

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
**GENERAL ORDER OF APPROVAL FOR SMALL
WATER HEATERS AND
STEAM GENERATING BOILERS**

General Order No. 08-AQ-G003

Issued August 8, 2008

I. Applicability Criteria for this Air Quality General Order of Approval:

This General Order No. 08-AQ-G003 supersedes and replaces General Order No. 06-AQG-001 for all small steam generating boiler applications on or following the above issuance date opting for a general order of approval.

Criterion	Limitation	
Fuel	Natural gas, compressed natural gas, liquefied petroleum gas (LPG), propane, and diesel only.	
Size	Project total heat input capacity	
	Using only natural gas, propane, or LPG	Using diesel at any time
	Between 4 and 50 MMBtu/hour heat input	Between 1 and 50 MMBtu/hour heat input
	Multiple boilers and water heaters in a single project may be included under the order of approval.	
Type	New package (factory built) boilers and water heaters.	
Location	Located in counties or at industrial facilities under jurisdiction of the Department of Ecology	
Minimum distance from stack to property line	100 ft (30.5 m)	
Minimum distance from stack to hills or buildings above the top of the stack	100 ft (30.5 m)	
Minimum flue gas temperature	180 °F (82 °C)	
Stack height criteria	Using only natural gas, propane, or LPG	Using diesel at any time
	<u>25 MMBtu/hour heat input or less:</u> Minimum of 1.06 times the building height of the nearest building roof within	<u>20 MMBtu/hour heat input or less:</u> Minimum of 1.2 times the building height of the nearest building roof within 100 ft of

Criterion	Limitation	
	100 ft of the stack	the stack
	<u>Over 25 MM Btu/hour heat input:</u> Minimum of 1.15 times the building height of the nearest building roof within 100 ft of the stack.	<u>Over 20MM Btu/hour heat input or less:</u> Minimum of 1.3 times the building height of the nearest building roof within 100 ft of the stack
	Dual fuel boilers and water heater are subject to the more stringent stack height standard.	
Nitrogen oxides limitation	<ul style="list-style-type: none"> • Natural gas, compressed natural gas, and LPG: 9 parts per million by volume (ppmv) @ 3% O₂ • Propane: 30 ppmv @ 3% O₂ • Diesel : 35 ppmv @ 3% O₂ 	
Carbon monoxide limitation	<ul style="list-style-type: none"> • Natural gas, compressed natural gas, and LPG: 50 ppmv @ 3% O₂ • Propane, diesel, : 100 ppmv @ 3% O₂ 	
Sulfur dioxide limitation	<ul style="list-style-type: none"> • Natural gas, compressed natural gas, and LPG. • Not greater than 8.1 grains sulfur per 100 cubic feet propane. • On-road quality diesel as defined in 40 CFR 80.2(y) with standards described in 40 CFR 80.520. 	
New Source Performance Standard (NSPS)	40 CFR part 60 subpart Dc, may be applicable to boilers over 10 MMBTU Btu/hour heat input	
Other criteria	<ol style="list-style-type: none"> 1. The boiler or water heater is not part of a new major stationary source or major modification to a major stationary source which is subject to review under the Prevention of Significant Deterioration program. 2. The addition of the boiler or water heater to an existing source does not make the source subject to the Air Operating Permit program or require a modification in an existing Air Operating Permit. 	

II. Process to apply for coverage

1. Submit the appropriate application forms. The forms are available from the Ecology office which covers the location of your proposed boiler installation.

Air Quality Program Central Regional Office 15 West Yakima Ave - Suite 200 Yakima, WA 98902-3452 Tel. No (509)-575-2490	Air Quality Program Eastern Regional Office N. 4601 Monroe Street Spokane, WA 99205-1295 Tel. No (509)- 329-3400
Industrial Section PO Box 47600 Olympia, WA 98504-7600 Tel. No. (360) 407-6945	Nuclear Waste Program Hanford Unit 3100 Port of Benton Blvd. Richland, WA 99354 Tel. No. (509)- 372-7950
On the internet at : www.ecy.wa.gov/programs/air/AOP_Permits/Boiler/GeneralOrders.htm	Air Quality Program Northwest Regional Office 3190 160th Ave. SE Bellevue, Washington 98008-5452 Tel. No. (425) 649-7283

