissions has been made;

(iv) Whether the facts that form the basis for certification under Subpart 204-8 of each monitor at the unit or a group of units (including the unit) using a common stack, or for using an excepted monitoring method or alternative monitoring method approved under Subpart 204-8, if any, has changed; and
(v) If a change is required to be reported under item (iv) above, specify the nature of the change, the reason for the change, when the change occurred, and how the unit's compliance status was determined subsequent to the change, including what method was used to determine emissions when a change mandated the need for monitor recertification.

Condition 25: Discretionary report contents. Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 204-4.1

Item 25.1:

This Condition applies to Emission Unit: U-00001

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**Item 25.2:** At the NOx authorized account representative's option the following may be included in the compliance certification report:

(1) The serial numbers of the NOx allowances that are to be deducted from each unit's compliance account under Section 204-6.5 for the control period; and

(2) For units sharing a common stack and having NOx emissions that are not monitored separately or apportioned in accordance with Subpart 204-8, the percentage of NOx allowances that is to be deducted from each unit's compliance account under Subdivision 204-6.5(e).

## Condition 26: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

### Applicable Federal Requirement: 6NYCRR 204-4.1

#### Item 26.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 26.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

> For each control period in which one or more NOx Budget units at a source are subject to the NOx Budget emissions limitation, the NOx authorized account representative of the source shall submit to the Department and the Administrator by November 30 of that year, a compliance certification report for each source covering all such units.

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

### Condition 27: Submission of NOx allowance transfers. Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 204-7.1

### Item 27.1:

This Condition applies to Emission Unit: U-00001

**Item 27.2:** The NOx authorized account representatives seeking recordation of a NOx allowance transfer shall submit the transfer to the Administrator. To be considered correctly submitted, the NOx allowance transfer shall include the following elements in a format specified by the Administrator:

(a) The numbers identifying both the transferor and transferee accounts;

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(b) A specification by serial number of each NOx allowance to be transferred; and(c) The printed name and signature of the NOx authorized account representative of the transferor account and the date signed.

## Condition 28: General provisions. Effective between the dates of 08/01/2006 and Permit Expiration Date

### Applicable Federal Requirement: 6NYCRR 204-8.1

Item 28.1:

This Condition applies to Emission Unit: U-00001

**Item 28.2:** The owners and operators, and to the extent applicable, the NOx authorized account representative of a NOx Budget unit, shall comply with the monitoring and reporting requirements as provided in this Subpart and in Subpart H of 40 CFR Part 75. For purposes of complying with such requirements, the definitions in Section 204-1.2 and in 40 CFR 72.2 shall apply, and the terms "affected unit," "designated representative," and "continuous emission monitoring system" (or "CEMS") in 40 CFR Part 75 shall be replaced by the terms "NOX Budget unit," "NOX authorized account representative," and "continuous emission monitoring account representative," and "continuous emission monitoring system" (or "204-1.2.") in 40 CFR Part 75 shall be replaced by the terms "NOX Budget unit," "NOX authorized account representative," and "continuous emission monitoring system" (or "CEMS"), respectively, as defined in Section 204-1.2.

## Condition 29: Prohibitions. Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable Federal Requirement: 6NYCRR 204-8.1

**Item 29.1:** This Condition applies to Emission Unit: U-00001

**Item 29.2:** No owner or operator of a NOx Budget unit or a non-NOx Budget unit monitored under 40 CFR 75.72(b)(2)(ii) shall:

(1) use any alternative monitoring system, alternative reference method, or any other alternative for the required continuous emission monitoring system without having obtained prior written approval in accordance with Section 204-8.6;

(2) operate the unit so as to discharge, or allow to be discharged, NOx emissions to the atmosphere without accounting for all such emissions in accordance with the applicable provisions of this Subpart and 40 CFR Part 75 except as provided for in 40 CFR 75.74;

(3) disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording NOx mass emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the applicable provisions of this Subpart and 40 CFR Part 75 except as provided for in 40 CFR 75.74; and

(4) permanently discontinue use of the continuous emission monitoring system, any component thereof, or any other approved emission monitoring system under this Subpart, except under any one of the following circumstances:

(i) The owner or operator is monitoring emissions from the unit with another certified monitoring system

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approved, in accordance with the applicable provisions of this Subpart and 40 CFR Part 75, by the Department for use at that unit that provides emission data for the same pollutant or parameter as the discontinued monitoring system; or

(ii) The NOx authorized account representative submits notification of the date of certification testing of a replacement monitoring system in accordance with Paragraph 204-8.2(b)(2).

### Condition 30: Requirements for installation, certification, and data accounting. Effective between the dates of 08/01/2006 and Permit Expiration Date

### Applicable Federal Requirement: 6NYCRR 204-8.1

**Item 30.1:** This Condition applies to Emission Unit: U-00001

**Item 30.2:** The owner or operator of each NOx Budget unit must meet the following requirements. These provisions also apply to a unit for which an application for a NOx Budget opt-in permit is submitted and not denied or withdrawn, as provided in Subpart 204-9:

(1) Install all monitoring systems required under this Subpart for monitoring NOx mass. This includes all systems required to monitor NOx emission rate, NOx concentration, heat input, and air or fuel flow, in accordance with 40 CFR 75.71 and 75.72.

(2) Install all monitoring systems for monitoring heat input, if required under Section 204-8.7 for developing NOx allowance allocations.

(3) Successfully complete all certification tests required under Section 204-8.2 and meet all other provisions of this Subpart and 40 CFR Part 75 applicable to the monitoring systems under paragraphs (a)(1) and (2) of this section.

(4) Record and report data from the monitoring systems under paragraphs (a)(1) and (2) of this section.

## Condition 31: Requirements for recertification of monitoring systems. Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable Federal Requirement: 6NYCRR 204-8.2

### Item 31.1:

This Condition applies to Emission Unit: U-00001

**Item 31.2:** Whenever the owner or operator makes a replacement, modification, or change in a certified monitoring system that the Administrator or the Department determines significantly affects the ability of the system to accurately measure or record NOx mass emissions or heat input or to meet the requirements of 40 CFR 75.21 or Appendix B to 40 CFR Part 75, the owner or operator shall recertify the monitoring system according to 40 CFR 75.20(b). Furthermore, whenever the owner or operator makes a replacement, modification, or change to the flue gas handling system or the unit's operation that the Administrator or the Department determines to significantly change the flow or concentration profile, the owner or operator shall recertify the continuous emissions monitoring system according to 40 CFR 75.20(b). Examples of changes which require recertification include: replacement of the analyzer, change in location or orientation of the sampling probe or site, or changing of flow rate monitor

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polynomial coefficients.

## Condition 32: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

### Applicable Federal Requirement: 6NYCRR 204-8.2

#### Item 32.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 32.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

> The owner or operator of a NOx Budget unit under paragraphs (b)(2) or (b)(3) of this section must determine, record and report NOx mass, heat input (if required for purposes of allocations) and any other values required to determine NOx Mass (e.g. NOx emission rate and heat input or NOx concentration and stack flow) using the provisions of 40 CFR 75.70(g), from the date and hour that the unit starts operating until all required certification tests are successfully completed.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 33: Out of control periods. Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 204-8.3

#### Item 33.1:

This Condition applies to Emission Unit: U-00001

**Item 33.2:** Whenever any monitoring system fails to meet the quality assurance requirements of Appendix B of 40 CFR Part 75, data shall be substituted using the applicable procedures in Subpart D, Appendix D, or Appendix E of 40 CFR Part 75.

## Condition 34: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable Federal Requirement: 6NYCRR 204-8.4

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#### Item 34.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 34.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

> The Authorized Account Representative for a NOx Budget unit shall submit written notice to the Department and the USEPA Administrator in accordance with the requirements of this subpart as follows:

All monitoring plans or monitoring plan modifications; compliance certifications, recertifications and quarterly QA/QC reports; and, petitions for alternative monitoring, shall be submitted to the USEPA Administrator (or his/her representatives) as well as two copies to the Department (one copy to the Regional Air Pollution Control Engineer (RAPCES) in the regional office and one copy to the Bureau of Quality Assurance (BQA) in the DEC central office. All Authorized Account Representative changes shall be sent to the NYSDEC central office.

All quarterly emission data shall be electronically filed with the USEPA Clean Air Markets Division with a copy (disc or hard copy) to the NYSDEC offices.

The address for the USEPA Administrator is as follows:

USEPA Clean Air Markets Division 1200 Pennsylvania Avenue, NW Mail Code 6204J Washington D.C. 20460

CEM Coordinator USEPA-Region 2 2890 Woodbridge Avenue Edison, N.J. 08837

The address for the BQA is as follows:

NYSDEC

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Bureau of Quality Assurance 625 Broadway Albany, NY 12233-3258

AAR changes should be sent to the attention of:

NYSDEC Stationary Source Planning Section Bureau of Air Quality Planning 625 Broadway, 2nd Floor Albany NY 12233-3251

The address for the RAPCE is as follows:

NYS SUNY Building 40 Stony Brook, NY 11790-2356

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

## Condition 35: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 204-8.7

#### Item 35.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

**Item 35.2:** Compliance Demonstration shall include the following monitoring:

> Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description: The owner or operator of a unit that elects to monitor

and report NOx Mass emissions using a NOx concentration system and a flow system shall also monitor and report heat input at the unit level using the procedures set forth in 40 CFR Part 75.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING

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### DESCRIPTION

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

## Condition 36: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 36.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY210-00-0 OXIDES OF NITROGEN

#### Item 36.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description:

> The owner or operator shall install, calibrate, maintain, and operate a continuous emissions monitor for oxides of nitrogen. This condition applies while the combustion turbine is firing distillate oil without duct firing. The data collected shall be maintained on site for a minimum of five years.

