

1 IN THE MATTER OF COMPLIANCE WITH RCW)
 2 70.94 AND THE GENERAL REGULATIONS FOR) SWAPCA 97-2057R1
 3 AIR POLLUTION SOURCES OF THE SOUTHWEST) REGULATORY ORDER TO
 4 AIR POLLUTION CONTROL AUTHORITY) ESTABLISH RACT
 5 Centralia Plant RESPONDENT) EMISSION LIMITS AND
 6 PacifiCorp, et. al.) ORDER OF APPROVAL
 7 Centralia, Washington)
 8

9 **INTRODUCTION**

10 1. Under RCW 70.94.154 of the Washington Clean Air Act, "reasonably available control
 11 technology" or "RACT" is required for all existing sources in Washington. All sources
 12 are required to achieve the lowest emission limit that the source or source category is
 13 capable of meeting by the application of control technology that is reasonably available
 14 considering technological and economic feasibility. See RCW 70.94.154(1). In setting
 15 RACT, SWAPCA is required to consider the following factors: (1) the impact of the
 16 source upon air quality, (2) the availability of additional controls, (3) the emission
 17 reduction to be achieved by additional controls, (4) the impact of additional controls on
 18 air quality, and (5) the capital and operating costs of the additional controls. See RCW
 19 70.94.030(19).

20 2. An important consideration in SWAPCA's determination of source-specific RACT for the
 21 Centralia Plant's sulfur dioxide (SO₂) emissions is Centralia Plant's agreement to achieve
 22 certain significant reductions in emissions of sulfur dioxide, which are discussed below
 23 in Item 7. Because the Centralia Plant has already agreed as part of the CDM process
 24 to accept these emission reductions once required in a Regulatory Order, it is not

1 necessary for SWAPCA to assess whether a less stringent SO₂ emission limit will meet
2 the requirements for RACT. Instead, in the RACT determination for SO₂ as provided in
3 the Technical Support Document, SWAPCA has considered whether RACT requires a
4 more stringent emission limit than the CDM target solution.

5 3. The Washington State legislature's decision to grant certain tax relief to the Centralia
6 Plant has changed the economic feasibility determination analysis under RACT that would
7 otherwise apply to this or similar sources. Thus, RACT for the Centralia Plant's SO₂
8 emission limit may not be easily transferred to other sources or source categories.

9 4. In addition to determining RACT for sulfur dioxide emissions, SWAPCA has also
10 determined RACT emission limits for nitrogen oxides, particulate matter, and carbon
11 monoxide.

12 5. SWAPCA has considered visibility impairment in Mount Rainier National Park and other
13 Class I areas. While no formal BART determination has been made, SWAPCA has
14 considered the federal "best available retrofit technology" (BART) guidelines for large
15 coal-fired power plants, and specifically how the RACT emission limits compare with the
16 new source performance standards (NSPS) (40 CFR 60.40a, Subpart Da).

17 REGULATORY BACKGROUND

18 **RACT Order SWAPCA 95-1787.**

19 6. SWAPCA issued RACT Order SWAPCA 95-1787 in August 1995 establishing plant-wide
20 SO₂ emission limits of 1.1 pounds per million Btu (lb/MBtu), annual average and 55,000
21 tons/yr. Comments from the National Park Service and USDA Forest Service concerning
22 BART prompted on-going discussions about additional SO₂ reductions. The 1995 RACT
3 Order was withdrawn in September 1996 to facilitate another review of RACT and to

1 determine whether the collaborative decision making (CDM) target solution exceeds
2 emission limits consistent with RACT.

3 **CDM Target Solution**

4 7. A collaborative decision making (CDM) process during 1996 led to agreement among the
5 Centralia Plant owners, federal land managers, and regulatory agencies to seek further
6 emission reductions. The outcome of this process was a proposal to limit SO₂ emissions
7 to no more than 10,000 tons/yr after December 31, 2002 and install NO_x controls. In
8 addition, proposed criteria were developed for: (a) Current Standards - Hourly
9 Concentrations; (b) Operating Conditions with Controls - Good Operating Practices,
10 Scrubber Outages, Unit Startup/Shutdown, Emissions Accounting, and Modifications; (c)
11 Emission Limits - Control System Deadline, Hourly Concentrations in 2002, Hourly
12 Concentration 2003 Onward, Annual Limit, and Bypass Stacks; (d) Monitoring and
13 Reporting - CEMs, Compliance Data, Interim Compliance, Compliance Evaluation, Data
14 Availability, and Reporting Frequency; and (e) Exceedances and Penalties - Hourly
15 Exceedance, Annual Exceedance, Excess Emission, Definition of Violation, and General
16 Enforcement and Allowance Forfeiture. Documentation from the CDM group
17 collaborative process is provided in Appendix B of the Technical Support Document.

18 **LEGAL AUTHORITY**

19 8. RCW 70.94.154 specifies that all sources in Washington State are required to meet
20 emission limitations consistent with RACT. SWAPCA may issue a Regulatory Order to
21 define emission limitations that constitute RACT and require compliance with such
22 emission limitations. RACT means the lowest emission limit that a particular source or
3 source category is capable of meeting by the application of control technology that is

1 reasonably available considering technological feasibility and economic feasibility
2 (SWAPCA 400-030(68)).

3 9. Regulations have been established for the control of air pollutants emitted to the ambient
4 air. Regulations applicable to the Centralia Plant which have been considered in
5 establishing RACT emission limits and control requirements include, but are not limited
6 to, the following regulations, codes or requirements. These items establish minimally
7 acceptable emission limits that could be allowed for existing facilities. More stringent
8 limits may be established in this Order consistent with implementation of RACT:

9 a. Title 40 Code of Federal Regulations (CFR) Part 60.40 et seq. (Subpart D)
10 "Standards of Performance for Fossil-Fuel-Fired Steam Generators" applies to each
11 steam generating unit of more than 250 million Btu per-hour heat input for which
12 construction commenced after August 17, 1971. This regulation does not apply
13 to the Centralia Plant because construction of the Centralia Plant commenced in
14 1968. SWAPCA approved construction of the Centralia Plant in a letter dated
15 November 7, 1969.

