



Connecticut Department of

**ENERGY &  
ENVIRONMENTAL  
PROTECTION**

**BUREAU OF AIR MANAGEMENT  
NEW SOURCE REVIEW PERMIT  
TO CONSTRUCT AND OPERATE A STATIONARY SOURCE**

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

<b>Owner/Operator</b>	Dominion Nuclear Connecticut, Inc.
<b>Address</b>	Rope Ferry Road, Waterford, CT 06385
<b>Equipment Location</b>	Millstone Power Station, Rope Ferry Road, Waterford, CT 06385
<b>Equipment Description</b>	Colt Industries PC2 Emergency Diesel Generator "A" (EU 2.5)
<b>Town-Permit Numbers</b>	199-0009
<b>Premises Number</b>	0003
<b>Stack Number</b>	08
<b>Modification Issue Date</b>	April 25, 2014
<b>Prior Permit Issue Date(s)</b>	3/22/2006, 5/21/1985
<b>Expiration Date</b>	None

/s/ Anne Gobin for  
Robert J. Klee  
Commissioner

April 25, 2014  
Date

This permit specifies necessary terms and conditions for the operation of this equipment to comply with state and federal air quality standards. The Permittee shall at all times comply with the terms and conditions stated herein.

## **PART I. DESIGN SPECIFICATIONS**

### **A. Equipment Design Specifications**

1. Fuel Type: Diesel
2. Maximum Fuel Firing Rate (lb/hr): 2,608 (see Part V.D of this permit)
3. Maximum Gross Heat Input (MMBTU/hr): 50.7

### **B. Stack Parameters**

1. Minimum Stack Height (ft): 69
2. Minimum Exhaust Gas Flow Rate (acfm): 48,306 @ 5,335 kW
3. Minimum Stack Exit Temperature (°F): 1,000
4. Minimum Distance from Stack to Property Line (ft): 675

## **PART II. OPERATIONAL CONDITIONS**

### **A. Equipment**

1. Maximum Fuel Consumption over any Consecutive 12 Month Period: 150,000 gallons
2. Maximum Fuel Sulfur Content (% by weight, dry basis): 0.3%
3. This emergency engine shall only be operated during periods of testing and scheduled maintenance or during an emergency. "Emergency engine" and "emergency" are defined in RCSA §22a-174-22(a).

### PART III. ALLOWABLE EMISSION LIMITS

The Permittee shall not cause or allow this equipment to exceed the emission limits stated herein at any time.

#### A. Criteria Pollutants

Pollutant	lb/hr	tons per 12 consecutive months
PM	5.3	1.05
PM <sub>10</sub>	5.3	1.05
PM <sub>2.5</sub>	5.3	1.05
SO <sub>2</sub>	15.8	3.12
NO <sub>x</sub>	122.3	24.14
VOC	4.7	0.93
CO	44.3	8.74

- B. Hazardous Air Pollutants:** This equipment shall not cause an exceedance of the Maximum Allowable Stack Concentration (MASC) for any hazardous air pollutant (HAP) emitted and listed in RCSA §22a-174-29. [STATE ONLY REQUIREMENT]
- C. Opacity:** Opacity resulting from operation of this engine shall not exceed 20% during any six-minute block average or 40% reduced to a one-minute block average; as measured by 40 CFR Part 60, Appendix A, Reference Method 9. [STATE ONLY REQUIREMENT]
- D. Demonstration of compliance with the above emission limits shall be met by calculating the emission rates using emission factors from the following sources:**
- AP-42, 5<sup>th</sup> Edition, Section 3.4 (10/96)
  - NO<sub>x</sub>: Based on RCSA §22a-174-22(e)

The commissioner may require other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

## **PART IV. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS**

### **A. Monitoring**

When more than one fuel supply tank is to service this source or when multiple sources are supplied by one fuel tank, the Permittee shall use a non-resettable runtime hour meter or totalizing fuel metering device to continuously monitor fuel feed to this permitted source. If an hour meter is used, calculate fuel use at the maximum firing rate as specified in Part I.A.2 of this permit.