Manufacturer Name/Model Number: NOx analyzer Parameter Monitored: OXIDES OF NITROGEN Upper Permit Limit: 0.025 pounds per million Btus Reference Test Method: 40 CFR Part 75 Monitoring Frequency: CONTINUOUS Averaging Method: 3-HOUR ROLLING AVERAGE Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

Condition 37: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

Item 37.1:

The Compliance Demonstration activity will be performed for:

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Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY998-00-0 VOC

#### Item 37.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition limits VOC emissions while the combustion turbine is firing distillate oil with duct firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: VOC Upper Permit Limit: 23.9 pounds per hour Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

### Condition 38: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 38.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY210-00-0 OXIDES OF NITROGEN

#### Item 38.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description: The owner or operator shall install, calibrate, maintain,

and operate a continuous emissions monitor for oxides of nitrogen. This condition applies while the combustion turbine is firing natural gas with or without duct firing.

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The data collected shall be maintained on site for a minimum of five years.

Manufacturer Name/Model Number: NOx Analyzer Parameter Monitored: OXIDES OF NITROGEN Upper Permit Limit: 2.0 parts per million by volume (dry, corrected to 15% O2) Reference Test Method: 40 CFR Part 75 Monitoring Frequency: CONTINUOUS Averaging Method: 3-HOUR ROLLING AVERAGE Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

Condition 39: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

### Item 39.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY210-00-0 OXIDES OF NITROGEN

#### Item 39.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description:

The owner or operator shall install, calibrate, maintain, and operate a continuous emissions monitor for oxides of nitrogen. This condition applies while the combustion turbine is firing distillate oil without duct firing. The data collected shall be maintained on site for a minimum of five years.

Manufacturer Name/Model Number: NOx Analyzer Parameter Monitored: OXIDES OF NITROGEN Upper Permit Limit: 6.0 parts per million by volume (dry, corrected to 15% O2) Reference Test Method: 40 CFR Part 75 Monitoring Frequency: CONTINUOUS Averaging Method: 3-HOUR ROLLING AVERAGE

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Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

## Condition 40: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 40.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY210-00-0 OXIDES OF NITROGEN

#### Item 40.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description:

The owner or operator shall install, calibrate, maintain, and operate a continuous emissions monitor for oxides of nitrogen. This condition applies while the combustion turbine is firing natural gas with or without duct firing. The data collected shall be maintained on site for a minimum of five years.

Manufacturer Name/Model Number: NOx analyzer Parameter Monitored: OXIDES OF NITROGEN Upper Permit Limit: 0.0076 pounds per million Btus Reference Test Method: 40 CFR Part 75 Monitoring Frequency: CONTINUOUS Averaging Method: 3-HOUR ROLLING AVERAGE Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

#### Condition 41: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 41.1:

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The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY998-00-0 VOC

#### Item 41.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition limits VOC emissions while the combustion turbine is firing natural gas without duct firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: VOC Upper Permit Limit: 3.5 pounds per hour Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

### Condition 42: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 42.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY998-00-0 VOC

#### Item 42.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition limits VOC emissions while the combustion turbine is firing distillate oil without duct firing. The

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data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: VOC Upper Permit Limit: 11.9 pounds per hour Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 43: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 43.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY210-00-0 OXIDES OF NITROGEN

#### Item 43.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description:

> The owner or operator shall install, calibrate, maintain, and operate a continuous emissions monitor for oxides of nitrogen. This condition applies while the combustion turbine is firing distillate oil with duct firing. The data collected shall be maintained on site for a minimum of five years.

Manufacturer Name/Model Number: NOx analyzer Parameter Monitored: OXIDES OF NITROGEN Upper Permit Limit: 0.027 pounds per million Btus Reference Test Method: 40 CFR Part 75 Monitoring Frequency: CONTINUOUS Averaging Method: 3-HOUR ROLLING AVERAGE Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006.

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Subsequent reports are due every 3 calendar month(s).

## Condition 44: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 44.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY210-00-0 OXIDES OF NITROGEN

## Item 44.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description:

The owner or operator shall install, calibrate, maintain, and operate a continuous emissions monitor for oxides of nitrogen. This condition applies while the combustion turbine is firing distillate oil with duct firing. The data collected shall be maintained on site for a minimum of five years.

Manufacturer Name/Model Number: NOx Analyzer Parameter Monitored: OXIDES OF NITROGEN Upper Permit Limit: 6.8 parts per million by volume (dry, corrected to 15% O2) Reference Test Method: 40 CFR Part 75 Monitoring Frequency: CONTINUOUS Averaging Method: 3-HOUR ROLLING AVERAGE Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

Condition 45: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 45.1:

The Compliance Demonstration activity will be performed for:

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Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY998-00-0 VOC

## Item 45.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition limits VOC emissions while the combustion turbine is firing natural gas with duct firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: VOC Upper Permit Limit: 6.1 pounds per hour Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

### Condition 46: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 40CFR 60.334(h)(3), NSPS Subpart GG

#### Item 46.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 46.2:

Compliance Demonstration shall include the following monitoring:

## Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

Notwithstanding the provisions of paragraph (h)(1) of 40 CFR 60.334(h), the owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in 60.331(u), regardless of whether an existing custom schedule approved by the administrator for subpart GG

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requires such monitoring. The owner or operator shall use one of the following sources of information to make the required demonstration:

(i) The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or

(ii) Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to 40 CFR part 75 of this chapter is required.

Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 47: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 227-1.3(a)

#### Item 47.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001 Emission Point: EP001

#### Item 47.2:

Compliance Demonstration shall include the following monitoring:

### Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

No owner or operator of a combustion installation shall operate the installation in such a way to emit greater than 20 percent opacity except for one six minute period per hour, not to exceed 27 percent, based upon the six minute average in reference test Method 9 in Appendix A of 40 CFR 60.

Parameter Monitored: OPACITY Upper Permit Limit: 20 percent Reference Test Method: Method 9

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Monitoring Frequency: MONTHLY Averaging Method: 6-MINUTE AVERAGE (METHOD 9) Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

#### Condition 48: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 48.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00002

Regulated Contaminant(s): CAS No: 0NY210-00-0 OXIDES OF NITROGEN

#### Item 48.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to oxides of nitrogen emissions

when the auxiliary boiler is firing distillate oil. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: OXIDES OF NITROGEN Upper Permit Limit: 0.10 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 49: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 49.1:

The Compliance Demonstration activity will be performed for:

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Emission Unit: U-00002

Regulated Contaminant(s): CAS No: 0NY210-00-0 OXIDES OF NITROGEN

### Item 49.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to oxides of nitrogen emissions when the auxiliary boiler is firing natural gas. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: OXIDES OF NITROGEN Upper Permit Limit: 0.011 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

### Condition 50: Applicability of this Subpart to this emission source Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable Federal Requirement: 40CFR 60.40c, NSPS Subpart Dc

#### Item 50.1:

This Condition applies to Emission Unit: U-00002

#### Item 50.2:

This emission source is subject to the applicable General Provisions of 40 CFR 60 Subpart Dc. The facility owner is responsible for reviewing these general provisions in detail and complying with all applicable technical, administrative and reporting requirements.

Condition 51: Enforceablity. Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 40CFR 60.42c(i), NSPS Subpart Dc

#### Item 51.1:

This Condition applies to Emission Unit: U-00002

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#### Item 51.2:

The sulfur dioxide emission limits, percentage reductions, and fuel oil sulfur limitations shall apply at all times, including periods of startup, shutdown, and malfunction.

#### Condition 52: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 227-1.3

#### Item 52.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00002 Emission Point: EP002

#### Item 52.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

> Operators of oil-fired boilers which are not exempt from permitting and where a continuous opacity monitor is not utilized for measuring smoke emissions, shall be required to perform the following:

> 1) Observe the stack for each boiler which is operating on oil once per day for visible emissions. This observation(s) must be conducted during daylight hours except during adverse weather conditions (fog, rain, or snow).

2) The results of each observation must be recorded in a bound logbook or other format acceptable to the Department. The following data must be recorded for each stack:

- date and time of day
- observer's name
- identity of emission point
- weather condition
- was a plume observed?

Inclement weather conditions shall be recorded for those days when observations are prohibited. This logbook must be retained at the facility for five (5) years after the date of the last entry.

3) If the operator observes any visible emissions (other than steam - see below) two consecutive days firing oil

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(the firing of other fuels in between days of firing oil does not count as an interruption in the consecutive days of firing oil), then a Method 9 analysis (based upon a 6-minute mean) of the affected emission point(s) must be conducted within two (2) business days of such occurrence. The results of the Method 9 analysis must be recorded in the logbook. The operator must contact the Regional Air Pollution Control Engineer within one (1) business day of performing the Method 9 analysis if the opacity standard is contravened. Upon notification, any corrective actions or future compliance schedules shall be presented to the Department for acceptance.

