



Oregon Department of Environmental Quality

Supplement to the 2018-2028 Regional Haze Plan

Sept. 15, 2023

The Oregon Department of Environmental Quality submits this supplement to the 2018 – 2028 Regional Haze State Implementation Plan.

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Section 1: Modified permits and orders

DEQ and LRAPA have modified permits for Jeld-Wen, Gilchrist Forest Products and International Paper to enforce Round 2 Regional Haze pollutant controls. DEQ modified the permit for Klamath Energy based on the facility's choice to reduce PSELS and screen out of the Round 2 Regional Haze process. The permits were not complete at the time DEQ submitted the 2018 – 2028 Regional Haze SIP. Since DEQ submitted the 2018 - 2028 Regional Haze SIP, DEQ and Gas Transmission Northwest LLC have negotiated a Stipulated Agreement and Final Order for Compressor Station #13. DEQ also negotiated amendments to previous Stipulated Agreements and Final Orders with the following facilities since the submission of the 2018-2023 Regional Haze SIP: NW Pipeline LLC's Oregon City Compressor Station, NW Pipeline Baker Compressor Station, Georgia Pacific Wauna Mill, Georgia Pacific Toledo, and Cascade Pacific Pulp Halsey Mill.

JELD-WEN (18-0006)

DEQ submits the following sections of permit number 18-0006-TV-01 as modified August 11, 2022, with this Regional Haze SIP supplement for approval:

Permit conditions (controls and emission limits)

53. Plant site emission limits PM10, SO2, and NOx.

53b. Unassigned emissions for PM10, NOx, and SO2 have been set to zero.

55 – 57. Testing Requirements

58 – 60. General Monitoring Requirements

61 – 64. Facility-wide Monitoring Requirements

65 – 71. Emissions Unit Specific Monitoring

72. Plant Site Emissions Monitoring: for PM10, NOx, SO2

73 – 76. General Recordkeeping Requirements

77. Source Specific Recordkeeping Requirements

80 – 84. General Reporting Requirements

85 – 87. Semi-annual and Annual Reports

Gilchrist Forest Products (18-0005)

Through four factor analysis, DEQ found installation of an Electrostatic Precipitator on boilers B-1 and B-2 to be cost-effective. DEQ submitted a notice to construct for the ESP with the 2018 – 2028 Regional Haze Plan but the modified permit was not complete at that time. DEQ completed the modification of permit 18-0005-TV-01 on July 25, 2023. In addition to the permit conditions requiring operation of the ESP, the modified permit lowers the PM10 PSEL to 77 tons/year. DEQ submits the following sections of permit number 18-0005-TV-01 with this Regional Haze SIP supplement for approval:

4 - 5. Facility Wide Requirements for Boilers 1 and 2

9 – 10. Fuels for Boilers 1 and 2

11 – 19. Accidental Release Prevention and Risk Management Plan for Boilers 1 and 2

41. Plant site emission limits PM10, SO2, and NOx.

42. Monitoring Requirement: to determine compliance with PM10, SO2 and NOx PSELS established in Condition 41.

43. Testing Requirement: to conduct a source test at compliance demonstration points B-1 and B-2.

45. General Testing Requirements

46 – 52. General Monitoring and Recordkeeping Requirements

53. Source Specific Recordkeeping Requirements

54 – 57. General Reporting Requirements

58 – 59 and 61. Semi-annual and Annual Reports

International Paper Company – Springfield Mill (TV #208850)

Removal of Round I BART Conditions

On January 9, 2023, International Paper (IP) requested removal of Round 1 Regional Haze BART permit limitations (conditions 207 and 208) because Round 2 limitations on fuel and associated reductions of PM, NOx and SO2 PSEs would make it impossible for Round 1 BART permit limitations to be exceeded.

In a letter dated February 2, 2023, LRAPA requested additional analyses from IP to demonstrate that potential deciview impacts are below 0.5 dv (deciviews) on a daily basis. LRAPA requested that the analyses be conducted using worst-case/maximum daily operating assumptions while burning Ultra Low Sulfur Diesel (ULSD) based on the August 9, 2021 Regional Haze Round II Stipulated Agreement & Final Order (SAFO) limitations.

On February 20, 2023, IP responded to LRAPA's February 2, 2023, request for additional worst-case daily analyses to show that Round 1 BART permit limitations would not be exceeded. Two different demonstrations were provided using maximum capacities from the BART Eligible Emission Units (BEEU's) currently in operation. One demonstration showed the BART worst-case potential deciview impacts of running the #4 Recovery Furnace (EU-445C) at full capacity of black liquor solids (BLS) and one that provided the BART calculation with the #4 Recovery Furnace running at 65% BLS, which is an average of more typical BLS firing rates of the #4 Recovery Furnace. Both scenarios showed emissions well below (~50% of) the daily BART limit of 500 pounds per hour. Additionally, as an extra-conservative demonstration, IP provided calculations for both scenarios by adding the Package Boiler (EU-150B) to show that all of IP's combustion sources together would not reach the daily BART limit - even though the Package Boiler is a non-BEEU.

On February 24, 2023, LRAPA concurred in a letter to IP that potential visibility impacts from the current BEEU's (Power Boiler (EU-150A), #4 Recovery Furnace (EU-445C), #4 Recovery Smelt Dissolving Tank Vent (EU-445D) and the Lime Kiln (EU455)), as well as the non-BEEU Package Boiler (EU-150B), are well below 0.5 dv, on a daily basis.

LRAPA approved IP's request to remove the Regional Haze Round 1 conditions (207 and 208 in the Title V permit issued on December 14, 2012) with LRAPA's February 24, 2023 letter. The removal of these conditions, as well as IP's demonstration that no RH Round 1 limits can be exceeded, have been documented in the Review Report as part of the Title V permit renewal which is currently on public notice from May 22, 2023 until July 7, 2023.

With this supplement to the 2018 – 2028 Regional Haze SIP, DEQ provides technical background information to demonstrate that the newly imposed conditions under Order No. 208850 at International Paper Company Springfield Mill for the second regional haze planning period provide more stringent emissions control than the prior emission limits and methods cited by the EPA in our determination that this source was not subject to BART in the first regional haze planning period (75 FR 12651, March 8, 2011, at page 12660).

DEQ submits the following sections of permit number 208850 as modified October 4, 2016, with this Regional Haze SIP supplement for approval:

186-189. Plant Site Emission Limits Monitoring

192. and 198. Recordkeeping Requirements

Klamath Energy LLC (18-0003-TV-01)

In a May 18, 2020, letter to DEQ, Klamath Energy LLC proposed that the Klamath Energy facility screen out of the Round 2 Regional Haze FFA process based on planned installations of ultra low-NOx burners to combustors on the facility's combined cycle combustion turbines (emissions units CT1 and CT2) by May 2021 for CT2 and May 2022 for CT1. These upgrades would reduce the facility PSEL to 122 tons/year for PM10, SO2, and NOx combined, and reduce the Q/d to less than 5.00. DEQ issued the permit modification in December 2020, which requires annual reporting of the combined rolling 12-month annual emissions for PM10, SO2, and NOx, as tons per year.

However, EPA noted that the 2020 permit modification does not contain an explicit enforceable limit on PSELs such that $Q/d < 5$. For that reason, DEQ submits the new permit conditions 3.a, 3.b, and associated monitoring, recordkeeping, and reporting requirements from the 2020 permit modification for units CT-1 and CT-2, as well as relevant permit conditions from the 2017 permit demonstrating controls (SCR) on units CT-1 through CT-6. DEQ submits the following sections of permit number 18-0003-TV-01 with this Regional Haze SIP supplement for approval:

2020 Permit Modification

3.a. Ultra Low-NOx Combustors are to be installed and operational on Combustion Turbines (CT-1 & CT-2) by January 1, 2023.

