

1 **ENERGY FACILITY SITE EVALUATION COUNCIL**
2 **P.O. BOX 43172**
3 **OLYMPIA, WASHINGTON 98504-3172**
4

5
6 **IN THE MATTER OF:**] **NO. EFSEC/2001-03**
7 **Wallula Power Project**] **FINAL APPROVAL OF THE**
8 **Wallula Generation LLC**] **NOTICE OF CONSTRUCTION**
9 **Walla Walla County, Washington**]
10]
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14 Pursuant to the Energy Facility Site Evaluation Council (EFSEC) General and Operating Permit
15 Regulations for Air Pollution Sources Chapter 463-39 Washington Administrative Code (WAC),
16 the Washington Department of Ecology (Ecology) regulations for new source review Chapter
17 173-400 WAC and Chapter 174-460 WAC, and based upon the Notice of Construction
18 Application (NOC), submitted by Wallula Generation, LLC on September 27, 2001, the
19 additional information submitted on September 27, 2001, October 17, 2001, December 21, 2002,
20 December 24, 2001 January 18, 2002, February 8, 2002, and April 3, 2002, and the technical
21 analysis performed by the Department of Ecology for EFSEC, EFSEC now finds the following:
22

23 **FINDINGS**
24

- 25 1. Wallula Generation, LLC has applied to construct and operate the Wallula Power Project
26 a 1,300 megawatt (MW) combined cycle electric power plant located in Walla Walla
27 County, Washington.
28
- 29 2. The project consists of two independent power blocks with critical back-up systems to
30 maintain overall plant reliability and availability, an auxiliary boiler, an emergency
31 generator, and a diesel fire pump. Each power block will consist of two General Electric
32 Model PG7421(FA) combustion gas turbine-generators, two heat recovery steam
33 generators (HRSG) complete with duct burners and an 11-cell mechanical draft cooling
34 tower. Each power block will be nominally rated at 650 MW.
35
- 36 3. For the remainder of this permit, each group of equipment that consists of one turbine-
37 generator, one set of duct burners, and one HRSG will be referred to as a Power
38 Generating Unit (PGU). There are four PGU's within this project.
39
- 40 4. This project is subject to New Source Performance Standard (NSPS) 40 CFR 60, Subpart
41 GG, Standards of Performance for Stationary Gas Turbine s.
42
- 43 5. This project is subject to NSPS 40 Code of Federal Regulations (CFR) 60, Subpart Da,
44 Standards of Performance for Electric Utility Steam Generating Units for Which
45 Construction is Commenced After September 18, 1978.
46
47

- 1 6. This project is subject to NSPS 40 CFR 60, Subpart Dc, Standards of Performance for
2 Small Industrial– Commercial –Institutional Steam Generating Units.
3
- 4 7. The Wallula Power Project is a new major stationary source that will emit more than 100
5 tons of a regulated pollutant per year and is therefore subject to PSD permitting.
6
- 7 8. Emissions of nitrogen oxides, volatile organic compounds, particulate matter, sulfuric
8 acid mist, and carbon monoxide (CO) are subject to Prevention of Significant
9 Deterioration permitting and will be issued a separate permit by EFSEC.
10
- 11 9. Emissions of sulfur oxides identified as sulfur dioxide (SO₂) and toxic air pollutants
12 (TAP's) are subject to Notice of Construction (NOC) attainment area permitting
13 requirements.
14
- 15 10. The Wallula Power Project is located in a "serious" nonattainment area for particulate
16 matter finer than 10 microns in diameter (PM₁₀) and will be subject to NOC
17 nonattainment area permitting requirements.
18
- 19 11. This project qualifies as a major stationary source because emissions of PM₁₀ are greater
20 than 70 tons per year.
21
- 22 12. Wallula Generation, LLC elected to take a federally enforceable limit on the number of
23 hours the auxiliary boiler, emergency diesel generator, and diesel fire pump will operate
24 each year.
25
- 26 13. Wallula Generation, LLC has elected to take a federally enforceable limitation on
27 emissions of PM₁₀ from the cooling towers.
28
- 29 14. This project will result in emissions of PM₁₀ of up to 300.5 tons per year.
30
- 31 15. Exclusive use of natural gas has been selected to be the Lowest Available Emission Rate
32 (LAER) for the control of PM₁₀ emissions from each PGU.
33
- 34 16. Water treatment plus a 0.0005% drift rate has been selected to be LAER for the control of
35 PM₁₀ emissions from the cooling towers.
36
- 37 17. Exclusive use of natural gas has been selected to be LAER for the control of PM₁₀
38 emissions from the auxiliary boiler.
39
- 40 18. Reduced operating hours has been selected to be LAER for the control of PM₁₀ emissions
41 from the emergency diesel generator.
42
- 43 19. Reduced operating hours has been selected to be LAER for the control of PM₁₀ emissions
44 from the diesel fire pump.
45
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1
2 30. The project will have no significant impact on ambient air quality and no ambient
3 standards will be exceeded.

