

1 **ENERGY FACILITY SITE EVALUATION COUNCIL**
2 **P.O. BOX 43172**
3 **OLYMPIA, WASHINGTON 98504-3172**

4 **IN THE MATTER OF:**] **NO. EFSEC/95-02 AMENDMENT 1**
5 **Chehalis Generation Facility**] **NOTICE OF CONSTRUCTION AND**
6 **Electrical Generating Facility**] **PREVENTION OF SIGNIFICANT**
7 **Chehalis, Washington**] **DETERIORATION FINAL**
8] **APPROVAL**

9 Pursuant to the Energy Facility Site Evaluation Council (EFSEC) regulation for air permit applications
10 (Washington Administrative Code 463-42-385), the Washington Department of Ecology (Ecology)
11 regulations for new source review (Washington Administrative Code 173-400-110 and Chapter 174-460
12 WAC), the federal Prevention of Significant Deterioration regulations (40 CFR 52.21), the complete Notice
13 of Construction/Prevention of Significant Deterioration Application, the 18 month extension application
14 submitted by Chehalis Power Generating, Limited Partnership (Chehalis Power), the January 10, 2000, Site
15 Certification Agreement amendment application, the March 22, 2001, Administrative Order on Consent
16 between Chehalis Power and US EPA Region 10, and the technical analysis performed by Ecology for
17 EFSEC, EFSEC finds the following:

18 **FINDINGS**

- 19 1. Chehalis Power has applied to construct the Chehalis Generation Facility (CGF) which will be
20 located near Chehalis, Washington. The proposed 520 megawatt (MW) project consists of two (2)
21 175 MW natural gas and oil-fired combustion gas turbines, (each operating with a heat recovery
22 steam generator (HRSG) in a combined cycle mode), a single steam turbine generator, and two
23 auxiliary boilers to assist in start-up and provide steam when the turbines are down. A steam host
24 (steam customer) may be added in the future. A contract has been signed with General Electric to
25 supply the gas turbine generator equipment.
- 26 2. The project is subject to PSD regulations under Title 40 Code of Federal Regulations (CFR) 52.21
27 because it is one of 28 listed industries that becomes a "major source," when emitting more than
28 100 tons per year of any regulated pollutant. CGF has the potential to emit significant quantities of
29 nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter (PM₁₀),
30 volatile organic compounds (VOC), and sulfuric acid mist (H₂SO₄).
- 31 3. The site of the proposed project is within a Class II area that is in attainment with regard to all

- 32 pollutants regulated by the National Ambient Air Quality Standards (NAAQS) and state air quality
33 standards. The site is 80 kilometers (km) from the nearest Class I Area, Mt. Rainier National Park.
- 34 4. The project is subject to new source review requirements under Chapter 173-400 WAC, Chapter
35 173-460 WAC, 40 CFR 52.21, 40 CFR 60.40b, 40 CFR 60.330; to emission monitoring
36 requirements under RCW 70.94, Chapter 173-400 WAC, 40 CFR 60 Appendices A, B, and F, and
37 40 CFR 75; to gas fuel monitoring requirements under 40 CFR 60.334(b)(2), and to oil fuel
38 requirements in 40 CFR 60.49b(r).
- 39 5. Chehalis Power's notice of construction/prevention of significant deterioration (NOC/PSD)
40 application for the proposed project was determined to be complete on August 14, 1995. The 18
41 month extension application was determined to be complete on August 24, 1998.
- 42 6. The project will use natural gas as the primary fuel. No. 2 distillate fuel may be used as a backup
43 and for limited testing purposes, not to exceed 720 hours per calendar year for each combustion
44 turbine generator and auxiliary boiler.
- 45 7. Best available control technology (BACT) as required under WAC 173-400-113(2) and toxic best
46 available control technology (T-BACT) as required under WAC 173-460-040(4) will be used for
47 the control of all air pollutants which will be emitted by the proposed project.
- 48 8. Turbines using advanced dry low NO_x (ADLN) burner technology and selective catalytic reduction
49 (SCR) for NO_x control are allowed by this permit.
- 50 9. The facility will have the potential to emit up to 129 tons per year of carbon monoxide (CO).
- 51 10. The facility will have the potential to emit up to 241 tons per year of nitrogen oxides (NO_x); as a
52 result of NO_x emission controls, the facility will have the potential to emit up to 226 tons per year of
53 ammonia (NH₃).
- 54 11. The facility will have the potential to emit up to 164 tons per year of sulfur oxides (SO_x).
- 55 12. The facility will have the potential to emit up to 152 tons per year of particulate matter smaller than
56 10 microns (PM₁₀).