16 b. Title 40 Code of Federal Regulations (CFR) Part 60.40a et seq. (Subpart Da)
17 "Standards of Performance for Electric Utility Steam Generating Units for Which
18 Construction Is Commenced After September 18, 1978" applies to each steam
19 generating unit of more than 250 million Btu per hour heat input for which
20 construction commenced after September 18, 1978. This regulation does not
21 apply to the Centralia Plant because construction of the Centralia Plant
22 commenced in 1968 and has not since been modified. SWAPCA approved
3 construction of the Centralia Plant in a letter dated November 7, 1969.

- 1 c. WAC 173-400-151 "Retrofit Requirements for Visibility Protection" requires the
2 owner or operator of any source to which significant visibility impairment of a
3 mandatory Class I area is reasonably attributable, to apply BART for each
4 contaminant contributing to visibility impairment that is emitted at more than 250
5 tons per year.
- 6 d. WAC 173-470 "Ambient Air Quality Standards for Particulate Matter" establishes
7 ambient air quality standards for total suspended particulate matter and for
8 particulate matter smaller than 10 microns (PM₁₀), which may not be exceeded
9 more than one day per year.
- 10 e. WAC 173-474 "Ambient Air Quality Standards for Sulfur Oxides" established
11 ambient air quality standards for sulfur oxides, measured as sulfur dioxide (SO₂),
12 of 0.4 parts per million (1-hour average) and 0.1 parts per million (24-hour
13 average) which may not be exceeded more than once in a one-year period, and
14 0.25 parts per million (1-hour average) which may not be exceeded more than
15 twice in a consecutive seven-day period.
- 16 f. WAC 173-475 "Ambient Air Quality Standards for Carbon Monoxide, Ozone, and
17 Nitrogen Dioxide" establishes an ambient air quality standard of 0.05 part per
18 million (ppm), annual arithmetic mean for nitrogen dioxide; an ambient air quality
19 standard of 0.12 ppm, one hour average, for ozone; and ambient air quality
20 standards of 9.0 ppm, eight hour average, and 35.0 ppm, one hour average, for
21 carbon monoxide.
- 22 g. SWAPCA 400-040 "General Standards for Maximum Emissions" Section 6
3 requires that no person shall cause or permit the emission of a gas containing

1 sulfur dioxide from any emission unit in excess of 1000 ppm dry_{v,v} corrected to
2 7% O₂ or 12% CO₂ average for any consecutive 60 minutes.

3 h. SWAPCA 400-091 "Voluntary Limits on Emissions" requires that SWAPCA
4 establish enforceable limits on emissions or limitations on potential to emit upon
5 request by a source to an amount agreed to by the owner or operator and
6 SWAPCA. SWAPCA shall issue a Regulatory Order to reduce that source's
7 potential to emit whereby the terms and conditions of such Order shall be
8 federally enforceable. Such Order shall be subject to public notice and comment.

9 i. SWAPCA 400-114 "Requirements for Replacement or Substantial Alteration of
10 Emission Control Technology at an Existing Stationary Source" requires that the
11 owner/operator of a source submit a Notice of Construction application to
12 SWAPCA and that an Order of Approval/Regulatory Order be issued prior to
13 making the replacement or alteration. For projects not otherwise reviewable under
14 SWAPCA 400-110, SWAPCA may require the owner or operator to employ
15 RACT. SWAPCA 400-114 applies to fuel modifications strictly for control of
16 emissions, as well as to the installation of pollution control equipment.

17 REGULATORY FINDINGS

18 **Emission Units**

19 10. SWAPCA evaluated all emission units at the Centralia Plant to determine those units that
20 should be considered for inclusion in a RACT evaluation. There were eight emission
21 units identified as major plant components. In addition, the Title V application further
22 identified four additional emission units. These four additional emission units were
23 identified to be insignificant emission units in accordance with Title V requirements.
24 Based on the RACT criteria of RCW 70.94.154 and RCW 70.94.030, only the main

1 boilers (Boilers #1 and #2) were determined to be of significant nature such that a RACT
2 evaluation and establishment of RACT emission limits would be practicable at this time.
3 The full evaluation of the emission units are documented in the Technical Support
4 Document in Section 2.2.

5 **Pollutants Deemed to be of Concern**

6 11. SWAPCA evaluated certain pollutants to determine whether they are "of concern" and
7 whether it would be practicable to set RACT emission limits for them at this time.
8 SWAPCA evaluated each of the criteria pollutants (sulfur dioxide, particulate matter,
9 oxides of nitrogen, and carbon monoxide) to determine if they qualified as contaminants
10 of concern for the Centralia Plant. Ozone was not directly evaluated because it is not a
11 pollutant directly emitted by the Centralia Plant, however, ozone was evaluated as a
12 byproduct of oxides of nitrogen and volatile organic compounds. In addition volatile
13 organic compounds, hazardous air pollutants (HAPs) and toxic air pollutants (TAPs), and
14 carbon dioxide were evaluated. Lead was not evaluated separately as a criteria pollutant
15 but was considered under the category of hazardous air pollutant. SWAPCA applied
16 criteria contained in RCW 70.94.154 and RCW 70.94.030 to each pollutant to arrive at
17 a conclusion of which pollutants should be evaluated for RACT. Only those pollutants
18 emitted from the emission units of concern that were identified above were evaluated.
19 The pollutants of concern for which a RACT determination was deemed to be practicable
20 are: sulfur dioxide, oxides of nitrogen, particulate matter and carbon monoxide. The full
21 evaluation of the pollutants of concern are documented in the Technical Support
22 Document in Section 2.3.