4
5 31. EFSEC has determined that the Wallula Power Project emissions will be consistent with
6 making reasonable progress toward meeting the national goal of preventing any future,
7 and remedying any existing, impairment of visibility by human-caused air pollution in
8 mandatory Class I federal areas.

9
10 32. The project will not have a noticeable effect on industrial, commercial, or residential
11 growth in the Wallula area.

12
13 33. EFSEC finds that all requirements for NOC have been satisfied and will comply with all
14 applicable federal NSPS. Approval of the NOC application is granted subject to the
15 following conditions.
16

17
18 **APPROVAL CONDITIONS:**

19
20 1. The combustion turbines, duct burners and auxiliary boiler shall be fuelled by natural gas
21 with a maximum total sulfur content of 1 grain per 100 standard cubic feet when averaged
22 over 24 hours. Should a custom fuel monitoring plan be approved by EPA and EFSEC the
23 requirements contained in the custom fuel monitoring plan will supersede those contained
24 within this approval condition.

25
26 1.1. Compliance with the sulfur limit shall be determined in accordance with ASTM D 4468-
27 85 and ASTM D 4084-94 or an alternative method approved by EFSEC.

28 1.2. Continuous compliance shall be monitored by recording the daily average of 24, one-
29 hour readings in accordance with Approval Condition 1.1 above. Should Wallula
30 Generation, LLC receive a custom fuel monitoring schedule in accordance with 40 CFR
31 60.334 the requirements in the custom fuel monitoring schedule will replace the
32 requirements in Approval Conditions 1.1 and 1.2.
33

34 2. The emergency diesel generator and the diesel fire pump shall be fuelled by on-road
35 # 2 diesel fuel with a sulfur content of less than or equal to 0.05 percent.

36
37 2.1. Compliance shall be determined by recordkeeping and reporting.

38 2.2. Continuous compliance shall be monitored by submittal of quarterly reports in
39 accordance with Approval Condition 13 below.

40
41 3. Emissions of PM₁₀ from each PGU shall not exceed 0.0029 grains per dry standard cubic foot
42 (g/dscf) at 15% O₂ when averaged over 1 hour and 20.8 pounds per hour when averaged over
43 24 hours.
44
45