- 57 13. The facility will have the potential to emit up to 65 tons per year of volatile organic compounds
58 (VOCs).
- 59 14. The facility will have the potential to emit up to 30 tons per year of sulfuric acid mist (H₂SO₄).
- 60 15. Allowable emissions from the new emissions units will not cause or contribute to air pollution in
61 violation of:
- 62 15.1. Any ambient air quality standard;
63 15.2. Any applicable maximum allowable increase over the baseline ambient concentration.
- 64 16. Ambient impact analysis indicates that there will be no significant impacts resulting from pollutant
65 deposition on soils and vegetation in either the Mt. Rainier or Olympic National Parks, Mt. Hood
66 Wilderness, Mt. Adams Wilderness, Goat Rock Wilderness, Alpine Lake Wilderness, or the
67 Columbia River Gorge National Scenic Area.
- 68 17. Ambient impact analysis indicates that the proposed emissions will cause no significant degradation
69 of regional visibility, or impairment of visibility in any Class I area.
- 70 18. No significant effect on industrial, commercial, or residential growth in the Chehalis area is
71 anticipated due to the project.
- 72 19. EFSEC finds that all requirements for new source review (NSR) and PSD are satisfied and that as
73 approved below, the new emissions units comply with all applicable federal new source
74 performance standards. Approval of the NOC/PSD application is granted subject to the following
75 conditions.

76 **APPROVAL CONDITIONS**

- 77 1. The combustion turbines and auxiliary boilers shall be fueled only by pipeline quality natural gas
78 except when natural gas is not available and during limited test periods. When natural gas is not
79 available and during limited test periods, the combustion turbines and boilers may be fueled by "on-
80 road specification diesel fuel" (referred to as "oil" in this Approval) containing no more than 0.05
81 percent sulfur by weight, as specified in 40 CFR 80.29 as amended through July 1, 1992. Oil firing
82 for each combustion turbine and auxiliary boiler is limited to 720 hours per calendar year. Chehalis

83 Power shall report all oil fired operations to EFSEC in accordance with the reporting requirements
84 in Condition 17.

85 2. NO_x emissions from each HRSG exhaust stack shall not exceed 3.0 parts per million on a dry
86 volumetric basis (ppmdv) over a one hour average when corrected to 15.0 percent oxygen when
87 burning natural gas. NO_x emissions from each HRSG exhaust stack shall not exceed 223 kilograms
88 (491 pounds) per day when burning natural gas.

89 NO_x emissions from each boiler shall not exceed 30.2 ppmdv over a one hour average corrected to
90 3.0 percent oxygen or 4.72 kilograms (10.4 pounds) per hour when burning natural gas.

91 NO_x emissions from each HRSG exhaust stack shall not exceed 14.0 ppmdv over a one hour
92 average, corrected to 15.0 percent oxygen, when burning oil. NO_x emission from each HRSG
93 exhaust stack shall not exceed 1,160 kilograms (2,538 pounds) per day when burning oil.

94 NO_x emissions from each boiler shall not exceed 70.0 ppmdv over a one hour average, corrected to
95 3.0 percent oxygen or 11.4 kilograms (25 pounds) per hour when burning oil.

96 The total annual NO_x emissions of all combustion turbines and boilers shall not exceed 241 tons on
97 a 12 month rolling summation, calculated once per month.

98 Initial compliance for each turbine shall be determined in accordance with Title 40 CFR Subpart
99 GG and EPA Reference Method 20, except that the instrument span shall be 100 ppm or less. Initial
100 compliance for each boiler shall be determined in accordance with Title 40 CFR Subpart Db and
101 EPA Reference Method 7.

