



1600 South Second Street
 Mount Vernon, WA 98273-5202
 ph 360.428.1617
 fax 360.428.1620
 www.nwcleanair.org

Original Issuance: June 21, 2011

Revision a: November 14, 2014

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 1089a**

Project Summary: Installation and operation of a natural gas-fired package boiler to maintain dry kiln operation during main boiler down-time.

Approved Emission Unit:

- One Apache 2,200 bhp Scotch Marine boiler (95 MMBtu/hr) equipped with low-NOx burners and flue gas recirculation.

| Owner/Operator | Facility Name and Location |
|---|---|
| Sierra Pacific Industries P.O. Box 496028 Redding, CA 96049 Contact:Curt Adcock, Manager | Sierra Pacific Industries 14686 Ovenell Road Mount Vernon, WA 98273 |

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 1089 issued June 21, 2011.

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

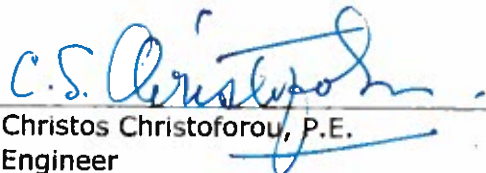
- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

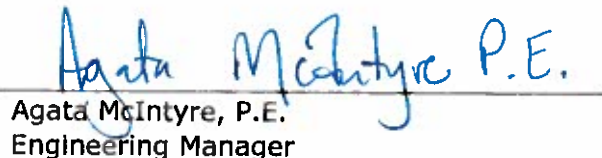
National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

As authorized by Northwest Clean Air Agency Regulation Section 300, this Order is issued subject to the following restrictions and conditions¹:

1. The annual capacity factor of the package boiler shall not exceed 10% per calendar year.
2. Visible emissions from the boiler stack shall not exceed 5% opacity for more than 3 minutes (aggregate) within any 60-minute period as determined by Washington State Department of Ecology Method 9A.
3. Fuel combusted in the package boiler shall be limited to natural gas only.
4. The annual capacity factor shall be calculated annually by January 31st for the previous calendar year. Records of the annual capacity factor, dates of boiler operation and amount of fuel combusted shall be kept for a period of not less than five years and made available to the NWCAA upon request.
5. A written operating and maintenance (O/M) manual shall be kept on site and up-to-date for the boiler. The O/M manual shall include practices for maintaining good air pollution control.


Christos Christoforou, P.E.
Engineer


Agata McIntyre, P.E.
Engineering Manager

Revision a: Replaced hours of operation of the boiler with capacity factor in Condition 1. Removed notification of startup condition. Removed testing provision and NOx and CO limits since original permit called only for initial testing.

¹ Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.



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 tel 800.622.4627
 fax 360.428.1620
 www.nwcleanair.org

Original Issuance: December 12, 2005

Revision a: January 17, 2008

Revision b: February 23, 2009

Revision c: May 8, 2013

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 938c**

Project Summary: This order authorizes Sierra Pacific Industries (SPI) to operate a lumber manufacturing and cogeneration facility including a 430 MMBtu/hr wood-fired boiler, 6 double-track dry kilns, associated lumber milling and handling equipment.

Approved Emission Units:

- One (1) 430 MMBtu/hr McBurney wood-fired boiler with natural gas backup. The boiler is equipped with a multicyclone, a 4-chamber electrostatic precipitator (both for PM control), and a selective non-catalytic reduction system (NOx control by urea injection).
- Six (6) lumber drying kilns
- One (1) anti-mold spray system equipped with a demister
- One (1) cooling tower

| Owner/Operator | Facility Name and Location |
|--|---|
| Sierra Pacific Industries 1975 Riverside Avenue Anderson, CA 96007 Contact: Curt Adcock, Mount Vernon Facility Manager | Sierra Pacific Industries 14353 McFarland Road Mount Vernon, WA 98273 |

Permit History

- OAC 938b superseded OAC 938a upon issuance on February 23, 2009.
- As of the date of issuance, this Order supersedes NWCAA OAC 938b.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
- 40 CFR 60 Subpart CCCC – Standards of Performance for Commercial and Industrial Solid Waste Incineration Units (Recordkeeping according to 60.2175(v) to prevent the boiler from meeting the definition of a CISWI unit according to 40 CFR 60.2265)