- 1 3.1. Compliance shall be determined by 40 CFR 60 Appendix A, Method 5,
2 40 CFR 51 Appendix M Method 201 or 201A for the front half analysis and 40 CFR 51
3 Appendix M Method 202 for the back half or an equivalent method approved in advance
4 by EFSEC.
- 5 3.2. Within 60 days of reaching commercial operation but no later than 180 days after the
6 first fire, each PGU shall be performance tested in accordance with 40 CFR 60.8 and
7 Approval Condition 3.1.
- 8 3.3. Continuous compliance shall be monitored by annual emissions testing in accordance
9 with Approval Condition 3.1. After 3 years of satisfactorily showing that tested
10 emissions are less than 75% of the limits in Approval Condition 3.1, the testing
11 frequency may be reduced from quarterly to once every three years. Should any test,
12 result in emissions of greater than 75% of the limits in Approval Condition 3.1 the
13 testing period shall return to annual.
- 14
- 15 4. Emissions of SO₂ from each PGU shall not exceed 0.35 ppm_{dv} at 15% O₂ when averaged
16 over 1 hour and 4.5 pounds per hour when averaged over 24 hours.
- 17
- 18 4.1. Compliance shall be determined by 40 CFR 60 Appendix A, Method 8 or an equivalent
19 method approved in advance by EFSEC.
- 20 4.2. Within 60 days of reaching commercial operation but no later than 180 days after the
21 first fire, each PGU shall be performance tested in accordance with 40 CFR 60.8 and
22 Approval Condition 4.1.
- 23 4.3. Continuous compliance shall be monitored by the combustion of no fuels other than
24 natural gas. A statement shall be made in each quarterly report regarding the type of fuel
25 combusted in the PGU.
- 26
- 27 5. Emissions of ammonia (NH₃) from each PGU exhaust stack shall not exceed 5 ppm_{dv} over a
28 24 hour average when corrected to 15.0 percent oxygen. Emissions of NH₃ from each PGU
29 stack exhaust shall not exceed 68.5 pounds per hour.
- 30 5.1. Compliance shall be determined by Bay Area Air Quality Management District Source
31 Test Procedure ST-1B, "Ammonia, Integrated Sampling", or an equivalent method
32 approved in advance by EFSEC.
- 33 5.2. Within 60 days of reaching commercial operation but no later than 180 days after the
34 first fire, each PGU shall be performance tested in accordance with 40 CFR 60.8 and
35 Approval Condition 5.1.
- 36 5.3. Continuous compliance shall be monitored by annual testing in accordance with
37 Approval Condition 5.1. Wallula Generation LLC shall develop and submit a plan to
38 EFSEC for approval that equates the source test results to the amount of NH₃ used for
39 the purpose of measuring emissions of NH₃.
- 40 5.4. Ammonia consumption and fuel use shall be recorded daily and reported monthly. All
41 source tests shall be used by EFSEC to establish a base line relating the of ammonia-
42 consumption/fuel-use ratio to NH₃ emissions. EFSEC may require NH₃ source testing at
43 any time that this relationship indicates NH₃ emissions may be exceeding the permit
44 limitation.

- 1
 2 6. The auxiliary boiler shall be limited to 4,000 hours of operation per calendar year.
 3
 4 6.1. Compliance shall be determined by installing and operating nonresetable totalizers on
 5 the auxiliary boiler.
 6 6.2. Compliance shall be monitored by record keeping and reporting in accordance with
 7 Approval Condition 11.1.
 8
 9 7. Emissions of PM₁₀ from each cooling tower block shall not exceed 3.7 pounds per hour
 10 (lb/hr) when averaged over 24 hours. The maximum total emissions from the two cooling
 11 tower blocks shall not exceed 13.9 tons per year calculated over a 12 month rolling
 12 summation.
 13
 14 7.1. Compliance shall be determined by source testing in accordance with the Cooling Tower
 15 Institute, Heated Glass Bead Isokinetic test method described in Cooling Tower Institute
 16 publication ATC-140 "Isokinetic Drift Measurement Test Code for Cooling Towers."
 17 7.2. A vender representative from the drift eliminator manufacturer shall be present during
 18 the installation of all drift eliminators. The vender representative shall inspect the
 19 instillation to ensure it is installed in accordance with the manufacturer's
 20 recommendations.
 21 7.3. Within 60 days of reaching commercial operation but no later than 180 days after the
 22 first fire in the same block PGU, the cooling tower shall be performance tested in
 23 accordance with 40 CFR 60.8 and Approval Condition 7.1.
 24 7.4. Continuous compliance shall be monitored by hourly calculation of the formula
 25 presented below. Total Dissolved Solids (TDS) shall be determined by daily testing in
 26 accordance with 40 CFR 136, Standard Method 2540 – B, or an alternate method
 27 approved in advance by EFSEC.
 28
 29

$$P_D = \left(\sum_{t=1}^T \frac{C_{1t}}{T \times N} \times R \times \frac{TDS_1}{10^6} + \sum_{t=1}^T \frac{C_{2t}}{T \times N} \times R \times \frac{TDS_2}{10^6} \right) \times \frac{D \times F}{10^2}$$