1 **SWAPCA's Discretion to Not Determine RACT Where Not Practicable**

2 12. Volatile organic compounds, hazardous air pollutants and toxic air pollutants, and carbon
3 dioxide were determined to not be subject to RACT for the Centralia Plant based on
4 individual factors explained in the Technical Support Document. The hazardous air
5 pollutants were found to be insignificant (not of concern) or determined to not be
6 practicable to have a RACT emission limit established at this time. One hazardous air
7 pollutant, mercury (Hg), was determined to be potentially of concern and was evaluated
8 in more detail than the other hazardous air pollutants. The U.S. EPA is currently
9 evaluating mercury emissions from all power plants to establish the need for maximum
10 achievable control technology (MACT) controls. Because the concentration of mercury
11 emissions from the Centralia Plant are significantly below the Washington State
12 established acceptable source impact level (ASIL) of WAC 173-460 and the fact that
13 mercury is being considered for a federal MACT standard, mercury is not yet a pollutant
14 of concern. Therefore, establishment of a RACT emission limit for mercury was not
15 considered to be practicable at this time.

16 **Basis for Order**

17 13. This Order, in part, is issued in accordance with SWAPCA 400-091, upon request by the
18 Respondent, to limit the potential to emit from the auxiliary boiler. The emission
19 limitation is based on establishing an annual total fuel consumption limit for the auxiliary
20 boiler of 600,000 gallons per year and AP-42 emission factors.

21 14. This Order, in part, is issued in accordance with SWAPCA 400-114(2)(a) requiring
22 installation of RACT and is deemed to meet the requirements of SWAPCA 400-114(3)
23 for Notice of Construction submittal and approval of replacement or substantial alteration
24 of emission control technology at an existing stationary source. Respondent shall notify

1 SWAPCA of the selected control technology upon its final selection. Any additional
2 monitoring and operating requirements necessary to ensure continuous compliance with
3 applicable requirements shall be incorporated into the Title V permit at the time of its
4 issuance or renewal, as appropriate.

5 **RACT and BART Findings**

6 15. SWAPCA finds that the 10,000 tons per year emission limit for SO₂ required in this
7 Order meets or exceeds the requirement for an SO₂ RACT emission limit for the Centralia
8 Plant.

9 16. SWAPCA finds that a 0.30 lb/MBtu, annual average, both units combined, emission limit
10 for oxides of nitrogen, a 0.010 gr/dscf and 20% opacity emission limits for particulate
11 matter, and 200 ppm, annual average, both units combined, emission limit for carbon
12 monoxide, are levels of emissions that can be achieved by the Centralia Plant by
13 application of RACT control technology, thereby establishing RACT emission limits as
14 provided under RCW 70.94.154.

15 17. SWAPCA finds that, while no formal BART determination has been made, based on the
16 requirements in this Order and documentation in the Technical Support Document, the
17 emission limits in this RACT Order represent BART under 40 CFR 51 Subpart P, WAC
18 173-400-151 and SWAPCA 400-151 for emissions of sulfur dioxide, particulate matter
19 and nitrogen oxides by meeting the BART requirements for those pollutants.

1 **NOW HAVING CONSIDERED THIS MATTER AND BEING DULY ADVISED, IT IS**
2 **HEREBY ORDERED:**

3 **SULFUR DIOXIDE**

4 18. THAT, unless otherwise provided below, no later than January 1, 2003 total SO₂
5 emissions from units #1 and #2, the auxiliary boiler (as described in Item 45), and other
6 emission points throughout the facility, combined, shall not exceed 10,000 tons/yr in any
7 rolling 12-month period. The determination of annual emissions shall be based on a
8 rolling monthly calculation from the recorded hourly SO₂ emissions used for Acid Rain
9 Program compliance evaluation. An annual average shall be computed for the preceding
10 12-month period which ends with each month of the quarter, to be reported quarterly by
11 the end of the month following the end of the calendar quarter.

2 19. THAT, the selected SO₂ emission control technology shall be operational no later than
3 December 31, 2001 for one of the Plant units, and shall be operational no later than
4 December 31, 2002 for the other Plant unit. However, if the selected SO₂ emission
5 control method is fuel supply modification or a post-combustion control system applied
6 to only one of the two units, neither of the units, or no controls, the emission limit for
7 the entire Plant shall be effective after December 31, 2001.

8 20. THAT, the annual SO₂ exhaust gas emissions, during and after installation of control
9 technology according to the schedule in Item 19 above, shall not exceed the following:

20 a. 7,500 tons per year, annual average, for the controlled unit including any bypass,
21 and no annual limit for the uncontrolled unit, if discharged through separate stacks
22 (flues), effective only in calendar year 2002;

3 b. 10,000 tons per year, annual average, for all exhaust gases discharged through a
24 new flue (and bypass for the controlled unit) if this flue is to be common for both

1 units once control technology is applied to both units. The exhaust stream to
2 which this limit applies consists of emissions from the first controlled unit for the
3 entire year of 2002 and emissions from the second controlled unit for only that
4 portion of the year 2002 that the second unit is in startup testing and discharges
5 its exhaust through the new common flue. Compliance evaluation periods that
6 span startup of the second unit shall use the monthly emissions calculated by the
7 appropriate accounting method for each month;

8 c. 10,000 tons per year, annual average, both units combined, if both units have
9 control technology installed (operational) by December 31, 2001, effective in
10 calendar year 2002 and beyond;

11 d. 10,000 tons per year, annual average, both units combined, both units controlled,
12 one or two stacks, effective in calendar year 2003 and beyond;

13 e. The Centralia Plant shall, within its operation and maintenance constraints, use all
14 best efforts to preferentially load the unit first equipped with SO₂ emission control
15 technology when the Plant is operating at less than maximum capacity from
16 December 31, 2001 through December 30, 2002. Daily generation records for
17 both units will be made available during calendar year 2002 to assess the relative
18 loading of the scrubbed and unscrubbed units.