National Emission Standards for Hazardous Air Pollutants / Maximum Achievable Control Technology Standards

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart DDDD--National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products
- 40 CFR 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

Resource Conservation and Recovery Act (RCRA) Solid Waste Regulations

- 40 CFR 241 – Solid Wastes Used as Fuels or Ingredients in Combustion Units

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions¹:

- 1) Fugitive emissions, including but not limited to any of the following, shall be controlled at all times as specified below such that no visible emissions are detected at any point beyond the plant property line as determined using 40 CFR 60 Appendix A Method 22.
 - a) dust from unpaved roads or any other non-vegetation-covered area;
 - b) fugitive sawdust from fuel-handling devices and/or storage areas;
 - c) ash which is processed by the ash handling system or is removed from the wood-fired boiler by other means. Such ash shall be stored in closed containers and disposed of in such a manner so as to not create a public nuisance. Ash shall be transported in a wet condition in covered containers at all times. It shall be the responsibility of the plant owner/operator to insure that any and all contract or company carriers adhere to this condition;
 - d) accumulation of sawdust or ash on outside surfaces, including but not limited to the main building, boilers, electrostatic precipitator, support pads, road areas. Surfaces shall be cleaned on a regular basis to prevent the build-up of ash and/or fugitive dust.
- 2) Each month, SPI shall determine compliance with the following emission limits using kiln throughput data, boiler operation data, and emission factors (listed below). SPI shall include the monthly compliance determinations in quarterly reports due postmarked no later than one calendar month after the close of each respective calendar quarter.
 - a) Emissions of acetaldehyde from the facility shall not exceed 33,844 lb/yr, 12-month total, calculated on a rolling monthly basis. The emission factors for this calculation shall be as follows unless otherwise approved by the NWCAA.
 - i) 1.64E-04 lb/MMBtu for the wood-fired boiler
 - ii) 113 lb/MMbf for kiln-drying Western hemlock
 - iii) 57 lb/MMbf for kiln-drying Douglas fir

¹ Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62. Fed. Reg. 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and RCW 43.21B, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

- b) Emissions of acrolein from the facility shall not exceed 588 lb/yr, 12-month total, calculated on a rolling monthly basis. The emission factors for this calculation shall be as follows unless otherwise approved by the NWCAA.
 - i) 3.15E-05 lb/MMBtu for the wood-fired boiler
 - ii) 1.6 lb/MMbf for kiln-drying Western hemlock
 - iii) 0.65 lb/MMbf for kiln-drying Douglas fir
- c) Emissions of formaldehyde from the facility shall not exceed 6,917 lb/yr, 12-month total, calculated on a rolling monthly basis. The emission factors for this calculation shall be as follows unless otherwise approved by the NWCAA.
 - i) 1.72E-03 lb/MMBtu for the wood-fired boiler
 - ii) 1.24 lb/MMbf for kiln-drying Western hemlock
 - iii) 1.0 lb/MMbf for kiln-drying Douglas fir

Wood-Fired Boiler

- 3) The exhaust stack from the wood-fired boiler shall not emit any air pollutants which exhibit greater than the following opacity limitations:
 - a) 20% opacity for a period or periods aggregating more than 3 minutes in any 1 hour as measured by a continuous opacity monitoring system (COMS) per Condition 5.
 - b) 5% opacity (1-hour average) as measured by a continuous opacity monitoring system (COMS) per Condition 5, except for periods of soot-blowing. Soot-blowing shall occur as a regularly scheduled event and shall not exceed 1 hour per 8-hour shift. Soot-blowing shall not cause the boiler stack to exceed 10% opacity (1-hour average) as measured by COMS per condition 5. Deviations from the regular soot-blowing schedule that result in excess emissions shall trigger agency notification.
 - c) 10% opacity for a period or periods aggregating more than 3 minutes in any 1 hour; as measured by Washington Department of Ecology Method 9A. Initial and ongoing compliance with 10% opacity from the boiler stack shall be demonstrated in accordance with 40 CFR Part 60 Appendix A Method 9 annually. Notification and reports shall be provided to the NWCAA as specified in NWCAA Regulation Appendix A.
- 4) SPI shall install and operate a continuous opacity monitoring system (COMS) for measurement of opacity at the wood-fired boiler/ESP exhaust stack, downstream from the particulate matter control device in accordance with NWCAA Regulation 367 and Appendix A.
- 5) Emissions of ammonia from the wood-fired boiler shall not exceed 50 ppmdv corrected to 7% O₂ as a 24-hour average.
 - a) Compliance shall be determined by Bay Area Air Quality Management District Source Test Procedure #1B (BAAQMD ST-1B) or alternative method approved by NWCAA.
 - b) SPI shall conduct compliance tests at least once every twelve months.
 - c) SPI shall monitor and record ammonia feed rate and NO_x emissions during the tests.
- 6) SPI shall maintain and operate the boiler and urea injection system (SNCR system) in accordance with good air pollution control practices and in a manner minimizing particulate and visible emissions from the unit. At least 30 days prior to any modification of the ammonia injection system, a written notification to the NWCAA is required and an updated Ammonia Emissions Monitoring Plan must be submitted evaluating a predictive relationship between boiler and SNCR parameters and emissions of ammonia.

