

**STATE OF NEW HAMPSHIRE
DEPARTMENT OF ENVIRONMENTAL SERVICES
AIR RESOURCES DIVISION**

OFFSITE FULL COMPLIANCE EVALUATION

**NEWINGTON ENERGY, LLC
99 DOVER ROAD
NEWINGTON, NH 03801**

AFS # 3301590793

Review Completed: February 12, 2007

I. Inspection

On February 12, 2007, the New Hampshire Department of Environmental Services (“DES”), Air Resources Division (“ARD”) completed an offsite full compliance evaluation (“FCE”) of NEL, LLC (“NEL”) located in Newington, NH, in Rockingham County. DES ARD’s offsite records review was conducted in accordance with EPA’s Compliance Monitoring Strategy. NEL was last inspected by DES ARD on December 2, 2004. At that time, NEL was a new electric generating facility and had not been previously inspected by DES ARD. There were no deficiencies identified by DES ARD during the 2004 inspection; however, there was an active Letter of Deficiency which DES ARD had issued to NEL in October 2004 for incomplete quarterly excess emission reports. This enforcement action will be discussed further in section VII of this report.

Offsite Review Completed:	February 12, 2007
Type of Inspection:	Offsite Full Compliance Evaluation
Inspected by:	Ray Walters
Source Contact:	Alan Douglass, Environmental Mgr., Con Edison Development (417) 730-4701 Robert Frizzle, NEL EH&S Mgr. (603) 766-1880 x109

NEL is a 525 megawatt (MW), combined cycle, dual-fueled electric generating facility. Construction of the twin turbine plant was completed in 2002 and it began commercial operation in October 2002. Con Edison Development owns the facility and it is operated by General Electric Co.

II. Process Description

NEL operates the combined cycle combustion turbine facility that consists of two combustion turbines (“CT #1 & CT #2”), with two heat recovery steam generators (“HRSGs”) and a single steam turbine. The facility is classified as a “combined cycle” plant because it produces electrical power using both combustion gas and steam. Each combustion turbine is rated at approximately 160 MW (at 95° F). The exhaust gas from each combustion turbine passes through a separate HRSG which generates steam. The steam from both HRSGs spins a single steam turbine to produce an additional 205 MW. At lower ambient air temperatures and, therefore, denser air, the combustion turbine output ratings increase to approximately 190 MW each (at 0° F), to produce a total plant output capacity of 585 MW. Auxiliary equipment at NEL includes a wet mechanical draft cooling tower, and a water treatment system. Air pollution control at the facility includes dry low NO_x reduction system, a combustor design to pre-mix the fuel and air into a fuel-lean mixture) when burning natural gas, and water injection which also lowers NO_x emissions when burning fuel oil. The facility also has continuous emission monitoring systems (“CEMs”) on both turbine stacks to measure and record emissions of CO, NO_x, and ammonia (“NH₃”) and to monitor opacity.

NEL also operates a natural gas-fired auxiliary boiler, six natural gas-fired fuel gas heaters, one diesel-fired emergency generator, and one diesel-fired emergency firewater pump.

III. Regulatory Compliance

CHAPTER ENV-A 300 - Ambient Air Quality Standards

NEL submitted ambient air quality modeling of its emissions to DES ARD in 2001 as part of its original application for a Temporary Permit. The results of the modeling indicated that no violations of the National Ambient Air Quality Standards ("NAAQS") or the increment standards were predicted to occur.

CHAPTER Env-A 500 – Standards Applicable to Certain New or Modified Facilities and Sources of Hazardous Air Pollutants

NEL is subject to the following New Source Performance Standards ("NSPS") specified in Env-A 503.01: 40 CFR 60 Subparts Db and Dc *Standards of Performance for Industrial-Commercial Institutional Steam Generating Units* and 40 CFR 60 Subpart GG *Standards of Performance for Stationary Gas Turbines*. NEL is not subject to any of the National Emission Standards for Hazardous Air Pollutants ("NESHAP") specified in Env-A 504.01 or the National Emission Standards for Hazardous Air Pollutants for Source Categories (Maximum Achievable Control Technology, or MACT, Standards) specified in Env-A 505.01.

CHAPTER Env-A 600 - Statewide Permit System

DES ARD issued Temporary Permit and Prevention of Significant Deterioration Permit TP-B-0526 ("the Permit") to NEL on December 12, 2006. The Permit replaces the two previously issued permits: the original PSD/Temporary Permit (DES Temporary Permit FP-T-0036, EPA PSD Permit 044-121NH10), and Temporary Permit TP-B-0483.