32 Where:

33
 34
 35 P_D = PM₁₀ quantity for the period (lb)

36 t = hour during the period from 1 to T

37 C_{1t} = Number of cells operating for hour "t" in cooling tower block 1

38 C_{2t} = Number of cells operating for hour "t" in cooling tower block 2

39 N = Number of cells in each cooling tower block

40 T = The period for which compliance is being checked, i.e. 24 hours or 8,760 hours

41 R = Design cooling water re-circulation rate for cooling tower blocks (86,068,800
 42 lb/hr)

43 TDS₁ = Average concentration of total dissolved solids in the re-circulating cooling
 44 water for cooling tower block 1, as determined for the period (ppmw)

45 TDS₂ = Average concentration of total dissolved solids in the re-circulating cooling

1 water for cooling tower block 2, as determined for the period (ppmw)
2 D = Design drift rate of 0.0005%
3 F = PM₁₀/PM ratio of 0.9 or 0.90, or another value established by Wallula
4 Generation, LLC pursuant to tests or methods approved in advance by EFSEC.
5

6 8. The emergency diesel generator shall be limited to 200 hours of operation per calendar year.
7

8 8.1. Compliance shall be determined by installing and operating nonresetable totalizers on
9 the emergency diesel generator.

10 8.2. Compliance shall be monitored by record keeping and reporting in accordance with
11 Approval Condition 8.1.

12
13 9. The diesel fire pump shall be limited to 100 hours of operation per calendar year.
14

15 9.1. Compliance shall be determined by installing and operating nonresetable totalizers on
16 the diesel fire pump.

17 9.2. Compliance shall be monitored by record keeping and reporting in accordance with
18 Approval Condition 9.1.
19

20 10. Wallula Generation, LLC shall offset the allowable PM₁₀ emissions from this project by
21 110% prior to beginning construction. The offsets must be greater than or equal to 331 tons
22 per year of PM₁₀.
23

24 10.1. Compliance with Approval Condition 10 shall be determined by purchasing land,
25 recording the deed restrictions, and complying with Approval Condition 11 below.

26 10.2. Continuous compliance shall be monitored by performing semi annual inspections of the
27 offsetting land and affirming to EFSEC in writing that the land use is current with its
28 deed restrictions.
29

30 11. Prior to beginning construction Wallula Generation, LLC, shall submit the following:
31

32 11.1. Proof that the proposed offsets are quantifiable.

33 11.1.1. Compliance with Approval Condition 11.1 shall be determined by describing the
34 historical, current, and proposed use of the land proposed for offsetting. The
35 applicant shall prepare an offsetting report and present all information necessary
36 to show that the proposed offsets are quantifiable and are greater than or equal to
37 331 tons per year of PM₁₀, consistent with the PM₁₀ Offset Protocol previously
38 submitted by Wallula Generation, LLC and accepted by EFSEC.
39

40 11.2. A statement that the proposed offsets are surplus.

41 11.2.1. Compliance with Approval Condition 11.2 shall be determined by including a
42 statement in the offsetting report (discussed in Approval Condition 11.1.1) that
43 the proposed offsets are not being used or credit for them is not being used for any
44 other purpose.
45

1 11.3. Proof that the proposed offsets are permanent.

2
3 11.3.1. Compliance with Approval Condition 11.3 shall be met by submitting copies of
4 property deeds showing that the offsetting property has permanent deed
5 restrictions limiting future land use to that described in the offsetting report
6 (discussed in Approval Condition 11.1.1).

7
8 11.4. Proof that the offsets are enforceable.

9 11.4.1. Compliance with Approval Condition 11.4 shall be determined by submitting
10 copies of property deeds showing that Wallula Generation, LLC is the owner of
11 the offsetting property.