### **B. Record Keeping**

1. The Permittee shall keep records of monthly and consecutive 12 month fuel consumption. The consecutive 12 month fuel consumption shall be determined by adding the current month's fuel consumption to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of the previous month.
2. The Permittee shall keep records of the fuel certification for each delivery of fuel oil from a bulk petroleum provider or a copy of the current contract with the fuel supplier supplying the fuel used by the equipment that includes the applicable sulfur content of the fuel as a condition of each shipment. The shipping receipt or contract shall include the date of delivery, the name of the fuel supplier, type of fuel delivered, the percentage of sulfur in such fuel, by weight, dry basis, and the method used to determine the sulfur content of such fuel.
3. The Permittee shall maintain a record of the date and type of emergency during which the engine is operated.
4. The Permittee shall keep all records required by this permit for a period of no less than five years and shall submit such records to the commissioner upon request.

## **PART V. SPECIAL REQUIREMENTS**

- A.** The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.
- B.** The Permittee shall comply with all applicable sections of the following National Emission Standards for Hazardous Air Pollutants at all times.

Title 40 CFR Part 63, Subpart: ZZZZ and A

Copies of the Code of Federal Regulations (CFR) are available online at the U.S. Government Printing Office website.

- C.** The Permittee shall operate this facility at all times in a manner so as not to violate or contribute significantly to the violation of any applicable state noise control regulations, as set forth in RCSA §§22a-69-1 through 22a-69-7.4. [STATE ONLY REQUIREMENT]

## **PART V. SPECIAL REQUIREMENTS, continued**

- D.** Generator load levels are used to verify hourly fuel use. EU 2.5 typically is test run at load of up to 5,000 kW. In accordance with the Nuclear Regulatory Commission guidelines for load qualification testing of safety-related emergency generators, this unit must also be test run for a brief time at approximately 18-month intervals at approximately 110% of its normal operating range (up to 5,500 kW). Shorter duration tests may also be performed at this level following certain maintenance procedures. Fuel consumption calculations at this load level are calculated to be up to 2,871 pounds per hour.

Calculations of emission limits and rates assume maximum nominal load in the normal operating range (5,000 kW) to be equivalent to a maximum firing rate of 380 gallons of diesel per hour.

## **PART VI. ADDITIONAL TERMS AND CONDITIONS**

- A.** This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.
- B.** Any representative of the DEEP may enter the Permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.
- C.** This permit may be revoked, suspended, modified or transferred in accordance with applicable law.
- D.** This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons or municipalities who are not parties to this permit.
- E.** Any document, including any notice, which is required to be submitted to the commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."
- F.** Nothing in this permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.

**PART VI. ADDITIONAL TERMS AND CONDITIONS, continued**

- G.** Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.
- H.** The date of submission to the commissioner of any document required by this permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.
- I.** Any document required to be submitted to the commissioner under this permit shall, unless otherwise specified in writing by the commissioner, be directed to: Office of Director; Engineering & Enforcement Division; Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.



**NSR Engineering Evaluation**  
 CT Department of Energy and Environmental Protection  
 Bureau of Air Management

<b>Company Name:</b>	Dominion Nuclear Connecticut, Inc.	<b>Permit No.:</b>	199-0007, -0008, -0010, -0017, -0055 and -0056
<b>Equipment Location:</b>	Millstone Power Station, Rope Ferry Road, Waterford, CT 06385	<b>Date App Received:</b>	1/16/2014
<b>Mailing Address:</b>	Rope Ferry Road, Waterford, CT 06385	<b>SIMS No.:</b>	201400404, 406, 415-419
<b>Contact Person:</b>	Mr. Steven Horn	<b>Date Prepared:</b>	4/9/2014
<b>Contact Title:</b>	Environmental Specialist	<b>Prepared By:</b>	Lou Corsino
<b>Contact Phone:</b>	860-444-4359	<b>Single or Multiple Units:</b>	Multiple
<b>Contact Email:</b>	steven.g.horn@dom.com	<b>Permit Type:</b>	Minor Mod (prepaid)
<b>Ozone:</b>	serious non-attainment	<b>Premises Size:</b>	Major
<b>PM2.5:</b>	attainment	<b>Equipment Size:</b>	Minor
<b>Equipment Description</b>	Two B&W FM 10-79 boilers and five emergency engines	<b>TV/GPLPE Permit No:</b>	199-0038-TV
Step 1: Complete all the fields above			
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">Step 2: <input type="button" value="Generate Eval"/></div> <div style="text-align: center;">Step 3: <input type="button" value="Update Fields"/></div> </div>			

