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TO: Intermountain Power Service Corporation (IPSC) Project Source File (DAQE-IN0327009-03)

THROUGH: Regg Olsen, Permitting Branch Manager

THROUGH: Rusty Ruby, New Source Review (NSR) Section Manager

FROM: Milka Radulovic, NSR Engineer

SUBJECT: Comments on the Intent to Approve (ITA) DAQE-IN0327009-03, CO PSD Modification of AO DAQE-049-02, to Add Overfire Air (OFA) on IPP Units 1 &2, dated December 19, 2003

DATE: February 24, 2004

Mike Owens from EPA Region VIII, Rick Moore, Grand Canyon Trust and Nina Dougherty, Utah Chapter Sierra Club made comments on the ITA DAQE-IN0327009-03 on January 23, 2004.

The comments received were reviewed and the following are responses to the issues raised:

Background

AO number DAQE-049-02, January 11, 2002, was issued to IPSC for an increase in the units' capacity by modifying Units 1 & 2 and debottlenecking (the uprate project). This earlier project had a 30-day public comment period starting November 22, 2001; therefore, it was not within the scope of the current action and thus was not out for public comment. However, because the Commenters addressed some issues with this earlier project, DAQ decided to include them in its responses for the ITA.

The earlier uprate project was reviewed under the WEPCO rule and Condition 25 of the AO subjected IPSC to an emissions monitoring test with the following language:

> "In order to demonstrate that the modification did not result in significant emissions increases (as defined in R307-101-2), the rolling 12-month period (that is compiled quarterly) main boilers 1&2 fuel consumption data (MMBtu/hr) and emissions from their stack flues shall be monitored for at least 5 years from the date the units begin fully using the modifications described herein as regular operation. If IPSC fails to comply with the reporting requirements of the WEPCO rule or if the submitted information indicates that emissions have increased above the significant emission increases as a consequence of the change, IPSC will be

required to obtain a PSD permit for these modifications at that time. Records of NO_x and SO_2 shall be obtained through the use of a CEM. Records of PM_{10} shall be based on annual stack tests outlined in the Condition 9. Records for the rest of pollutants shall be based on the EPA's Compilation of Air Pollutant Emission Factors (AP-42), industry specific published emission factors (such as Electric Power Research Institute, Edison Electric Institute or IPSC own testing)."

The current IPSC project was a request to add over-fire air (OFA) system on IPP Units 1&2 and to change the burners' as a replacement-in-kind and resulted in issuance of the ITA DAQE-IN0327009-03 for PSD major modification to DAQE-049-02 for CO. Public notice for this project was published on December 24, 2003.

ITA Condition 25 of the proposed AO subjects IPSC to an emissions monitoring test with the following language

"In order to demonstrate that the modifications approved in DAQE-049-02 did not result in significant emissions increases (as defined in R307-101-2), the rolling 12-month period (that is compiled quarterly) main boilers 1&2 fuel consumption data (MMBtu/hr) and emissions from their stack flues shall be monitored for at least 5 years from the date the units begin fully using the modifications described therein as regular operation. If IPSC fails to comply with the reporting requirements of the WEPCO rule or if the submitted information indicates that emissions have increased above the significant emission increases as a consequence of the change, IPSC will be required to obtain a PSD permit for these modifications at that time. Records of NO_x and SO_2 shall be obtained through the use of a CEM. Records of PM_{10} shall be based on annual stack tests outlined in the Condition 9. Records for the rest of pollutants, except CO, shall be based on the EPA's Compilation of Air Pollutant Emission Factors (AP-42), industry specific published emission factors (such as Electric Power Research Institute, Edison Electric Institute or IPSC own testing)."

In the January 23, 2004 comments for the IPSC ITA, Commenters raised the following issues:

Issue 1: The Second project for the addition of the OFA system and burner replacement (ITA DAQE-IN0327009-03) is used to net out the uprate project NO_x emissions issued under the AO DAQE-049-02; The ITA DAQE-IN0327009-03 and the AO DAQE-049-02 should be one project, and a "netting" of the emissions should have been performed in accordance with UAC rules resulting in federally enforceable and creditable limits.

