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

FROM: Milka Radulovic, NSR Engineer

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

DATE: January 27, 2004

Rick Moore, Grand Canyon Trust and Nina Dougherty, Utah Chapter Sierra Club (Commenters) made comments on the ITA DAQE-IN0327009-03 on January 23, 2004.

The comments were reviewed and the following are responses the several issues raised in the Commenters letter:

Background:

AO number DAQE-049-02, January 11, 2002, was issued to IPSC for increase in capacity by modifying Units 1 & 2 and debottlenecking (the uprate project).

This uprate project was reviewed under WEPCO rule and the Condition 25 of the AO subjected IPSC to monitoring 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)."

Second IPSC project is a request to add over-fire air (OFA) on IPP Units 1&2 and it resulted in issuance of the ITA DAQE-IN0327009-03 for CO PSD major modification to

DAQE-049-02. Public notice for this project was published on December 24, 03. ITA Condition 25 of the AO subjected IPSC to monitoring 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 have raised several issues.

Issue 1and 2: ITA DAQE-IN0327009-03 and AO DAQE-049-02 should be one project, and a "netting" of the emissions should have been performed.

Issue 1: ITA DAQE-IN0327009-03 and AO DAQE-049-02 should be one project

UDAQ:

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

1. Although IPSC initially considered new low-NO_x burners (LNB) among other steps for NO_x control[1], IPSC ultimately chose to continue to control NO_x emissions within realm of normal operating methodologies historically available for Units 1&2 boilers. Based on the boiler manufacturer study 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[2].

2. IPSC has determined that the burning of certain outlier (but approved) coals due to coal deteriorating quality[3] on a long-term basis might cause

[1] IPSC NOI document dated 4/4/01, page 5
[2] IPSC NOI document dated 9/5/01

difficulties in maintenance of their NO_x limitations. In order to forestall ~~mitigate~~ the effects of these outlier fuels, IPSC determined that the use of OFA would be the most appropriate method.

3. IPSC found that IPP Units 1&2 burners are reaching the end of their life[4] 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 burners[5].

4. In complying with the uprate project WEPCO rule monitoring, IPSC will not use OFA to have credits in the uprate project monitoring.[6] OFA emissions will be separately monitored on its own merit.

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

   The second project for OFA (ITA IN0327009-03) is for 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 additional review for increases previously reviewed and covered within 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 from the PSD regulations major modification applicability.

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

[3] IPSC NOI dated 11/14/02, page 2
[4] IPSC NOI dated 11/14/02
[5] IPSC NOI dated 11/14/02
[6] IPSC letter to UDAQ, dated February 11, 2004

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

Previous permitting actions during first uprate project contemporaneous period included:

- AO number DAQE-749-01, an amendment to AO DAQE-523-01
- AO number DAQE-523-01 was a consolidation of the following AOs:
  AO without an assigned number dated February 11, 1987,
  BAQE-0873-1, dated April 28, 1987,
  BAQE-102-87, dated December 7, 1987,
  DAQE-0824-92, dated September 4, 1992,
  DAQE-779-03, dated September 15, 1993, and
  DAQE-028-97, dated January 8, 1997

AOs number DAQE-749-01 and DAQE-523-01 were administrative actions and did not result in any emission change. The last action, which was not an administrative change, was for the AO number DAQE-028-97, which falls outside the uprate project contemporaneous period also did not show any emissions increase.

Summary based of the requested project scope/definitions in the NOI documents:

- OFA system was not needed and it will not be used in accounting for the uprate emissions monitoring under WEPCO rule.

- If the current burners were not predicted to fail, and if coal quality would not have the potential to change, neither replacement-in-kind of the LNB nor OFA system would be necessary at this time.

- IPSC needs to make sure it is able to meet emissions limits for NO_x for the AO, New Source Performance Standards (NSPS), and Acid Rain requirements in lights of deteriorating coal quality. Even if IPSC were still operating at the old NSPS

limit of 0.05 lb/MMBtu that was in place before the projects, there would still be a need replace LNB and install OFA.[7]

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, nor was it needed to meet WEPCO rule monitoring requirements. Even, if the projects were combined at outset and included OFA in uprate project, the permitting would still have been minor for all pollutants except CO, which has undergone PSD major modification review.

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

It is correct that Utah's preconstruction permitting rules require that, for any modification of a source to be approved, the degree of pollution control must represent BACT; therefore BACT is required for the PM_{10}, NO_x, VOC, CO, and HAPs emissions.

The following is the explanation ~~clarification~~ of the BACT analysis statement "BACT analysis performed in previous engineering review apply to this modification" provided in the November 2, 2001 engineering review:

For PM_{10} emissions BACT is determined to be applications of existing Units 1 and 2 baghouses. Replacement of the existing baghouses or modification of the existing baghouses represents unwarranted expense given the incremental decrease in PM_{10} emissions possible.

For CO BACT has been determined to be combustion controls that IPSC has been implementing on previous and current permits. IPSC is still required to operate Unit 1 and 2 to minimize CO emissions using combustion controls.

For NO_x BACT has been determined (in addition to the Units 1 and 2 existing Low-NO_x burners) to be adjustments in combustion controls, i.e., bias firing burners in service arrangements, excess air adjustment, adjustment of soot-blowing frequency, addition of superheat tubes to eliminate transient temperature anomalies and provide stable operation at the new higher rating.