102 NO_x, O₂ emissions and exhaust gas flow rate or velocity from each exhaust stack shall be measured
103 and recorded by a continuous emission monitoring system (CEMS) which meets the requirements
104 of Condition 14.2. Exhaust gas flow rate or velocity may be determined using F factor calculation
105 or other method approved by EFSEC in advance instead of using a flow CEM.

106 3. CO emissions from each HRSG exhaust stack shall not exceed 3.0 ppmdv corrected to 15.0 percent
107 oxygen, or 3.5 kilograms (7.7 pounds) per hour on a one hour average when natural gas is burned.

108 CO emissions from each HRSG exhaust stack shall not exceed 8.0 ppmdv, corrected to 15 percent

- 109 oxygen, on a one hour average, or 11.1 kilograms (24.4 pounds) per hour, when oil is burned.
- 110 CO emissions from each boiler shall not exceed 20.0 ppm_{dv} on a one hour average, corrected to 3.0
111 percent oxygen, or 2.3 kilograms (4.9 pounds) per hour.
- 112 Initial compliance for each HRSG and boiler when burning natural gas shall be determined by EPA
113 Reference Method 10 or an equivalent method agreed to in advance by EFSEC. The span and
114 linearity calibration gas concentrations in Method 10 shall be modified to a span gas concentration
115 of 100 ppm or less, with all other calibration gas concentrations similarly reduced.
- 116 CO emissions from each of the exhaust stacks shall be measured and recorded by CEMS that meet
117 the requirements of Condition 14.1.
- 118 4. SO₂ emissions from each HRSG exhaust stack shall not exceed 4.72 kilograms (10.4 pounds) per
119 hour when natural gas is burned.
- 120 SO₂ emissions from each HRSG exhaust stack shall not exceed 54.0 kilograms (119 pounds) per
121 hour when oil is burned.
- 122 SO₂ emissions from each boiler shall not exceed 0.73 kilograms (1.6 pounds) per hour when natural
123 gas is burned.
- 124 SO₂ emissions from each boiler shall not exceed 6.63 kilograms (14.6 pounds) per hour when oil is
125 burned.
- 126 Initial compliance for each HRSG and boiler shall be determined by EPA Reference Method 6, or
127 an equivalent method approved in advance by EFSEC. If Method 6C is used, the instrument span
128 shall be at maximums of 3 ppm when natural gas is burned, and 30 ppm when oil is burned, and all
129 span and calibration gases used shall follow in accordance with the method requirements.
- 130 Continuous emission monitoring of SO₂ is not required. Continuous compliance with the limit for
131 each of the stacks shall be by means of fuel sulfur content reporting and fuel flow monitoring to
132 each turbine and boiler.
- 133 5. Volatile organic compound (VOC) emissions from each HRSG exhaust stack shall not exceed 3.2

134 kilograms (7.0 pounds) per hour, or 69 kilograms (152 pounds) per day, whichever is more
135 restrictive, when natural gas is burned. VOC emissions from each HRSG exhaust stack shall not
136 exceed 5.22 kilograms (11.5 pounds) per hour, or 115 kilograms (252 pounds) per day, whichever is
137 more restrictive, when oil is burned.

138 VOC emissions from each boiler shall not exceed 10 ppm_{dv} corrected to 3.0 percent oxygen, or
139 0.68 kilograms (1.5 pounds) per hour when firing natural gas. VOC emissions from each boiler
140 shall not exceed 20 ppm_{dv} corrected to 3.0 percent oxygen, or 1.3 kilograms (2.8 pounds) per hour
141 when firing oil.

142 Initial compliance for each HRSG and boiler shall be determined by EPA Reference Methods 25A
143 or 25B, or an equivalent method agreed to in advance by EFSEC.

144 6. PM₁₀ emissions from each HRSG exhaust stack shall not exceed 172 kilograms (379 pounds) per
145 day when natural gas is burned. PM₁₀ emissions from each HRSG exhaust stack shall not exceed
146 218 kilograms (480 pounds) per day when oil is burned.

147 PM₁₀ emissions from each boiler shall not exceed 0.68 kilograms (1.5 pounds) per hour when
148 natural gas is burned. PM₁₀ emissions from each boiler shall not exceed 4.5 kilograms (9.8 pounds)
149 per hour when oil is burned.