UDAQ:

Uprate and OFA projects are separate projects based on the following:

1. Although in the NOI and the provided documents IPSC initially

considered new low-NO_x burners (LNB) among other steps for NO_x control[1], IPSC in the end chose to continue to control NO_x emissions within the realm of normal operating methodologies historically available for Units 1&2 boilers[2]. Based on the Units 1 and 2 boiler manufacturer study[3] which reviewed all aspects of boiler operation at the new turbine output levels and on its plant data, IPSC determined that NO_x is controllable on per unit basis levels well below any net significant increase without need to replace burners; therefore, IPSC modified its uprate project NOI accordingly[4].

2. Based on the deteriorating coal quality IPSC was anticipating that the burning of certain outlier (but approved) coals [5] on a long-term basis might cause difficulties in maintenance of their NO_x limitations. In order to forestall the effects of these outlier fuels, IPSC decided that the use of OFA would be the most appropriate method.

3. After examination of the existing burners on Units 1 and 2 boilers, IPSC found that IPP Units 1&2 burners are reaching the end of their life[6] and IPSC is taking a proactive approach to replace them before IPP begins experiencing forced outages due to burner failures since they are vital part of the boilers. Therefore, IPS requested a replacement-in-kind for the burners[7].

4. In complying with the uprate project WEPCO rule monitoring, IPSC will not use OFA to have credits in the uprate project monitoring.[8]

5. In the ITA for the second project, the monitoring under WEPCO rule is still required for the first uprate project for all pollutants emissions (except CO) without credits from the OFA project. Further the OFA project requires the source to apply the WEPCO rule monitoring test for the source's combined emissions from both projects (except CO).

6. The second project for the OFA system and burners replacement-in-kind (ITA IN0327009-03) resulted in a CO major modification under PSD regulations. IPSC has satisfied Condition 25 of the AO DAQE-049-02 by applying for and obtaining a PSD permit for CO emission increases above significant level, arising from the subsequent project (overfire air). Continuing to check CO emission values within the limits established in the PSD permit would be redundant. PSD regulations do not require

[1] IPSC NOI document dated 4/4/01, page 5
[2] IPSC NOI document dated 4/4/01, page 6 and
[3] IPSC NOI document dated 9/5/01, page 2
[4] IPSC NOI document dated 9/5/01
[5] IPSC NOI dated 11/14/02, page 2
[6] IPSC NOI dated 11/14/02
[7] IPSC NOI dated 11/14/02
[8] IPSC letter to UDAQ, dated February 11, 2004

additional review for increases previously reviewed and covered within an earlier PSD permit.

Issue 2: netting of the emissions should have been performed

UDAQ

Netting of the emissions is not required

1. Netting analysis is a volunteer action from the source (federal guidance) to net out of the PSD regulations major modification applicability.

2. Under the federal guidance netting is not used to qualify project minor (for PSD regulations) emissions change as a major PSD modification.[9]

3. In UAC R307 "netting" is required when looking at the contemporaneous emissions increases and decreases in order to determine if significant emissions increase has occurred.

In the first uprate project (AO DAQE-049-02) a netting analysis is not required for two reasons:

a. Condition 25 in the ITA requires that IPSC monitors actual emissions and compare then with base line emissions (two years average prior to the change) to verify that no net emission increase has occurred from the uprate project or uprate and OFA projects combined.

b. In the five-year contemporaneous period prior to issuance of the AO DAQE-049-02 there were no credible contemporaneous emissions decreases or increases.

The OFA project estimated CO emissions increase above significant levels, and PSD major modification review was performed for it. The OFA system was not part of the uprate project.

Issue 3

"Utah's preconstruction permitting rules require that, for any modification of a source to be approved, the degree of pollution control must represent BACT"

DAQ

Statement is correct. BACT was required and performed as appropriate.

[9] EPA Draft-New Source Review Workshop Manual, A.36

Issue 4: IPSC did not provide a NO_x BACT analysis for the modifications that are the subject of the current intent to approve. And the proposed intent to approve does not include any BACT determination for NO_x.

