

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

IN THE MATTER OF APPROVING ) Preliminary Determination  
AN 091 LIMITATION FOR ) AQPID A0750008  
**WASHINGTON STATE UNIVERSITY** )  
**GRIMES WAY STEAM PLANT** )

**Project Summary**

Washington State University (WSU), herein referred to as the Permittee, has an existing steam plant facility located at the intersection of Grimes Way and Olympia Avenue, Pullman, Washington in Whitman County.

The Permittee is taking production limits to remove WSU from Title V per WAC 173-400-091. With the limits in this order, the Permittee is classified as a **Synthetic Minor 80**.

The equipment evaluated in this regulatory order of approval is the following:

Emission Unit	Equipment Description	Capacity	Emission Controls
EU1, EU2, EU3	English Boiler S-Type Natural Gas and #2 Distillate fuels	99 MMBTU/hr	Flue Gas Recirculation and economizers. Todd Ultra-Low Rapid Mix Burners
EU4, EU5	Natural gas fired RICE Generator Cummins Model QSV 81G	1100 kWe (1529 bhp)	Oxidation Catalyst EAS, Incorporated
EU6	#2 distillate oil fired RICE Generator Cummins Model QSK60	1750 kWe (2922 bhp)	Oxidation Catalyst EAS, Incorporated

**Legal Authority**

The emissions from the proposed project have been reviewed under the legal authority of RCW 70A.15.2210 and the applicable rules and regulations adopted thereunder. The proposed project, if operated as specified, will be in accordance with applicable rules and regulations, as set forth in Chapters 173-400 WAC and 173-460 WAC and the operation thereof, at the location proposed, will not result in ambient air quality standards being exceeded.

- This Notice of Construction (NOC) Approval Order rescinds and replaces NOC Approval Order No. 03AQER-5744, 1<sup>st</sup> Amendment and Air Operating Permit No. 07AQ-E211; NOC Approval Order No. 03AQER-5744, 1<sup>st</sup> Amendment and Air Operating Permit No. 07AQ-E211 is no longer in effect.

**Therefore, it is ordered** that the project, as described in the NOC application and/or in the plans, specifications, and other information submitted to the Washington State Department of Ecology (Ecology), is approved for construction and operation provided the following conditions are satisfied:

### **APPROVAL CONDITIONS**

#### **1. OPERATION LIMITS**

- a. Annual natural gas consumption must be limited to no more than 2,602 MMscf/yr for the boilers and the 1100 RICE generators in the Grimes Way steam plant.
- b. Annual # 2 distillate oil consumption must be limited to no more than 4.962 MMgal/yr for the boilers and 0.119 MMgal/yr for the 1750 RICE generator in the Grimes Way steam plant.
- c. The permitted maximum annual natural gas consumption shall be reduced 140 scf for every gallon of #2 distillate oil used in the boilers.
- d. All natural gas used by the steam plant must be from the local utility pipeline.
- e. All # 2 distillate oil must have a sulfur content of less than 0.00150 weight percent as sulfur.
- f. The three boilers must not average more than 2500 hours each per year burning # 2 distillate oil as fuel.
- g. The two 1100 RICE generators must not average more than 3000 hours each per year of operation.
- h. The 1750 RICE generator must not be operated more than 1000 hours per year.
- i. If the permittee requests that the hours of operation be increased for any of the three RICE generators, then the sections of this Order covering the RICE generators, and all the emissions from the generators shall be reevaluated as a new source under the BACT analysis requirements for NSR under WAC 173-400-110.

#### **2. GENERAL TESTING REQUIREMENTS**

- a. Alternative Testing - The testing specified below must be conducted unless alternate or equivalent test methods are requested in writing by the permittee and approved of by Ecology. {40 C.F.R. 60.8(b)}