150 Initial compliance for the HRSGs and the boiler shall be determined by either EPA Reference
151 Methods 5, 201, or 201A, or an equivalent method agreed to in advance by EFSEC.

152 7. H₂SO₄ emissions from each HRSG exhaust stack shall not exceed 0.91 kilograms (2.0 pounds) per
153 hour when natural gas is burned. H₂SO₄ emissions from each HRSG exhaust stack shall not exceed
154 8.62 kilograms (19.0 pounds) per hour when oil is burned. H₂SO₄ emissions from each boiler shall
155 not exceed 0.05 kilograms (0.1 pounds) per hour when natural gas is burned. H₂SO₄ emissions
156 from each boiler shall not exceed 0.50 kilograms (1.1 pounds) per hour when oil is burned. All
157 limits are on a one hour average.

158 Initial compliance with the H₂SO₄ emissions limits shall be determined by EPA Reference Method
159 8, or an equivalent method approved in advance by EFSEC.

- 160 8. Opacity from each exhaust stack of the project shall not exceed 10 percent over a six minute
161 average as measured by EPA Reference Method 9, or an equivalent method approved in advance by
162 EFSEC. A certified opacity reader shall read and record the opacity daily if Method 9 is used.
- 163 9. NH₃ emissions from each HRSG exhaust stack shall not exceed 10.0 ppm_{dv} on a one hour average
164 corrected to 15.0 percent oxygen when burning natural gas. NH₃ emissions from each HRSG
165 exhaust stack shall not exceed 278 kilograms (612 pounds) per day when burning natural gas.
- 166 NH₃ emissions from each HRSG exhaust stack shall not exceed 10.0 ppm_{dv} over a one hour
167 average corrected to 15.0 percent oxygen when burning oil. NO_x emission from each HRSG
168 exhaust stack shall not exceed 310 kilograms (683 pounds) per day when burning oil.
- 169 NH₃ emissions from each HRSG exhaust stack shall be measured and recorded by CEMS that meet
170 meet the requirements of Condition 14.3.
- 171 10. All conditions apply except during unit startup and shutdowns. The duration of startup or shutdown
172 periods are limited to 3 hours per occurrence, with a maximum of two startups per 24 hour period,
173 and 200 startups per year, per turbine or boiler. CO emissions during startup and shutdown shall
174 not exceed 120 kilograms (263 pounds) per hour when burning gas, or 190 kilograms (417 pounds)
175 per hour when burning oil, averaged over the occurrence. NO_x emissions during startup and
176 shutdown shall not exceed 132 kilograms (292 pounds) per hour when burning gas, or 185
177 kilograms (407 pounds) per hour when burning oil, averaged over the occurrence. Also, at least one
178 turbine must be down when both boilers are operating under load conditions.
- 179 11. Within 180 days after initial turbine start-up, Chehalis Generation Facility shall conduct
180 performance tests for NO_x, SO₂, H₂SO₄, opacity, NH₃, CO, VOCs and PM₁₀ on each combustion
181 turbine and boiler, to be performed by an independent testing firm. A test plan shall be submitted
182 for EFSEC's approval at least 30 days prior to the testing.
- 183 "Initial turbine start-up" means the time that the first electricity from an electric generator is
184 delivered to the electrical power grid.
- 185 12. Sampling ports and platforms shall be provided on each stack, after the final pollution control
186 device. The ports shall meet the requirements of 40 CFR, Part 60, Appendix A Method 20.

