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Anthony T. Gody
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US NRC, Region II
245 Peachtree Center Ave, NE
Suite 1200
Atlanta, GA 30303-1257

Louisiana Energy Services, LLC
NRC Docket Number: 70-3103

Subject: Considerations for NRC Authorization of Cascade 3

References:
1. Letter from UUSA to NRC, Reply to Notice of Violation 70-3103/2011-006, dated April 8, 2011
2. Letter from UUSA to NRC, LES-10-00227-NRC, Commercial Grade Dedication Activities for Cascades 3 through 8, dated October 21, 2010

Dear Mr. Gody:

The purpose of this letter and enclosure is to summarize actions taken by URENCO USA (UUSA) to ensure Cascade 3 meets those design and license requirements necessary to fulfill the safety function of IROFS41. These actions were taken beyond our response to Notice of Violation 70-3101/2011-006 in Reference 1. These additional actions were taken as a result of the Nuclear Regulatory Commission's (NRC's) recent inspection on Cascade 4, UUSA's review of those inspection results for any impacts on Cascade 3, and additional actions UUSA deemed prudent to re-verify conformance and improve ongoing cascade commercial grade dedication performance.

In summary, UUSA has completed, or has in progress, several actions. Completed actions are those necessary to support our request for NRC authorization of Cascade 3. Other actions are in progress to enhance ongoing commercial grade dedication activities and UUSA inspections for cascades. These actions have been grouped into the following general categories:

1. Determine causes and corrective actions for issues identified during the NRC inspection of Cascade 4 commercial grade dedication activities that may be applicable to Cascade 3. If determined to be applicable, implement appropriate corrective actions to resolve.
2. Re-inspection of Cascade 3 upper steel H-Frame structural welds including technical evaluation and resolution of any identified non conformances in accordance with the Non Conformance Report (NCR) process.
3. Root cause evaluation and completion of corrective actions, applicable to Cascade 3, resulting from the NRC identified concern regarding Quality Control (QC) H-Frame base fillet weld inspections on Cascade 4.

4. Re-verification of the adequacy of Cascade 3 commercial grade dedication packages and prior Condition Report (CR) closures.
5. Other actions implemented or in progress to enhance ongoing UUSA inspections and commercial grade dedication activities for all cascades.

UUSA believes it is important to note that no physical repairs of welds or other items were required in Cascade 3 as a result of these re-inspections, thus limiting the significance of these issues to ones of documentation and H-Frame weld inspection adequacy. The NCR issued for the Category 2 action was dispositioned as "use as is."

Issues identified during the recent NRC inspection of Cascade 4 were documented in CRs and entered into the Corrective Action Program (Category 1 action). This includes the two potential Notices of Violation regarding compliance to Quality Assurance Criterion 10 and 15.

The most significant example of the pending Criterion 10 violation was the documentation of H-Frame base fillet welds as satisfactory per the design that were found by NRC field inspections to not meet all specified weld leg length design specifications (Category 2 action). The Chief Nuclear Officer elevated this issue to the level of root cause evaluation and assembled an outside independent team to perform the evaluation (Category 3 action). The team included senior management personnel with extensive utility management, quality assurance and AWS D.1.1 expertise. The root cause team has determined the cause was inappropriate application of judgment by the QC weld inspectors when determining acceptance of welds to AWS D1.1 criteria. As a result relative to Cascade 3, UUSA performed a complete re-inspection of H-Frame structural steel welds and re-analysis of the as-found condition by the Engineer of Record to confirm structural design adequacy per applicable design criteria. The root cause evaluation team also confirmed these specific inspectors performed no other inspections on Cascade 3 nor were any other irregular welds identified in Cascade 3 upper steel comparable to the short leg noted in the H-Frame base that resulted from grinding off one edge. Other actions include ongoing efforts to fully inspect other installed H-Frames and determine why the weld leg length issue was not previously resolved by UUSA. UUSA had identified H-Frame quality issues early on in the project, and took actions to correct. Documentation associated with other Cascade 3 weld types (e.g., seismic II/I welds) on Cascade 3 were also reviewed for adequacy and AWS D.1.1 conformance. No additional issues were identified.

UUSA performed a search through the Corrective Action Program data base to identify prior CRs applicable to Cascade 4 (Category 1 action). This included both past issues and those most recently identified during the NRC inspection of Cascade 4. These were reviewed for any potential applicability to Cascade 3 and, where applicability was noted, further review was performed to confirm closure was acceptably documented such that no outstanding impacts to Cascade 3 resulted. Approximately 70 CRs were reviewed.