3.b. The permittee must notify DEQ in writing when the ultra low-NOx combustors are brought into operation. The notification must be submitted no later than seven (7) days after the initial startup of the ultra low-NOx combustors. [OAR 340-214-011 0]

61.i. Source specific recordkeeping requirements: Total operating time that CT-1 or CT-2 operated broken down to periods within the normal operating range (60 - 100%) and periods within the partial load range 50 - 60%.

66.b.xxi. Semi-Annual and Annual Reports: Starting January 1, 2023, the combined rolling 12-month annual emissions for PM10, SO2, and NOx as tons per year.

2017 Permit

10 – 16;18; 24 – 28. Emission Unit Specific Emission Limits and Standards

32 - 34. General Testing Requirements

35 - 37. General Monitoring Requirements

39 - 45. Fuel Monitoring

46 - 49. Visible Emissions Monitoring

51 - 52 and 54 - 55. Continuous Emission Monitoring CT – 1 through CT-6

56. Plant Site Emission Monitoring for PM10, SO2 and NOx

57 – 60. General Recordkeeping Requirements

61. Source Specific Recordkeeping Requirements

62 - 65. General Reporting Requirements

66 – 67 and 69. Semi-Annual and Annual Reports

Gas Transmission NW LLC – Compressor Station #13 (18-0096)

Through four factor analysis, DEQ determined that Selective Catalytic Reduction on turbines 13C and 13D was cost effective. On August 9, 2021, DEQ issued a unilateral order that required Gas Transmission NW to install and maintain SCR on Turbines 13C and 13D by July 31, 2026. GTN contested the order, but later entered into a SAFO with DEQ on June 1, 2022. The SAFO requires GTN to install and maintain SCR on Turbines 13C and 13D by July 31, 2026, or replace Turbines 13C and 13D with new technology to reduce Round 2 regional haze

pollutants by July 31, 2031. GTN notified DEQ on March 23, 2023 that GTN intends to replace Turbines 13C and 13D. DEQ submits SAFO No. AQ/RH-HQ-2021-140 (OAH CASE NO. 2021-ABC-04835) with this Regional Haze SIP for approval. DEQ will enforce compliance with the SAFO conditions through the facility's Title V permit monitoring, recordkeeping and reporting requirements. DEQ also submits the following sections of permit number 18-0096-TV-01 as modified July 11, 2018, with this Regional Haze SIP supplement for approval:

24-26: General Monitoring Requirements

32 - 35: General Recordkeeping Requirements

37 - 38: General Reporting Requirements

39: Plant Site Emissions Monitoring, Table 8 (PSEL Procedures, Test Methods, and Frequencies), Emission Calculation, Table 9 (Pollutant Emission Factors)

40 - 43: General Recordkeeping Requirements

44: Source Specific Recordkeeping Requirements

NW Pipeline LLC – Oregon City Compressor Station (03-2729)

Through four factor analysis, DEQ determined that Low Emissions Combustion Retrofit on engines 1 and 2 (EU1 and EU2) were cost effective. On August 9, 2021, Northwest Pipeline and DEQ entered into a Stipulated Agreement and Final Order (SAFO No. 01-0038) that required the replacement of EU1 and EU2 with lower emitting units and limit combined PSEL of NO_x, SO₂ and PM₁₀ from the new units to no more than 219 tons per year. On February 1, 2022, Northwest Pipeline and DEQ agreed to amend the SAFO, based on feedback from EPA, to include a deadline for the replacement of EU1 and EU2 by July 31, 2031. DEQ submits the amended SAFO No. 03-2729-A1 to be included as part of the SIP. DEQ also submits the following sections of permit number 03-2729-TV-01 as modified February 19, 2013 with this Regional Haze SIP supplement for approval:

7: Facility Wide Monitoring

19: Emissions Unit Monitoring and Recordkeeping Requirement

25-27: Continuous Parameter Monitoring and Recordkeeping Requirements

38: Stationary Gas Turbines Monitoring Requirements

41: Stationary Gas Turbines Recordkeeping Requirements

45: Plant Site Emissions Monitoring

50 - 65: General Monitoring, Record Keeping and Reporting Requirements

NW Pipeline LLC – Baker Compressor Station

DEQ negotiated an amendment to the previous Stipulated Agreement and Final Order with NW Pipeline LLC regarding the Baker Compressor Station since the submission of the 2018-2023 Regional Haze SIP. DEQ submits SAFO No. 01-0038-A1 with this Regional Haze SIP for approval.

DEQ also submits the following sections of permit number 01-0038-TV-01 as modified January 12, 2017, with this Regional Haze SIP supplement for approval:

27 - 30: General Monitoring Requirements

32: Plant Site Emissions Monitoring

33 - 36: General recordkeeping requirements

37: Source specific recordkeeping requirements for EU1 and EU2

38 - 41: General reporting requirements

Georgia Pacific - Wauna Mill

DEQ negotiated an amendment to the previous Stipulated Agreement and Final Order with Georgia Pacific Consumer Operations LLC regarding the Wauna Mill facility since the submission of the 2018-2023 Regional Haze SIP. DEQ submits SAFO No. No. 04-004-A1 with this Regional Haze SIP for approval.

Georgia Pacific - Toledo

DEQ negotiated an amendment to the previous Stipulated Agreement and Final Order with Georgia Pacific - Toledo LLC regarding the Toledo facility since the submission of the 2018-2023 Regional Haze SIP. DEQ submits SAFO No. 21-005-A1 with this Regional Haze SIP for approval.

Cascade Pacific Pulp Halsey Mill

DEQ negotiated an amendment to the previous Stipulated Agreement and Final Order with the Cascade Pacific regarding the Halsey Mill since the submission of the 2018-2023 Regional Haze SIP. DEQ submits SAFO 22-3501-A2 with this Regional Haze SIP for approval.

Section 2: Sources screened out from four factor analysis

The following facilities took emissions limits such that $Q/d < 5$, which screened these sources out of four factor analysis. DEQ submits permit conditions that enforce the emission limits for Round 2 Regional Haze pollutants for these facilities.

1. Kingsford Manufacturing
2. Timber Products Co.
3. Roseburg Forest Products – Riddle
4. Roseburg Forest Products – Medford
5. Cascades Tissue Group (August 18, 2021, SAFO submitted).
6. PGE Beaver Plant (August 10, 2021, SAFO submitted).
7. Klamath Energy (see Section 1).
8. Willamette Falls Paper Company (August 9, 2021, SAFO submitted).

Kingsford Manufacturing – LRAPA (No. 204402)

In an April 16, 2020, email to DEQ and LRAPA, Kingsford agreed to a combined limitation on regional haze precursor PSEs and unassigned emissions of no more than 304 tons per year. Based on this agreement, DEQ concurred that Kingsford was not required to undergo FFA for their Springfield facility during this round of the Regional Haze program. DEQ required that Kingsford submit a permit modification application for the updated PSEs to LRAPA by August 1, 2020. On September 14, 2020, LRAPA amended the Title V Operating Permit No. 204402 as follows:

- Reduce the unassigned emissions associated with PM10 and NOx
- Add a limitation related to the Regional Haze program, and
- Update the permit to reflect the use of propane as a backup fuel for natural gas.

DEQ and LRAPA will enforce compliance with the PSEL reductions through the facility's Title V permit monitoring, recordkeeping and reporting requirements. DEQ submits the following sections of permit number 204402 as modified November 15, 2021 with this Regional Haze SIP supplement for approval:

71: Plant site emission limits and unassigned emissions for PM10, NOx and SO2.