- 187 13. Adequate permanent and safe access to the test ports shall be provided. Other arrangements may be
188 acceptable if approved by EFSEC prior to installation.
- 189 14. Continuous Emission Monitoring Systems
- 190 14.1 Continuous emission monitoring systems (CEMS) for CO, shall, at a minimum meet the
191 requirements contained in 40 CFR, Part 60, Appendix B, Performance Specifications and
192 40 CFR, Part 60, Appendix F, Quality Assurance Procedures.
- 193 14.2 CEMS for NO_x, O₂, and (if used) exhaust gas flow rate or velocity compliance shall meet
194 the requirements contained in 40 CFR 75, Emissions Monitoring.
- 195 14.3 CEMS for NH₃ shall meet the requirements contained in 40 CFR, Part 60, Appendix B,
196 Performance Specifications and 40 CFR, Part 60, Appendix F, Quality Assurance
197 Procedures, or other EFSEC-approved performance specifications and quality assurance
198 procedures.
- 199 15. Compliance testing shall be performed for PM₁₀, VOCs, and H₂SO₄ from each stack once every two
200 calendar years. Source testing for these parameters is to coincide with the Relative Accuracy Test
201 Audit required for each installed CEMS. If the compliance testing for 3 consecutive tests indicates
202 that the source can maintain compliance with a specific pollutant's (PM₁₀, VOCs, or H₂SO₄,)
203 emission limitations and EFSEC agrees to allow a reduced frequency of compliance testing, then
204 the compliance testing frequency for that pollutant can be reduced to once every 4 years, until a test
205 indicates noncompliance. When a compliance test for a pollutant indicates noncompliance with the
206 emissions limitations, the frequency of testing will return to once every two years until the above
207 criteria are met again.
- 208 16. CEMS and process data shall be reported in written (or electronic if permitted by EFSEC) form to
209 the authorized representative of EFSEC and to the EPA Region X Office of Air Quality monthly
210 (unless a different testing and reporting schedule has been approved by EFSEC) within thirty days
211 of the end of each calendar month.
- 212 17. The format of the reporting shall match that required by EPA for demonstrating compliance with
213 the Title IV Acid Rain program reporting requirements. Pollutants not covered by that format shall
214 be reported in a format approved by EFSEC which shall include at least the following:
- 215 17.1. Process or control equipment operating parameters.
- 216 17.2. The hourly maximum and average concentration, in the units of the standard, for each
217 pollutant monitored.

- 218 17.3. The duration and nature of any monitor down time.
- 219 17.4. Results of any monitor audits or accuracy checks.
- 220 17.5. Results of any stack tests.
- 221 18. For each occurrence of monitored emissions in excess of the standard, the monthly emissions report
222 (per condition 17) shall include the following:
- 223 18.1 For parameters subject to monitoring and reporting under the Title IV Acid Rain program,
224 the reporting requirements in that program shall govern excess emissions report content.
- 225 18.2 For all other pollutants:
- 226 18.2.1. The time of the occurrence.
- 227 18.2.2. Magnitude of the emission or process parameters excess.
- 228 18.2.3. The duration of the excess.
- 229 18.2.4. The probable cause.
- 230 18.2.5. Corrective actions taken or planned.
- 231 18.2.6. Any other agency contacted.
- 232 19. Operating and maintenance manuals for all equipment that has the potential to affect emissions to
233 the atmosphere shall be developed and followed. Copies of the manuals shall be available to
234 EFSEC or the authorized representative of EFSEC. Emissions that result from a failure to follow
235 the requirements of the manuals may be considered proof that the equipment was not properly
236 operated and maintained.
- 237 20. Operation of the equipment that has the potential to affect emission to the atmosphere must be
238 conducted in compliance with all data and specifications submitted as part of the NOC/PSD
239 application unless otherwise approved by EFSEC.
- 240 21. This approval shall become invalid if construction of the project is not commenced within eighteen
241 (18) months after receipt of final approval, or if construction of the facility is discontinued for a
242 period of eighteen (18) months, unless EFSEC extends the 18 month period upon a satisfactory
243 showing that an extension is justified, pursuant to 40 CFR 52.21(r)(2) and applicable EPA
244 guidance.
- 245 22. Any activity that is undertaken by the Chehalis Generation Facility or others, in a manner which is
246 inconsistent with the application and this determination, shall be subject to EFSEC enforcement

- 247 under applicable regulations. Nothing in this determination shall be construed so as to relieve
248 Chehalis Generation Facility of its obligations under any state, local, or federal laws or regulations.
- 249 23. The Chehalis Generation Facility shall notify EFSEC in writing at least thirty days prior to start-up
250 of the project.
- 251 24. Access to the source by EFSEC or the authorized representative of EFSEC shall be permitted upon
252 request for the purpose of compliance assurance inspections. Failure to allow access is grounds for
253 revocation of this determination of approval.