**Introduction**

**Discussion of Modifications:**

*Permits 199-0007 and -0008*

Dominion Nuclear Connecticut, Inc. (DNC) applied for minor modification to permit nos. 199-0007 and 199-0008 for two B&W FM 10-79 boilers to incorporate the fuel requirements specified in Trading Agreement and Order No. 8328. The NSR permit already specified the use of No. 4 oil. The order also specified the use of a blend of No. 4 oil with other oil or other oil. Where “other oil” is defined in RCSA §22a-174-22(a). No other operational limitations were changed.

The previous permit was a very limited one-page permit issued on January 24, 1986. As such, a complete permit had to be drafted with our new template which included adding an emission limit table, appropriate monitoring and record keeping, and other general language.

*Permits 199-0009, -0010, -0017, -0055 and -0056*

DNC applied for minor modification to permit nos. 199-0009, -0010, -0017, -0055 and -0056 for five emergency engines at the site to remove permit conditions that have become obsolete due to the revisions made to RCSA §22a-174-22. Pursuant to RCSA §22a-174-22(c)(2) this regulation now exempts these emergency engines from RCSA §§22a-174-22(d) to (k), inclusive, and (m) because the engines are used “to test and to provide emergency power or alternative power for safety-related structures, systems, and

components or other Nuclear Regulatory Commission mandated systems at an electricity generating facility licensed under 10 CFR 50”.

Because of the change, the requirements of RCSA §22a-174-22 and specific emission limitations of RCSA §22a-174-22(e) related to this exemption have been removed from the permit.

In addition, the permits were re-written into our new permit template, which resulted in some streamlining of some conditions, and some permit conditions were clarified or updated, such as indicating whether or not the engines were subject to the RICE MACT.

*Applicant Review*

Because all of the minor modification applications were pre-paid, the draft permits were sent to the applicant for their review on March 4, 2014. DNC submitted minor comments on the drafts which were discussed and incorporated into the draft permits and DNC confirmed that they were satisfied with the current draft permits on April 16, 2014.

**Regulatory Applicability:** The requested changes are considered a minor modification pursuant to RCSA §22a-174-2a(e)(2)(A) because the changes are not considered a non-minor modification or revision. Total annual allowable emissions from these sources will not be increasing due to these modifications. A public notice is not required pursuant to RCSA §22a-174-2a(e)(6).

**Permits 199-0007 and -0008 - Emissions Change from Modification/Revision**

Pollutant	Existing Permit (tpy ea.)	Modified Permit (tpy ea.)	Change in Emissions (tpy ea.)
PM	No Limit	8.6	0
PM <sub>10</sub>	No Limit	8.6	0
PM <sub>2.5</sub>	No Limit	5.6	0
SO <sub>x</sub>	113.5	107.4	- 6.1
NO <sub>x</sub>	No Limit	60.2 (0007) 66.5 (0008)	0
VOC	No Limit	0.3	0
CO	No Limit	7.2	0

**Comments:** The original permits only had an annual limit for SO<sub>x</sub>. The other pollutants were not limited. The new permit limits were calculated by using the latest AP-42 emission factors from AP-42, 5<sup>th</sup> edition, Section 1.3 (May 2010) with the exception of NO<sub>x</sub> which was calculated using the NO<sub>x</sub> full load emission rate set by Order No. 8328.