71a: Limit emissions of PM10, NOx and SO2 to no more than 304 tons/year combined.

72: Record keeping and monitoring requirements, process monitoring, emission factors for PM10, NOx and SO2.

73: Formula for calculating emissions for each emissions unit and determining compliance with PSELs.

75 – 91: General testing, monitoring, recordkeeping and reporting requirements.

Timber Products Co. (15-0025)

Timber Products Co.'s April 2020 permit renewal application requested reduced PSELs below the screening threshold of Q/d = 5.00. DEQ agreed that this facility did not need to undergo FFA for Regional Haze Round 2. DEQ completed the permit renewal that codified the PSEL reduction on June 23, 2022. DEQ will enforce compliance with the PSEL reductions through the facility's Title V permit monitoring, recordkeeping and reporting requirements. DEQ submits the following sections of permit number 15-0025-TV-01 as modified June 23, 2022 with this Regional Haze SIP supplement for approval:

70. Plant Site Emission Limits for PM10, NOx, and SO2

71. Plant site emissions may not exceed short-term limits.

72. Monitoring requirements.

74 – 90. General testing, monitoring, recordkeeping and reporting requirements.

Roseburg Forest Products – Riddle (10-0078)

DEQ concurred that FFA was not required for this facility based on lowered PSELs in the July 2019 permit renewal. DEQ will enforce compliance with the PSEL reductions through the facility's Title V permit monitoring, recordkeeping and reporting requirements. DEQ submits the following sections of permit number 10-0078-TV-01 as modified July 31, 2019 with this Regional Haze SIP supplement for approval:

65. Plant Site Emission Limits: for PM10, NOx, and SO2

66. PSEL monitoring

68. General testing requirements

69 - 71. General monitoring and recordkeeping requirements

72 – 75. General recordkeeping requirements

76 – 79. Reporting requirements

80 – 81. Semi-annual and annual reports

Roseburg Forest Products – Medford (15-0073)

DEQ concurred that FFA was not required for this facility based on lowered PSELs in the June 2017 permit renewal that reduced the Q/d to less than 5. DEQ will enforce compliance with the PSEL reductions through the facility's Title V permit monitoring, recordkeeping and reporting requirements. DEQ submits the following sections of permit number 15-0073-TV-01 as modified August 18, 2022 with this Regional Haze SIP supplement for approval:

44. Plant Site Emission Limits: for PM10, NOx, and SO2

45. Plant site emissions may not exceed short-term limits.

46. PSEL monitoring

48 - 49. General testing requirements

50 - 57. General monitoring and recordkeeping requirements

58 – 61. Reporting requirements

63 - 64. Semi-annual and annual reports

Cascades Tissue Group (05-1849)

DEQ submits the monitoring, record-keeping and reporting conditions to supplement the SAFO negotiated with Cascades Tissue Group. Cascades Tissue Group agreed to lower PSELS for the St. Helens facility in April 2018, resulting in a Q/d value of 1.78. The facility stated they expected reduction of unassigned emissions and netting basis to occur in June 2021, rather than at the next permit renewal. In a SAFO signed August 18, 2021, the facility agreed to PSELS for SO₂, PM₁₀ and NO_x of 39, 14 and 103 tons per year, respectively, and set the unassigned emissions for each regional haze pollutant to zero. DEQ will enforce compliance with the PSEL reductions through the facility's Title V permit monitoring, recordkeeping and reporting requirements. DEQ submits the following sections of permit number 05-1849-TV-01 as modified April 6, 2018 with this Regional Haze SIP supplement for approval:

24 - 25. Monitoring requirement for PM₁₀, SO₂ and NO_x.

27. General testing requirements

29 –35. General monitoring and recordkeeping requirements

36 – 39. General reporting requirements

40 – 43. Semi-annual and annual reports

PGE Beaver / Port Westward (05-2520)

DEQ submits the monitoring, record-keeping and reporting conditions to supplement the SAFO negotiated with PGE. DEQ agreed that this facility did not need to undergo FFA for Regional Haze Round 2 because PGE committed to voluntarily reduce the PSELS of Regional Haze pollutants below the screening threshold of Q/d = 5.00. PGE committed to reducing PSELS in a SAFO signed August 10, 2021. DEQ will enforce compliance with the PSEL reductions through the facility's Title V permit monitoring, recordkeeping and reporting requirements. DEQ submits the following sections of permit number 05-2520-TV-01 as modified January 21, 2009 with this Regional Haze SIP supplement for approval:

62 – 66. Plant site emission limit monitoring

68 – 71. Testing requirements

72 - 78. General monitoring and recordkeeping requirements

79a. Site-specific recordkeeping requirements

80 - 83. Reporting requirements

85. General first semi-annual reporting requirements

87, 88.a, 89.d, 89.f, 89.i. Site specific reporting requirements

Willamette Falls Paper Company (03-2145)

DEQ agreed that this facility did not need to undergo FFA for Regional Haze Round 2 because PGE committed to voluntarily reduce the PSELS of Regional Haze pollutants below the screening threshold of Q/d = 5.00. Willamette Falls Paper Company committed to reducing PSELS in a SAFO signed August 9, 2021. The facility also agreed to only burn ultra-low sulfur diesel as a backup fuel (less than 48 hours/year). This agreement removed #6 fuel oil as a permitted fuel source in their Title V Permit.

Section 3: Sources finding no cost effective controls

For sources that screened into four factors analysis, but for which no additional controls were cost effective, DEQ submits permit conditions pertaining to existing controls, emission limits and monitoring, record keeping and reporting requirements. Maintaining existing controls is necessary to maintain reasonable progress toward natural visibility conditions.

DEQ requires each of the facilities listed below to maintain existing controls to minimize visibility impairment and comply with the 2018 – 2028 Regional Haze SIP. DEQ enforces existing controls through each facility's Title V or Air Contaminant Discharge permit and National Emission Standards for Hazardous Air Pollutants. For each facility listed below, DEQ submits the listed permit conditions, emission limits, standards and monitoring, recordkeeping and reporting requirements with this Regional Haze SIP supplement for approval.

Pacific Wood Laminates, Inc.

Permit number: 08-0003-TV-01

Permit Conditions:

3: Controls to be Maintained

9-10: Veneer and Plywood Manufacturing Operations Rule

12-19: Hog Fuel Boiler Emissions Unit Requirements

26-41: Veneer Dryers Requirements

56-71: General Testing, Monitoring, Recordkeeping and Reporting Requirements

73: Compliance Certification

Swanson Group Mfg. LLC

Permit number: 10-0045-TV-01

Permit conditions:

4: Controls to Maintain

10-24: Hog Fuel Boiler Requirements

25-25.c: RTO Monitoring Requirements

27-40: Emissions Unit Specific Requirements

50-64: Testing, Monitoring, Recordkeeping and Reporting Requirements

66: Compliance Certification

Ochoco Lumber Company

Permit number: 12-0032-ST-01

Permit conditions:

1.1-1.3: General Emissions Limits and Standards

1.6: Air Pollution Control Devices Operating and Maintenance Requirements

2.1-2.5: Specific Performance and Emission Standards

4.1-4.4: Compliance Demonstration and Source Testing

5.1-6.2: Recordkeeping Requirements

Columbia Forest Products, Inc.