- a) An initial plan shall be submitted to NWCAA for approval at least 30 days prior to startup and shall include specific operating parameters.
 - b) A final plan shall be submitted to NWCAA for approval within 60 days after conducting the initial ammonia compliance test and shall contain source test results and the established relationship between the boiler and SNCR operating parameters and ammonia emissions. This plan shall define QA/QC procedures and corrective actions when parameter monitoring indicates the emission limit in Condition 6 may be exceeded.
- 7) At least fifty percent (50%) of fuel burned in the boiler on a calendar year basis shall be clean hog fuel consisting of bark, sawdust, chips, and other wood waste from wood products industries. SPI shall inspect all purchased fuel prior to acceptance. Clean hog fuel for purposes of this condition shall meet the following criteria:
- a) Is derived from wood and is of a suitable size and moisture content to sustain adequate combustion;
 - b) Is free of contamination including, but not limited to, non-wood man-made materials, painted wood, wood treated with creosote or other wood preservatives, wood from construction/demolition activities, and wood contaminated with petroleum products.
- 8) Up to fifty percent (50%) of fuel burned in the boiler on a calendar year basis shall be clean cellulosic biomass, resinated wood debris, and/or biomass-derived non-hazardous secondary materials (NHSM) as defined, processed, and managed according to 40 CFR Part 241 Solid Wastes Used as Fuels or Ingredients in Combustion Units. This fraction of boiler fuel shall be referred to as "alternative fuel" throughout this Order.
- 9) Prior to combusting any alternative fuel, SPI shall develop and implement an alternative fuel quality assurance plan subject to prior approval by the Northwest Clean Air Agency. The plan shall clearly describe how SPI will evaluate potential alternative fuel and alternative fuel suppliers to assure that the boiler will not combust solid or hazardous waste. Changes to the plan shall be approved by the Northwest Clean Air Agency prior to implementation. The following elements shall be included in the plan:
- a) Procedure for alternative fuel handling at the SPI facility;
 - b) Procedure for SPI inspection of alternative fuel sources/suppliers;
 - c) Procedure for inspecting individual alternative fuel loads, including how to identify different levels of contamination by visual inspection, how to document the inspection, and how to identify loads with unacceptable levels of contamination. "Contamination" includes plastics, asbestos-containing material, preservative-treated wood, painted wood, rubber, metals, non-wood roofing materials, or any other material that is not a non-waste fuel according to 40 CFR 241.
- 10) When utilizing alternative fuels, the facility shall operate according to a Northwest Clean Air Agency-approved fuel quality assurance plan developed according to condition 9). A copy of the approved fuel quality assurance plan shall be kept with this Order.
- 11) The NWCAA shall be provided written notification of the date on which alternative fuel is first received by SPI and the date on which alternative fuel is first fired in the boiler. The notice shall be postmarked no later than 15 days after the first alternative fuel delivery and shall reference OAC 938c.
- 12) Rejected fuel loads must be removed from the SPI facility by the close of business on the business day following the day in which the fuel was received.