- b. Testing Logistics - The permittee must provide testable emission points, sampling ports, safe access to sampling points and ports, and utilities for sampling and testing. {40 C.F.R. 60.8(e)}
- c. Number of Test Runs - Unless specifically noted below, testing of each piece of energy equipment must consist of three separate runs of at least 60-minutes each. {40 C.F.R. 60.8(f)} Boilers must be tested while operating on natural gas and separately while operating on # 2 distillate oil.
- d. Throughput during Testing - During testing, each piece of energy equipment must be operated at a minimum of ninety percent (90%) of rated capacity (Example: 90% of 98.495 MMBtu/hour = 88.65 MMBtu/hour). {40 CFR 60.8(c)} Operation of each energy equipment item during testing at less than ninety percent (90%) may be proposed but will result in an operational restriction that will be amended to this Approval Order.
- e. Notification of Performance Testing - The permittee must provide written notification to Ecology of their intent to conduct any performance test at least 30-days before such test is scheduled to begin. {40 C.F.R. 60.8(d)}
- f. Submittal of Performance Test Plan - A written test plan, including a description of the method(s) proposed, must be submitted for approval to Ecology at least 30 calendar days prior to the start of any performance test.
- g. Notification of Inability to Conduct Performance Test - If the permittee is unable to conduct any performance test as scheduled, Ecology must be notified at least 24-hours before the test at the address under APPROVAL CONDITION 7. (Reporting) or via telephone at 509-329-3400.
- h. Plant Operator during Testing - The energy equipment must be operated and controlled by regular campus power plant operators during the period when the performance testers are on-site to conduct testing and during actual testing.
- i. Periodic Performance Testing - Following initial performance testing, subsequent performance testing while combusting the approved fuels must be conducted in accordance with section 3.3.
- j. Performance Testing Results - The results of all initial performance and all other periodic performance testing must be sent to the address at APPROVAL CONDITION 7. One copy of the completed test report must be submitted no later than 60-days after the last day of the testing. {40 C.F.R. 60.8(a)}

### **3. STACK EMISSION LIMITS & ASSOCIATED PERFORMANCE TESTING**

#### **Emission limits:**

- a. The emission limits for the stack exhausts are as follows:

**Table 3.a.i: Stack Emission Test Limits at 7% Oxygen, Average for Three Runs**

Combustion Unit Type	Boiler	Boiler	1100 RICE	1750 RICE
Combustion Fuel	Gas	#2 Oil	Gas	#2 Oil
PM <sub>10</sub> as grains per scf	0.004	0.016	0.017	0.04
NO <sub>x</sub> as ppmvd	9.3	58.2	205	1600
CO as ppmvd	14.0	73.8	69.4	79.0
VOC (as C <sub>3</sub> H <sub>8</sub> ) as ppmvd	3.2	3.6	9.1	6.0
Formaldehyde as ppmvd	n.a	n.a	4.33	1.50

**Table 3.a.ii: Maximum Hourly Emission Limits Based on a Three Hour Rolling Average**

Combustion Unit Type	Per Boiler	Per Boiler	Per 1100 RICE	Per 1750 RICE
Combustion Fuel	Gas	#2 Oil	Gas	#2 Oil
PM <sub>10</sub> in lb/hr	0.734	2.827	0.404	1.291
NO <sub>x</sub> in lb/hr	1.418	9.046	3.974	43.07
CO in lb/hr	1.310	6.973	0.819	1.291
VOC (as C <sub>3</sub> H <sub>8</sub> ) in lb/hr	0.542	0.518	0.170	0.153
Formaldehyde in lb/hr	N.R.	N.R.	0.05	0.025

- b. Visible emissions from stacks must be less than 10 percent opacity, averaged over a six-minute period.
- c. Performance testing and monitoring requirements:

Periodic and initial testing requirements – In addition to the initial performance testing, emissions of NO<sub>x</sub>, CO, and VOC from each permitted unit must be tested once per year until the unit has passed for three consecutive years and then the unit must be tested once every five years thereafter utilizing the following test methods:

- i. NO<sub>x</sub> Per 40 C.F.R. 60, Appendix A, method 7E.
- ii. CO Per 40 C.F.R. 60, Appendix A, method 10.
- iii. VOC Per 40 C.F.R. 60, Appendix A, method 18 & 25A. (VOC reported as propane.)
- iv. Formaldehyde from each RICE generator must be tested at least once every five years utilizing EPA Reference Method 316.
- v. When 1100 RICE generators are used for peak shaving, they will need to be performance tested annually (40 C.F.R. 63 Subpart ZZZZ, Table 6 No.14). When the 1100 RICE generators are only run for maintenance, testing or emergency use then the performance testing may remain once every five years.
- vi. When 1750 RICE generator is used for peak shaving, it will need to be source tested once every three years (40 C.F.R 63 Subpart ZZZZ, Table 6 No. 11). When the 1750