Permit number: 18-0014-TV-01

Permit conditions:

3. Controls to maintain

8-13. Boilers

14-17. Veneer Dryers

18-20. Press Vents and Material Handling

22-23. Natural Gas Fired Space Heatera

34-52. Testing and Monitoring Requirements

58-66. Recordkeeping Requirements

67-67.a; 67.b.iii-b.v; 68-70. Semi-Annual and Annual Reporting

Collins Products, L.L.C. (18-0013-TV-01)

Permit number: 18-0013-TV-01

Permit conditions:

3. Controls to Maintain

14-16. Fuels

19-24. Particle Board Plant Emission Limits and Standards

34-42. Hardboard Plant Emission Limits and Standards

63-75. Testing, Monitoring and Recordkeeping Requirements

77. Compliance Certification

Woodgrain Millwork LLC - Particleboard

Permit number: 31-0002-TV-01

Permit conditions:

3: Controls to Maintain

12-23;25-28;30: Boiler Requirements

31-35; 37; 39: Green Furnish Dryer Requirements

40-41;43-44;46: Dryer Requirements

48; 49; 51-54: Press and Thermal Catalytic Oxidizer Requirements

55-59: Board Cooler Requirements

60-64: Uncontrolled Cyclones Requirements

65-70: Material Handling Cyclones Requirements

71-72: Particleboard Manufacturing Requirements

80-94: General Testing, Monitoring, Recordkeeping and Reporting Requirements

96: Compliance Certification

Section 4: Requirement to maintain existing controls

DEQ submits permit conditions for the Ash Grove Cement Company Boardman facility that are necessary to minimize visibility impairment and comply with the 2018 – 2028 Regional Haze SIP.

Ash Grove Cement Company - (01-0029-TV-01)

In the 2018 – 2018 Regional Haze SIP, DEQ documented its decision that DEQ did not require further Round 2 Regional Haze pollutant controls or four factor analysis at the Ash Grove Durkee facility. Because existing controls for Round 2 Regional Haze pollutants must be maintained at the Ash Grove Cement Company Durkee facility to comply with the 2018 – 2028 Regional Haze SIP, DEQ submits the following sections of permit number 01-0029-TV-01 as modified October 16, 2020 with this Regional Haze SIP supplement for approval:

3. Emissions Unit and Pollution Control Device Identification; Emission Limits and Standards, Testing, Monitoring and Recordkeeping Requirements.

9 – 11 and 14. Fuels

15. Accidental Release Prevention, Emissions Unit (Kiln) Requirements for PM, SO₂ and NO_x

16 – 17. Visible Emissions

18 – 22. Particulate Emissions

23 – 26. SO₂ Emissions

27 – 28. NO_x Emissions

42. Operation and Maintenance Plan requirements

45. Emissions Unit Clinker Cooler Requirements

46 – 47. Visible Emissions (Clinker Cooler)

48 – 49. Particulate Emissions (Clinker Cooler)

50. Monitoring Requirement (Clinker Cooler)

51 - 55. Emissions Units RM-A, HO, CM, CP, and KG Visible Emission Requirements

56 – 58. Emissions Units RM-A, HO, CM, CP, and KG Particulate Emission Requirements

59 – 61. Emissions Unit CH Visible Emission Requirements

62 – 64. Emissions Unit CH Particulate Emission Requirements

65 - 67. Emissions Unit FU-CRUSH Visible Emission Requirements

68 – 70. Emissions Unit RM-B and CRUSH Visible Emission Requirements

71 – 73. Emissions Unit RM-B and CRUSH Particulate Emission Requirements

74 – 76. Emissions Unit FU4-A, TEMP-S Visible Emission Requirements

84. General Testing Requirements

85 – 87. General Monitoring Requirements

88 – 93. General Recordkeeping Requirements

94 – 97. General Reporting Requirements

99 – 100. Semi-Annual and Annual Reports

102. Compliance Certification

Section 5: Additional submittals

Progress Report: Emission Trend Demonstration and Precursor Inventory

DEQ has attached a spreadsheet with this 2018 - 2028 Regional Haze SIP supplement demonstrating that DEQ inventoried all precursor pollutants to regional haze, including NH₃ and VOCs. The spreadsheet also demonstrates that DEQ met the progress report requirement to analyze emission trends over time: the period between the submission of the Round 1 Regional Haze SIP and the 2017 inventory that informed the 2018 – 2028 Regional Haze SIP.

Supplemental Information: Alternative Compliance [OAR 340-223-0110(2)]

In July 2021, the Environmental Quality Commission adopted new rules to “...establish the process and criteria for identifying reductions of pollutants from stationary sources that reduce visibility and contribute to regional haze in Class I areas, for the purpose of maintaining reasonable progress and other requirements associated with Oregon’s implementation of the federal regional haze rule in 40 CFR 51.308 (2017).” (OAR 340-223-0020). The rule includes screening methodology for source selection (OAR 340-223-0100). Facilities with a Q/d greater than 5.00 screen into the program and are required to conduct a four factor analysis following requirements in OAR 340-223-0130(1).

The rule allows for DEQ to choose to enter into a stipulated agreement and final order in certain circumstances (OAR 340-223-0110(2)(b)). If the Source requests to:

“(A) Accept federally enforceable reductions of combined plant site emission limits of round II regional haze pollutants to bring the source’s Q/d below 5.00. Notwithstanding OAR 340-222-0040, a source may take a PSEL reduction below the generic PSEL to achieve an overall PSEL of round II regional haze pollutants below a Q/d of 5.00. A source’s Q/d will be considered to be brought below 5.00 when Q/d is below 5.00 using the calculation in OAR 340-223-0100(2), except that the Q factor shall be calculated by adding the plant site emission limits for regional haze pollutants as stated in the stipulated agreement and final order;

(B) Install controls identified by the source in a four factor analysis as cost effective for that source for reducing round II regional haze pollutants. DEQ must agree that the controls identified will result in the greatest cost effective emissions reduction at the identified emissions unit and DEQ must establish a timeline for installation of those controls that is the fastest practicable timeline for installation of the identified controls and that is no later than July 31, 2026;

(C) Install controls or reduce emissions for round II regional haze pollutants that DEQ determines, in its sole discretion, provide equivalent emissions reductions to controls that would be identified as cost effective for that source following the adjustment and review of a four factor analysis. DEQ must establish a timeline for installation of those controls that is the fastest practicable timeline for installation of the identified controls and that is no later than July 31, 2026;

(D) Maintain controls that the source has already installed to control round II regional haze pollutants or maintain reduced emissions of regional haze pollutants that DEQ determines, in its sole discretion, have provided and will continue to provide equivalent emissions reductions to controls that would be identified as cost effective for that source following adjustment and review of a four factor analysis; or

(E) Replace an emissions unit with a new emissions unit that meets the emission limits and requirements of the most recent applicable standard in place at the time of the permitting of the new emissions unit. DEQ must establish a timeline for installation of the new emissions unit that is the fastest practicable timeline for installation of the new emissions unit and that is no later than July 31, 2031.”

The following sources completed four factor analysis as required by the Round II Regional Haze program and provided DEQ with additional information to explain why the source should be allowed to take different

emissions reductions actions than listed in the four factor analysis. Additional details on communications with the facilities are provided to further explain DEQ's reasoning for selecting these proposed alternatives as controls.

Boise Cascade Wood Products, LLC – Elgin Complex

On December 23, 2019, DEQ notified Boise Cascade – Elgin that their facility had been selected for further analysis in DEQ's Round II Regional Haze planning. On June 15, Boise Cascade – Elgin submitted their Four Factor Analysis. On August 14, 2020, DEQ notified Boise Cascade – Elgin that the four factor analysis submitted by the facility required additional analysis to determine if Selective Catalytic Reduction or Selective Non-catalytic Reduction Technology would be cost effective on Boilers 1 and 2.