\*\* NOTE \*\* Steam plumes generally form after leaving the top of the stack (this is known as a detached plume). The distance between the stack and the beginning of the detached plume may vary, however, there is (normally) a distinctive distance between the plume and stack. Steam plumes are white in color and have a billowy consistency. Steam plumes dissipate within a short distance of the stack (the colder the air the longer the steam plume will last) and leave no dispersion trail downwind of the stack.

Monitoring Frequency: DAILY Reporting Requirements: QUARTERLY (CALENDAR) Reports due 60 days after the reporting period. The initial report is due 11/29/2006. Subsequent reports are due every 3 calendar month(s).

## Condition 53: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 227-1.3(a)

#### Item 53.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00002 Emission Point: EP002

### Item 53.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE Monitoring Description:

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No owner or operator of a combustion installation shall operate the installation in such a way to emit greater than 20 percent opacity except for one six minute period per hour, not to exceed 27 percent, based upon the six minute average in reference test Method 9 in Appendix A of 40 CFR 60.

Parameter Monitored: OPACITY Upper Permit Limit: 20 percent Reference Test Method: Method 9 Monitoring Frequency: ANNUALLY Averaging Method: 6-MINUTE AVERAGE (METHOD 9) Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

### Condition 54: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 227-1.3(a)

#### Item 54.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00003 Emission Point: EP003

#### Item 54.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

No owner or operator of a combustion installation shall operate the installation in such a way to emit greater than 20 percent opacity except for one six minute period per hour, not to exceed 27 percent, based upon the six minute average in reference test Method 9 in Appendix A of 40 CFR 60.

Parameter Monitored: OPACITY Upper Permit Limit: 20 percent Reference Test Method: Method 9 Monitoring Frequency: ANNUALLY Averaging Method: 6-MINUTE AVERAGE (METHOD 9) Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period.

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The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 55: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 55.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00003 Emission Point: EP003

Regulated Contaminant(s): CAS No: 0NY210-00-0 OXIDES OF NITROGEN

### Item 55.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to oxides of nitrogen emissions from the fuel gas heater. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: OXIDES OF NITROGEN Upper Permit Limit: 0.050 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

#### Condition 56: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 227-1.3(a)

#### Item 56.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00003 Emission Point: EP004

#### Item 56.2:

Compliance Demonstration shall include the following monitoring:

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#### Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

No owner or operator of a combustion installation shall operate the installation in such a way to emit greater than 20 percent opacity except for one six minute period per hour, not to exceed 27 percent, based upon the six minute average in reference test Method 9 in Appendix A of 40 CFR 60.

Parameter Monitored: OPACITY Upper Permit Limit: 20 percent Reference Test Method: Method 9 Monitoring Frequency: ANNUALLY Averaging Method: 6-MINUTE AVERAGE (METHOD 9) Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 57: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable Federal Requirement: 6NYCRR 231-2

#### Item 57.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00003 Emission Point: EP004

Regulated Contaminant(s): CAS No: 0NY210-00-0 OXIDES OF NITROGEN

#### Item 57.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description:

This condition applies to oxides of nitrogen emissions from the diesel fire pump. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: OXIDES OF NITROGEN Upper Permit Limit: 1.97 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT

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Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

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#### STATE ONLY ENFORCEABLE CONDITIONS \*\*\*\* Facility Level \*\*\*\*

#### NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

This section contains terms and conditions which are not federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: Public Access to Recordkeeping for Facilities With State Facility Permits - 6NYCRR Part 201-1.10(a) Where emission source owners and/or operators keep records pursuant to compliance with the operational flexibility requirements of 6 NYCRR Subpart 201-5.4(b)(1) , and/or the emission capping requirements of 6 NYCRR Subparts 201-7.2(d), 201-7.3(f), 201-7.3(g), 201-7.3(h)(5), 201-7.3(i) and 201-7.3(j), the Department will make such records available to the public upon request in accordance with 6 NYCRR Part 616 - Public Access to Records. Emission source owners and/or operators must submit the records required to comply with the request within sixty working days of written notification by the Department of receipt of the request.

Item B: General Provisions for State Enforceable Permit Terms and Condition - 6 NYCRR Part 201-5

> Any person who owns and/or operates stationary sources shall operate and maintain all emission units and any required emission control devices in compliance with all applicable Parts of this Chapter and existing laws, and shall operate the facility in accordance with all criteria, emission limits, terms, conditions, and standards in this permit. Failure of such person to properly operate and maintain the effectiveness of such emission units and emission control devices may be sufficient reason for the Department to revoke or deny a permit.

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or

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law.

## STATE ONLY APPLICABLE REQUIREMENTS The following conditions are state only enforceable.

## Condition 58: Contaminant List Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: ECL 19-0301

#### Item 58.1:

Emissions of the following contaminants are subject to contaminant specific requirements in this permit(emission limits, control requirements or compliance monitoring conditions).

CAS No: 007664-41-7 Name: AMMONIA

CAS No: 000630-08-0 Name: CARBON MONOXIDE

CAS No: 0NY210-00-0 Name: OXIDES OF NITROGEN

CAS No: 0NY075-00-5 Name: PM-10

CAS No: 007664-93-9 Name: SULFURIC ACID

CAS No: 0NY998-00-0 Name: VOC

### Condition 59: Unavoidable noncompliance and violations Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-1.4

Item 59.1:

At the discretion of the commissioner a violation of any applicable emission standard for necessary scheduled equipment maintenance, start-up/shutdown conditions and malfunctions or upsets may be excused if such violations are unavoidable. The following actions and recordkeeping and reporting requirements must be adhered to in such circumstances.

(a) The facility owner and/or operator shall compile and maintain records of all equipment maintenance or start-up/shutdown activities when they can be expected to result in an exceedance of any

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applicable emission standard, and shall submit a report of such activities to the commissioner's representative when requested to do so in writing or when so required by a condition of a permit issued for the corresponding air contamination source except where conditions elsewhere in this permit which contain more stringent reporting and notification provisions for an applicable requirement, in which case they supercede those stated here. Such reports shall describe why the violation was unavoidable and shall include the time, frequency and duration of the maintenance and/or start-up/shutdown activities and the identification of air contaminants, and the estimated emission rates. If a facility owner and/or operator is subject to continuous stack monitoring and quarterly reporting requirements, he need not submit reports for equipment maintenance or start-up/shutdown for the facility to the commissioner's representative.

(b) In the event that emissions of air contaminants in excess of any emission standard in 6 NYCRR Chapter III Subchapter A occur due to a malfunction, the facility owner and/or operator shall report such malfunction by telephone to the commissioner's representative as soon as possible during normal working hours, but in any event not later than two working days after becoming aware that the malfunction occurred. Within 30 days thereafter, when requested in writing by the commissioner's representative, the facility owner and/or operator shall submit a written report to the commissioner's representative describing the malfunction, the corrective action taken, identification of air contaminants, and an estimate of the emission rates. These reporting requirements are superceded by conditions elsewhere in this permit which contain reporting and notification provisions for applicable requirements more stringent than those above.

(c) The Department may also require the owner and/or operator to include in reports described under (a) and (b) above an estimate of the maximum ground level concentration of each air contaminant emitted and the effect of such emissions depending on the deviation of the malfunction and the air contaminants emitted.

(d) In the event of maintenance, start-up/shutdown or malfunction conditions which result in emissions exceeding any applicable emission standard, the facility owner and/or operator shall take appropriate action to prevent emissions which will result in contravention of any applicable ambient air quality standard. Reasonably available control technology, as determined by the commissioner, shall be applied during any maintenance, start-up/shutdown or malfunction condition subject to this paragraph.

(e) In order to have a violation of a federal regulation (such as a new source performance standard or national emissions standard for hazardous air pollutants) excused, the specific federal regulation must provide for an affirmative defense during start-up, shutdowns, malfunctions or upsets.

## Condition 60: Steady state emission requirements. Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable State Requirement: 6NYCRR 201-5

**Item 60.1:** The emissions of NOx, CO, and ammonia from the combustion turbines are monitored by continuous emissions monitors (CEMs), and apply only during periods of steady state operation of the combustion turbines. The owner or operator is required to define periods of start-up, shutdown, and fuel switching. Based on these definitions the owner or operator must develop emission limits for NOx, CO, and ammonia during the periods of start-up, shutdown, and fuel switching for both natural gas and distillate oil firing modes of combustion turbine operation.

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#### Condition 61: Emission Unit Definition Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 61.1:

The facility is authorized to perform regulated processes under this permit for:

Emission Unit: U-00001 Emission Unit Description:

This emission unit consists of one Siemens-Westinghouse 501F combustion turbine and a duct fired HRSG. The combustion turbine will fire primarily natural gas with distillate oil back-up. The duct burner is limited to firing only natural gas. The turbine uses dry low NOx technology and steam injection in combination with a SCR to control emissions of NOx. The turbine also employs an oxidation catalyst to control emissions of carbon monoxide, VOCs, and HAPs.

Building(s): GEN01

#### Item 61.2:

The facility is authorized to perform regulated processes under this permit for: Emission Unit: U-00002

Emission Unit Description:

This emission unit consists of an auxiliary boiler which fires natural gas as its primary fuel with distillate oil back-up. The boiler uses a low NOx burner in combination with flue gas recirculation to control emissions of NOx.

Building(s): GEN01

#### Item 61.3:

The facility is authorized to perform regulated processes under this permit for: Emission Unit: U-00003 Emission Unit Description: This emission unit consists of a natural gas fired fuel gas heater and a diesel fire pump.