254 Reviewed by:

255 _____/s/_____
256 Robert C. Burmark, P.E. _____
257 Engineering and Technical Services Date
258 Washington Department of Ecology

259 Approved by:

260 _____/s/_____
261 Barbara McAllister _____
262 Director, Office of Air Quality Date
263 U.S. Environmental Protection Agency, Region X

264 _____/s/_____
265 Deborah Ross _____
266 Chair Date
267 Energy Facility Site Evaluation Council

268 APPENDIX A – SUMMARY OF EMISSION LIMITATIONS for PSD EFSEC/95-02 AMENDMENT 1

COMBUSTION TURBINE WITH ADVANCED DRY LOW NOX TECHNOLOGY, SCR, AND OXIDATION CATALYST (PER TURBINE)						
Pollutant	Natural Gas Fuel		Oil Fuel		Test Method (or equivalent approved by EFSEC)	Stack Testing or Certification Frequency
	Limit	Averaging Time	Limit	Averaging Time		
NO _x ¹ @15% O ₂	3 ppmdv 491 lb/day	1 hour daily	14 ppmdv 2538 lb/day	1 hour daily	RM 20 and CEMs	Initial and Annual RATA
CO @ 15% O ₂	3.0 ppmdv 7.7 lb/hr	1 hour 1 hour	8.0 ppmdv 24.4 lb/hr	1 hour 1 hour	RM 10 and CEMs	Initial and Annual RATA
SO ₂	10.4 lb/hr	1 hour	119 lb/hr	1 hour	RM 6 and fuel monitoring	Initial
PM ₁₀	379 lb/day	daily	480 lb/day	daily	RM 5 or 201 or 201A	Initial and once per 2 calendar years ²
VOC	7.0 lb/hr 152 lb/day	1 hour daily	11.5 lb/hr 252 lb/day	1 hour daily	RM 25A or 25B	Initial and once per 2 calendar years ²
Sulfuric Acid Mist	2.0 lb/hr	1 hour	19.0 lb/hr	1 hour	RM 8	Initial and once per 2 calendar years ²
NH ₃ @15% O ₂	10 ppmdv 612 lb/day	1 hour daily	10 ppmdv 683 lb/day	1 hour daily	Bay Area Air Quality Management District Source Test Procedure ST-1B, January 20,1982.	Initial and Annual RATA
Opacity	10%	6 minute (one daily reading)	10%	6 minute (one daily reading)	RM 9	Initial and 6 month reader certification
AUXILIARY BOILERS WITH OXIDATION CATALYST (PER BOILER)						
NO _x @ 3.0% O ₂	30.2 ppmdv 10.4 lb/hr	1 hour 1 hour	70 ppmdv 25 lb/hr	1 hour 1 hour	RM 7 and CEMs	Initial and Annual RATA
CO @ 3.0% O ₂	20 ppmdv 4.9 lb/hr	1 hour 1 hour	20 ppmdv 4.9 lb/hr	1 hour 1 hour	RM 10 and CEMs	Initial and Annual RATA
SO ₂	1.6 lb/hr	1 hour	14.6 lb/hr	1 hour	RM 6 or 6C and fuel monitoring	Initial
PM ₁₀	1.5 lb/hr	1 hour	9.8 lb/hr	1 hour	RM 5 or 201 or 201A	Initial and once per 2 calendar years ²
VOC @ 3.0% O ₂	10 ppmdv 1.5 lb/hr	1 hour 1 hour	20 ppmdv 2.8 lb/hr	1 hour 1 hour	RM 25A or 25B	Initial and once per 2 calendar years ²
Sulfuric Acid Mist	0.1 lb/hr	1 hour	1.1 lb/hr	1 hour	RM 8	Initial and once per 2 calendar years ²
Opacity	10%	6 minute (one daily reading)	10%	6 minute (one daily reading)	RM 9	Initial and 6 month reader certification

- 269 1. Plant wide annual NO_x limit is 241 tons per year on a 12 month rolling summation.
 270 2. See Condition 15 for reduced frequency of compliance certification testing options.
 271 3. This table is a summary of the permit’s conditions. If there is a conflict between this table and a permit provision, the written permit provision takes precedence.