On September 18, 2020, Boise Cascade – Elgin submitted additional information that explained, according to a control technology vendor that Elgin provided with site-specific information, SNCR was not feasible because of the temperature ranges in the boilers and SCR would not be cost effective because of the reduced emissions reduction efficiency that would be achieved if placed after the Electrostatic Precipitator. On January 21, 2021, DEQ notified Boise Cascade – Elgin that DEQ had preliminarily determined the installation of SCR on Boilers 1 and 2 were likely cost effective based on information provided to DEQ.

On April 20, 2021, Boise Cascade – Elgin provided additional analysis to DEQ on the technical feasibility of both SCR and SNCR technology on Boilers 1 and 2. The facility provided the following technical challenges associated with the retrofitting of the boilers with these technologies:

- “SCR is not identified in the EPA RBLC database as an existing control technology deployed on biomass-fired industrial boilers.
- The temperatures of boiler flue-gas exiting the Facility's Dry Electrostatic Precipitator (DESP) are generally below the minimum SCR operating temperature and well below the optimum operating temperatures for catalyzed reactions.
- Flue-gas reheating would be required for effective SCR operation, which would result in additional energy usage and GHG emissions.
- The presence of alkali metals and other constituents found in wood could poison catalysts.
- There is risk of ammonia slip, oxidation of CO to CO₂ and formation of sulfuric acid mist emissions associated with injection of ammonia.”

DEQ agreed with Boise Cascade – Elgin's findings that installing SCR before the particulate matter pollution control technology would risk fouling of the catalyst and installing after the pollution control technology would result in less emission reductions due to a loss of temperature, requiring additional heat input and greenhouse gas emissions.

With SCR technology no longer under consideration, DEQ and Boise Cascade – Elgin reviewed the technical feasibility of the next most cost-effective control from the facility's four factor analysis, SNCR. Boise Cascade – Elgin also investigated if other emission reduction technologies, in combination with improved combustion practices, would achieve similar results as SNCR installation. On May 10, 2021, Boise Cascade – Elgin provided a report from a combustion and boiler technologies consultant that described the technical reasoning for anticipated emissions reduction from a combination of combustion efficiency improvements that could be made to Boilers 1 and 2.

On August 12, 2021, Boise Cascade – Elgin and DEQ entered into a Stipulated Agreement and Final Order that, among other things, required Elgin to install Continuous Emissions Monitors for Nitrogen Oxides and complete combustion improvements on Boilers 1 and 2 to achieve at least 15% emissions reduction of NO_x (see SAFO No. 31-0006). DEQ also submits the following sections of permit number 03-2729-TV-01 as modified May 23, 2022 with this Regional Haze SIP supplement for approval:

56. Sitewide Monitoring Requirements

59 - 61. General Monitoring Requirements

62 - 65. General Recordkeeping Requirements

66 - 70. Boiler NESHAP Recordkeeping Requirements

71 - 75. General Reporting Requirements

77 – 78. Semi-Annual and Annual Reports

Boise Cascade Wood Products, LLC – Medford

On December 23, 2019, DEQ notified Boise Cascade – Medford that their facility had been selected for further analysis in DEQ’s Round II Regional Haze planning. On June 4, Boise Cascade – Medford submitted their Four Factor Analysis. On August 14, 2020, DEQ notified Boise Cascade – Medford that the four factor analysis submitted by the facility required additional analysis to determine if Selective Catalytic Reduction or Selective Non-catalytic Reduction Technology would be cost effective on Boiler1, Boiler 2 and Boiler 3.

On October 27, 2020, Boise Cascade – Medford submitted additional information that explained, according to a control technology vendor that Medford provided with site-specific information, SNCR was not feasible because of the temperature range and residence time in the boilers, and SCR would not be cost effective because of the reduced emissions reduction efficiency that would be achieved if placed after the Electrostatic Precipitator. On January 21, 2021, DEQ notified Boise Cascade – Medford that DEQ had preliminarily determined the installation of SCR on Boilers 1, 2 and 3, were likely cost effective based on information provided to DEQ.

On April 20, 2021, Boise Cascade – Medford provided additional analysis to DEQ on the technical feasibility of both SCR and SNCR technology on Boilers 1, 2 and 3. The facility provided similar reasoning for the infeasibility of SCR/SNCR technology as provided for the Elgin Complex.

On August 9, 2021, Boise Cascade – Medford and DEQ entered into a Stipulated Agreement and Final Order that required the reduction of Round II Regional Haze pollutants below a Q/d of 5.00 by August 1, 2026 (see SAFO No. 15-0004). DEQ also submits the following sections of permit number 15-0004-TV-01 as modified February 20, 2020 with this Regional Haze SIP supplement for approval:

71: Plant Site Emission Limit Monitoring: for PM10, NOx, and SO2

72. Source-specific Recordkeeping Requirements

74. General Testing Requirements

75 – 77. General Monitoring and Recordkeeping Requirements

78 – 81. General Recordkeeping Requirements

82 – 86. General Reporting Requirements

87 – 88. Semi-annual and Annual Reports

Georgia Pacific - Wauna Mill

On December 23, 2019, DEQ notified Georgia Pacific – Wauna Mill (GP – Wauna) that their facility had been selected for further analysis in DEQ’s Round II Regional Haze planning. On June 15, GP – Wauna submitted their Four Factor Analysis (FFA). On August 14, 2020, DEQ notified GP – Wauna that the FFA submitted by the facility required additional analysis to determine if:

- The existing Electrostatic Precipitator (ESP) on Recovery Furnace 24 would be cost effective to upgrade.
- Low NOx Burners (LNB) and Flue Gas Recirculation (FGR) would be cost effective for installation on Power Boiler 33 and Paper Machines 5, 6 and 7.
- Selective Catalytic Reduction (SCR) would be cost effective for installation on Power Boiler 33 and/or Recovery Furnace 24.
- Selective Noncatalytic Reduction (SNCR) would be cost effective for installation on Power Boiler 33.

On September 14, 2020, GP – Wauna submitted additional information:

- Assumptions used in the FFA for the ESP upgrade by GP – Wauna were inaccurate. GP – Wauna provided additional detail on an upgrade to the ESP that confirmed that the existing ESP has a 99.37% control efficiency. With higher existing efficiency, additional reductions of emissions would be less cost effective than previously stated in the original FFA. GP also provided information on a potential polishing Wet Electrostatic Precipitator, stating that information from vendors showed the cost would exceed the threshold of \$10,000 per ton.
- A memorandum issued by the National Association of Air and Stream Improvements (NCASI) stating that the installation of SCR on a Kraft recovery furnace was infeasible. The memorandum, dated September 10, 2020, stated that installation of SCR was infeasible due to difficulties:
 - maintaining flue gas temperature at the appropriate level at the SCR reactor inlet
 - potential for higher SO in the flue gas, and
 - potential for high particulate concentration after the electrostatic precipitator.
- Further site-specific assessment was needed by vendors in order to fully assess control options for Power Boiler 33.

On January 21, 2021, DEQ notified GP – Wauna that DEQ had preliminarily determined the installation of LNB on Paper Machine 1, 2, 5, 6 and 7, LNB on Lime Kiln 21, and SCR on Power Boiler 33, were likely cost effective based on information provided to DEQ.

On April 30, 2021, Georgia Pacific submitted a letter in response to DEQ’s preliminary determination for both the Wauna Mill and Toledo facilities. Regarding the GP – Wauna facility, GP stated that:

- Paper Machine 1 and 2 should not be under further consideration for control because updated data provide to DEQ in the September 14 letter reduced emissions from these units below DEQ’s screening threshold of 20 tons per year.
- Actual emission rates for Paper Machines 6 and 7 were lower than previously reported and proposed to reduce the permit emissions factor from 0.1265 lb/MMBtu to 0.06 lb/MMBtu.
- GP agreed to replace the Yankee burner on Paper Machine 5 and achieve an emissions rate of 0.03 lb/MMBtu.
- Controls at the Lime Kiln are not feasible because NOx emissions are Thermal NOx, kiln operations are complex and small fluctuations in temperature that occur during operation can impact NOx generation. Also, LNB installation would require replacement of other systems which make these projects not cost effective at this time.
- Based on a study conducted by a contractor, the installation of SCR would require additional heat input and capital expense in order to obtain the proper flue gas temperature for proper operation, increasing greenhouse gas emissions. Instead, GP proposed to use LNB and FGR to achieve NOx emissions reductions.