## Condition 62: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

#### Item 62.1:

The Compliance Demonstration activity will be performed for the Facility.

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#### Item 62.2:

Compliance Demonstration shall include the following monitoring:

## Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

The owner or operator shall not fire distillate oil with a sulfur content greater than 0.04% by weight. Sulfur content shall be measured on a per delivery basis. Records of sulfur content shall be maintained at the facility for a minimum of five years.

Parameter Monitored: SULFUR CONTENT Upper Permit Limit: 0.04 percent by weight Monitoring Frequency: PER DELIVERY Averaging Method: MAXIMUM - NOT TO BE EXCEEDED AT ANY TIME (INSTANTANEOUS/DISCRETE OR GRAB) Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 63: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

## Item 63.1:

The Compliance Demonstration activity will be performed for the facility: The Compliance Demonstration applies to:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 000630-08-0 CARBON MONOXIDE

#### Item 63.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description: The facility is limited to 270.9 tons per year of carbon monoxide emissions. The data collected shall be maintained on site for a minimum of five years.

Manufacturer Name/Model Number: CO Analyzer

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Parameter Monitored: CARBON MONOXIDE Upper Permit Limit: 270.9 tons per year Reference Test Method: 40 CFR Part 60 Monitoring Frequency: CONTINUOUS Averaging Method: ANNUAL MAXIMUM ROLLED DAILY Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

# Condition 64: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 64.1:

The Compliance Demonstration activity will be performed for the Facility.

#### Item 64.2:

Compliance Demonstration shall include the following monitoring:

#### Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

The owner or operator shall, within one year following the commencement of operation, submit a Title V permit application to the Department (as per the requirements of paragraph 201-6.3(a)(3)). This application must include start-up, shutdown, and fuel switching data to establish enforceable combustion turbine start-up, shutdown, and fuel switching emission rates for NOx, CO, and NH3, and confirm that such established rates would not result in a violation of applicable NAAQS.

In the event that a minimum of 15 start-ups and 15 shutdowns, while firing distillate oil, does not occur within the one year period defined above, the owner or operator will be required to submit start-up and shutdown data, with an application for permit modification, once the 15 start-ups and shutdowns while firing distillate oil occur.

Also, if a minimum of 15 fuel switches do not occur within the one year period defined above, the owner or operator will be required to submit fuel switching data with an application for permit modification once the 15 fuel switches occur.

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Monitoring Frequency: CONTINUOUS Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

# Condition 65: Air pollution prohibited Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 211.2

#### Item 65.1:

No person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others.

#### \*\*\*\* Emission Unit Level \*\*\*\*

# Condition 66: Emission Point Definition By Emission Unit Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

#### Item 66.1:

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: U-00001

Emission Point: EP001		
Height (ft.): 170	Diameter (in.): 240	
NYTMN (km.): 4520.2	NYTME (km.): 673.74	Building: GEN01

#### Item 66.2:

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: U-00002 Emission Point: EP002 Height (ft.): 170 Diameter (in.): 24 NYTMN (km.): 4520.17 NYTME (km.): 673.73 Building: GEN01

#### Item 66.3:

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: U-00003

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Emission Point: EP003	
Height (ft.): 18	Diameter (in.): 16

Emission Point: EP004 Height (ft.): 7 Diameter (in.): 6

#### Condition 67: Process Definition By Emission Unit Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

#### Item 67.1:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit:U-00001Process:P01Source Classification Code: 2-01-002-01Process Description:Combustion turbine firing natural gas.

Emission Source/Control: CT001 - Combustion Design Capacity: 2,221 million Btu per hour

Emission Source/Control: OXY01 - Control Control Type: CATALYTIC OXIDATION

Emission Source/Control: SCR01 - Control Control Type: SELECTIVE CATALYTIC REDUCTION (SCR)

#### Item 67.2:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: U-00001 Process: P02 Source Classification Code: 2-01-001-01 Process Description: Combustion turbine firing natural gas in combination with the duct burner firing natural gas.

Emission Source/Control: CT001 - Combustion Design Capacity: 2,221 million Btu per hour

Emission Source/Control: DB001 - Combustion Design Capacity: 494 million Btu per hour

Emission Source/Control: OXY01 - Control Control Type: CATALYTIC OXIDATION

Emission Source/Control: SCR01 - Control

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#### Control Type: SELECTIVE CATALYTIC REDUCTION (SCR)

#### Item 67.3:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: U-00001 Process: P03 Source Classification Code: 2-01-001-01 Process Description: Combustion turbine firing distillate oil. When the combustion turbine fires distillate oil the heat input is 2,125 mmBtu/hr.

Emission Source/Control: CT001 - Combustion Design Capacity: 2,221 million Btu per hour

Emission Source/Control: OXY01 - Control Control Type: CATALYTIC OXIDATION

Emission Source/Control: SCR01 - Control Control Type: SELECTIVE CATALYTIC REDUCTION (SCR)

#### Item 67.4:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: U-00001 Process: P04 Source Classification Code: 2-01-001-01 Process Description: Combustion turbine firing distillate oil in combination with the duct burner firing natural gas. During this operating scenario the duct burner is limited to operating at no more than 369 mmBtu/hr heat input.

Emission Source/Control: CT001 - Combustion Design Capacity: 2,221 million Btu per hour

Emission Source/Control: DB001 - Combustion Design Capacity: 494 million Btu per hour

Emission Source/Control: OXY01 - Control Control Type: CATALYTIC OXIDATION

Emission Source/Control: SCR01 - Control Control Type: SELECTIVE CATALYTIC REDUCTION (SCR)

# Item 67.5:

This permit authorizes the following regulated processes for the cited Emission Unit:

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Emission Unit: U-00002 Process: P05 Source Classification Code: 1-02-006-02 Process Description: Auxiliary boiler firing natural gas.

Emission Source/Control: AUX01 - Combustion Design Capacity: 29.4 million Btu per hour

#### Item 67.6:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: U-00002 Process: P06 Source Classification Code: 1-02-005-02 Process Description: Auxiliary boiler firing distillate oil. When the auxiliary boiler fires distillate oil the heat input is 28.0 mmBtu/hr.

Emission Source/Control: AUX01 - Combustion Design Capacity: 29.4 million Btu per hour

#### Item 67.7:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: U-00003 Process: P07 Source Classification Code: 1-05-001-06 Process Description: Fuel gas heater firing natural gas.

Emission Source/Control: FGH01 - Combustion Design Capacity: 4.32 million Btu per hour

#### Item 67.8:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit:U-00003Process:P08SourceProcess Description:Diesel fire pump.

Source Classification Code: 2-02-001-02

Emission Source/Control: DFP01 - Combustion Design Capacity: 300 horsepower (mechanical)

# Condition 68: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

#### Item 68.1:

The Compliance Demonstration activity will be performed for:

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Emission Unit: U-00001

# Item 68.2:

Compliance Demonstration shall include the following monitoring:

# Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

The duct burner shall not fire at a heat rate greater than 369 mmBtu/hr when the combustion turbine is firing distillate oil. The owner or operator shall keep records of the heat rate of the duct burner when it fires in combination with the combustion turbine firing distillate oil. The owner or operator shall maintain duct burner heat rate records on site for a minimum of five years.

Parameter Monitored: HEAT INPUT Upper Permit Limit: 369 million Btu per hour Monitoring Frequency: CONTINUOUS Averaging Method: MAXIMUM - NOT TO BE EXCEEDED AT ANY TIME (INSTANTANEOUS/DISCRETE OR GRAB) Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 69: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 69.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 007664-93-9 SULFURIC ACID

#### Item 69.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to sulfuric acid mist emissions

while the combustion turbine fires distillate oil with or

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without the duct burner firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: SULFURIC ACID Upper Permit Limit: 31.9 pounds per hour Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 70: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 70.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

#### Item 70.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to PM-10 emissions while the combustion turbine fires natural gas with the duct burner firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: PM-10 Upper Permit Limit: 17.0 pounds per hour Reference Test Method: Method 201A & 202 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

#### Condition 71: Compliance Demonstration

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#### Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 71.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 71.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description: The combustion turbine shall not operate below 75% load except during periods of start-up, shutdown, or

malfunction. The owner or operator shall maintain percent load operation records on site for a minimum of five years.

Monitoring Frequency: CONTINUOUS Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 72: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement:6NYCRR 201-5

#### Item 72.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 007664-93-9 SULFURIC ACID

#### Item 72.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to sulfuric acid mist emissions while the combustion turbine fires natural gas with or without the duct burner firing. The data collected shall

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be maintained on site for a minimum of five years.

Parameter Monitored: SULFURIC ACID Upper Permit Limit: 0.0004 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 73: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

### Item 73.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 73.2:

Compliance Demonstration shall include the following monitoring:

### Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

The combustion turbine shall fire a maximum of 10,928,571 gallons of distillate oil during any 12 month consecutive period. The owner or operator shall maintain combustion turbine fuel oil use records on site for a minimum of five years.

