

Statement of Basis for Revision to AOP-3 (Revision #1) for City of Spokane Spokane Regional Solid Waste System

Facility Description

The City of Spokane Regional Solid Waste System Waste-to-Energy (WTE) facility burns up to about 950 tons per day of municipal solid waste. Natural gas is used as supplemental fuel during start up, shut downs, and other periods when additional heat input is needed to maintain proper combustion. The process involves:

- the receipt of municipal solid waste;
- some sorting of waste. There are special areas on the tipping floor for yard and garden waste, sheetrock, and large appliances. There is a separate area where recyclables and household hazardous wastes are collected;
- municipal solid waste is burned in the two combustors (the yard and garden waste is generally transported to a compost facility for composting, the sheetrock is landfilled, appliances and other recyclables are recycled, and household hazardous waste is disposed of appropriately);
- heat from the burning of waste is used to generate electricity which is sold; and
- ash is transported to a landfill.

Emissions from the facility include combustion emissions from the burning of municipal solid waste, and fugitive emissions from handling municipal solid waste and ash and from traffic on roadways. The WTE facility is considered a major source for CO, NO_x, SO₂, PM₁₀, hydrogen chloride, and total Hazardous Air Pollutants (HAPs).

Permit History

SRCAA issued AOP-3 (Renewal #1) to the City of Spokane Regional Solid Waste System Waste-to-Energy (WTE) facility on October 30, 2006.

Permit Revision

Since AOP-3 Renewal #1 was issued on October 30, 2006, new requirements have become applicable to the WTE facility. According to WAC 173-401-730, when additional requirements become applicable to a source with a remaining permit term of three or more years, the permit must be reopened and revised to include the additional requirements. Since AOP-3 Renewal #1 does not expire until October 29, 2011, which is a remaining permit term of more than three years, the permit must be reopened to incorporate the revisions. According to WAC 173-401-730, the permit revision must be completed no later than 18 months after promulgation of the applicable requirement.

The procedures for reopening a permit are established in WAC 173-401-730. Generally speaking, the procedure is the same as for issuing a permit (30-day public comment and 45-day EPA review) except that the portions of the permit being revised are the only ones open for comment and WTE must be notified at least 30-days prior to the reopening. In this case, WTE was notified of the intended reopening by letter, dated June 3, 2008.

As part of this reopening, the following new and/or revised requirements have been incorporated:

- Requirements contained in SRCAA Regulation I, Section 6.17, “Standards for Municipal Waste Combustors,” as revised on May 5, 2007, which implements the emission guidelines promulgated by EPA in 40 CFR Part 60, Subpart Cb. The requirements given in 40 CFR 60, Subpart Cb were revised on May 10, 2006. SRCAA Regulation I, Section 6.17 was revised on May 5, 2007 to incorporate the May 10, 2006 revisions to 40 CFR 60, Subpart Cb.

EPA promulgated emission guidelines given in 40 CFR 60, Subpart Cb, for existing municipal solid waste combustors in 1995. Federal regulations require states and/or local agencies to implement the federal guidelines to affected sources in their jurisdictions. Since WTE is an affected source, SRCAA adopted the federal standards from 40 CFR 60, Subpart Cb into SRCAA Regulation I, Section 6.17 in 1998. EPA revised the emission guidelines for MWC combustors on May 10, 2006. Therefore, SRCAA Regulation I, Section 6.17 was revised on May 5, 2007 to incorporate the May 10, 2006 revisions to 40 CFR 60, Subpart Cb. The following list summarizes the changes made to 40 CFR 60, Subpart Cb, which were incorporated into SRCAA Regulation I, Section 6.17:

- More stringent emission limits for particulate matter, cadmium, lead, and mercury, effective April 28, 2009;
- Minor changes to operator training requirements;
- Clarifications to startup, shutdown, and malfunction exclusions;
- Addition of option to install continuous emission monitor in lieu of annual testing for particulate matter, cadmium, lead, mercury, HCl, and dioxin/furans;
- Revisions to minimum data recovery requirements for NOx, CO, SO2, unit load, and baghouse temperature continuous data requirements;
- Clarifications to annual testing requirements; and
- Exemption from 40 CFR Part 60, Subpart E.

In addition, 40 CFR Part 60, Subpart Db has been revised to clarify that facilities subject to an approved state plan implementing Subpart Cb are not subject to Subpart Db. Accordingly, the requirements of Subpart Db have been removed from the permit during this re-opening.