12
13 11.5. Within 12 months of submitting the offsetting report Wallula Generation, LLC, shall
14 request this permit be reopened and the deed information inserted into the permit.
15

16 12. Emissions during startup and shutdown shall be counted towards annual emission limits.

17 12.1. Startup is defined as any operating period that is ramping up from less than partial load
18 (50%), and ends when four hours for a cold start, 2.5 hours for a warm start, or 1.5 hours
19 for a hot start have elapsed, since fuel was first introduced to the applicable turbine.

20 12.2. Shutdown is defined as any operating period for which all the following are occurring:

21 12.2.1. The system is ramping down from normal operation. Normal operation is defined
22 as operation between 50% and 100% of turbine power generation capacity.

23 12.2.2. The system is at less than partial load (50%).

24 12.2.3. Either the catalytic oxidation or selective catalytic reduction systems are below
25 the normal operating temperature range indicated by the manufacturer's operating
26 manual.

27
28 12.3. Shutdown ends when the fuel feed to the PGU ceases.

29 12.4. Emission limits for SO₂ during startup and shutdown of a PGU:

30 12.4.1. The limit on the one hour average SO₂ concentration and 24 hour mass emission
31 from each PGU is relieved.

32 12.4.2. Mass SO₂ emissions during startup and shutdown from each PGU shall be limited
33 to 4.48 lb/hr averaged over the startup or shutdown period.

34 12.4.3. Mass SO₂ emissions during startup and shutdown shall be included in
35 determination of compliance with the daily SO₂ mass emission limit in Condition
36 4.

37
38 12.5. Emission limits for PM₁₀ during startup and shutdown of a PGU.

39 12.5.1. The mass emission limit is relieved.

40 12.5.2. Total PM₁₀ mass emission rates during startup and shutdown from each PGU
41 shall be limited to 12 lb/hr averaged over the startup or shutdown period.

42 12.5.3. The PM₁₀ mass emission rates during startup and shutdown shall be included
43 with the total PM₁₀ mass emissions during normal operation to determine
44 compliance with the daily PM₁₀ mass emission limit in Condition 3.
45

1 13. Wallula Generation, LLC shall report the following monitoring data to EFSEC:

2
3 13.1. CEMS and process data shall be reported in writing (or electronic if permitted by the
4 EFSEC) form to the authorized representative of EFSEC and to the EPA Region X
5 Office of Air Quality monthly (unless a different testing and reporting schedule has been
6 approved by EFSEC) using the applicable performance specifications in 40 CFR 60
7 Appendix B and 40 CFR 75.

8 13.2. Submit copies of each source test performed on emission units regulated by this order.

9 13.3. Submit a report quarterly, or on another approved reporting schedule, and in the format
10 that matches that required by EPA for demonstrating compliance with the Title IV Acid
11 Rain program reporting requirements. Pollutants not covered by that format shall be
12 reported in a format approved by EFSEC that shall include at least the following:

13
14 13.3.1. Process or control equipment operating parameters.

15 13.3.2. Calendar date or monitoring period.

16 13.3.3. Sulfur content of the natural gas as required by Approval Condition 1.2.

17 13.3.4. Records of fuel purchased in accordance with Approval Condition 2.2.

18 13.3.5. Total operating hours from each unit required to do so in Approval Conditions 6,
19 8, and 9 above.

20 13.3.6. PM10 emissions for each regulated unit in accordance with Approval Conditions
21 3.2, 3.3, 7.3, 7.4, and 12.5.3.

22 13.3.7. SO2 emissions from each regulated emission unit in accordance with Approval
23 Conditions 4.2, 4.3, 12.4.3.

24 13.3.8. NH3 emissions from each regulated unit in accordance with Approval Conditions
25 5.2, 5.3, and 5.4.

26 13.3.9. Results of inspections required by Approval Condition 10.2.

27
28 13.4. In addition, each quarterly report shall include:

29 13.4.1. Days and duration for which data was not collected.

30 13.4.2. Reasons for which data was not collected.

31 13.4.3. Results of any required stack tests.