Work Practice Type: PROCESS MATERIAL THRUPUT Process Material: FUEL OIL Upper Permit Limit: 10,928,571 gallons per year Monitoring Frequency: DAILY Averaging Method: 12 MONTH AVERAGE - ROLLED MONTHLY Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 74: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

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#### Applicable State Requirement: 6NYCRR 201-5

#### Item 74.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 007664-93-9 SULFURIC ACID

#### Item 74.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to sulfuric acid mist emissions while the combustion turbine fires distillate oil with or without the duct burner firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: SULFURIC ACID Upper Permit Limit: 0.015 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 75: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 75.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 007664-93-9 SULFURIC ACID

### Item 75.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING

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Monitoring Description:

This condition applies to sulfuric acid mist emissions while the combustion turbine fires natural gas with or without the duct burner firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: SULFURIC ACID Upper Permit Limit: 1.1 pounds per hour Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 76: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

### Applicable State Requirement: 6NYCRR 201-5

#### Item 76.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

#### Item 76.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to PM-10 emissions while the combustion turbine fires natural gas with the duct burner firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: PM-10 Upper Permit Limit: 0.0066 pounds per million Btus Reference Test Method: Method 201A & 202 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007.

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Subsequent reports are due every 6 calendar month(s).

#### Condition 77: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

### Applicable State Requirement: 6NYCRR 201-5

#### Item 77.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

# Item 77.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to PM-10 emissions while the

combustion turbine fires natural gas without the duct burner firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: PM-10 Upper Permit Limit: 11.7 pounds per hour Reference Test Method: Method 201A & 202 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

#### Condition 78: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 78.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

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#### Item 78.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to PM-10 emissions while the combustion turbine fires natural gas without the duct burner firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: PM-10 Upper Permit Limit: 0.0055 pounds per million Btus Reference Test Method: Method 201A & 202 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

#### **Condition 79: Compliance Demonstration** Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

#### Item 79.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 000630-08-0 CARBON MONOXIDE

#### Item 79.2:

Compliance Demonstration shall include the following monitoring:

#### Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description:

The owner or operator shall install, calibrate, maintain, and operate a continuous emissions monitor for carbon monoxide. This condition applies while the combustion turbine is firing oil at loads at or above 75% but less than 90% load with no duct firing or at any load at or between 75% and 100% when the duct burner is firing. The data collected shall be maintained on site for a minimum of five years.

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Manufacturer Name/Model Number: CO Analyzer Parameter Monitored: CARBON MONOXIDE Upper Permit Limit: 4.0 parts per million by volume (dry, corrected to 15% O2) Reference Test Method: 40 CFR Part 60 Monitoring Frequency: CONTINUOUS Averaging Method: 1-HOUR AVERAGE Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

# Condition 80: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 80.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

#### Item 80.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to PM-10 emissions while the combustion turbine fires distillate oil without the duct burner firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: PM-10 Upper Permit Limit: 98.3 pounds per hour Reference Test Method: Method 201A & 202 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

#### **Condition 81: Compliance Demonstration**

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#### Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 81.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

#### Item 81.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description:

This condition applies to PM-10 emissions while the combustion turbine fires distillate oil with the duct burner firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: PM-10 Upper Permit Limit: 100.3 pounds per hour Reference Test Method: Method 201A & 202 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 82: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

# Item 82.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

#### Item 82.2:

Compliance Demonstration shall include the following monitoring:

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Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description:

This condition applies to PM-10 emissions while the combustion turbine fires distillate oil with the duct burner firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: PM-10 Upper Permit Limit: 0.041 pounds per million Btus Reference Test Method: Method 201A & 202 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

### Condition 83: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

#### Item 83.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

#### Item 83.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description:

This condition applies to PM-10 emissions while the combustion turbine fires distillate oil at or greater than 90% load without the duct burner firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: PM-10 Upper Permit Limit: 0.051 pounds per million Btus Reference Test Method: Method 201A & 202 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE

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Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 84: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 84.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 000630-08-0 CARBON MONOXIDE

#### Item 84.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description:

The owner or operator shall install, calibrate, maintain, and operate a continuous emissions monitor for carbon monoxide. This condition applies while the combustion turbine is firing oil at or greater than 90% load with no duct firing. The data collected shall be maintained on site for a minimum of five years.

Manufacturer Name/Model Number: CO Analyzer Parameter Monitored: CARBON MONOXIDE Upper Permit Limit: 0.0050 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: CONTINUOUS Averaging Method: 1-HOUR AVERAGE Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

#### Condition 85: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

Item 85.1:

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The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 000630-08-0 CARBON MONOXIDE

# Item 85.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description:

The owner or operator shall install, calibrate, maintain, and operate a continuous emissions monitor for carbon monoxide. This condition applies while the combustion turbine is firing oil at load at or above 75% but less than 90% load with no duct firing or at any load at or between 75% and 100% when the duct burner is firing. The data collected shall be maintained on site for a minimum of five years.

Manufacturer Name/Model Number: CO Analyzer Parameter Monitored: CARBON MONOXIDE Upper Permit Limit: 0.010 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: CONTINUOUS Averaging Method: 1-HOUR AVERAGE Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

Condition 86: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

#### Item 86.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 86.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

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Monitoring Description:

The duct burner shall only fire natural gas for a maximum of 4380 hours during any 12 month consecutive period. The owner or operator shall maintain duct burner hours of operation records on site for a minimum of five years.

Work Practice Type: HOURS PER YEAR OPERATION Upper Permit Limit: 4380 hours Monitoring Frequency: DAILY Averaging Method: 12 MONTH AVERAGE - ROLLED MONTHLY Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 87: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 87.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 000630-08-0 CARBON MONOXIDE

# Item 87.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description:

> The owner or operator shall install, calibrate, maintain, and operate a continuous emissions monitor for carbon monoxide. This condition applies while the combustion turbine is firing natural gas with or without duct firing. The data collected shall be maintained on site for a minimum of five years.

Manufacturer Name/Model Number: CO Analyzer Parameter Monitored: CARBON MONOXIDE Upper Permit Limit: 0.0047 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: CONTINUOUS Averaging Method: 1-HOUR AVERAGE Reporting Requirements: QUARTERLY (CALENDAR)

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Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

#### Condition 88: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 88.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 000630-08-0 CARBON MONOXIDE

#### Item 88.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description:

The owner or operator shall install, calibrate, maintain, and operate a continuous emissions monitor for carbon monoxide. This condition applies while the combustion turbine is firing natural gas with or without duct firing or when the combustion turbine is firing oil at or greater than 90% load with no duct firing. The data collected shall be maintained on site for a minimum of five years.

Manufacturer Name/Model Number: CO Analyzer Parameter Monitored: CARBON MONOXIDE Upper Permit Limit: 2.0 parts per million by volume (dry, corrected to 15% O2) Reference Test Method: 40 CFR Part 60 Appendix Monitoring Frequency: CONTINUOUS Averaging Method: 1-HOUR AVERAGE Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

# Condition 89: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

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#### Item 89.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 007664-41-7 AMMONIA

#### Item 89.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: CONTINUOUS EMISSION MONITORING (CEM) Monitoring Description: The owner or operator shall install, calibrate, maintain, and operate a continuous emissions monitor for ammonia slip. This condition applies to all combustion turbine/duct burner operating scenarios. The data collected shall be maintained on site for a minimum of five years.

Manufacturer Name/Model Number: Ammonia Analyzer Parameter Monitored: AMMONIA Upper Permit Limit: 5.0 parts per million by volume (dry, corrected to 15% O2) Reference Test Method: 40 CFR Part 60 Monitoring Frequency: CONTINUOUS Averaging Method: 1-HOUR AVERAGE Reporting Requirements: QUARTERLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 10/30/2006. Subsequent reports are due every 3 calendar month(s).

Condition 90: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

# Item 90.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

#### Item 90.2:

Compliance Demonstration shall include the following monitoring:

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Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description:

This condition applies to PM-10 emissions while the combustion turbine fires distillate oil at loads at or above 75% but less than 90% load without the duct burner firing. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: PM-10 Upper Permit Limit: 0.061 pounds per million Btus Reference Test Method: Method 201A & 202 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

### Condition 91: Applicable Units, nameplate capacity of 25 MWe or greater Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 237-1.4(a)

# Item 91.1:

This Condition applies to Emission Unit: U-00001

#### Item 91.2:

Any unit, that at any time on or after January 1, 1999, serves a generator with a nameplate capacity equal to or greater than 25 MWe and sells any amount of electricity shall be a NOx budget unit, and any source that includes one or more such units shall be a NOx budget source, subject to the requirements of NYCRR 237

### Condition 92: Permit requirments to be included in new permits or units Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 237-1.6(a)

Item 92.1: This Condition applies to Emission Unit: U-00001

**Item 92.2:** The NOx authorized account representative of each NOx budget unit shall: Submit to the department a complete NOx budget permit application under NYCRR 237-3.3 in accordance with the deadlines specified in NYCRR 237-3.2(b); and submit in a timely manner any supplemental information that the department determines is necessary in order to review a NOx budget permit application and issue or deny a NOx budget permit.

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The owners and operators of each NOx budget unit shall have a NOx budget permit and operate the unit in compliance with such NOx budget permit.

# Condition 93: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 237-1.6(c)

#### Item 93.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 93.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

> The owners and operators of each NOx budget source and each NOx budget unit at the source shall hold NOx allowances available for compliance deductions under NYCRR 237-6.5, as of the NOx allowance transfer deadline, in the unit's compliance account and the source's overdraft account in an amount not less than the total NOx emissions for the control period from the unit, as determined in accordance with NYCRR 237-8.