The re-opening also incorporates the newly adopted SRCAA source test rule, SRCAA Regulation I, Section 2.09 – STATE/LOCAL ONLY into condition 5M and the applicable requirements throughout the permit have been updated to the most recent versions adopted since the permit was issued in October 2006.

This document is intended to provide the statement of basis for the revisions that are being made to AOP-3 (i.e., the requirements are listed, the regulatory basis for each new and revised requirement is provided, and associated monitoring, recordkeeping, and reporting is discussed).

PROPOSED REVISIONS TO AOP-3 Revision #1:

The revised permit (AOP-3 Revision #1) is written in underline / strikeout format to identify the proposed revisions. The following revisions are included under this permit reopening:

1. The cover page and header of the permit were revised to include a revision date and reason for revision. The expiration date of the permit will remain the same. The cover page was also updated to reflect the current agency name.
2. All references to Spokane County Air Pollution Control Authority (SCAPCA) in the permit were replaced by the current agency name of Spokane Regional Clean Air Agency (SRCAA).
3. All references to SRCAA Regulation I, Section 6.17, "Standards for Municipal Solid Waste Combustors" were updated to reflect the most recent version, adopted on 5/5/07.
4. Condition 37 was revised to update the minimum data requirements for continuous emission monitoring systems for SO₂, NO_x, CO, MWC baghouse inlet temperature, and MWC unit load level. The revised requirements given in SRCAA Regulation I, Section 6.17 requires that valid hourly averages for SO₂, NO_x, CO, MWC baghouse inlet temperature, and MWC unit load level be obtained for 90% of the operating hours per calendar quarter and for 95% of the operating hours per calendar year. The previous requirements required valid hourly averages for at least 75% of the operating hours per day for 90% of the operating days per calendar quarter.
5. The particulate emission limit, given in Condition 78 (and Condition 4S), was revised to reflect the more stringent particulate emission limit. On and after April 28, 2009, particulate matter emissions, as measured using RM 5 (front half only), shall not exceed 25 mg/dscm, corrected to 7% O₂. The particulate matter limit applicable until April 28, 2009 is 27 mg/dscm, corrected to 7% O₂.
6. Language was added to the emission limits given in Conditions 80, 82, 83, and 103, to clarify that during periods of startup, shutdown, or malfunction, monitoring data shall be dismissed or excluded from compliance calculations, but shall be recorded and reported in accordance with Conditions 9M.f.v and 11M.a.v.
7. Language was added to the SO₂ and NO_x emission limits given in Conditions 80 and 82 to clarify that If a loss of boiler water level control (e.g., boiler waterwall tube failure) or a loss of combustion air control (e.g., loss of combustion air fan, induced draft fan, combustion grate bar failure) is determined to be a malfunction, a diluent cap of 14 percent for oxygen may be used in the emissions calculations for sulfur dioxide and nitrogen oxides. In addition, language was added to the CO emission limit, given in Condition 83 to clarify that that if a loss of boiler water level control (e.g., boiler waterwall tube failure) or a loss of combustion air control (e.g., loss of combustion air fan, induced draft fan, combustion grate bar failure) is determined to be a malfunction, the duration of the malfunction period is limited to 15 hours per occurrence. It is important to note that the SO₂, NO_x, and CO emission limits, given in Conditions 80, 82, and 83, do not have a blanket "malfunction" exclusion. The federal SO₂, NO_x, and CO emission limits, given in 40 CFR 60, Subpart Cb, which were incorporated into SRCAA Regulation I, Section 6.17, contain an exclusion that these limits do not apply during "startups, shutdowns, and malfunctions," limited to three hours per occurrence. However, when the SO₂, NO_x, and CO emission limits contained in the PSD permit, NOC approval order, etc. were streamlined with the federal Cb emission limits, the malfunction exclusion was eliminated because the PSD and NOC approval orders do not contain a malfunction exclusion. Rather, per Condition 20 of the permit, excess emissions due to unavoidable upset conditions (which would cover malfunctions as the criteria are the same) must be reviewed on a case-by-case basis by SRCAA, and if the criteria given in WAC 173-400-107

are met, SRCAA can excuse the excess emissions from penalties. The language given in Subpart Cb pertaining to malfunctions was included in the revised permit in the event that if an excess emission event is determined to be unavoidable and is a malfunction the diluent cap for SO₂ and NO_x and alternate malfunction time period for CO may be used..