UDAQ

The use of already approved fuels is not considered a physical or operational change nor is it a change in the method of operation at the source. IPSC has determined that the burning of certain outlier (but approved) fuels on a long-term basis might cause difficulties in maintenance of their NO_x limitations. In order to mitigate the effects of these outlier fuels, IPSC determined that the use of OFA system would be the most appropriate method. Installation of OFA system did not result in a BACT determination as this was a voluntary change to the units, and was not required as part of any other process modifications, including the uprate project. Therefore, no BACT was necessary.

Issue 5: The actual emissions prior to the modifications for which IPSC requested approval must be calculated. IPSC included this emissions information in its April 4, 2001 NOI based on average of the two years 1999 and 2000 although the company only provided unit-specific data for SO_2 and particulate emissions. We believe the pre-change data should have been provided for each unit separately and then tallied for the entire source.

UDAQ

Pre NOI Base line emissions data (for calendar year 1999 and 2000) were provided for all PSD regulated pollutants, including HAPs, except those not reasonably expected to be emitted from the facility. This data was calculated by adding together emissions from each unit. Also, for the compliance base line emissions, each unit data will be calculated base on stack tests, continuous emissions monitoring system data ...

Issue 6: The representative actual emissions after the modification at the source should be projected. While IPSC did provide data on its actual emissions prior to the modification in its April 4, 2001 NOI, neither IPSC or UDAQ projected the plant's representative actual emissions after the modification.

UDAQ

A full representation of post-modification emissions projected for the 24-month period following the change (annualized) was included in the original IPSC NOI dated 4/4/01, and it was adjusted as the proposed project evolved.[10]

Issue 7: Any emission reductions which IPSC planned to ensure no significant net emissions increase should be evaluated separately.

[10] IPSC NOI dated 4/4/01, IPSC Excel worksheet Attachment to IPSC's clarification letter to DAQE dated 6/7/01, Excel worksheet attachment to IPSC e-mail to UDAQ dated 9/5/01

UDAQ

IPSC calculations for the project projected actual emissions were based on the evaluation of the emissions due to the project modifications.

Issue 8: IPSC has already installed and operated the overfire air at Unit 1, one of the projects that must be authorized by the current intent to approve before the construction begins.

UDAQ

An experimental AO was issued on February 14, 2003 and second on May 27, 2003, to allow installation and testing of an OFA system on Unit 1. After the experimental AO expiration date, the IPSC stopped utilizing the OFA system.

Issue 9: It appears that the recently proposed addition of overfire air, which is the subject of the current intent to approve, was necessary for the modified plant to meet the requested federally enforceable limit...

UDAQ

IPSC does not need the OFA or LNB's. IPSC has already demonstrated that it is meeting and can continue to meet the requirements of DAQE-049-02.[11]

IPSC's intent in permitting action was to add OFA to forestall the impacts from deteriorating coal quality and to meet forthcoming limit reductions in Acid Rain and new legislation.

Issue 10: The AO included new federally enforceable limits to essentially ensure no significant increase, appearing to make an "allowable to allowable" comparison. UDAQ should have required lower limits to meet WEPCO.

UDAQ

In the uprate project AO (DAQE-049-02) Condition 9 emission rates were lowered for each boiler to ensure that the main boilers' current potential-to-emit (PTE) for NO_x, SO_2 and PM_{10} does not increase with a coal throughput increase. Since the uprate project increased the boilers capacity, new limits will maintain pre uprate project PTE, and must still be met regardless of whether or not emissions are from the uprate project modification.

Issue 11: Projected representative actual emissions should include those emissions from the increased hours of operation caused by the modification.

[11] IPSC Letter to UDAQ dated 04/11/04

UDAQ

IPSC did not make the modifications in order to increase the hours of operation at the facility. The IPP facility has no history of forced outages caused by circumstances that the modifications were intended to address. Most of the modifications were made in order to increase generation capacity at the facility or deteriorating coal quality. Any modifications made to address reliability concerns were preventative in nature, and not tied to forced outages.[12]

Issue 12: AO DAQE-049-02 should have included enforceable and creditable permit conditions because IPSC was "clearly" netting out of PSD in the uprate. IPSC must have had creditable emissions in order to avoid PSD review.