On August 9, 2021, GP – Wauna and DEQ entered into a Stipulated Agreement and Final Order that, among other things, required the Wauna Mill to:

- Reduce Plant Site Emission Limits on a schedule
- Replace the burner on Paper Machine 5 to achieve emissions rate of no more than 0.03 lb/MMBtu and perform a source test to confirm the specified emission rate
- Accept a limit of 0.06 lb/MMBtu for the TAD1 and TAD2 burners on Paper Machines 6 and 7 and perform a source test to confirm the specified emission rate, and
- Install LNB/FGR to achieve an emissions rate of 0.09 lb/MMBtu and install a Continuous Emissions Monitoring System (CEMS) to demonstrate compliance with the specified emission rate averaged over a set period of time. (see SAFO No. 31-0006).

On December 5, 2022, GP – Wauna and DEQ amended the SAFO to correct an error in CEMS certification reference. (see SAFO NO. 31-0006-A1).

Georgia Pacific – Toledo LLC

On December 23, 2019, DEQ notified Georgia Pacific – Toledo (GP – Toledo) that their facility had been selected for further analysis in DEQ’s Round II Regional Haze planning. On June 15, GP – Toledo submitted

their Four Factor Analysis (FFA). On August 14, 2020, DEQ notified GP – Toledo that the FFA submitted by the facility required additional analysis to determine if:

- The Hardwood Chip Handling Line 118 emissions of particulate matter would be cost effectively reduced by upgrading the existing cyclone to a baghouse for the line
- Low NOx Burner (LNB) would be cost effective for installation on Lime Kilns EU-1, 2 and 3.
- LNB and Flue Gas Recirculation (FGR) would be cost effective for installation on Boilers EU-11, 13, and 18.
- Selective Catalytic Reduction (SCR) would be cost effective for installation on Boilers EU-11 and 13 and Recovery Furnaces 1 and 2.
- Selective Noncatalytic Reduction (SNCR) would be cost effective for installation on Boilers EU-11, 13 and 18.
- Wet scrubber would be cost effective for installation on Lime Kilns EU-1, 2 and 3.

On September 14, 2020, GP – Toledo submitted additional information:

- Assumptions used in the FFA for the Hardwood Chip Handling Line 118 Cyclone were inaccurate. GP – Toledo used a default emission factor developed by DEQ. When applying more specific emission factors developed by NCASI and by GP at a similar cyclone from a different facility, the emissions drop from 57.9 tons per year to 3.4 tons per year. GP – Toledo argued that additional controls would not be cost effective.
- Past analysis on LNB installation on Lime Kiln 1, 2 and 3 showed that installation of this technology would not result in measurable emissions reduction.
- Installation of a wet scrubber on Lime Kilns 1, 2 and 3 would not be cost effective because of the reduced control efficiency due to the size of particles emitted from the kilns.
- Further site-specific assessment was needed by vendors in order to fully assess control options for Boilers EU-11, 13 and 18.
- A memorandum issued by the National Association of Air and Stream Improvements (NCASI) stating that the installation of SCR on a Kraft recovery furnace was infeasible. The memorandum, dated September 10, 2020, stated that installation of SCR was infeasible due to difficulties:
 - maintaining flue gas temperature at the appropriate level at the SCR reactor inlet
 - potential for higher SO in the flue gas, and
 - potential for high particulate concentration after the electrostatic precipitator.

On January 21, 2021, DEQ notified GP – Toledo that DEQ had preliminarily determined the installation of a Baghouse on Hardwood Chip Handling Line 118, installation of LNB on Lime Kilns EU-1, 2 and 3, installation of SCR on Boilers EU-11 and 13, and installation of SNCR on Boiler EU-18 were likely cost effective based on information provided to DEQ.

On April 30, 2021, Georgia Pacific submitted a letter in response to DEQ's preliminary determination for both the Wauna Mill and Toledo facilities. Regarding the GP – Toledo facility, GP stated that:

- GP – Toledo conducted a source test of Hardwood Chip Handling Line 118 Cyclone on April 21, 2021. Emissions data collected during the test showed that emissions were less than 5 tons per year of particulate matter. GP – Toledo stated that this emissions point should not be considered further due to the already low emissions.
- Controls at the Lime Kiln are not feasible because NOx emissions are Thermal NOx, kilns operations are complex and small fluctuations in temperature that occur during operation can impact NOx generation. Also, LNB installation would require replacement of other systems which make these projects not cost effective at this time.
- Based on a study conducted by a contractor, the installation of SCR on Power Boilers EU-11 and -13 and SNCR on Power Boiler EU-18 would require additional heat input and capital expense to obtain the proper flue gas temperature for proper operation, increasing greenhouse gas emissions. Instead, GP proposed to use LNB and FGR to achieve NOx emissions reductions. Also, GP – Toledo requested time for additional evaluation to determine whether controlling the existing boilers with LNB and FGR or installing replacement boilers works best for the facility.

On August 9, 2021, GP – Toledo and DEQ entered into a Stipulated Agreement and Final Order that, among other things, required Toledo to:

- Install LNB/FGR to achieve an emissions rate of 0.09 lb/MMBtu and install a Continuous Emissions Monitoring System (CEMS) to demonstrate compliance with the specified emission rate averaged over a set period of time; or
- Replace Boilers EU-11, 13 and 18 with boilers that have a combined PSEL no greater than their potential to emit or a Q of 889 tons of NOx, 437 tons of SO2 and 311 tons of PM10. (see SAFO No. 21-0005).

On December 5, 2022, GP – Toledo and DEQ amended the SAFO to correct an error in CEMS certification reference. (see SAFO NO. 21-0005-A1).

Cascade Pacific Pulp, LLC - Halsey Pulp Mill

On December 23, 2019, DEQ notified Cascade Pacific Pulp, LLC – Halsey Pulp Mill (CPP Halsey) that their facility had been selected for further analysis in DEQ’s Round II Regional Haze planning. On June 15, 2020, CPP Halsey submitted their Four Factor Analysis (FFA). On August 14, 2020, DEQ notified CPP Halsey that the FFA submitted by the facility required additional analysis to determine if:

- Low NOx Burners (LNB) would be cost effective for installation on Power Boiler 1.
- Selective Catalytic Reduction (SCR) would be cost effective for installation on the Recovery Furnace.
- Selective Noncatalytic Reduction (SNCR) would be cost effective for installation on Power Boiler 1.
- A wet scrubber would be cost effective for installation on the Recovery Furnace.

On September 19, 2020, CPP Halsey submitted additional information:

- Further site-specific assessment was needed by vendors in order to fully assess feasibility of SNCR installation on Power Boiler 1. The temperature profile of the boiler would not support SNCR installation and would require additional heat input.
- A memorandum issued by the National Association of Air and Stream Improvements (NCASI) stating that the installation of SCR on a Kraft recovery furnace was infeasible. The memorandum, dated September 10, 2020, stated that installation of SCR was infeasible due to difficulties:
 - maintaining flue gas temperature at the appropriate level at the SCR reactor inlet
 - potential for higher SO in the flue gas, and
 - potential for high particulate concentration after the electrostatic precipitator.
- Additional cost effectiveness information on LNB installation on Power Boiler 1 and Wet Scrubber installation on the Recovery Furnace.