- RICE generator is only run for maintenance, testing or emergency use then the performance testing may remain once every five years.
- vii. The initial performance testing and all periodic testing for visible emissions must be accomplished for Boilers No. 1 and No. 2 or by using the following test method:
    - A. Visible emission Per 40 Code of Federal Regulations, Part 60, Appendix A, Method 9.
  - viii. An initial performance test for PM/PM<sub>10</sub> is not required. However, Ecology may require testing of an exhaust stack for PM if the visible emissions are greater than 10 percent opacity emission limit at the stack. The test methods used must be:
    - A. PM Per 40 C.F.R. 60, Appendix A, method 5 and 40 C.F.R. 51, Appendix M, method 202.
- d. Ongoing compliance must be monitored by the following methods:
- i. Fuel usage monitoring, hours of operation, and record keeping.
  - ii. Visible Emissions Monitoring: At least once per month, as well as any time excess visible emissions are observed, the permittee must perform surveys for the purpose of observing all emission units in this order.
    - A. Initial survey per 40 C.F.R. 60, Appendix A, Method 22.
    - B. If there appear to be excess emissions above 10 percent opacity at an exhaust stack.
    - C. Check emission unit for operation malfunction and take corrective action.
    - D. If excess visible emissions persist over 24 hours, perform visible emission assessment per 40 C.F.R. 60, Appendix A, Method 9, by a visible emission certified person within 48 hours of first excess emission observation.
    - E. Notify Ecology within one month, per APPROVAL CONDITON 7 or (509) 329-3400, if visible emissions are in excess of the 10 percent opacity.
- e. Emissions of Nitrogen Oxides (NO<sub>x</sub>) must not exceed 80.69 tons over 12 months, rolling average.

#### **4. OPERATION & MAINTENANCE (O&M) MANUAL**

A site-specific O&M manual for the boilers and RICE generators must be developed and followed. Manufacturer's instructions may be referenced. The O&M manual must be updated to reflect any modifications of the equipment or its operating procedures. The O&M manual for the boilers and the RICE generators must at a minimum include a description of:

- a. normal operating parameters,
- b. instrumentation to monitor operating parameters,
- c. a maintenance schedule,
- d. monitoring and record keeping requirements, and
- e. monitoring procedures.

#### **5. INITIAL NOTIFICATIONS & SUBMITTALS**

- a. The following notifications and submittal have been submitted by the permittee.
  - i. Notification of the date when all three boilers have successfully completed test firing as defined in Condition 2.
  - ii. Notification of the date normal operation starts as defined in either Condition 2.
  - iii. Date of initial emissions performance testing per Condition 2.
- b. Notification of O&M Manual Completion - The permittee must provide written notification to Ecology of their having completed the O&M manual for the boiler and RICE generator system within 30-days of completing operational testing. Ecology has received the required notification.
- c. Notify Ecology within one week of peak shaving use of the 1100 RICE or 1750 RICE generators.
  - i. Provide a RICE generator source testing schedule with notification.

## 6. MONITORING and RECORDKEEPING

Specific records must be kept on-site by the permittee and made available for inspection by Ecology upon request. The records must be organized in a readily accessible manner and cover a minimum of the most recent 60-month period. The records to be kept must include the following:

- a. Occurrence and duration of any malfunction in the operation of each boiler and RICE generator. The record must include identification of the boiler and/or RICE generator, date, time, duration and/or cause, estimate of excess emissions, corrective action taken, as applicable.
- b. Boiler and RICE generator fuel consumption by quantity for each boiler and RICE generator during each calendar month. This recordkeeping must be done via fuel bills and/or meter readings. {EPA Region 10, 5/6/98 letter to Ecology, 40 C.F.R. 60.48c(g)}
- c. A file of any initial and any periodic performance testing results, including visible emission surveys.
- d. O&M manual and maintenance records.
- e. Boiler and RICE generator hours of operation per month and 12 months rolling average based on installed hours meter readings on each boiler and generator.

## 7. REPORTING

The following reports and all other correspondence must be sent to:

Washington State Department of Ecology  
Regional Air Quality Section  
4601 N. Monroe Street  
Spokane, WA 99205-1295

Reports may be submitted electronically to [emissions.inventory@ecy.wa.gov](mailto:emissions.inventory@ecy.wa.gov)

*OR AS DIRECTED.*

- a. The occurrence and duration of any malfunction per the recordkeeping at APPROVAL CONDITION 6.a must be sent to the above address no later than 30-days after the end of the month during which the malfunction was discovered.
- b. Boiler and RICE generator fuel consumption by quantity per the recordkeeping at APPROVAL CONDITION 6.b must be sent to the above address no later than 30-days following the end of the calendar year and/or following completion of operational testing for the boilers and RICE generators. These reports must be certified by a responsible official or a designated alternate.
- c. Estimated PM, SO<sub>x</sub>, NO<sub>x</sub>, CO, VOC and total TAP emissions from the boiler and RICE generators for the given calendar year must be sent to the above address no later than 30-days following the end of the calendar year. The estimate must be based upon the latest test information and fuel usage.
- d. Hours of operation for the boilers and generators must be sent to the above address no later than 30-days following the end of the calendar year.