UDAQ

There was no request or need by IPSC to use contemporaneous emission reductions to net out of PSD in the uprate project AO.

New enforceable or creditable emission limits are not required under WEPCO except where contemporaneous emissions reductions are utilized to avoid PSD review.[13]

Issue 13: IPSC admitted in its NOI that the modification will cause net significant increase in emissions.

UDAQ

At no time did IPSC project a net significant increase for any pollutant. IPSC acknowledged in its calculations that an increase in coal flow by itself could cause increases in certain emissions. However, the project scope included methodology to control emissions below significance levels. Although the methodology changed throughout the application review process, the result was that the project would not cause a net significant increase in any regulated pollutant.[14]

Issue 14: The BACT cost estimate analysis for NO_x burners was inadequate.

The new burners were replacement-in-kind. Therefore BACT was not required.

Issue 15: While it does not appear that IPSC ever quantified to the UDAQ the increase that would occur in SO_2, PM_{10} or other pollutants due to the plant upgrades, the increase in amount of coal burned would also increase emissions of these pollutants unless there was a concurrent reduction in air pollution achieved through improvements or upgrades

[12] IPSC NOI dated 4/4/01, and IPSC NOI dated 9/5/01
[13] 57 FR 32323, dated July 21, 1992
[14] Excel worksheet Attachments to IPSC NOI date 4/4/01, Excel worksheet Attachment to IPSC correction letter dated 9/5/01

to the plant's pollution control systems or through some other operational limitation.

The projections included all PSD pollutants, including HAPs that were reasonably expected to be emitted from the facility. The uprate project, projected future actual emissions for the pollutants will go through the WEPCO rule monitoring test accounting and the monitoring will include all concurrent reductions and increases in air pollution resulting from the improvements of the uprate project.

After the review of the received comments UQAQ decided to impose monitoring on both projects separately in order to insure that a net emissions increase will not occur. Therefore, Condition 25 (ITA DAQE-IN0327009-03) will be expanded and split into two conditions which will read as follows:

25. In order to demonstrate that the modifications approved in AO number DAQE-049-02 did not result in significant emissions increases (as defined in R307-101-2), the rolling 12-month period (that is compiled quarterly) main boilers 1&2 fuel consumption data (MMBtu/hr) and emissions from their stack flues, except CO shall be monitored for at least 5 years from the date the units begin fully using the modifications described therein as regular operation.

    IPSC shall be required to obtain a PSD permit if:

    a. IPSC fails to comply with the record keeping and reporting requirements of the WEPCO rule, or

    b. The submitted information indicates that emissions, except CO, without credits from the OFA system operation, have increased above the significant emission increases as a consequence of the changes.

    Records of NO_x and SO_2 shall be obtained through the use of a CEM. Records of PM_{10} shall be based on annual stack tests outlined in Condition 9. Records for the rest of the pollutants, except CO, shall be based on the EPA's Compilation of Air Pollutant Emission Factors (AP-42) or industry specific published emission factors (such as Electric Power Research Institute, Edison Electric Institute or IPSC own testing).

26. In order to demonstrate that the modifications approved in AO number DAQE-049-02 and for the OFA system addition for the boilers 1&2 did not result in significant emissions increases (as defined in R307-101-2), the rolling 12-month period (that is compiled quarterly) main boilers 1&2 fuel consumption data (MMBtu/hr) and emissions from their stack flues, except CO shall be monitored for at least 5 years from the date the units begin fully using the modifications described therein as regular operation.

IPSC shall be required to obtain a PSD permit if:

a. If IPSC fails to comply with the record keeping and reporting requirements of the WEPCO rule, or

b. The submitted information indicates that changes made in the AO number DAQE-049-02 and OFA system additions combined emissions, except CO, have increased above the significant emission increases as a consequence of the changes.

Records of NO_x and SO_2 shall be obtained through the use of each unit CEM system. Records of PM_{10} shall be based on each unit annual stack tests outlined in Condition 9. Records for the rest of the pollutants, except CO, shall be based on the EPA´s Compilation of Air Pollutant Emission Factors (AP-42) or industry specific published emission factors (such as Electric Power Research Institute, Edison Electric Institute or IPSC own testing).