The Permit incorporates conditions and emission limits which apply to periods of startup, shutdown, and fuel transition of the combustion turbines CT #1 and CT #2. In the original PSD/Temporary Permit, NEL was required to propose (and DES to establish) permit limits for periods of startup, shutdown, and fuel transition. The PSD/Temporary Permit also required NEL to propose (and DES to establish) operational and emissions limitations during periods of startup and shutdown. The Permit incorporates these limits into the Permit.

In addition, in the Permit DES ARD increased the amount of fuel oil that NEL can combust in CT #1 and CT #2 from 19,850,000 gallons to 33,120,000 gallons during any 12-consecutive month period. The Permit also allows NEL to report its ammonia usage on a quarterly basis, instead of the previous monthly basis, and incorporates the replacement of the eight original natural gas-fired Fuel Gas Heaters with six new natural gas-fired Fuel Gas Heaters.

PART Env-A 604.02 – Permit Terms and Conditions

NEL calculates its annual emissions of combustion pollutants from its fuel usage and demonstrates compliance with its short-term emission limits by using the data measured and calculated by its CEM systems. Table I shows the operating limits and reported fuel usage and hours of operation. Table II shows the emissions from the fuel-burning devices. Table III shows the pollution control equipment

required to be operated at NEL.

TABLE I – Operating Limits and Reported Operations

Device	Manufacturer, Model, Installation Date	Operating Limitations	Reported Annual Fuel Usage and Operations
EU01 - CT #1 with corresponding HRSG	General Electric Frame 7FA Date installed: June 2002	CT #1 and CT #2 shall each be limited to: 2,115 MMBtu/hr gross heat input while firing natural gas, or 2,218 MMBtu/hr gross heat input while firing low sulfur distillate fuel oil.	CT #1 and HRSG: 2005: 8,676,018 MMBtu NG 539,055 MMBtu #2 FO 7029 hours 2004: 9,712,879 MMBtu NG 7039 MMBtu #2 FO 6928 hours
EU02 - CT #2 with corresponding HRSG	General Electric Frame 7FA Date installed: June 2002	Supplemental fuel firing in each HRSG shall be limited to 177.7 MMBtu/hr gross heat input. Fuel limited to natural gas only.	CT #2 and HRSG: 2005: 10,061,766 MMBtu NG 41,680 MMBtu #2 FO 6710 hours 2004: 8,190,284 MMBtu NG 174,391 MMBtu #2 FO 6577 hours
EU03 – 2 Cooling Towers	Marley Wet Mechanical Draft Cooling Towers Date installed: 2002	Cooling Tower drift limited to 0.0005 % of the circulating water flow rate.	Operate continuously Stack tested in September 2003
EU04 – Auxiliary Boiler	Hurst Boiler Model No. S2XID-G-600-2001 Date installed: June 2002	Heat input/fuel usage limited to 25.2 MMBtu/hr of NG @ 15 grains of sulfur per 100 cubic feet of gas, calculated as hydrogen sulfide at standard temperature and pressure Operating hours limited to 2,000 hours per consecutive 12-month period.	2005: 1734 MMBtu NG 48 hours 2004: 1734 MMBtu NG 100 hours
EU05 – 6 Fuel Gas Heaters	Laars Model No. 2400 Date installed: August 2004	The maximum gross heat input of each of the six fuel gas heaters shall be limited to 2.4 MMBtu/hr (HHV). The fuel shall contain no more than 15 grains of sulfur (as H ₂ S) per 100 cubic feet of gas.	2005: 3978 MMBtu NG 256 hours 2004: 3978 MMBtu NG 100 hours
EU06 – Diesel Emergency Generator	Cummins Model No. QSX15-G9 Installed June 2002	The maximum gross heat input of the Diesel Emergency Generator shall be limited to 5.2 MMBtu/hr and shall operate no more than 500 hours during any consecutive 12-month period. The diesel fuel (No. 2 oil) shall not exceed 0.40 % sulfur by weight.	2005: 465.9 MMBtu Diesel FO 13 hours 2004: 456.9 MMBtu Diesel FO 13 hours

Device	Manufacturer, Model, Installation Date	Operating Limitations	Reported Annual Fuel Usage and Operations
EU07 – Diesel Firewater Pump	John Deere Model No. JDFP-06WR Installed June 2002	The maximum gross heat input of the Diesel Firewater Pump shall be limited to 1.9 MMBtu/hr and shall operate no more than 500 hours during any consecutive 12-month period. The diesel fuel (No. 2 oil) shall not exceed 0.40 % sulfur by weight.	2005: 41 MMBtu Diesel FO 26 hours 2004: 41 MMBtu Diesel FO 52 hours