19 21. THAT, from January 1, 2002 onward, the SO₂ exhaust gas concentration from units to
20 which emission reduction technology has been applied, according to the schedule in Item
21 19 above, shall not exceed the following short-term levels:

22 a. 250 ppm, 1-hour average measured on a dry basis corrected to 7% O₂ for the
23 controlled unit(s); 1000 ppm, 1-hour average measured on a dry basis corrected
24 to 7% O₂ for the uncontrolled unit for only 2002;

1 b. During planned or forced outages of the SO₂ emission control technology and
2 during startups and/or shutdowns of a unit as defined in Section 25 below, if the
3 selected SO₂ emission control technology cannot operate, the following alternative
4 emission levels measured on a dry basis corrected to 7% O₂ shall apply:

5 (i) 1000 ppm, 1-hour average, if the exhaust gas from each unit is discharged
6 through separate flues which are independently monitored;

7 (ii) If the exhaust gases from both units are discharged through a new common
8 flue in which only a combined exhaust mixture may be monitored, then the
9 following outage and startup/shutdown levels shall apply:

10 (a) In 2002, 1000 ppm, 1-hour average; and

11 (b) In 2003 and onward, 750 ppm, 1-hour average if the outage or
12 startup/shutdown condition exists for only one unit, and 1000 ppm,
13 1-hour average if the condition exists for both units concurrently;

14 c. If the exhaust gases from both units are discharged through a new common flue,
15 during startup testing of the second unit's SO₂ emission control technology, SO₂
16 concentrations shall not exceed 750 ppm, 1-hour average, only in 2002.

17 22. THAT, prior to compliance with the SO₂ emission limit in Item 18 above, neither Unit #1
18 nor Unit #2 shall exceed for any fixed hour at any time while fuel is being supplied to
19 the unit, an SO₂ stack concentration of 1000 ppm, 1-hour average, dry basis corrected to
20 7% O₂ as provided in SWAPCA 400-040(6).

21 23. THAT, the duration of a forced outage of the SO₂ emission control technology shall be
22 minimized by returning the emission control system to operation as soon as practicable.
23 A planned outage is defined as one that is scheduled in advance regardless of the length
24 of the planning horizon. All other unanticipated system outages are defined to be forced.

1 The Centralia Plant is responsible for demonstrating that a forced outage which occurs
2 while the plant continues to operate is unavoidable and is being managed to minimize
3 emissions as provided in SWAPCA 400-107. Emission control system outages shall be
4 reported to SWAPCA by telephone during the current business day or no later than the
5 next business morning; a message may be left on an automatic answering machine outside
6 normal business hours. A written report may be requested by SWAPCA, and shall be
7 required for any forced outage longer than 72 hours. For outages exceeding 72 hours, the
8 plant shall consider available means to reduce emissions of SO₂, including, but not limited
9 to, a reduction in electrical output, use of reduced sulfur content coal, or taking one or
10 both units off line. Planned emission control system outages shall be conducted to the
11 maximum extent possible during daily or weekly plant load reduction periods. No
12 planned emission control system outages shall occur during the period of June 15 through
13 September 15 except when the plant is completely off line and no fuel is burned.

14 24. THAT, all SO₂ emissions during startup, shutdown, equipment out of service, and upset
15 conditions shall be included in the summation of emissions to determine compliance with
16 the annual (12 month) emissions limit of 10,000 tpy.

17 25. THAT, during startup and shutdown of the Centralia Plant units (for normal operations
18 or planned outages), emissions control equipment shall be operated to minimize overall
19 emissions, except to the extent equipment operation will cause degradation of its long-
20 term performance. Exceedances of the normal operation hourly SO₂ (250 ppm) and
21 opacity limitations (20%) are excused under SWAPCA 400-107 during startup and
22 shutdown when the electrostatic precipitators (ESPs) and SO₂ emission control system(s)
23 are out of service. The shutdown period begins when the ESP temperature drops to
24 220°F, the critical ESP de-energize temperature. When the critical temperature is

1 attained, first the SO₂ control system, and then the ESPs are taken out of service. For
2 periods when all fuel is out of the boiler, SO₂ emissions shall be assumed to be zero. The
3 startup period begins when fuel is introduced into a boiler with the intent of raising its
4 temperature to operating conditions. The ESPs are energized when they reach operational
5 temperature, or 220°F. The SO₂ control system(s) is(are) placed in service following ESP
6 stabilization. The startup period ends when the earlier of the two operating events below
7 occurs:

- 8 a. Opacity in the gas path downstream of the ESPs has stabilized below 10% for 30
9 minutes (five consecutive 6-minute periods); or
- 10 b. 8 hours have elapsed after the startup unit is synchronized to be electrically on-
11 line.

12 26. THAT, during equipment out of service and upsets (including forced outages), emissions
13 in excess of the 250 ppm hourly SO₂ limitation are excused from the hourly limit
14 provided they meet the burden of proof regarding unavoidable conditions that lead to
15 excess emissions in accordance with SWAPCA 400-107. Centralia Plant shall record
16 equipment out of service and upset conditions in the operation log for periodic inspection
17 by SWAPCA. For periods when all fuel is out of the boiler, SO₂ emissions shall be
18 assumed to be zero.

19 27. THAT, the compliance determination methodology for SO₂ emissions shall be as follows:

- 20 a. SO₂ emissions from each unit, if emitted through separate flues, shall be measured
21 by an SO₂ monitor and the diluent (O₂ or CO₂) monitor, which are continuous
22 emission monitors (CEM) installed and operated to meet the requirements of 40
23 CFR Part 75. Hourly (over a fixed clock hour, e.g., 1:00 p.m. to 1:59 p.m.) SO₂
24 averages shall be calculated by the CEM. Compliance with the hourly SO₂

1 limitations shall be determined from the CEM data, collected in compliance with
2 40 CFR Part 75 separately for Centralia Plant Units #1 and #2 from separate flues,
3 or a combined flue, if applicable.

4 b. Compliance with the annual emission limit in tons per year shall be determined
5 at the end of each calendar quarter from tons of SO₂ emitted during the three 12-
6 month periods ending in that quarter. Emissions shall be calculated using the
7 methodology in 40 CFR 75 for the Acid Rain Program. If prior to June 2000, the
8 U.S. Environmental Protection Agency has not resolved the discrepancy that exists
9 in calculating tons of SO₂ between the current 40 CFR Part 75 and coal burned
10 methodologies, the Centralia Plant may propose to SWAPCA, for review and
11 modification of this provision, alternative monitoring and compliance evaluation
12 methods that more accurately represent true emissions.

