Nebraska Public Power District

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September 19, 2011

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Subject: NPPD Transmittal 294 – District Comments on Sargent & Lundy Submittal NPPD-SL-0307 – FGD Process Water Balance

References:
1. Sargent & Lundy Transmittal NPPD-SL-0293 and NPPD-SL-0251
2. Sargent & Lundy Action Items 11-0451

Paul:

Attachment A to NPPD Transmittal 294 contains GGS MPCE team member comments on S&L's submittal NPPD-SL-0307 - FGD Process Water Balance.

Please have appropriate Sargent & Lundy personnel address the comments and resubmit this white paper by October 15, 2011. To ensure that all items noted in this letter have been properly addressed to the satisfaction of the GGS MPCE team, please provide a specific response and comments to each question on how Sargent & Lundy has addressed each issue. Attachment A is being provided in *Word* format for this purpose.

Please contact me at 308-386-5312 or via e-mail at bbnitsc@nppd.com with any questions or comments concerning the requested actions.

Bob Nitsch lmh

Bob Nitsch
Engineer

lmh

Attachment

c: John Meacham John Befort

T:\MPCE\PROJECT FILES\01.13 S&L ENGINEERING SERVICES AGREEMENT 4700000926\01.13.10 SUBMITTAL FORMS TO S&L\#294 LETTER 11919 - COMMENTS ON NPPD-SL-0307- FGD PROCESS WATER BALANCE REV. 3.DOCX

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SARGENT & LUNDY SUBMITTAL
NPPD-SL-0307

ATTACHMENT A

Based on review of Sargent & Lundy submittal NPPD-SL-0307 – FGD Process Water Balance Rev. 3, GGS MPCE team members have the following comments and request that S&L address them in a follow-up revision to this document by October 15, 2011:

1. Please incorporate minor edits to the document as noted throughout.

2. Based on recent discussions with other MPCE / FGD vendors, a concern has been raised on the large impact / effect bromine levels may have on the allowable chloride levels in the absorber. Issues such as using brominated activated carbon or brominated treatment processes on the incoming coal feed to the boiler for mercury control are issues that were identified where another MPCE process could impact downstream FGD performance. What has Sargent & Lundy observed and noted to date in regard to FGD impacts concerning FGD bromine levels and the use of brominated products / processes upstream of the FGD absorber vessel? **(This comment was provided in the last round of comments and does not appear to have been addressed in NPPD-SL-0307.)**

3. In Table 1 – Estimated Bleed Stream Quality, what would be the expected freezing temperature of this liquid stream? At low flow levels? In tank storage situations?

4. In Section B.1 General Considerations, it is noted that only one hydrobin would require refurbishment to provide the necessary storage. This statement does not match prior noted expectations from the GGS MPCE team members to provide redundancy to ensure and maintain the operability of the unit. The station would expect a minimum of two storage tanks for this service considering the potential need to perform inspections and possible maintenance on the tanks due to the liquid being stored in them.

5. GGS MPCE team members recently held a discussion with Mr. Robert Aliasso Jr. of The Stebbins Engineering and Manufacturing Company where he noted that Stebbins is well capable of lining tanks like the GGS hydrobins for corrosion protection. He noted that his company would be capable of providing a study to do this to the GGS hydrobins. If S&L personnel have not done this already, it is requested that they ask Mr. Aliasso and Stebbins to perform this study and assist as needed.

Mr. Aliasso's contact information is:

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Division Manager
The Stebbins Engineering and Manufacturing Company
363 Eastern Boulevard
Watertown, NY 13601 USA
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REAliasso@stebbinseng.com

6. In Section B.2 - Hydrobin Coating, the recommendation is made to consider the installation of an equalization tank made of FRP, HDPE, or similar materials to eliminate the risk of corrosion issues versus using the hydrobins. To this point, the following is noted and requested:

    a. Please provide the cost to provide and install a similar sized tank made of the suggested materials. This cost should be all-inclusive, (i.e. tank, foundations, insulation / lagging, heat tracing, etc.).

    b. Where would this new tank(s) be placed with respect to the fly ash damp unloaders and fly ash silos if we were to use the damp unloaders to address this liquid stream? Would there be any demolition work required to place them? If not, what would be the cost to route piping from these tanks to the damp unloaders, including pipe racks, foundations, heat tracing, etc.)? These issues need to be addressed via an update to the proposed general site / equipment arrangement drawing and in a cost estimate.

    c. How, would the pumping arrangement for these proposed new tanks differ in size and location to the pumping arrangement with the use of the hydrobins?

    d. Did anyone from S&L evaluate the potential mechanical modifications required to the hydrobins if they were to be converted to the proposed liquid storage option? If not, this needs to be done and addressed in the report. In particular, does the lower cone / discharge gate arrangement need to be modified, and if so, how?

7. In Section C - Zero Liquid Discharge, the question is asked whether the system is proposed to be installed by itself or in conjunction with the use of the hydrobins and fly ash damp unloader option?

8. In Section C - Zero Liquid Discharge, the question is asked whether this type of system works best under a steady state liquid feed situation or whether intermittent and varying liquid feed rates are acceptable?

9. In Section C - Zero Liquid Discharge, the comment is made about the use of a package boiler during startup to provide an external source of steam? During normal operation, is the main plant expected to provide the steam supply to this equipment? If so, what are the required steam conditions, quality, pressure required for this service.

10. In light of the three discussed liquid disposal options, does S&L have any other potential options that they would consider to be viable to address this issue? Does S&L's environmental personnel consider the option to simply haul this bleed stream water to an appropriately designed fly ash or gypsum disposal pit to be a viable option? A response from Ken Snell preferably, based on S&L's perspective of this potential disposal option is requested.

11. In Attachment C, Aquatech Quotation, it appears by review of this proposal that most of the proposed equipment is based on 1 x 100% capacity design. Again, this type of arrangement does not match the expectations for redundancy to maintain the operability of the unit. Even noting the material options chosen for the proposed equipment, due to the criticality of this system and its potential operational impact to the station, the station would expect redundant trains of equipment to allow for the potential need to perform inspections and possible maintenance on system components. The cost estimate to provide this level of redundancy needs to be figured into the overall cost of the system.

12. In the Summary and Recommendations Section, there is a recommendation to defer any decisions regarding disposal, reuse, and / or treatment of the bleed stream until NPPD completes its sampling program to better define chloride levels. It is recognized that this issue has been discussed, but the plant has no official sampling program in place to evaluate chlorine in its fuel supply. If S&L wants the DISTRICT to do this, S&L needs to provide a proposed sampling program to the MPCE team members.