TABLE II – Actual Annual Emissions and Facility Limits

Year of Operation	NO _x	CO	PM	SO ₂	VOCs	HAPs
2005	93.50 tons	42.87 tons	81.35 tons	6.78 tons	9.17 tons	4.66 tons
2004	68.95 tons	31.97 tons	72.18 tons	7.27 tons	18.05 tons	34.55 tons
Consecutive 12-month limit	229.5	529.7	107.8	53.4	39.0	

TABLE III – Pollution Control Equipment

Emission Device Being Controlled	Description of Equipment	Purpose
EU01 - CT #1 with corresponding HRSG	1. Dry low-NO _x (DLN) in conjunction with Selective Catalytic Reduction (SCR) - for natural gas combustion 2. Water injection system in conjunction with SCR - for distillate oil combustion	For NO _x Control
EU02 - CT #2 with corresponding HRSG	1. Dry Low-NO _x (DLN) in conjunction with SCR - for natural gas combustion 2. Water injection system in conjunction with SCR - for distillate oil combustion	For NO _x Control
EU03 – 2 Cooling Towers	Each of the 10 cooling tower cells (i.e., 5 per each cooling tower) is equipped with a single layer of Marley drift eliminator plus a suspended layer of Marley honeycomb cooling tower fill.	To minimize water drift losses and plume visibility

In addition to the long-term emission limits shown in Table I and II, NEL has short-term emission limits for SO₂ (in lb/MM BTU), CO (in ppmv @ 15% O₂), TSP/PM-10 (in lb/MMBtu), NO_x (in ppmv @ 15% O₂), VOCs (in lb/MMBtu) and sulfuric acid mist (in lb/MMBtu), under both conditions of oil-firing and natural gas-firing. These limits, depending on the pollutant and fuel used, are 1-hour block averages and/or 3-hour rolling or block averages. There is also a 24-hour block averaged ammonia emission limit (in ppmv @ 15% O₂) and 6-minute averaged opacity limit.

The Permit also contains emission rate limits for the same pollutants (in lb/hr) for maximum load

conditions with the same averaging times for both fuels. It also stipulates for both combustion turbines limits on the maximum amounts of NO_x and CO (in pounds) that is allowed to be generated per startup and shutdown.

Compliance with the short-term emission standards for NO_x, CO, and ammonia is demonstrated by measurement of pollutant information and data collection and averaging by the CEMs. Compliance with the short-term emission standards for particulate matter, VOCs and sulfuric acid mist is demonstrated by periodic compliance stack testing.

PART Env-A 609.03 – Exempt and Insignificant Activities

There are no exempt or insignificant activities listed in the Permit.

PART Env-A 618 – Additional Requirements in Non-Attainment Areas and the New Hampshire Portion of the Northeast Ozone Transport Region

NEL is located in Rockingham County, NH and is in the Northeast Ozone Transport Region. It is a major new source in an ozone non-attainment area and is subject to New Source Review (NSR) for Prevention of Significant Deterioration (“PSD”). The modifications incorporated into the Permit since the issuance of the previous permits (the original PSD/Temporary Permit (DES Temporary Permit FP-T-0036, EPA PSD Permit 044-121NH10), and Temporary Permit TP-B-0483) were evaluated with respect to PSD and NSR. Specifically, the increase in pollutant emissions caused by the increase in fuel oil firing in CT #1 and CT #2, and the decrease in emissions resulting from the replacement of the eight natural gas-fired fuel gas heaters with six new natural gas-fired heaters do not trigger the thresholds for significant modifications under the PSD and non-attainment NSR programs.

CHAPTER Env-A 800 – Testing and Monitoring Procedures

PART Env-A 802 Compliance Stack Testing For Stationary Sources

As required by its original PSD/Temporary Permit, NEL conducted compliance stack emission testing in September 2002. In May and September of 2003, NEL conducted cooling tower drift testing. With the exception of compliance testing for sulfuric acid mist emissions conducted in April 2005, NEL has performed no other compliance stack testing since the previous compliance inspection in December 2004. (See the Full Compliance Evaluation Records Review at the end of this report).

PART Env-A 808 – Continuous Emission Monitoring

NEL has a CEM system installed on each combustion turbine stack exhaust. Each CEM monitors the emissions of NO_x, CO, and ammonia, as well as stack oxygen as the diluent gas. NEL conducts its annual recertifications of the CEM systems and quarterly audits as required by the Permit and by 40 CFR 75. (See the Full Compliance Evaluation Records Review at the end of this report).