8. The lead emission limit, given in Condition 89 (and Condition 10S), was revised to reflect the more stringent lead emission limit. On and after April 28, 2009, lead emissions as measured using RM 29, shall not exceed 0.40 mg/dscm, corrected to 7% O₂. The lead emission limit applicable until April 28, 2009 is 0.44 mg/dscm, corrected to 7% O₂.
9. The cadmium emission limit, given in Condition 90, was revised to reflect the more stringent cadmium emission limit. On and after April 28, 2009, cadmium emissions shall not exceed 0.035 mg/dscm, corrected to 7% O₂. The cadmium emission limit applicable until April 28, 2009 is 0.040 mg/dscm, corrected to 7% O₂.
10. The mercury emission limit, given in Condition 91, was revised to reflect the more stringent mercury emission limit. On and after April 28, 2009, mercury emissions shall not exceed 0.050 mg/dscm, corrected to 7% O₂, or uncontrolled emissions shall be reduced by at least 85% by weight. The mercury emission limit applicable until April 28, 2009 is 0.080 mg/dscm, corrected to 7% O₂, or uncontrolled emissions shall be reduced by at least 85% by weight.
11. Condition 107, which contains the certification requirements for chief facility operators and shift supervisors, was revised to include the revised certification requirements which allows a provisionally certified operator to stand-in for a certified operator for periods of up to 12 hours without notification to SRCAA, for periods up to two weeks, if the periods are included in the semi-annual monitoring report submitted to SRCAA, and for periods longer than two weeks if SRCAA is notified. The revised certification requirements allow more flexibility for provisionally certified operators to stand in for certified operators.
12. Condition 5M, which contains the annual stack testing requirements, was revised to include the new language that clarifies that the annual stack test must be conducted no less than 9 calendar months and no more than 15 calendar months following the previous test and must complete five tests in each 5-year calendar period. In addition, language was added to Condition 5M which requires all stack testing to be done in accordance with SRCAA Regulation I, Section 2.09, "Stack Tests," which is a regulation which was newly promulgated by SRCAA on 2/8/08. Condition 5M was also revised to remove the requirement to submit the test plan to SRCAA within 60 days after the test. Instead, language was included requiring that the timeline for submittal of the final test report be included as part of the test plan submitted to SRCAA.
13. Condition 5M was also revised to include the option for WTE to install, calibrate, maintain, and operate a continuous emission monitoring system for mercury, cadmium, lead, or hydrogen chloride and/or a continuous automated sampling system for dioxin / furan or mercury, in place of periodic stack testing for these pollutants.
14. Condition 7M was revised to incorporate the revised requirements (given in SRCAA Regulation I, Section 6.17) which apply if activated carbon injection is used to comply with the mercury and/or dioxins/furans emission limits. The revised permit requires that the total carbon usage of the plant be estimated for each calendar quarter using two methods. Currently, WTE does not rely on their carbon injection system to comply with the mercury

and/or dioxins/furans emission limits (the carbon injection system is turned off during the annual stack test). However, the condition is in the permit in the event that WTE does rely on the carbon injection system to comply with the mercury and/or dioxin/furan emission limits in the future.

15. Conditions 9M and 11M were revised to include the recordkeeping requirements for when a certified operator is temporarily off-site when no other certified operator is on site.
16. Condition 18M was added to the permit to include the requirements for WTE to notify SRCAA in writing and submit a status report and corrective action summary to SRCAA every four weeks if the certified chief facility operator and certified shift supervisor are off site for more than two weeks, no other certified operator is on site, and a provisionally certified control room operator performs the duties of the certified chief facility operator or certified shift supervisor as allowed under Condition 107.
17. All requirements given in 40 CFR 60, Subpart Db were removed from the permit because the most recent version of subpart Db states that any facility subject to an EPA approved State or Federal section 111(d)/129 plan implementing subpart Cb is not covered by Subpart Db. SRCAA Regulation I, Section 6.17 is an EPA approved State plan implementing subpart Cb. Since WTE is subject to SRCAA Regulation I, Section 6.17, the facility is not subject to Subpart Db.
18. All requirements given in 40 CFR 60, Subpart E were removed from the permit because 40 CFR § 60.32b(n) exempts any facility meeting the Subpart Cb applicability requirements from the requirements of 40 CFR Part 60, Subpart E.
19. All applicable requirements throughout the permit were updated to the most recent versions adopted since the permit was issued in October 2006.

PREPARED BY: _____
April Westby

DATE: _____

This Statement of Basis and the Operating Permit to which it applies have been reviewed by:

_____, P.E.
April Westby, P.E.

DATE: _____

Ronald J. Edgar, Chief of Technical Services

DATE: _____

William Dameworth, Control Officer

DATE: _____