On January 21, 2021, DEQ notified CPP Halsey that DEQ had preliminarily determined the installation of LNB and Fuel Gas Recirculation on Power Boiler 1 and elimination of #6 fuel oil use as back-up fuel for the facility to reduce SO2 emissions were likely cost effective based on information provided to DEQ.

On January 27, 2021, CPP Halsey submitted a letter in response to DEQ’s preliminary determination for both the Wauna Mill and Toledo facilities, explaining that the cost effectiveness of LNB/FGR installation was above the \$10,000 per ton threshold for consideration.

On February 9, 2021, DEQ responded to CPP Halsey, providing DEQ’s cost effectiveness calculations, and asking for additional information from CPP on vendor cost estimates.

On August 9, 2021, CPP Halsey and DEQ entered into a Stipulated Agreement and Final Order that, among other things, required the CPP Halsey to (See SAFO No. 22-3501):

- Conduct a source test for NOx from Power Boiler 1 by January 31, 2022.
- Install LNB to achieve an NOx emissions reduction of at least 33% by December 31, 2023
- Conduct source test for NOx from Power Boiler 1 to confirm emissions reduction by March 31, 2024
- Removal of #6 fuel oil as a permitted fuel source in the facility’s Title V Permit

On February 1, 2022, CPP Halsey and DEQ amended the SAFO to require:

- Include an option for replacement of PB1EU;
- additional requirements to ensure practical enforceability of emission reductions;
- Removal of #6 fuel oil as a permitted fuel source in the facility's Title V Permit.

On August 25, 2023, CPP Halsey and DEQ amended the SAFO to require (see SAFO NO. 22-3501-A2):

- The replacement of PB2EU instead of PB1EU
- Limiting the operation of Power Boiler 1
- Appropriate permitting of the new power boiler at the time of installation
- Removal of #6 fuel oil as a permitted fuel source in the facility's Title V Permit

International Paper Company – Springfield Mill

On January 9, 2020, DEQ notified International Paper Company – Springfield Mill (IP Springfield) that their facility had been selected for further analysis in DEQ's Round II Regional Haze planning. On June 15, 2020, IP Springfield submitted their Four Factor Analysis (FFA). On August 14, 2020, DEQ notified IP Springfield that the FFA submitted by the facility required additional analysis to determine if:

- Low NOx Burner (LNB) would be cost effective for installation on Power Boiler EU-150A
- Selective Catalytic Reduction (SCR) would be cost effective for installation on Power Boiler EU-150A, Package Boiler EU150B, and Recovery Furnace 4.
- Selective Noncatalytic Reduction (SNCR) would be cost effective for installation on Power Boiler EU-150A and Package Boiler EU-150B.

On September 18, 2020, IP Springfield submitted additional information:

- A memorandum issued by the National Association of Air and Stream Improvements (NCASI) stating that the installation of SCR on a Kraft recovery furnace was infeasible. The memorandum, dated September 10, 2020, stated that installation of SCR was infeasible due to difficulties:
 - maintaining flue gas temperature at the appropriate level at the SCR reactor inlet
 - potential for higher SO in the flue gas, and
 - potential for high particulate concentration after the electrostatic precipitator.
- Concerns with cost effectiveness of LNB / FGR and additional resources needed to conduct more site-specific analysis of controls.

On January 21, 2021, DEQ notified IP Springfield that DEQ had preliminarily determined the installation of SCR on Power Boiler 150A, elimination of #6 fuel oil use as back-up fuel for the facility to reduce SO₂ emissions, and restricting the use of ultra-low sulfur diesel to quantities allowed in NESHAP DDDDD (EU-150A and EU-150B) or to periods of natural gas curtailment (Recovery Furnace 4 and EU-455) were likely cost effective based on information provided to DEQ.

On February 2, 2021, IP Springfield submitted a letter in response to DEQ's preliminary determination, explaining that the cost effectiveness of SCR installation was above the \$10,000 per ton threshold for consideration.

On August 9, 2021, IP Springfield and DEQ entered into a Stipulated Agreement and Final Order that, among other things, required the Springfield Mill to:

- Reduce Plant Site Emission Limits for SO₂, NO_x, and PM₁₀
- Limit fuel combustion in Power Boiler 150A and Package Boiler 150B to natural gas and under specific circumstances, ultra-low sulfur diesel.
- Limit fuel combustion in Recover Furnace 4 to black liquor solids and natural gas and under specific circumstances, ultra-low sulfur diesel.

- Limit fuel combustion in the Lime Kilns to natural gas, product turpentine and product methanol and under specific circumstances, ultra-low sulfur diesel.
- Achieve an emissions rate of 0.25 lb/MMBtu on a 7-day rolling average and install a Continuous Emissions Monitoring System (CEMS) to demonstrate compliance with the specified emissions rate.
- Further reduce the PSEL for NOx from Power Boiler 150A after CEMS installation (see SAFO No. 208850).

In addition to these requirements, DEQ submits the following sections of permit number 208850 as modified October 4, 2016 with this Regional Haze SIP supplement for approval:

186-189: Plant Site Emission Limit Monitoring

192: Recordkeeping Requirements

198: Reporting Requirements

Section 6: Response to Federal Land Manager Review Comments

Comment #1:

In our October 29, 2021 public comments on the draft SIP, the NPS recommended that Oregon base control determinations on the results of four-factor analyses rather than permitted emission limit adjustments that allow facilities to retroactively avoid selection. In cases where recent actual emission levels would not have triggered selection the NPS views permit adjustments by Oregon in a positive light as a way to avoid backsliding. However, in cases where recent actual emission levels triggered selection (e.g., Kingsford Manufacturing Company, Owens-Brockway Glass Container Inc.) facilities should not be allowed to accept permitted emission reductions in lieu of implementing cost-effective emission controls unless such reductions are equivalent to those identified as feasible through four-factor analyses.

Response:

DEQ appreciates NPS' recommendations and shares the goal to reduce haze-forming emissions as much as possible. DEQ agrees that a facility should not avoid undergoing four factor analysis by limiting their actual emissions. However, all facilities that took reductions to emissions to select out of the process took reductions to their Plant Site Emission Limits (PSELs) and in some cases reduced their unassigned emissions. Unassigned emissions allow a facility to make future changes that increase their PSELs and avoid otherwise required permit review. By reducing unassigned emissions as well as PSELs, DEQ ensures that facilities will be required to undergo the necessary review of emissions and potential four factor analysis if they propose future emissions increases. No facility took artificial limits to their actual emissions; all sources took reductions to bring potential emissions in line with actual emissions at the facility. In the case of both Kingsford and Owens-Brockway, reductions to potential and unassigned emissions were taken to align allowable emissions with equipment that currently exists at the facilities.

Oregon approached Regional Haze Round 2 by scrutinizing allowable potential emissions rather than actual emissions. DEQ followed EPA's August 2019 guidance, and consulted with other states before establishing a process through which facilities could avoid being captured by Regional Haze requirements by lowering their PSELs. DEQ's approach of screening into regional haze based on allowable emissions is more protective than the approach of most other states, which focused on actual emissions. That possibility was carried throughout the entire process; at any point, a source could select out of the pool of regional haze sources by taking a PSEL reduction. PSEL reduction is one of the compliance options provided in Division 223. Emissions reductions are verifiable and enforceable through facilities' Title V permits, the stipulated agreements and orders, and by incorporation into the proposed Regional Haze SIP. DEQ appreciates these comments and will take them into consideration as planning proceeds for Round 3 Regional Haze Planning (2028-2038).