13 c. The minimum data availability requirements of 40 CFR 75.20 to 75.34 shall be
14 met. Periods of CEM malfunctions shall be subject to SWAPCA 400-105(5)(h)
15 which exempts the Centralia Plant from monitoring and reporting requirements if
16 SWAPCA determines that the CEM malfunction was unavoidable. When
17 determining compliance with the SO₂ limitations for monitor out-of-service periods
18 of four hours or less in duration, the average of the hour before and the hour
19 following a monitor out-of-service period, in accordance with 40 CFR
20 75.33(b)(1)(i) shall be used. Because the missing data substitution procedures for
21 40 CFR 75.30 to 75.34 may require the use of emission values that do not
22 represent actual emissions, alternative data may be used for missing data periods.
23 When determining compliance with SO₂ limitations for monitor out-of-service
24 periods greater than four hours, data from the on-line coal analyzer operated by

1 the Centralia Mining Company, the as-burned coal analyses conducted by
2 Centralia Plant, and emission control system operating data shall be evaluated.
3 The data or combination of data, that best represents actual emissions shall be
4 used to determine compliance with the SO₂ limitations. Stack test data may be
5 used, if available and approved by SWAPCA.

6 d. Quarterly reports for Centralia Plant Units #1 and #2 shall be submitted to
7 SWAPCA by the end of the month following the end of each calendar quarter.

8 Each report shall include, but not be limited to, the following:

- 9 (1) Hourly concentrations of SO₂ in ppm, dry basis corrected to 7% O₂;
- 10 (2) Tons of SO₂ emitted from all relevant stacks (plus any extreme emergency
11 bypasses through the old stacks) for each 12-month period, ending with the
12 last day of each month in the quarter;
- 13 (3) Complete 40 CFR Part 75 quarterly report on disk may be submitted under
14 separate cover;
- 15 (4) During 2002, daily megawatt generation from each boiler to allow
16 confirmation of loading priority of the boilers.

17 28. THAT, exceedances and violations of short-term and annual emissions limitations shall
18 be defined as described below:

- 19 a. An exceedance of the hourly limitation (250 ppm and 1000 ppm) is defined as any
20 fixed hour (e.g., 1:00 p.m. to 1:59 p.m.) with SO₂ concentration over the
21 limitations as defined and determined under Items 21 and 22 above;
- 22 b. Exceedance of the hourly SO₂ limitations in Items 21 and 22 above shall be
23 subject to SWAPCA 400-107. The Centralia Plant shall have the burden of proof
24 demonstrating unavoidable conditions that lead to excess emission in accordance

1 with SWAPCA 400-107. Excess emissions shall be reported to SWAPCA by
2 telephone during the current business day or next business morning; a message
3 may be left on an automatic answering machine outside normal business hours.
4 A written report may be required by SWAPCA if determined necessary.
5 Violations and penalties for exceedances of the hourly limits shall be determined
6 in accordance with SWAPCA 400-230 and RCW 70.94;

7 c. An exceedance of the annual limitation is one 12-month period exceeding the
8 tons/year SO₂ limitations as defined and determined under Items 18, 19, and 20
9 above. All hourly SO₂ emission data for startup, shutdown, upset and forced or
10 planned emission control system outage periods shall be included in the
11 calculations of the annual tons of SO₂ emitted;

12 d. Except as provided herein, each exceedance of the annual (rolling 12-month)
13 emission limitation shall constitute a continuing violation for the days in the last
14 month of the 12-month (annual) period. Each day of violation shall be treated
15 equally and be subject to penalty as allowed by law at the time of the non-
16 compliance. The Centralia Plant may calculate 365-day emission summations
17 ending on each day in the last month of the 12-month period to reduce the number
18 of violation days subject to penalty. If adequately demonstrated, the number of
19 violation days shall not include the number of 365-day periods ending within the
20 last month of the exceedance period for which the emissions summation did not
21 exceed the annual limit;

22 e. SWAPCA retains the authority to take enforcement action in response to
23 deficiencies in plant operation and maintenance, equipment performance, or any

1 other matter not explicitly identified in Items 25 and 26, consistent with SWAPCA
2 400 General Regulations for Air Pollution Sources;

3 f. In addition to penalties that may be assessed under statutory and regulatory
4 authorities, beginning in calendar year 2002, the Centralia Plant shall forfeit
5 ownership of SO₂ allowances to SWAPCA equal to 1.5 times the quantity of
6 emissions in excess of the 10,000 ton annual limit calculated on a calendar year
7 basis.

8 29. THAT, if the selected emission control technology includes construction of a new stack(s)
9 with one or two flues, the existing stack for each unit may remain for bypass situations
10 provided that certified CEMs are maintained in the existing stacks. If there are no
11 certified functioning CEMs in the existing stacks, these stacks shall only be used during
12 extreme emergency conditions, provided that a separate bypass duct around the SO₂
13 emission control technology is not constructed into the new stack. Examples of
14 emergency conditions are interruption of the exhaust gas flow path through that unit's
15 scrubber vessel, or other situations with the potential to result in personal injury or severe
16 damage to the boiler, emission control systems, or new stack. Any bypass that is not
17 monitored by a certified functional CEM is considered an upset condition and shall be
18 reported to SWAPCA during the current business day or by the next business morning
19 and shall be documented to SWAPCA within 5 days of the occurrence. All SO₂
20 emissions discharged from a bypass stack shall be included in the calculation of emissions
21 for determining compliance with the annual limit.