Each ton of NOx emitted in excess of the NOx budget emissions limitation shall constitute a separate violation of applicable State law.

A NOx budget unit shall be subject to the requirements under NYCRR 237-1.6(c)(1) starting when the unit commences operation.

NOx allowances shall be held in, deducted from, or transferred among NOx Allowance Tracking System accounts in accordance with NYCRR 237-5, 237-6, 237-7, and 237-9.

Except for future control period NOx allowances which may be deducted pursuant to NYCRR 237-6.5(f), a NOx allowance shall not be deducted, in order to comply with the requirements under NYCRR 237-1.6(c)(1), for a control period in a year prior to the year for which the NOx allowance was allocated.

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A NOx allowance allocated by the department under the Acid Deposition Reduction (ADR) NOx Budget Trading Program is a limited authorization to emit one ton of NOx in accordance with the ADR NOx Budget Trading Program. No provision of the ADR NOx Budget Trading Program, the NOx budget permit application, or the NOx budget permit or any provision of law shall be construed to limit the authority of the State to terminate or limit such authorization.

A NOx allowance allocated by the department under the ADR NOx Budget Trading Program does not constitute a property right.

The owners and operators of a NOx budget unit that has excess emissions in any control period shall: Forfeit the NOx allowances required for deduction under NYCRR 237-6.5(d)(1); and pay any fine, penalty, or assessment or comply with any other remedy imposed under NYCRR 237-6.5(d)(3).

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

# Condition 94: Recordkeeping and Reporting Requirements Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 237-1.6(e)

# Item 94.1:

This Condition applies to Emission Unit: U-00001

#### Item 94.2:

Unless otherwise provided, the owners and operators of the NOx budget source and each NOx budget unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the department:

1) The account certificate of representation for the NOx authorized account representative for the source and each NOx budget unit at the source and all documents that demonstrate the truth of the statements in the account certificate of representation, in accordance with NYCRR 237-2.4; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new account certificate of representation changing the NOx authorized account representative.

2) All emissions monitoring information, in accordance with NYCRR 237-8.

3) Copies of all reports, compliance certifications, and other submissions and all records made or

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required under the ADR NOx Budget Trading Program.

4)Copies of all documents used to complete a NOx budget permit application and any other submission under the ADR NOx Budget Trading Program or to demonstrate compliance with the requirements of the ADR NOx Budget Trading Program.

The NOx authorized account representative of a NOx budget source and each NOx budget unit at the source shall submit the reports and compliance certifications required under the ADR NOx Budget Trading Program, including those under NYCRR 237-4, 237-8, or 237-9.

# Condition 95: Liability Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 237-1.6(f)

Item 95.1: This Condition applies to Emission Unit: U-00001

### Item 95.2:

No permit revision shall excuse any violation of the requirements of the ADR NOx Budget Trading Program that occurs prior to the date that the revision takes effect. Any provision of the ADR NOx Budget Trading Program that applies to a NOx budget unit (including a provision applicable to the NOx authorized account representative of a NOx budget unit) shall also apply to the owners and operators of such unit. Except with regard to the requirements applicable to units with a common stack under NYCRR 237-8, the owners and operators and the NOx authorized account representative of one NOx budget unit shall not be liable for any violation by any other NOx budget unit of which they are not owners or operators or the NOx authorized account representative and that is located at a source of which they are not owners or operators or the NOx authorized account representative.

Condition 96: Effect on other Authorities Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 237-1.6(g)

# Item 96.1:

This Condition applies to Emission Unit: U-00001

# Item 96.2:

No provision of the ADR NOx Budget Trading Program, a NOx budget permit application, or a NOx budget permit, shall be construed as exempting or excluding the owners and operators and, to the extent applicable, the NOx authorized account representative of a NOx budget source or NOx budget unit from compliance with any other provisions of applicable State and federal law and regulations.

# Condition 97: Authorization and responsibilities of the NOx authorized account representative Effective between the dates of 08/01/2006 and Permit Expiration Date

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Applicable State Requirement: 6NYCRR 237-2

Item 97.1: This Condition applies to Emission Unit: U-00001

#### Item 97.2:

Except as provided under NYCRR 237-2.2, each NOx budget source, including all NOx budget units at the source, shall have one and only one NOx authorized account representative, with regard to all matters under the Acid Deposition Reduction (ADR) NOx Budget Trading Program concerning the source or any NOx budget unit at the source.

The NOx authorized account representative of the NOx budget source shall be selected by an agreement binding on the owners and operators of the source and all NOx budget units at the source.

Upon receipt by the department or its agent of a complete account certificate of representation under NYCRR 237-2.4, the NOx authorized account representative of the source shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each owner and operator of the NOx budget source represented and each NOx budget unit at the source in all matters pertaining to the ADR NOx Budget Trading Program, not withstanding any agreement between the NOx authorized account representative and such owners and operators. The owners and operators shall be bound by any decision or order issued to the NOx authorized account representative by the department or a court regarding the source or unit.

No NOx budget permit shall be issued, and no NOx Allowance Tracking System account shall be established for a NOx budget unit at a source, until the department or its agent has received a complete account certificate of representation under NYCRR 237-2.4 for a NOx authorized account representative of the source and the NOx budget units at the source.

Each submission under the ADR NOx Budget Trading Program shall be submitted, signed, and certified by the NOx authorized account representative for each NOx budget source on behalf of which the submission is made. Each such submission shall include the following certification statement by the NOx authorized account representative: "I am authorized to make this submission on behalf of the owners and operators of the NOx budget sources or NOx budget units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment."

The department or its agent will accept or act on a submission made on behalf of owners or operators of a NOx budget source or a NOx budget unit only if the submission has been made, signed, and certified in accordance with NYCRR 237-2.1(e)(1).

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# Condition 98: Compliance Demonstration

Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 237-4.1

#### Item 98.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 98.2:

Compliance Demonstration shall include the following monitoring:

#### Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

For each control period in which one or more NOx budget units at a source are subject to the NOx budget emissions limitation, the NOx authorized account representative of the source shall submit to the department by the September 30 following the relevant control period, a compliance certification report for each source covering all such units.

The NOx authorized account representative shall include in the compliance certification report the following elements, in a format prescribed by the department, concerning each unit at the source and subject to the NOx budget emissions limitation for the control period covered by the report:

(1) identification of each NOx budget unit;

(2) except in instances when the NOx budget unit seeks to use future control period NOx allowances which may be deducted pursuant to NYCRR 237-6.5(f), at the NOx authorized account representative's option, the serial numbers of the NOx allowances that are to be deducted from each unit's compliance account under NYCRR 237-6.5 for the control period;

(3) at the NOx authorized account representative's option, for units sharing a common stack and having NOx emissions that are not monitored separately or apportioned in accordance with NYCRR 237-8, the percentage of NOx allowances that is to be deducted from each unit's compliance account under NYCRR 237-6.5(e);

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(4) for units using future control period allowances for compliance purposes pursuant to NYCRR 237-6.5(f), the statement of intent and report required under NYCRR 237-6.5(f)(2); and

(5) the compliance certification under NYCRR 237-4(c).

In the compliance certification report the NOx authorized account representative shall certify, based on reasonable inquiry of those persons with primary responsibility for operating the source and the NOx budget units at the source in compliance with the Acid Deposition Reduction (ADR) NOx Budget Trading Program, whether each NOx budget unit for which the compliance certification is submitted was operated during the calendar year covered by the report in compliance with the requirements of the ADR NOx Budget Trading Program applicable to the unit, including:

(a) whether the unit was operated in compliance with the NOx budget emissions limitation;

(b) whether the monitoring plan that governs the unit has been maintained to reflect the actual operation and monitoring of the unit, and contains all information necessary to attribute NOx emissions to the unit, in accordance with NYCRR 237-8;

(c) whether all the NOx emissions from the unit, or a group of units (including the unit) using a common stack, were monitored or accounted for through the missing data procedures and reported in the quarterly monitoring reports, including whether conditional data were reported in the quarterly reports in accordance with NYCRR 237-8. If conditional data were reported, the owner or operator shall indicate whether the status of all conditional data has been resolved and all necessary quarterly report resubmissions have been made;

(d) whether the facts that form the basis for certification under NYCRR 237-8 of each monitor at the unit or a group of units (including the unit) using a common stack, or for using an excepted monitoring method or alternative monitoring method approved under NYCRR 237-8, if any, has changed; and

(e) if a change is required to be reported in (4) above,

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specify the nature of the change, the reason for the change, when the change occurred, and how the unit's compliance status was determined subsequent to the change, including what method was used to determine emissions when a change mandated the need for monitor recertification.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 99: Submission of NOx allowance transfers Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 237-7.1

# Item 99.1:

This Condition applies to Emission Unit: U-00001

#### Item 99.2:

The NOx authorized account representatives seeking recordation of a NOx allowance transfer shall submit the transfer to the department or its agent. To be considered correctly submitted, the NOx allowance transfer shall include the following elements in a format specified by the department or its agent:

(a) the numbers identifying both the transferor and transferee accounts;

(b) a specification by serial number of each NOx allowance to be transferred; and

(c) the printed name and signature of the NOx authorized account representative of the transferor account and the date signed.