## 8. GENERAL CONDITIONS

- a. **Activities Inconsistent with this Order** – Any activity undertaken by the Permittee, or others, in a manner that is inconsistent with the data and specifications submitted as part of the NOC application or this NOC Approval Order, will be subject to Ecology enforcement under applicable regulations.
- b. **Availability of Order** – Legible copies of this NOC Approval Order and any O&M manual(s) must be available to employees in direct operation of the equipment described in the NOC application and must be available for review upon request by Ecology.
- c. **Compliance Assurance Access** – Access to the source by representatives of Ecology or the United States Environmental Protection Agency (EPA) must be permitted upon request. Failure to allow access is grounds for enforcement action under the federal Clean Air Act or the Washington State Clean Air Act, and may result in revocation of this NOC Approval Order.
- d. **Discontinuing Construction or Operation** – This NOC Approval Order will become invalid if construction of the equipment described in the NOC application and this NOC Approval Order does not commence within 18 months after receipt of this NOC Approval Order.

If construction or operation is discontinued for 18 months or longer on a portion or all of the equipment described in the NOC application and this NOC Approval Order, the portion of the NOC Approval Order regulating the inactive equipment will become invalid. Ecology may extend the 18-month period upon request by the Permittee and a satisfactory showing that an extension is justified.

- e. **Equipment Operation** – Operation of the facility must be conducted in compliance with all data and specifications submitted as part of the NOC application and in accordance with O&M manuals, unless otherwise approved in writing by Ecology.
- f. **Registration** – Periodic emissions inventory and other information may be requested by Ecology. The requested information must be submitted within 30 days of receiving the request, unless otherwise specified. All fees must be paid by the date specified.
- g. **Violation Duration** – If the Permittee violates an approval condition in this NOC Approval Order, the violation is presumed to commence at the time of the testing, recordkeeping, or monitoring which indicates noncompliance. The violation is presumed to continue until the time of testing, recordkeeping, or monitoring which indicates compliance. A violation of an approval condition includes, but is not limited to, failure of air pollution control equipment, failure of other equipment resulting in increased emissions, or a failed source test indicating an exceedance of an emission limit. The duration of a violation may also be determined based on credible evidence which shows that the violation was of longer duration, that there were intervening days during which no violation occurred, or that the violation was not continuous in nature.
- h. **Obligations under Other Laws or Regulations** – Nothing in this Approval Order excuses the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.
- i. **Maintaining Compliance** – It will not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the operations in order to maintain compliance with the conditions of this NOC Approval Order.
- j. **Visible Emissions** – No visible emissions from the source are allowed beyond the property line, as determined by 40 C.F.R. Part 60, Appendix A, Test Method 22.
- k. **Changes in Operations** – Any changes in operation contrary to information submitted in the NOC application must be reported to Ecology at least 60 days before the changes are implemented. Such changes in operation may require a new amended NOC Approval Order.

Authorization may be modified, suspended, or revoked in whole or part for cause, including, but not limited to, the following:

- Violation of any terms or conditions of this authorization.
- Obtaining this authorization by misrepresentation or failure to disclose full all relevant facts.

The provisions of this authorization are severable and, if any provision of this authorization, or application of any provision to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this authorization, shall not be affected thereby.



You have a right to appeal this Approval Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Approval Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of this Approval Order:

- File your appeal and a copy of this Approval Order with the PCHB (See addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Approval Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

**ADDRESS AND LOCATION INFORMATION**

<b>Street Addresses</b>	<b>Mailing Addresses</b>
<b>Department of Ecology</b> Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	<b>Department of Ecology</b> Attn: Appeals Processing Desk P O Box 47608 Olympia, WA 98504-7608
<b>Pollution Control Hearings Board</b> 1111 Israel Rd. SW, STE 301 Tumwater, WA 98501	<b>Pollution Control Hearings Board</b> P O Box 40903 Olympia, WA 98504-0903

DATED at Spokane, Washington this    day of April 2022

PREPARED BY:

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