- 13) Submit to the NWCAA by February 28 for the previous calendar year a summary describing the source and quantities of all alternative fuel combusted in the boiler. The report shall include information on all loads of fuel rejected and the reason the fuel was rejected, information on the types of contaminants found in the fuel from each source of fuel (e.g. plastic, rubber, painted wood, asbestos-containing materials, salts, etc.), and the results of the bucket tests recorded during the year. The report shall also include a demonstration of compliance with conditions 7) and 8) of this Order.
- 14) Combustion of wet fuel, i.e., fuel with moisture content greater than or equal to 55 percent, shall not be considered as an affirmative defense to an excess emission condition for the wood-fired boiler. Use of such fuels is a foreseeable occurrence, and as such, compliance with all permit limits and applicable regulations shall be required at all times unless the NWCAA has determined that the cause of the wet fuel condition is due to an unavoidable or emergency situation.

Dry kilns

- 15) SPI is allowed to process Western Hemlock and/or Douglas-Fir in the kilns. No other wood species shall be processed in the kilns without prior written approval from the NWCAA.
- 16) Each calendar month, SPI shall record the quantity of Douglas fir and the quantity of hemlock dried in each kiln for that month and for the previous 12 month period.
- 17) SPI shall continuously monitor and record the dry-bulb temperature in each dry kiln using a device accurate to within ± 0.50 °F. At no time shall any kiln dry-bulb temperature setpoint or the actual dry-bulb temperature in any dry kiln exceed 200°F. Records shall be maintained for a minimum of 5 years and shall be made available to the NWCAA upon request.
- 18) The opacity of emissions from the dry kilns shall not exceed 10% for a period or periods aggregating more than 3 minutes in any 1 hour, as determined by WDOE Method 9A. SPI shall conduct monthly inspections of the dry kilns for visible emissions. Inspections are to be performed during daylight hours while the kilns are in operation. If, during the scheduled inspection or at any other time, visible emissions other than uncombined water are observed, SPI shall, as soon as possible, but no later than within 24 hours of the initial observation, take corrective action until there are no visible emissions or, alternatively, record the opacity using DOE Method 9A or shut down the kiln until it can be repaired. SPI shall maintain records of monthly inspections onsite for a minimum of 5 years.

Anti-mold spray system

- 19) SPI shall collect emissions from the spray chamber and shall vent all such emissions to a mist eliminator (demister). The demister shall be operated whenever anti-stain/brightener is applied.
- 20) SPI shall conduct monthly visual inspections during any month that the spray chamber is used, of the following:
- Ductwork, to ensure structural integrity (no corrosion, holes, etc.),
 - Fan, to ensure proper fan operation, and
 - Exhaust stack(s) and surrounding roof or structure, to ensure no anti-stain/brightener deposition which would indicate breakthrough or malfunction of the demister. If structural or mechanical problems are noted during such inspections, SPI shall correct problems identified by these inspections within 24 hours of initial discovery or discontinue anti-stain application. If anti-stain/brightener chemical deposition is discovered at the exhaust stack(s) or on surrounding roofs or structure, SPI shall perform a more detailed examination of the

process to determine reasons for breakthrough, and SPI shall revise its Operation and Maintenance Plan to address any problems related to the breakthrough and any related problems with the demister within one week of initial discovery. Excess anti-stain/brightener deposition shall be removed from exhaust stack(s) and surrounding roofs or structure within 10 days of initial discovery.

d) SPI shall maintain records of monthly inspections onsite for a minimum of 5 years.

21) All anti-mold coating operations shall take place inside the spray chamber. Anti-mold coatings shall not be applied by hand or with hand held equipment.

Cooling Tower

22) SPI shall operate and maintain drift eliminators with at least a 0.0005% design drift loss on the cooling tower. The design drift loss shall be demonstrated by manufacturer specifications.

23) Only water treatment chemicals that do not contain chromium or chromium-compounds shall be used in the cooling tower. Material Safety Data Sheets (MSDS) for all water treatment chemicals shall be kept on-site.



Erica K. Shuhler, P.E.
Chemical Engineer



for Mark Buford, P.E.
Assistant Director

Revision a: Increased allowable throughput in condition 10 and added conditions 9, 11, and 12 of original permit.

Revision b: New condition 3 limiting facility-wide emissions of acetaldehyde, acrolein, and formaldehyde; added soot blowing opacity allowance in condition 4; updated condition 7 to reflect existing urea injection system; removed allowable kiln throughput and added kiln throughput recordkeeping requirements in condition 11.

Revision c: Updated OAC format and added an allowance for up to 50% of the wood-fired boiler fuel to originate from outside of the wood industry.