# Condition 100: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 237-8

#### Item 100.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 100.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description: The owners and operators, and to the extent applicable,

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the NOx authorized account representative of a NOx budget unit, shall comply with the monitoring and reporting requirements as provided in this NYCRR 237-8 and in Subpart H of 40 CFR part 75. For purposes of complying with such requirements, the definitions in NYCRR 237-1.2 and in 40 CFR 72.2 shall apply, and the terms "affected unit," and "designated representative" in 40 CFR part 75 shall be replaced by the terms "NOx budget unit," and "NOx authorized account representative," respectively, as defined in section 237-1.2.

For any NOx budget unit which is also a NOx budget unit under Part 204 of this title, prior or contemporaneous timely submissions in compliance with the requirements of Subpart 204-8 may, when appropriate, be summarily referenced by the owners and operators of the NOx budget unit in order to demonstrate compliance with the requirements of this Subpart:

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

# Condition 101: Applicability Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 238-1.4

#### Item 101.1:

This Condition applies to Emission Unit: U-00001

#### Item 101.2:

The administrator has determined this to be an affected SO2 budget unit as defined at 42 U.S.C. section 7651a(2); and is subject to the requirements of NYCRR Part 238. With the exception of any SO2 budget unit which has shutdown in accordance with section 238-1.5 and which no longer has any outstanding compliance obligations stemming from its prior operation, NYCRR 238 applies to every SO2 budget unit.

Condition 102: Permit Requirments Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 238-1.6(a)

#### Item 102.1:

This Condition applies to Emission Unit: U-00001

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#### Item 102.2:

The SO2 authorized account representative of each SO2 budget unit shall: (i) submit to the department a complete SO2 budget permit application under section 238-3.3 in accordance with the deadlines specified in NYCRR 238-3.2; which states the later of October 1, 2004 or 12 months before the date on which the SO2 budget unit commences operation;

(ii) submit in a timely manner any supplemental information that the department determines is necessary in order to review an SO2 budget permit application and issue or deny an SO2 budget permit.

The owners and operators of each SO2 budget unit shall have an SO2 budget permit and operate the unit in compliance with such SO2 budget permit.

# Condition 103: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

# Applicable State Requirement: 6NYCRR 238-1.6(c)

### Item 103.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 103.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

The owners and operators of each SO2 budget source and each SO2 budget unit at the source shall hold SO2 allowances available for compliance deductions under NYCRR 238-6.5, as of the SO2 allowance transfer deadline, in the unit's compliance account and the source's overdraft account in an amount not less than the total SO2 emissions for the control period from the unit, as determined in accordance with NYCRR 238-8.

Each ton of sulfur dioxide emitted in excess of the SO2 budget emissions limitation shall constitute a separate violation of this Part, the Act, and applicable State law.

An SO2 budget unit shall be subject to the requirements under NYCRR 1.6 (c)(1) on the date on which the unit commences operation.

SO2 allowances shall be held in, deducted from, or transferred among SO2 Allowance Tracking System accounts

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in accordance with NYCRR 238-5, 238-6, and 238-7.

Except for future control period SO2 allowances which may be deducted pursuant to NYCRR 238-6.5(f), an SO2 allowance shall not be deducted, in order to comply with the requirements under NYCRR 238-1.6(c)(1) for a control period in a year prior to the year for which the SO2 allowance was allocated.

An SO2 allowance allocated by the department under the ADR SO2 budget Trading Program is a limited authorization to emit one ton of sulfur dioxide in accordance with the Acid Deposition Reduction (ADR) SO2 Budget Trading Program. No provision of the ADR SO2 Budget Trading Program, the SO2 budget permit application, or the SO2 budget permit or any provision of law shall be construed to limit the authority of the United States or the State to terminate or limit such authorization.

An SO2 allowance allocated by the department under the ADR SO2 Budget Trading Program does not constitute a property right.

The owners and operators of an SO2 budget unit that has excess emissions in any control period shall: Forfeit the SO2 allowances required for deduction under NYCRR 238-6.5(d)(1); and Pay any fine, penalty, or assessment or comply with any other remedy imposed under NYCRR 238-6.5(d)(3).

Reporting Requirements: ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 12 calendar month(s).

### Condition 104: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 238-1.6(e)

#### Item 104.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 104.2:

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Compliance Demonstration shall include the following monitoring:

# Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

Unless otherwise provided, the owners and operators of the SO2 budget source and each SO2 budget unit at the source shall keep on site or at a site approved by the Department each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the department.

The account certificate of representation for the SO2 authorized account representative for the source and each SO2 budget unit at the source and all documents that demonstrate the truth of the statements in the account certificate of representation, in accordance with NYCRR 238-2.4; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new account certificate of representation changing the SO2 authorized account representative;

All emissions monitoring information, in accordance with NYCRR 238-8;

Copies of all reports, compliance certifications, and other submissions and all records made or required under the ADR SO2 Budget Trading Program;

Copies of all documents used to complete an SO2 budget permit application and any other submission under the ADR SO2 Budget Trading Program or to demonstrate compliance with the requirements of the ADR SO2 Budget Trading Program;

The SO2 authorized account representative of an SO2 budget source and each SO2 budget unit at the source shall submit the reports and compliance certifications required under the ADR SO2 Budget Trading Program, including those under NYCRR 238-4, or 238-8.

Reporting Requirements: ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 12 calendar month(s).

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#### Condition 105: Liability Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 238-1.6(f)

Item 105.1: This Condition applies to Emission Unit: U-00001

### Item 105.2:

No permit revision shall excuse any violation of the requirements of the ADR SO2 Budget Trading Program that occurs prior to the date that the revision takes effect.

Any provision of the ADR SO2 Budget Trading Program that applies to an SO2 budget source (including a provision applicable to the SO2 authorized account representative of an SO2 budget source) shall also apply to the owners and operators of such source and of the SO2 budget units at the source;

Any provision of the ADR SO2 Budget Trading Program that applies to an SO2 budget unit (including a provision applicable to the SO2 authorized account representative of an SO2 budget unit) shall also apply to the owners and operators of such unit. Except with regard to the requirements applicable to units with a common stack under Subpart 238-8, the owners and operators and the SO2 authorized account representative of one SO2 budget unit shall not be liable for any violation by any other SO2 budget unit of which they are not owners or operators or the SO2 authorized account representative and that is located at a source of which they are not owners or operators or the SO2 authorized account representative.

### Condition 106: Effect on Other Authorities Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 238-1.6(g)

# Item 106.1:

This Condition applies to Emission Unit: U-00001

#### Item 106.2:

No provision of the ADR SO2 Budget Trading Program, an SO2 budget permit application, or an SO2 budget permit, shall be construed as exempting or excluding the owners and operators and, to the extent applicable, the SO2 authorized account representative of an SO2 budget source or SO2 budget unit from compliance with any other provisions of applicable State and federal law and regulation.

Condition 107: Submissions to the Department Effective between the dates of 08/01/2006 and Permit Expiration Date

# Applicable State Requirement: 6NYCRR 238-2.1

# Item 107.1:

This Condition applies to Emission Unit: U-00001

Item 107.2:

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Each submission under the Acid Deposition Reduction (ADR) SO2 Budget Trading Program shall be submitted, signed, and certified by the SO2 authorized account representative for each SO2 budget source on behalf of which the submission is made. Each such submission shall include the following certification statement by the SO2 authorized account representative:

"I am authorized to make this submission on behalf of the owners and operators of the SO2 budget sources or SO2 budget units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment."

# Condition 108: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 238-4.1

#### Item 108.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

#### Item 108.2:

Compliance Demonstration shall include the following monitoring:

#### Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

For each control period in which one or more SO2 budget units at a source are subject to the SO2 budget emissions limitation, the SO2 authorized account representative of the source shall submit to the Department by the March 1 following the relevant control period, a compliance certification report for each source covering all such units; as per NYCRR 238-4.

The SO2 authorized account representative shall include in the compliance certification the following elements, in a format prescribed by the department, concerning each unit at the source and subject to the SO2 budget emissions limitation for the control period covered by the report:

(1) identification of each SO2 budget unit;

(2) except in instances when the SO2 budget unit seeks to

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use future control period SO2 allowances which may be deducted pursuant to NYCRR 238-6.5(f), at the SO2 authorized account representative's option, the serial numbers of the SO2 allowances that are to be deducted from each unit's compliance account under NYCRR 238-6.5 for the control period;

(3) at the SO2 authorized account representative's option, for units sharing a common stack and having SO2 emissions that are not monitored separately or apportioned in accordance with NYCRR 238-8, the percentage of SO2 allowances that is to be deducted from each unit's compliance account under NYCRR 238-6.5(e);

(4) for units using future control period allowances for compliance purposes pursuant to NYCRR 238-6.5(f), the statement of intent and report required under NYCRR 238-6.5(f)(2); and

(5) the compliance certification under NYCRR 238-4.1(c).