In the second project PSD BACT analysis was performed for CO emissions as presented in the source plan review, dated December 4, 2003. Since no other pollutants increases were estimated to come as a result of the proposed project, and since no other physical as a result of this second project BACT review was needed.

[7] IPSC letter to UDAQ, dated February 11, 2004

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 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 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 performed.

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

WEPCO rule monitoring states:

> "If these (monitoring) data suggests that the utility has increased annual emissions over baseline levels, the permitting authority should inquire whether the increase resulted from the physical or operational change."
>
> "The purpose of this monitoring provision is to provide reasonable means of determining weather a significant increase in representative actual emission resulting from the proposed change at an existing utility occurs within the 5 year period following the change. Thus the intent is to confirm the utility's initial projections rather than annually revisiting the issue of NSR applicability. If, however, the reviewing authority determines that the source's emissions ...."

In UAC R307-405, "Major Modification" means any physical change or change in method of operation of a major source that would result in a significant net emission increase of any pollutant....

Since in the WEPCO rule monitoring is for net emission increases for the source and in UAC major modifications is triggered by the source net emission increase, it is appropriate to present source base line emissions.

Clarification: During the WEPCO rule monitoring process when evaluating base line project emissions level with its future actual emissions level in the case that emissions for one pollutant from Unit 1 go above the PSD net significant level, the source may choose to accompany that emission increase with an emission decrease of the same pollutant that occurred at the Unit 2 in the same year

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. The projections included all PSD pollutants, including HAPs that were reasonably expected to be emitted from the facility.[8]

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

UDAQ
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Since in the WEPCO rule monitoring is for net emission increases for the source and in UAC major modifications is triggered by the source net emission increase, it is appropriate to present source actual emissions. However, the IPSC will go through accounting of actual emissions change for each component of the project, and projects to get the source emissions using it's on record data.

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 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

[8] 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

requested federally enforceable limit...

UDAQ

IPSC September 24, 2003 Notice of Intent has a statment: Additional Information Submittal specifies that due to changing fuel quality, it appears likely that addition of the NO_x control such as OFA would be helpful in meeting permit conditions for long term operation".

IPSC does not need the OFA or LNB's to meet the WEPCO requirements. IPSC has already demonstrated that it is meeting and can continue to meet those requirements under DAQE-049-02.[9]

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 emissions rate were lowered for each boiler to ensure that main boilers's current allowable potential-to-emit (PTE) for NO_x, SO_2 and PM_{10} does not increase with coal throughput increase. Since the uprate project increased 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.

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.[10]

Issue 12: AO DAQE-049-02 should have included enforceable and creditable permit

[9] IPSC Letter to UDAQ dated 04/11/04
[10] IPSC NOI dated 4/4/01, and IPSC NOI dated 9/5/01

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

IPSC did not "net out" of PSD the required significant net emissions levels. There was no request or need by IPSC to use contemporaneous emission reductions to net out of PSD in the uprate project AO. AO requires IPSC to meet the WEPCO rule monitorings for each unit. IPSC stated its intent to control actual emissions [8] projected representative actual emissions[7]. Although the project approach changed throughout the application review process, the result was that the project would not cause a net significant increase in any regulated pollutant.

Also, new enforceable or creditable emission limits are not required under WEPCO except where contemporaneous emissions reductions are utilized to avoid PSD review.[11]

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.[12]

The WEPCO rule allows this result. Specifically, representative future actual emission projections can consider the "physical and operational capabilities following the change." IPSC utilized available methodologies in the uprate project to control emissions below significance levels.[113]

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

IPSC proposed replacement of the burners for several reasons. One was the increasing deterioration of the current burners. Although IPSC believed (and later proved during the testing) that current burners could easily meet the proposed capacity increase, replacement as part of the uprate project could not be justified as replacement-in-kind at that time (we could not test them before the uprate project materializes to prove what we believed). Therefore IPSC sought to have the burner replacement permitted as part of the uprate project rather than replacement-in-kind. However, Utah regulations require

[11] 57 FR 32323, dated July 21, 1992

[12] Excel worksheet Attachments to IPSC NOI date 4/4/01, Excel worksheet Attachment to IPSC correction letter dated 9/5/01

[13] 57 FR 32323, dated July 21, 1992

burners not replaced-in-kind to be current technology burners that meet BACT. Since BACT analysis for burner replacement required the addition of over-fire air (OFA), IPSC withdrew its request to permit burners as part of the uprate project.[11] Since IPSC believed it had the capability to meet both increased capacity and the WEPCO emission requirements with the facility's current burner configuration IPSC's permit request for the new burner additions was withdrawn. Therefore new burners would be reviewed on their own merits as replacement-in-kind at a later date.

IPSC indicated in its revised NOI that the WEPCO requirements could be met without new LNBs and OFA. The facility has since operated for over 22 months at it's modified capacity with current burners and has easily met the WEPCO rule's "actuals-to future-actuals" test.

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

A full representation of post-modification emissions projected for the 24-month period following the change (annualized) was included in the original 4/4/2001 NOI submittal from IPSC, and was adjusted as the proposed project scope evolved. 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 resulting from the uprate project.