1 **OXIDES OF NITROGEN**

2 30. THAT, the annual average (calendar year) emission rate for NO_x shall not exceed
3 0.30 lb/MBtu, both units averaged together, for those hours when a unit's generating load
4 is 360 MW gross or greater. (This annual average emission rate is calculated as the
5 combined arithmetic sum of hourly emission rates for each unit when each unit's
6 generating load is 360 MW gross, or greater, divided by the combined sum of the number
7 of hours that each unit operated at 360 MW, or greater, during the calendar year.) For
8 all operating hours, emissions of NO_x shall not exceed 0.35 lb NO_x/MBtu annual average
9 (calendar year), both units averaged together. These emission limits shall be subject to
10 the schedule in Items 31 and 32. All other provisions including compliance
11 demonstration shall be consistent with the Acid Rain Program provisions.

12 31. THAT, the selected NO_x emission control technology shall be operational no later than
13 December 31, 2001 for the first unit and December 31, 2002 for the second unit.

14 32. THAT, the NO_x exhaust gas emission rate during installation of control technology
15 according to the schedule in Item 31 above, shall not exceed the following:

16 a. 0.31 lb/MBtu annual average for the controlled unit for all hours when the unit
17 generating load is 360 MW gross or above, 0.36 lb/MBtu annual average for all
18 operating hours for the controlled unit, 0.45 lb/MBtu annual average for the
19 uncontrolled unit, if discharged through separate stacks, effective only in calendar
20 year 2002;

21 b. 0.40 lb/MBtu, annual average, both units combined, if the exhaust gases from both
22 units (one unit controlled, one unit not controlled) are discharged through a new
3 common flue, effective only in calendar year 2002;

1 c. If both units have SO₂ control technology installed by December 31, 2001, the
2 emission limits in Item 30 shall be effective in calendar year 2002 and beyond;

3 d. The emission limits in Item 30 shall be effective in calendar year 2003 and
4 beyond.

5 33. THAT, for good cause, SWAPCA may, at its discretion and after meeting any public
6 involvement requirements under SWAPCA 400-171 and any other applicable law or
7 regulation, modify the NO_x emissions limitations of this Order. Good cause may include,
8 for example, higher NO_x emissions than predicted by the manufacturer in the RACT
9 submittal when operated in accordance with good industry practices or excessive boiler
10 waterwall tube corrosion resulting from the installation and operation of the low NO_x
11 modifications. All causes resulting from installation of Level III low NO_x technology
12 shall be documented to SWAPCA no later than December 31, 2006, except excessive
13 boiler waterwall tube corrosion which shall be documented to SWAPCA no later than
14 December 31, 2008. A request to modify the NO_x conditions of this Order shall include
15 an explanation of the reasons why the RACT NO_x emissions limits established in this
16 Order cannot be met, why the reasons for such modification were beyond the control of
17 the Centralia Plant, identification of any special operating conditions that may be the sole
18 or principle reason for a modification, and what efforts were taken within the timelines
19 specified above to avoid and/or mitigate the need for a modification. Nothing in this
20 section shall be construed to limit SWAPCA's authority to revise this Order pursuant to
21 Item 59 of this Order.

1 **PARTICULATE MATTER**

2 34. **THAT, emissions of front half particulate matter shall not exceed 0.010 gr/dscf (Method**
3 **5, or equivalent, front half only), as corrected to 7% O₂, evaluated once per year for each**
4 **stack (flue) by source testing effective after December 31, 2001.**

5 35. **THAT, compliance with the grain loading limit shall be based on an annual stack test**
6 **using EPA Method 5, or equivalent. The test method selected shall be consistent with**
7 **the SO₂ control technology selected and shall be appropriate for the stack conditions**
8 **existing for the selected SO₂ control technology (i.e., wet or dry stack and maximum**
9 **temperature). Only the front half catch shall be used for compliance demonstration with**
10 **this limit, however, the backhalf catch should continue to be performed to provide an**
11 **indication of total (condensable and non-condensable) particulate matter emitted from the**
12 **plant.**

13 36. **THAT, the opacity of emissions shall be based on the continuous opacity monitoring**
14 **system (COMS) if stack conditions allow accurate particulate matter readings without**
15 **being adversely affected by moisture. Opacity shall not exceed 20% based on a 6-minute**
16 **average, except for one 6-minute period per hour of not more than 27% opacity. See 40**
17 **CFR 60.42a(b). In addition, visible emissions as determined by a Certified Observer shall**
18 **not exceed 20% opacity for more than 3 minutes in any one hour period as provided in**
19 **SWAPCA 400-040(1). Both standards for opacity determination apply. If moisture is**
20 **present in the gas stream to the extent that it interferes with the COMS providing accurate**
21 **opacity data, then visual observations using EPA Method 9 shall be performed a**
22 **minimum of once per quarter to demonstrate compliance.**

23 37. **THAT, the particulate matter and opacity emission limits shall apply at all times but are**
24 **excused for startup and shutdown, and may be excused for periods of malfunction or**

1 upset consistent with SWAPCA 400-107. In addition, opacity exceedances shall be
2 allowed during periods of manual precipitator rapping and are excused under SWAPCA
3 400-107(5). Such opacity exceedances shall be reported to SWAPCA no later than the
4 next business day and shall be noted in the quarterly report.

5 38. THAT, during startup and shutdown of the Centralia Plant boilers for planned or forced
6 unit outages, emissions control equipment shall be operated to minimize overall
7 emissions, except to the extent equipment operation will cause degradation of its long-
8 term performance. Exceedances of the normal operation particulate matter and opacity
9 limitations are excused under WAC 173-400-107(4) and SWAPCA 400-107(4) during
10 startup and shutdown when the electrostatic precipitators (ESPs) and SO₂ emission control
11 system(s) are out of service. The shutdown period begins when the ESP temperature
12 drops to the critical ESP de-energize temperature, 220°F. When the critical temperature
13 is attained, first the SO₂ control system, and then the ESPs are taken out of service. The
14 startup period begins when fuel is introduced into a boiler with the intent of raising its
15 temperature to operating conditions. The ESPs are energized when they reach operational
16 temperature. The SO₂ control system(s) is(are) placed in service following ESP
17 stabilization. The startup period ends when the earlier of the two operating events below
18 occurs:

- 19 a. Opacity in the gas path downstream of both ESPs has stabilized below 10% for
20 30 minutes (five consecutive 6-minute periods); or
21 b. 8 hours have elapsed after the startup unit is synchronized to be electrically on-
22 line.