In the compliance certification report, the SO2 authorized account representative shall certify, based on reasonable inquiry of those persons with primary responsibility for operating the source and the SO2 budget units at the source in compliance with the ADR SO2 Budget Trading Program, whether each SO2 budget unit for which the compliance certification is submitted was operated during the calendar year covered by the report in compliance with the requirements of the ADR SO2 Budget Trading Program applicable to the unit, including:

(a) whether the unit was operated in compliance with the SO2 budget emissions limitation;

(b) whether the monitoring plan that governs the unit has been maintained to reflect the actual operation and monitoring of the unit, and contains all information necessary to attribute SO2 emissions to the unit, in accordance with Subpart 238-8;

(c) whether all the SO2 emissions from the unit, or a group of units (including the unit) using a common stack, were monitored or accounted for through the missing data procedures and reported in the quarterly monitoring reports, including whether conditional data were reported

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in the quarterly reports in accordance with Subpart 238-8. If conditional data were reported, the owner or operator shall indicate whether the status of all conditional data has been resolved and all necessary quarterly report resubmissions have been made;

(d) whether the facts that form the basis for certification under Subpart 238-8 of each monitor at the unit or a group of units (including the unit) using a common stack, or for using an excepted monitoring method or alternative monitoring method approved under Subpart 238-8, if any, has changed; and

(e) if a change is required to be reported under (4) above, specify the nature of the change, the reason for the change, when the change occurred, and how the unit's compliance status was determined subsequent to the change, including what method was used to determine emissions when a change mandated the need for monitor recertification.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

## Condition 109: Submission of SO2 allowance transfers Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable State Requirement: 6NYCRR 238-7.1

## Item 109.1:

This Condition applies to Emission Unit: U-00001

Item 109.2:

The SO2 authorized account representatives seeking recordation of an SO2 allowance transfer shall submit the transfer to the department or its agent. To be considered correctly submitted, the SO2 allowance transfer shall include the following elements in a format specified by the department or its agent:

(a) the numbers identifying both the transferor and transferee accounts;

(b) a specification by serial number of each SO2 allowance to be transferred; and

(c) the printed name and signature of the SO2 authorized account representative of the transferor account and the date signed.

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## Condition 110: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement:6NYCRR 238-8

# Item 110.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00001

## Item 110.2:

Compliance Demonstration shall include the following monitoring:

## Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES Monitoring Description:

The owners and operators, and to the extent applicable, the SO2 authorized account representative of an SO2 budget unit, shall comply with the monitoring and reporting requirements as provided for in all applicable sections of 40 CFR part 75. For purposes of complying with such requirements, the definitions in NYCRR 238-1.2 and in 40 CFR 72.2 shall apply, and the terms "affected unit," and "designated representative" in 40 CFR part 75 shall be replaced by the terms "SO2 budget unit," and "SO2 authorized account representative," respectively, as defined in NYCRR 238-1.2.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

## Condition 111: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

#### Item 111.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00002

## Item 111.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC

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## **OPERATIONS**

Monitoring Description:

The boiler may fire up to 400 hours per year (out of the 4800 hours per year limitation) on distillate oil during any 12 month consecutive period. The auxiliary boiler shall not operate when the combustion turbine operates except during periods of combustion turbine start-up. The owner or operator shall maintain auxiliary boiler hours of operation records on site for a minimum of five years.

Work Practice Type: HOURS PER YEAR OPERATION Upper Permit Limit: 400 hours Monitoring Frequency: DAILY Averaging Method: 12 MONTH AVERAGE - ROLLED MONTHLY Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 112: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

#### Item 112.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00002

#### Item 112.2:

Compliance Demonstration shall include the following monitoring:

## Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

The auxiliary boiler shall fire for a maximum of 4800 hours during any 12 month consecutive period. The auxiliary boiler shall not operate when the combustion turbine operates except during periods of combustion turbine start-up. The owner or operator shall maintain auxiliary boiler hours of operation records on site for a minimum of five years.

Work Practice Type: HOURS PER YEAR OPERATION Upper Permit Limit: 4800 hours Monitoring Frequency: DAILY Averaging Method: 12 MONTH AVERAGE - ROLLED MONTHLY

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Reporting Requirements: SEMI-ANNUALLY (ANNIVERSARY) Initial Report Due: 03/02/2007 for the period 08/01/2006 through 01/31/2007

# Condition 113: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable State Requirement: 6NYCRR 201-5

## Item 113.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00002

## Item 113.2:

Compliance Demonstration shall include the following monitoring:

## Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

The auxiliary boiler shall fire a maximum of 95,714 gallons of distillate oil during any 12 month consecutive period. The owner or operator shall maintain auxiliary boiler fuel oil use records on site for a minimum of five years.

Work Practice Type: PROCESS MATERIAL THRUPUT Process Material: FUEL OIL Upper Permit Limit: 95,714 gallons per year Monitoring Frequency: DAILY Averaging Method: 12 MONTH AVERAGE - ROLLED MONTHLY Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 114: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 114.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00002

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

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## Item 114.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to PM-10 emissions when the auxiliary boiler is firing natural gas. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: PM-10 Upper Permit Limit: 0.0033 pounds per million Btus Reference Test Method: Method 201A & 202 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 115: Compliance Demonstration

Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable State Requirement: 6NYCRR 201-5

## Item 115.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00002

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

### Item 115.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to PM-10 emissions when the auxiliary boiler is firing distillate oil. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: PM-10 Upper Permit Limit: 0.015 pounds per million Btus Reference Test Method: Method 201A & 202

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Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 116: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

## Item 116.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00002

Regulated Contaminant(s): CAS No: 000630-08-0 CARBON MONOXIDE

## Item 116.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to carbon monoxide emissions when the auxiliary boiler is firing natural gas. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: CARBON MONOXIDE Upper Permit Limit: 0.036 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 117: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 117.1:

The Compliance Demonstration activity will be performed for:

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Emission Unit: U-00002

Regulated Contaminant(s): CAS No: 000630-08-0 CARBON MONOXIDE

## Item 117.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to carbon monoxide emissions when the auxiliary boiler is firing distillate oil. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: CARBON MONOXIDE Upper Permit Limit: 0.039 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 118: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

#### Item 118.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00003 Emission Point: EP003

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

### Item 118.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to PM-10 emissions from the fuel gas heater. The data collected shall be maintained on site for a minimum of five years.

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Parameter Monitored: PM-10 Upper Permit Limit: 0.0088 pounds per million Btus Reference Test Method: Method 201A & 202 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 119: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable State Requirement: 6NYCRR 201-5

Item 119.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00003 Emission Point: EP003

Regulated Contaminant(s): CAS No: 000630-08-0 CARBON MONOXIDE

## Item 119.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to carbon monoxide emissions from the fuel gas heater. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: CARBON MONOXIDE Upper Permit Limit: 0.098 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

Condition 120: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

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## Item 120.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00003 Emission Point: EP004

## Item 120.2:

Compliance Demonstration shall include the following monitoring:

## Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS Monitoring Description: The diesel fire pump shall be restricted to operating

four hours per day maximum (not to exceed 375 hours per year). The owner or operator shall maintain diesel fire pump hours of operation records on site for a minimum of five years.

Work Practice Type: HOURS PER DAY OPERATION Upper Permit Limit: 4 hours Monitoring Frequency: DAILY Averaging Method: 12 MONTH AVERAGE - ROLLED MONTHLY Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 121: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

### Applicable State Requirement: 6NYCRR 201-5

#### Item 121.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00003 Emission Point: EP004

## Item 121.2:

Compliance Demonstration shall include the following monitoring:

## Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

The diesel fire pump shall fire a maximum of 6,000 gallons of distillate oil during any 12 month consecutive period. The owner or operator shall maintain diesel fire pump fuel oil use records on site for a minimum of five

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years.

Work Practice Type: PROCESS MATERIAL THRUPUT Process Material: FUEL OIL Upper Permit Limit: 6,000 gallons per year Monitoring Frequency: DAILY Averaging Method: 12 MONTH AVERAGE - ROLLED MONTHLY Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 122: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

## Applicable State Requirement: 6NYCRR 201-5

## Item 122.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00003 Emission Point: EP004

## Item 122.2:

Compliance Demonstration shall include the following monitoring:

## Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

The diesel fire pump shall be limited to 375 hours per year of operation on a 12 month rolling basis. The owner or operator shall maintain diesel fire pump hours of operation records on site for a minimum of five years.

Work Practice Type: HOURS PER YEAR OPERATION Upper Permit Limit: 375 hours Monitoring Frequency: DAILY Averaging Method: 12 MONTH AVERAGE - ROLLED MONTHLY Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

# Condition 123: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

Applicable State Requirement: 6NYCRR 201-5

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### Item 123.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00003 Emission Point: EP004

Regulated Contaminant(s): CAS No: 0NY075-00-5 PM-10

## Item 123.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to PM-10 emissions from the diesel fire pump. The data collected shall be maintained on site for a minimum of five years.

Parameter Monitored: PM-10 Upper Permit Limit: 0.03 pounds per million Btus Reference Test Method: Method 201A & 202 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).

## Condition 124: Compliance Demonstration Effective between the dates of 08/01/2006 and Permit Expiration Date

#### Applicable State Requirement: 6NYCRR 201-5

## Item 124.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: U-00003 Emission Point: EP004

Regulated Contaminant(s): CAS No: 000630-08-0 CARBON MONOXIDE

## Item 124.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING Monitoring Description: This condition applies to carbon monoxide emissions from the diesel fire pump. The data collected shall be

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maintained on site for a minimum of five years.

Parameter Monitored: CARBON MONOXIDE Upper Permit Limit: 0.09 pounds per million Btus Reference Test Method: 40 CFR Part 60 Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT Averaging Method: 1-HOUR AVERAGE Reporting Requirements: SEMI-ANNUALLY (CALENDAR) Reports due 30 days after the reporting period. The initial report is due 1/30/2007. Subsequent reports are due every 6 calendar month(s).