2. Pay the application/coverage fee of \$500. This fee must be paid before the Coverage Order can be issued. Do not include a check with the application. A separate invoice will be sent to you after a decision to grant coverage under this General Order has been made.
3. Documentation of SEPA review is required for all boilers covered under this General Order
 - If SEPA review for this project has been done by another agency, submit copies of the SEPA threshold determination (such as a Determination of Nonsignificance) and the SEPA checklist prepared for the project.
 - If SEPA review has not been done by another agency, submit a completed SEPA checklist. The checklist is available from the above contacts or on the internet at www.ecy.wa.gov/biblio/ecy05045.html

Granting of Coverage

For those units that qualify for coverage, the applicant will receive a Coverage Order within 30 days after the complete application has been received by Ecology.

For those boilers that do not qualify for coverage under this General Order, the applicant will receive a letter from Ecology within 30 days after the application has been received. The letter will explain why the unit does not qualify for coverage under this General Order of Approval and how to apply for an air quality approval for the boiler.

III. Conditions of Approval

1. Siting criteria for the boiler exhaust stack

No.	Parameter	Requirement or limitation	
(a)	Stack height	Natural gas, propane, or liquefied petroleum gas	Diesel
(a)(1)		<u>25 MMBtu/hour heat input or less:</u> Minimum of 1.06 times the building height of the nearest building roof within 100 ft of the stack	<u>20 MMBtu/hour heat input or less:</u> Minimum of 1.2 times the building height of the nearest building roof within 100 ft of the stack
(a)(2)		<u>Over 25 MMBtu/hour heat input:</u> Minimum of 1.15 times the building height of the nearest building roof within 100 ft of the stack	<u>Over 20 MMBtu/hour heat input or less:</u> Minimum of 1.3 times the building height of the nearest building roof within 100 ft of the stack
(a)(3)		Dual fuel boilers and water heaters are subject to the more stringent stack height standard.	
(b)	Stack location:		
(b)(1)	From property line	At least 100 ft (30.5 meter)	
(b)(2)	From building or hill higher than stack height	At least 100 ft (30.5 meter)	
(c)	Exhaust temperature	At least 180 °F (82 °C)	

2. Operational and Emission limitations, monitoring, recordkeeping and reporting requirements for the boiler

No.	Pollutant or parameter	Limitation(s)	Monitoring	Recordkeeping	Reporting
(a)	Fuel usage	<ul style="list-style-type: none"> • Only natural gas, compressed natural gas, LPG, propane, or diesel. • Fuel use shall be consistent with the rated capacity and efficiency of the combustion unit. 	Gas meter for each boiler and water heater or fuel purchase records.	Annual fuel usage for the boilers and water heaters in cubic feet or gallons based on monthly usage by the boiler	None
(b)	Nitrogen oxides	<ul style="list-style-type: none"> • Natural gas, compressed natural gas, and LPG: 9 parts per million by volume (ppmv) @ 3% O₂ • Propane: 30 ppmv @ 3% O₂ • Diesel : 35 ppmv @ 3% O₂ 	Boiler and water heater manufacturer's certification of performance	Manufacturer's certification of performance.	None
(c)	Carbon monoxide	<ul style="list-style-type: none"> • Natural gas, compressed natural gas, and LPG: 50 ppmv @ 3% O₂ • Propane, diesel, : 100 ppmv @ 3% O₂ 	Boiler and water heater manufacturer's certification of performance.	Manufacturer's certification of performance.	None
(d)	Particulate Matter: Limit is applicable to boilers 30 MMBtu/hr heat input rate or larger.	0.02 grains per dry standard cubic @ 3% oxygen	Fuel supplier's certification of total sulfur content of the fuel.	Retain copy of fuel quality certificates from fuel supplier for 5 years.	None
(e)	Sulfur dioxide	<ul style="list-style-type: none"> • Natural gas: Pipeline standard. • Propane or 	Fuel supplier's certification of total sulfur content of the	Retain copy of fuel quality certificates from fuel supplier for	None