CHAPTER Env-A 900 - Owner or Operator Recordkeeping and Reporting Obligations

The reports submitted to DES ARD by NEL indicate that it is maintaining the necessary records of its operation for each of its permitted devices. A review of NEL’s actual recordkeeping and data maintenance procedures will be conducted during the next onsite full compliance evaluation of the facility in 2009.

The Full Compliance Evaluation Records Review is included as an attachment to this report. The attachment lists all the reports that were reviewed in order to complete this compliance evaluation. The records review attachment includes a determination of each report's timeliness with regard to the required submittal date, and if the report was acceptable in terms of its content.

Quarterly CEM Excess Emission Reports are required to be submitted to DES ARD within 30 days after the end of each calendar quarter. NEL submitted the report for the 3rd quarter of 2006 approximately one month late. Two other reports during 2005 and 2006 were submitted approximately one week to 10 days late.

IV. Compliance with RACT

CHAPTER ENV-A 1200 - Stationary Source Air Pollution

PART Env-A 1204 - Stationary Sources of VOCs

NEL does not have any processes or devices with VOC emissions that subject it to the Reasonably Available Control Technology ("RACT") requirements for VOC RACT.

PART Env-A 1211 - Nitrogen Oxides

NEL's auxiliary boiler is subject to the NO_x RACT emission standard of 0.20 lb/MMBtu specified in Env-A 1211.12, *Emission Standards for Auxiliary Boilers*. This includes the annual boiler efficiency testing and measurements of NO_x and CO concentrations and opacity.

The fuel gas heaters are subject to the NO_x RACT requirements of Env-A 1211.14, *Emission Standards and Control Options for Miscellaneous Stationary Sources*.

The Diesel Emergency Generator and Diesel Firewater Pump are each subject to the annual limit on operating hours of no more than 500 hours and a combined NO_x emissions limit of no greater than 25 tons per consecutive 12-month period specified in Env-A 1211.11, *Emission Standards and Control Options for Emergency Generators*. Exceeding either of these limits requires the devices to be fully NO_x RACT-subject and undergo compliance emissions stack testing every 3 years in order to demonstrate compliance with the 8.0 grams per bhp-hr emission standard.

CHAPTER ENV-A 1400 - Regulation Toxic Air Pollutants

PART Env-A 1402 - Applicability and Part Env-A 1404 - Permit Requirements

NEL conducted an air toxics compliance determination as part of its original Temporary/PSD Permit application. Air dispersion modeling submitted with the application demonstrated compliance with ambient air limits specified in Env-A 1400.

CHAPTER Env-A 2000 - Fuel Burning Devices

Since this was an offsite evaluation, compliance with the visible emission standards for NEL's fuel burning devices could not be verified.

CHAPTER Env-A 3200 – NO_x Budget Trading Program

NEL is required to obtain sufficient NO_x Budget Allowances to cover all ozone season (May 1 through September 30 of each calendar year) NO_x emissions. The CEM systems meet all the criteria for measuring NO_x emissions as required by the NO_x Budget Trading Program.

V. Compliance with Permit Fee System

PART Env-A 704.01 – Emission Based Fees

NEL submitted its annual emissions-based fee payments for 2004 and 2005 operating years in full and on time.

VI. Compliance with Federal Requirements

40 CFR 60 - New Source Performance Standards

NEL is subject to Subpart GG *Standards of Performance for Stationary Gas Turbines*. The emission performance standards of the rule are confirmed by CEM data and/or stack emissions testing, as required.

40 CFR 70.6 (c)(1) Title V Permit Compliance Requirements

NEL is a Title V source, but has not yet been issued a Title V permit. Therefore, it has not yet had to submit a Title V annual compliance certification or semi-annual permit deviation and monitoring reports.

40 CFR PART 72, 73, 75 and 76 - Federal Acid Rain Program

The EPA Phase II Acid Rain Permit for NEL provides for zero SO₂ allowance allocations for the two turbines. NEL shall acquire SO₂ allowances in the amount of one allowance for each ton of SO₂ emitted in accordance with 40 CFR 72. NEL operates and maintains its CEM systems to comply with the monitoring requirements of this federal program. NEL complies with this requirement.