Comment #2:

Compliance deadlines for the affected facilities have been significantly altered.

The alternative compliance deadline for emission unit replacements is July 31, 2031 versus the July 31, 2026 deadline to install controls. This extended deadline is well beyond the end of the current regional haze planning period and will allow current emission levels from affected facilities to continue without mitigation for an additional five years. In their 2019 regional haze guidance document, the EPA states that the reasonable progress goals “for the second implementation period are to be based only on the combined effect of the LTS measures with compliance dates on or before December 31, 2028.”

Response:

Section 169A(b)(2)(B) of the Clean Air Act requires “a long term (ten to fifteen years) strategy for making reasonable progress” toward national regional haze goals. 40 CFR 51.308(f) set the 2018-2028 planning timeline for Round 2 of Regional Haze. However, EPA regulations explicitly contemplate the installation of controls outside of the planning period. 40 CFR 51.308(f)(2)(i) states that “[i]n considering the time necessary for compliance, if the State concludes that a control measure cannot reasonably be installed and become operational until after the end of the implementation period, the State may not consider this fact in determining whether the measure is necessary to make reasonable progress.” This demonstrates that the State may require control measures that cannot reasonably be installed within the planning period. The excerpt cited by NPS from the 2019 regional haze guidance actually refers to regional scale modeling efforts rather than control measures. Regarding reasonable progress goals, Oregon is on target to achieve reasonable progress and stay on the glide path in Class I areas. DEQ took EPA’s 2021 guidance that achieving Uniform Rate of Progress (URP) is not a “safe harbor” seriously and has worked to implement cost-effective controls beyond what was necessary to achieve URP. This included requiring controls that could not reasonably be anticipated to be operational during the planning period.

Generally, the majority of Oregon’s compliance deadlines are within the planning period. In a few cases there are alternative compliance timelines which extend to 2031. Beyond the fact that this is permissible under EPA’s regional haze regulations, it is practical due to the delays in the submission of Oregon’s Round 2 Regional Haze plan. These delays were due to EPA’s timeline in completing national scale modeling for regional haze, which states used as an input for regional scale modeling. Given that the process was delayed by three years, DEQ felt it was appropriate for facilities to utilize the entire 10 year period for installation of replacement emission units. This should not be interpreted to indicate a similar timeline for future equipment replacements; multiple factors were involved in this determination including the timing of the global pandemic and subsequent supply chain delays.

Comment #3:

Alternative compliance options do not identify the emission reductions that will be achieved by the replacement of existing emission units. This makes it difficult to determine whether the alternative compliance options are equivalent to or better than the original reasonable progress determinations.

Response:

Reasonable progress is established for each state based on aggregate emissions reductions. This determination is not made individually based on decisions regarding emissions reductions at individual facilities. The four factor analysis completed by each of these facilities concluded that no controls were cost effective. In further discussion with facilities as laid out in Section 5 of the supplement, facilities requested additional review to determine if equipment replacement would be preferable to a retrofit. Through additional scrutiny of the four factor analysis, DEQ determined that some subset of controls were cost effective. In comparison to no cost effective controls, DEQ finds that replacement of these emissions units will result in greater emissions reductions than what would be achieved with equipment retrofits. In general, replacement of emissions units result in greater emissions reductions than retrofits because new equipment is subject to an

array of permitting requirements such as compliance with ambient air quality standards, increment protection, and visibility requirements.

Comment #4:

Alternative compliance options do not require installation of Best Available Control Technology (BACT) as part of emission unit replacement permitting.

Several of the SAFOs note that the new units “shall meet the most recent permitting standards and requirements for new emission units (including but not limited to New Source Performance Standards) in place at the time of submitting a permit application.” This may not be adequately protective because new source performance standards (NSPS) are frequently less stringent than BACT-level controls.

The NPS continues to recommend that Oregon require the most significant pollution reductions found to be technically feasible and cost-effective for facilities reviewed for reasonable progress. Acceptable alternative approaches should be supported by a demonstration that they are equivalent to or better than reasonable progress.

Response:

Reasonable progress is established for each state based on aggregate emissions reductions. This determination is not made individually based on decisions regarding emissions reductions at individual facilities. DEQ concurs that the facilities should consider the maximum reductions possible with cost effective controls. BACT reviews under NSR follow their own set of rules and guidelines to determine what is cost-effective. While DEQ considered BACT guidelines and used information from the RACT-BACT clearinghouse in analyzing possible controls at each facility, the Environmental Quality Commission adopted rules based on what Oregon considered cost effective for the purposes of Regional Haze. “Cost effective” is defined in OAR 340-223-0120(4)(a) as costing \$10,000 or less to install. In Round 3, DEQ will conduct another review of possible cost effective control technology.

Comment #5:

Georgia Pacific - Wauna Mill (04-0004)

The NPS supports the determination to install low NOx burners and flue gas recirculation to achieve an emission rate no greater than 0.09 lb/MMBtu on a seven-day rolling basis. We also agree with the determination that these controls should be installed no later than July 31, 2026.

Response:

DEQ considered this comment and thanks the commenter.

Comment #6:

Cascade Pacific Pulp, LLC - Halsey Pulp Mill (22-3501)

The proposed SAFO Amendment No. 22-3501-A2 includes replacement of PB#2 no later than July 31, 2031 and limits NOx emissions to 0.036 lb/MMBtu as a 30-day rolling average. The NPS recommends that the new boiler meet BACT (as a substitute for a four-factor analysis). The NPS also recommends that Oregon DEQ address the "Time Necessary for Compliance" for the alternative boiler replacement option.

Response:

See responses to comments # 2 and #4.

Comment #7:

Georgia-Pacific – Toledo LLC (21-0005)

The NPS agrees with the requirement to install low NOx burners and flue gas recirculation on EU-11, EU-13, and E18 to achieve an emission rate no greater than 0.09 lb/MMBtu on a seven-day rolling basis by July 31, 2026. If, instead, Georgia Pacific chooses to replace these boilers, the NPS recommends that the new boiler(s) meet BACT (as a substitute for a four-factor analysis). The NPS also recommends that Oregon DEQ address the "Time Necessary for Compliance" for the July 31, 2031 alternative boiler replacement option.

Response:

See responses to comments # 2 and #4.

Comment #8:

Gas Transmission NW LLC – Compressor Station #13 (18-0096)

The NPS agrees with the requirement to install SCR controls and associated monitoring equipment by July 31, 2026. In lieu of complying with the SCR requirements, the revised SAFO now allows for replacement of the gas turbines by July 31, 2031. The alternate compliance plan specifies that the new turbines “shall meet the most recent permitting standards and requirements for new emission units (including but not limited to New Source Performance Standards),” but does not specify whether the actual emission reductions achieved will be equivalent to or better than installation of SCR. The current NSPS for combustion turbines of this size is 25 ppm NOx. New turbines equipped with SCR can achieve limits of 2.5 ppm NOx. The NPS recommends that the new turbines meet BACT (as a substitute for a four-factor analysis). The NPS also recommends that Oregon DEQ address the "Time Necessary for Compliance" for the alternative turbine replacement option.

Response:

See response to comment #4 regarding BACT. In general, replacement of emissions units result in greater emissions reductions than retrofits because new equipment is subject to an array of current permitting requirements such as compliance with ambient air quality standards, increment protection, visibility requirements and greenhouse gas reduction requirements. Current permitting rules in Oregon require review of replacement projects for compliance with the National Ambient Air Quality Standards and to determine if Typically Available Control Technology should be installed at a facility. These additional reviews will result in the installation of new equipment that emits less NOx than would otherwise be emitted by a retrofitted unit.