1 **CARBON MONOXIDE**

2 39. THAT, emissions of carbon monoxide shall not exceed 200 ppm on an annual average
3 (calendar year), combined. This emission limit is effective after December 31, 2001.

4 40. THAT, compliance with the carbon monoxide emission concentration limit shall be
5 determined annually using existing plant operating data to identify average CO
6 concentrations. For information purposes, year-to-date average carbon monoxide
7 concentrations shall be calculated and reported quarterly. Plant operating data collected
8 by the CO monitors shall be validated once per year, for each stack (flue), by source
9 testing, using EPA Method 10, to confirm the representativeness of the CO monitor data.

10 **PROJECT MILESTONES**

11 41. THAT, to the extent applicable to the control technology selected, the following project
12 milestones shall be met through reporting of progress to SWAPCA:

13 a. Demonstration of initial progress to install SO₂ air pollution control facilities shall
14 be submitted by November 1, 1998. Initial progress may include, but is not
15 limited to: engineering work, agreements to proceed with construction, contracts
16 to purchase or contracts for construction of air pollution control facilities.

17 b. A procurement contract for the first unit SO₂ emission control system(s) shall be
18 awarded no later than March 31, 1999.

19 c. Commencement of physical onsite construction activity for the first unit SO₂
20 emission control system(s) shall commence no later than August 31, 1999.

21 d. A procurement contract for the second unit SO₂ emission control system(s) shall
22 be awarded no later than March 31, 2000.

23 e. Commencement of physical onsite construction activity for the second unit SO₂
24 emission control system(s) shall commence no later than August 31, 2000.

- 1 f. Commencement of startup testing of SO₂ control equipment for the first unit shall
2 occur no later than October 31, 2001 and the second unit by no later than October
3 31, 2002. Startup testing is considered to be the initiation of flue gas through the
4 SO₂ control system.
- 5 g. The SO₂ control system shall be installed and fully operational for the first unit
6 no later than December 31, 2001 and for the second unit no later than December
7 31, 2002.
- 8 h. A procurement contract for the first unit NO_x emission control system(s) shall be
9 awarded no later than October 31, 2000. The second unit NO_x emission control
10 system(s) shall be awarded no later than October 31, 2001.
- 11 i. Commencement of physical onsite construction activity for the first unit NO_x
12 emission control system(s) shall commence no later than August 31, 2001.
13 Commencement of physical onsite construction activity for the second unit NO_x
14 emission control system(s) shall commence no later than August 31, 2002.
- 15 j. NO_x control equipment startup testing shall be commenced no later than October
16 31, 2001 and October 31, 2002, for the first and second units, respectively.
- 17 k. The NO_x controls shall be installed and fully operational for the first unit no later
18 than December 31, 2001 and for the second unit no later than December 31, 2002.

19 **RECORDKEEPING AND REPORTING**

- 20 42. THAT, a comprehensive test plan shall be submitted to SWAPCA for review and
21 approval at least five business days prior to performance of any periodic testing beyond
22 CEMS monitoring required in this Order. SWAPCA shall be notified at least three days
23 in advance of any testing so that personnel may be present during testing. A minimum
24 of three test runs shall be performed at a minimum of 500 MW gross to establish that

1 collected data is representative of normal operation. Compliance shall be determined by
2 averaging the results of individual test runs. The results of required emissions testing
3 shall be provided to SWAPCA by no later than 45 days following completion of testing.
4 All gaseous emissions shall, as a minimum, be reported in parts per million by volume,
5 pounds per hour, and pounds per million Btu of heat input. Emissions data shall be
6 reported as corrected to 7% O₂. The test report shall include a summary of operating
7 conditions for each test run to include, as a minimum: (1) estimated heat input into
8 furnace (MBtu/hr), (2) estimated fuel consumption rate (lb/hr), (3) air discharge flowrate
9 in dry standard cubic feet, (4) exhaust temperature of emissions out the stack, (5)
10 estimated sulfur content of coal, (6) estimated SO₂ reduction in percent, as a result of
11 controls, and (7) unit load in megawatts on an hourly basis. Initial source testing of the
12 SO₂ control system shall be completed no later than 90 days after demonstration of
13 successful operation of that SO₂ technology.

14 43. THAT, Respondent shall submit quarterly emission reports by no later than the end of the
15 month following the end of each calendar quarter of the calendar year. These reports
16 shall contain, as a minimum, the following information:

- 17 a. Total gallons of fuel oil burned in each boiler (Boiler #1, Boiler #2 and auxiliary
18 boiler) and certification of sulfur content in fuel oil;
- 19 b. Information required under 40 CFR 75;
- 20 c. CEMS/DAHS data for NO_x and SO₂ corrected to the units of measure and
21 averaging times, including rolling averages, consistent with the emission limits
22 established by this Order and applicable federal requirements. The date, time and
23 measured oxygen content in percent shall be provided for each reported hourly
24 value;

- 1 d. Quarterly average CO concentrations for each boiler;
- 2 e. Quarterly opacity excess emissions over 20%, if opacity monitoring is possible
- 3 under stack conditions, otherwise report results of quarterly Method 9 test;
- 4 f. Year to date totals for SO₂ emissions and average NO_x emission rate for Units #1
- 5 and #2 under all operating conditions; and
- 6 g. Estimated monthly average fuel heating values (Btu/lb) for coal burned in Boiler
- 7 #1 and Boiler #2 to assist with periodic compliance checks.

8 **HSB 1257 TAX ABATEMENT REQUIREMENTS**

- 9 44. THAT, Respondent shall report progress to SWAPCA on meeting the requirements of
- 10 House Substitute Bill (HSB) 1257 annually by June 1 of each year during the construction
- 11 period of the SO₂ control equipment (both units) and then monthly after the SO₂ control
- 12 equipment is operational. Such report shall contain sufficient data and/or documentation
- 13 to demonstrate compliance with HSB 1257 for tax abatement purposes.