VII. Compliance and Enforcement Status

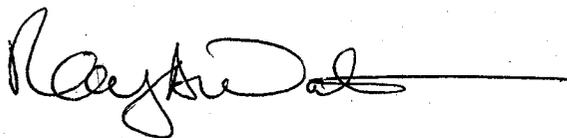
There were no deficiencies identified by DES ARD during this offsite inspection. On June 7, 2006, DES ARD issued a Letter of Compliance to NEL to close out an enforcement action which DES ARD initiated in 2004. On October 22, 2004, DES ARD issued Letter of Deficiency (LOD) No. ARD 2004-007 to NEL to document problems DES ARD had discovered in NEL's quarterly CEM excess emission reports. The reporting problems were corrected and the Letter of Compliance completed the action. There have been no additional enforcement actions against NEL.

VIII. Conclusion and Recommended Actions

With the exception of the minor problems noted on page 7 of this report with NEL's late submittal of some quarterly CEM excess emission reports, there were no new issues of non-compliance identified during this offsite evaluation.

IX. Attachments:

07-0212 Newington Energy FCE Offsite Records Review Checksheet

A handwritten signature in black ink, appearing to read "Ray A. Walters", followed by a horizontal line extending to the right.

Raymond A. Walters
Compliance Assessment Section Supervisor
Air Resources Division

File: 07-0212 Newington Energy FCE Offsite Report

Full Compliance Evaluation Records Review

Facility: Newington Energy, LLC

Date of FCE: February 12, 2007

Reviewer: Raymond Walters

Annual Emission Reports:

Reporting Period	When Rec'd?	Report OK?	In Database?
CY 2005	04/14/06		Yes
CY 2004	04/18/05		Yes

Annual Emissions-Based Fee Payments:

Reporting Period	When Rec'd?	In Database?
CY 2005	04/14/06	Yes, in Sonny's spreadsheet
CY 2004	05/25/05	Yes, in Sonny's spreadsheet

TV Annual Compliance Certifications:

Reporting Period	When Rec'd?	Report OK?	In Database?
No Title V permit issued yet, therefore, no annual compliance certification report required.			

TV Semi-Annual Permit Deviation and Monitoring Reports:

Reporting Period	When Rec'd?	Report OK?	In Database?
No Title V permit issued yet, therefore, no semi-annual permit deviation and monitoring reports required.			

Individual Permit Deviations Reports

Date	Duration	When Rec'd?	Report OK, Cause?	In Database?
None since 2004				

Qtr'ly CEM Excess Emission Reports:

Reporting Period	When Rec'd?	Report OK?	In Database?
4 th Qtr 2006	02/01/07	Yes	Yes
3 rd Qtr 2006	11/28/06	1 month late	Yes
2 nd Qtr 2006	08/02/06	Yes	Yes
1 st Qtr 2006	04/28/06	Yes	Yes
4 th Qtr 2005	02/11/06	10 days late	Yes
3 rd Qtr 2005	11/08/05	1 week late	Yes
2 nd Qtr 2005	08/02/05	Yes	Yes
1 st Qtr 2005	05/04/05	Yes	Yes
4 th Qtr 2004	02/01/05	Yes	Yes

CEM Audits (OPAs, Linearity Audits, RATAs, 7DD):

Reporting Period	Report Type	When Rec'd?	Report OK?	In Database?
4 th Qtr 2006	OPA	11/28/06		Y
4 th Qtr 2006	Linearity Audit	11/28/06		Y
3 rd Qtr 2006	OPA	08/02/06		Y
3 rd Qtr 2006	Linearity Audit	08/02/06		Y
2 nd Qtr 2006	2006 RATA	06/13-14/06		
2 nd Qtr 2006	OPA	04/28/06		Y
2 nd Qtr 2006	Linearity Audit	04/28/06		Y
1 st Qtr 2006	OPA	02/11/06		Y
1 st Qtr 2006	Linearity Audit	02/11/06		Y
4 th Qtr 2005	OPA	11/08/05		Y
4 th Qtr 2005	Linearity Audit	11/08/05		Y
3 rd Qtr 2005	OPA	10/11/05		Y
3 rd Qtr 2005	2005 RATA	09/13-14/05		Y
3 rd Qtr 2005	Linearity Audit	08/02/05		Y

Other reports:

Reporting Period	Report Type	When Rec'd?	Report OK?	In Database?

Stack Tests/CEM Cerifications:

Stack Test Date	Device Tested	When Rec'd?	Report OK?	In Database?
01/27/06	CT1 & CT2 new CO analyzer certifications			Y
04/05-06/06	CT1 & CT2 H ₂ SO ₄ mist testing			Y

Last revised: May 17, 2005

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