32
33 13.5. Wallula Generation, LLC shall maintain monitoring records on site for at least five
34 years, and shall submit:

35 13.5.1. Excess emission reports to EFSEC, as appropriate and

36 13.5.2. Results of any compliance source tests.

37
38 13.6. For each occurrence of monitored emissions in excess of the standard, the monthly
39 emissions report (per Approval Condition 13) shall include the following:

40 13.6.1. For parameters subject to monitoring and reporting under the Title IV, Acid Rain
41 program, the reporting requirements in that program shall govern excess
42 emissions report content.

43 13.6.2. For all other pollutants:

44 13.6.2.1. The time of the occurrence.

45 13.6.2.2. Magnitude of the emission or process parameters excess.

- 1 13.6.2.3. The duration of the excess.
- 2 13.6.2.4. The probable cause.
- 3 13.6.2.5. Corrective actions taken or planned.
- 4 13.6.2.6. Any other agency contacted.
- 5
- 6 14. Sampling ports and platform shall be provided on each stack, after the final pollution control
- 7 device. The ports shall meet the requirements of 40 CFR 60 Appendix A,
- 8 Method 1.
- 9
- 10 14.1. Adequate permanent and safe access to the test ports shall be provided.
- 11
- 12 15. Initial start-up for determining the initial compliance testing, CEM system performance
- 13 testing, and similar purposes is defined as the time when the earlier of beginning commercial
- 14 operation of the power plant or 180 days after the first fire occurs.
- 15
- 16 16. Wallula Generation, LLC, shall notify EFSEC in writing at least thirty days prior to start-up
- 17 of any permitted emissions unit and at least 30 days prior to the formal initial start-up defined
- 18 in Approval Condition 15.
- 19
- 20 17. Wallula Generation, LLC, shall prepare a dust control plan and submit it for EFSEC approval
- 21 prior to beginning construction. Upon EFSEC approval the plan shall be followed to
- 22 minimize construction related dust emissions.
- 23
- 24 18. Within 90 days of startup Wallula Generation, LLC shall identify operational parameters and
- 25 practices that will constitute proper operation of each PGU, auxiliary boiler, diesel generator,
- 26 and diesel fire pump. These operational parameters and practices shall be included in an
- 27 O&M manual for the facility. The O&M manual shall be maintained and followed by
- 28 Wallula Generation, LLC and shall be available for review by EFSEC or the authorized
- 29 representative of EFSEC, and EPA. Emissions that result from a failure to follow the
- 30 requirements of the O&M manual may be considered credible evidence that emission violations
- 31 have occurred. EFSEC shall be notified when ever the manual is updated.
- 32
- 33 19. Any activity, which is undertaken by the company or others, in a manner, which is
- 34 inconsistent with the application and this determination, shall be subject to EFSEC
- 35 enforcement under the applicable regulations. Nothing in this determination shall be
- 36 construed so as to relieve Wallula Generation, LLC, of its obligations under any state, local,
- 37 or federal laws or regulations.
- 38
- 39 20. Access to the source, by EFSEC, the authorized representative of EFSEC, or the EPA, shall
- 40 be permitted upon request for the purposes of compliance assurance inspections. Failure to
- 41 allow such access is grounds for an enforcement action under the federal Clean Air Act or the
- 42 Washington State Clean Air Act.
- 43
- 44 21. This approval shall become invalid if construction of the project is not commenced within
- 45 eighteen (18) months after receipt of the final approval, or if construction of the facility is

1 discontinued for a period of eighteen (18) months, unless the EFSEC extends the 18 month
2 period, pursuant to 40 CFR 52.21(r)(2) and applicable EPA guidance.
3

4

5 **Reviewed by:**

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7
8

DATE: _____

9 _____
10 Richard B. Hibbard, P.E.
11 Engineering and Technical Services
12 Washington State Department of Ecology

13 **Approved by:**

14
15
16

DATE: _____

17 _____
18 James O. Luce
19 Chairman
20 Washington State Energy Facility Site Evaluation Council