## **Permits 199-0009 and -0010 - Emissions Change from Modification/Revision**

<b>Pollutant</b>	<b>Existing Permit (tpy ea.)</b>	<b>Modified Permit (tpy ea.)</b>	<b>Change in Emissions (tpy ea.)</b>
<b>PM</b>	1.05	1.05	0
<b>PM<sub>10</sub></b>	1.05	1.05	0
<b>PM<sub>2.5</sub></b>	1.05	1.05	0
<b>SO<sub>x</sub></b>	4.4	3.12	- 1.28
<b>NO<sub>x</sub></b>	24.14	24.14	0
<b>VOC</b>	0.93	0.93	0
<b>CO</b>	8.74	8.74	0

**Comments:** The value for annual SO<sub>x</sub> emissions in the current permits was a clerical error due to the use of the incorrect firing rate when calculating emissions which was corrected in the modified permits.

## **Permits 199-0017 - Emissions Change from Modification/Revision**

<b>Pollutant</b>	<b>Existing Permit (tpy)</b>	<b>Modified Permit (tpy)</b>	<b>Change in Emissions (tpy)</b>
<b>PM</b>	0.11	0.11	0
<b>PM<sub>10</sub></b>	0.11	0.11	0
<b>PM<sub>2.5</sub></b>	0.11	0.11	0
<b>SO<sub>x</sub></b>	0.34	0.35	+ 0.01
<b>NO<sub>x</sub></b>	4.98	5.00	+ 0.02
<b>VOC</b>	0.10	0.10	0
<b>CO</b>	0.96	0.96	0

**Comments:** The values for annual SO<sub>x</sub> and NO<sub>x</sub> emissions in the current permit were clerical errors due to a slight rounding error which was corrected in the modified permit.

**Permits 199-0055 and -0056 - Emissions Change from Modification/Revision**

Pollutant	Existing Permit (tpy ea.)	Modified Permit (tpy ea.)	Change in Emissions (tpy ea.)
PM	0.34	0.34	0
PM <sub>10</sub>	0.34	0.34	0
PM <sub>2.5</sub>	0.34	0.34	0
SO <sub>x</sub>	1.02	1.02	0
NO <sub>x</sub>	9.70	8.84	- 0.86
VOC	0.31	0.31	0
CO	2.88	2.88	0

**Comments:** The values for NO<sub>x</sub> in the current permits were based on old stack test data. The modified permit reflects the latest stack test value for NO<sub>x</sub>, which was required to be conducted when the units were previously subject to RCSA §22a-174-22.

**Permit Fees for Permits 199-0007, -0008**

Equipment Size  Major  Minor

Permit Type Minor Permit Mod

Permit Fee \$3,250 ea.

Municipality  Yes

# of Permits/Applications 2 \$6,500

Application Fee Submitted  Yes -\$1,880

Was Permit Fee paid with Application Fee?  Yes -4620

**Additional Application Fees (\$1750 Each)**

	Quantity	
BACT Review	0	\$0
LAER Review	0	\$0

**Money Owed \$0**

## Permit Fees for Permits 199-0009, -0010, -0017, -0055, -0056

Equipment Size  Major  Minor

Permit Type Minor Permit Mod

Permit Fee \$1,750 ea.

Municipality  Yes

# of Permits/Applications 5 \$8,750

Application Fee Submitted  Yes -\$4,700

Was Permit Fee paid with Application Fee?  Yes -4050

### Additional Application Fees (\$1750 Each)

	Quantity	
BACT Review	0	\$0
LAER Review	0	\$0

<b>Money Owed</b>	<b>\$0</b>
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## Compliance History Review

Was the SIMS Enforcement Report run and reviewed for this applicant?	Yes
Were other bureaus contacted to resolve any outstanding enforcement actions shown in the SIMS Report?	N/A
What is the date on the Enforcement Section's review of air compliance email?	4/10/2014
Was the compliance record reviewed in accordance with the Environmental Compliance History Policy?	Yes

### Comments:

## Approvals

Based on the information submitted by the applicant, this engineering evaluation and the compliance history review, the granting of these permit modifications is recommended for Dominion Nuclear Connecticut, Inc.

/s/ Louis Corsino 4/24/2014  
 Louis J. Corsino III  
 APCE III

/s/ Susan E. Amarello 4/24/2014  
 Susan E. Amarello  
 Supervising APCE