No.	Pollutant or parameter	Limitation(s)	Monitoring	Recordkeeping	Reporting
		LPG: Not greater than 8.1 grains sulfur per 100 cubic feet. • On-road quality diesel: As defined in 40 CFR 80.2(y) with standards described in 40 CFR 80.520.	fuel.	5 years.	
(f)	Visible emissions	Opacity shall not exceed five (5) percent	If any smoke can be seen coming from the stack, the permittee is to take immediate steps to bring the boiler or water heater back into proper operation per the manufacturer's operation and maintenance provisions.	Record any occurrence of visible emissions and what actions were taken to bring the boiler or water heater back into proper operation.	If corrective action fails to eliminate visible emissions within 24-hours, report in writing to permit issuing office. Provide records to Ecology within 30 calendar days of request.

Other Conditions of Approval

3. The boilers and water heaters installed shall be as described in the application and Order issued granting coverage under this General Order of Approval.
4. Unit installation information: The permittee shall submit to Ecology and, for boilers 10 MMBtu/hr heat input or larger, also to Region 10 of the Environmental Protection Agency, the following information¹:

¹ Electronic mail submittals of the notifications to the approving office are encouraged to reduce paperwork.

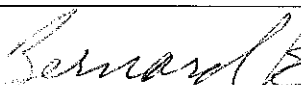

- a. The date installation is complete for the boilers and water heaters with anticipated startup date. The anticipated start-up date must be no later than thirty days after the installation completion date.
- b. Submit actual startup date no later than 15 days after initial startup date or if a previously installed boiler, 15 days after coverage under this General Order.
5. For boilers 10 MMBtu/hr heat input or larger, the owner is to retain records of boiler startups, shutdowns and malfunctions with the boiler. Information to be recorded includes:
 - a. Date time and duration of each boiler start-up
 - b. Date time and duration of each of boiler shut down
 - c. Date time and duration of each of boiler malfunction and what was done to correct the malfunction.
6. All records and information required in Approval Conditions 2 through 5 must be kept by the boiler/water heater owner for 5 years after the record is created.
7. Operation and Maintenance.
 - a. The permittee is to follow all recommended operation and equipment maintenance provisions supplied by the manufacturer of the unit.
 - b. At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate the boilers and water heaters including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.
8. Periodic emissions inventory information and other information may be requested by the Ecology. Emissions information requested by Ecology shall be submitted within 30 days of receiving the request unless otherwise specified.
9. Annual/periodic Registration or Air Operating Permit fees. The applicant will pay the required registration fees within the deadline date specified on the invoice from Ecology.
10. Legible copies of this General Order of Approval, the Coverage Order, and the Operations and Maintenance Manual shall be displayed onsite and available to employees in direct operation of the facility.
11. Access to the source for the purpose of determining compliance with the terms of this General Order of Approval by Ecology staff shall be permitted during normal business hours. Failure to allow such access is grounds for an enforcement action under the Washington State Clean Air Act.
12. The applicant is required to comply with applicable rules and regulations pertaining to air quality, and conditions of operation imposed upon issuance of this order. Any violation of applicable state and/or federal air quality rules and regulations or of the terms of this approval shall be subject to the sanctions provided in Chapter 70.94 RCW. Authorization under this Order may be modified, suspended, or revoked in whole or part for cause including, but not limited to, the following:
 - a. Violation of any terms or conditions of this authorization;

- b. Obtaining this authorization by misrepresentation or failure to disclose fully all relevant facts.
- 13. The provisions of this General Order of Approval are severable. If any provision or application of any provisions of this authorization 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.

Legal Basis to Issue This General Order of Approval

The Department of Ecology Air Quality Program is issuing this General Order of Approval as allowed under Washington Administrative Code (WAC) 173-400-560. Receipt of a Coverage Order for installation of a specific unit under this approval satisfies the requirements of WAC 173-400-110 and WAC 173-460-040.

Approvals

PREPARED BY:	APPROVED BY:
	
Date: 8/8/08	Date: 8/08/08
Bernard Brady, PE	Stuart A. Clark, Program Manager
Air Quality Program	Air Quality Program
Department of Ecology	Department of Ecology