14 **VOLUNTARY EMISSION LIMIT**

- 15 45. THAT, the total annual fuel oil combusted in the auxiliary boiler shall not exceed 600,000
- 16 gallons per year. Consumption shall be reported quarterly to SWAPCA. The auxiliary
- 17 boiler shall have a separate fuel meter to monitor the total amount of fuel it consumes in
- 18 that boiler. Emissions of SO₂ from the auxiliary boiler shall be included in the 10,000
- 19 tons per year emission limit of Item 18. Emissions shall be calculated based on fuel
- 20 consumption and fuel sulfur content.

21 **GENERAL PROVISIONS**

- 22 46. THAT, the owners of the Centralia Plant shall have sole discretion to select the control
- 3 technology which complies with the emission limitations herein specified.

1 47. THAT, any physical changes of the boilers and draft systems, including fans for the
2 purpose of installing NO_x and SO₂ emissions control equipment, will not trigger New
3 Source Performance Standards (NSPS) or BACT/PSD under New Source Review as a
4 modification per 40 CFR 60.14(e), WAC 173-400-110, or SWAPCA 400-110. Any
5 physical changes associated with the installation of pollution controls to meet the emission
6 limitations of this Order shall not be major modifications because such changes are
7 exempted for electric utility boilers in 40 CFR 52.21(b)(2)(iii)(h) from the Prevention of
8 Significant Deterioration (PSD) program under WAC 173-400-141, SWAPCA 400-141,
9 and 40 CFR 51 Subpart I and 40 CFR 52.21.

10 48. THAT, at all times, including periods of startup, shutdown, and malfunction, the plant
11 shall, to the extent practicable, maintain and operate air pollution control equipment in
12 a manner consistent with good air pollution control practice for minimizing emissions.
13 Determination of whether acceptable operating and maintenance procedures are being used
14 will be based on information available to SWAPCA which may include, but is not limited
15 to, monitoring results, review of operating and maintenance procedures and records, and
16 inspection of the source.

17 49. THAT, the emission limits and conditions of this Order supersede all previously issued
18 Regulatory Orders including SWAPCA 90-934E.

19 50. THAT, the Centralia Plant shall submit an annual emission inventory to SWAPCA in
20 accordance with SWAPCA 400-105.

21 51. THAT, this RACT Regulatory Order is subject to SWAPCA's authority to review and
22 revise this Order pursuant to RCW 70.94.153 and 70.94.154 and shall not limit
23 SWAPCA's authority under RCW 70.94 or other applicable federal and state laws and
24 regulations.

1 52. THAT, if any provision of this Regulatory Order shall be declared invalid by any court
2 of competent jurisdiction, all unaffected provisions shall remain in effect and be
3 enforceable.

4 53. THAT, for the purpose of ensuring compliance with this Regulatory Order, duly
5 authorized representatives of the Southwest Air Pollution Control Authority shall be
6 permitted access to Respondent's premises and the facilities being constructed, owned,
7 operated and/or maintained by Respondent during regular business hours for the purpose
8 of inspecting said facilities. These inspections are required to determine the status of
9 compliance with the terms of this Regulatory Order.

10 54. THAT, the provisions, terms and conditions of this Regulatory Order shall be deemed to
11 bind Respondent, its officers, directors, agents, servants, employees, successors and
12 assigns, and all persons, firms and corporations under or for it.

13 55. THAT, the requirements of this Order shall survive any transfer of ownership of the
14 Centralia Plant or any portion thereof.

15 56. THAT, this Order does not supersede requirements of other agencies with jurisdiction and
16 further, this Order does not relieve Respondent of any requirements of any other
17 governmental agency. In addition to this Order, Respondent may be required to obtain
18 other permits or approvals from other Agencies with jurisdiction.

19 57. THAT, compliance with this Order and its requirements does not relieve the Respondent
20 from responsibility of compliance with Southwest Air Pollution Control Authority General
21 Regulations for Air Pollution Sources, RCW 70.94, WAC Title 173 or any other
22 applicable air contaminant emission control requirements, nor from the resulting liabilities
23 and/or legal remedies for failure to comply.

1 58. THAT, the Centralia Plant shall provide annual written certification that the requirements
2 of this Regulatory Order have been met. Certification of truth, accuracy and
3 completeness shall be provided by a responsible official, as defined in WAC 173-401
4 "Operating Permit Regulation", and shall be submitted with each report. This certification
5 shall state that, "based on the information and belief formed after reasonable inquiry, the
6 statements and information in the report are true, accurate and complete."

7 59. THAT, for good cause shown, SWAPCA may, in its discretion and after meeting any
8 public involvement requirements under SWAPCA 400-171 and any other applicable law
9 or regulation, modify or stay the project milestones, effective dates, or Order. A request
10 to modify or stay the project milestones, effective dates, or Order should include an
11 explanation of the reasons why the current project milestones, effective dates, or Order
12 cannot be met, whether the reasons for the modification or stay were beyond the control
13 of the Centralia Plant, what efforts were taken to avoid and/or mitigate the need for a
14 modification or stay, and a proposed schedule that can be met.

1 60. THAT, this Order, once signed and issued, may be appealed pursuant to RCW
2 43.21B.230. An appeal must be filed with the Pollution Control Hearings Board (PCHB)
3 at PO Box 40903, Olympia, WA 98504-0903, and shall be served on SWAPCA within
4 thirty (30) days from the date of the notice of this Order. This Order may also be
5 appealed as provided in SWAPCA 400-250.

6 DATED this 26th day of February, 1998.



Reviewed by: _____

Paul T. Mairose

Paul T. Mairose, P.E.

Chief Engineer

EXPIRES: 08-4-98

Approved by: _____

Robert D. Elliott

Robert D. Elliott

Executive Director

Southwest Air Pollution Control Authority