Though there were no other known issues or concerns relevant to the commercial grade dedication of Cascade 3, UUSA has undertaken (and completed) a number of additional reviews (Category 4 actions). A review of approximately 50 previously closed CRs was performed to confirm the resolution of these issues was adequately documented. Some documentation improvements were noted and completed. Vertical slice reviews of

select CGD documentation for Cascade 3 were also performed to confirm the types of documentation concerns identified during the NRC inspection of Cascade 4 Form 3s did not exist in the Critical Characteristic Verification Packages (CCVPs) for Cascade 3. These reviews concluded that those issues did not exist. The CCVPs for Cascade 3 had also been reviewed by Operations prior to the Cascade 3 NRC inspections (see Reference 2), and represented a different documentation approach than was used for CGD Plans and Form 3s for Cascade 4.

Finally, UUSA has completed and/or is implementing a number of additional actions to enhance overall performance (Category 5 actions). Examples include:

- The acquisition of a set of metric weld gauges reflecting the weld size as specified in design documents.
- The establishment of a weld verification team in the Project while retaining separate, qualified expertise in the Quality organization to perform independent QA/QC oversight (i.e., this adds a level of verification while maintaining quality control independence).
- A detailed process review is in progress to ensure complete handoffs from organization to organization with a clear understanding of expectations and responsibilities at each step. A number of the groups and functions are also being reorganized and combined to enhance direct line of sight for responsibilities associated with CGD program implementation.

These Category 5 actions have been taken as part of a broader effort to address Cascade conformance and readiness for future NRC reviews. A transition plan was recently established by senior management, approved by the Chief Executive Officer and communicated site wide. This plan includes those actions deemed necessary to identify and address the causes of performance issues, extent of condition and needed corrective actions to ensure future cascade readiness.

In summary, we believe the actions taken in response to the NOV on Cascade 3 (Reference 1) and additional actions described in this letter and enclosure are comprehensive and ensure conformance of Cascade 3 to IROFS41 design requirements and its readiness for startup.

If you have any questions or wish to discuss this further, please do not hesitate to call.

Respectfully,

David E. Sexton
Chief Nuclear Officer and Vice President of Operations

Enclosure: Cascade 3 Authorization Actions

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ENCLOSURE

CASCADE 3 AUTHORIZATION ACTIONS

Introduction

UUSA has completed actions to support a request to the NRC for authorization of Cascade 3 and has a number of other actions completed or in progress to enhance ongoing commercial grade dedication activities and UUSA inspections of cascades. These actions have been grouped into the following general categories:

1. Determine causes and corrective actions for issues identified during the NRC inspection of Cascade 4 commercial grade dedication activities for applicability to Cascade 3 and, if applicable, implement appropriate corrective actions.
2. Re-inspection of Cascade 3 upper steel H-Frame structural welds including technical evaluation and resolution of any identified non conformances in accordance with the Non Conformance Report (NCR) process.
3. Root cause evaluation and completion of corrective actions, applicable to Cascade 3, resulting from the NRC identified concern regarding Quality Control (QC) H-Frame base fillet weld inspections on Cascade 4.
4. Re-verification of the adequacy of Cascade 3 commercial grade dedication packages and prior Condition Report (CR) closures.
5. Other actions implemented or in progress to enhance the completeness and accuracy of ongoing UUSA inspections and commercial grade dedication activities for all cascades.

Category 1 Actions

Category 1 actions are those necessary to complete cause analyses, implement corrective actions and address any extent of condition issues from Cascade 4 that have applicability on Cascade 3. This includes the pending NRC NOVs on Cascade 4.

Action: Perform Detailed Apparent Cause for NRC potential Notice of Violation related to Criterion 10 and noted examples as identified in CR 2011-1361.

Result for Cascade 3: Detailed Apparent Cause was completed and no impacts identified on Cascade 3, other than those separate CRs noted below.

Action: Determine acceptability of Flomel anchor bolt length issues identified in Cascade 4 Work Plan 1001-MECH-852-001, as noted on the associated CDGP D22010-013 Form 3 as identified in CR 2011-1349.

Result for Cascade 3: Based on disposition of NCR 2011-1349 and NCR 2011-1540, which document the Flomel anchor bolt dimension issue for Cascades 3 and 4, the anchor bolts dimensions are acceptable as is.

Action: Perform Detailed Apparent Cause for NRC potential Notice of Violation related to Criterion 15 and noted examples as identified in CR 2011-1363

Result for Cascade 3: Detailed Apparent Cause determined was completed and no impacts identified on Cascade 3 other than those separate CRs noted below.

Action: Address issue related to use-as-is disposition not supported with written justification for NCR 2011-597 as documented in CR 2011-1309.

Result for Cascade 3: As documented in CR 2011-1309, NCR 2011-0597 has been revised to provide information that supports the use-as-is disposition.

Action: Perform review and Engineering evaluation for gaps identified in vertical supports in Cascade 3 and 4 upper steel.

Result for Cascade 3: CR 2011-1312 and NCR 2011-1312 were generated. NCR 2011-1312 and CR evaluation, based on RCSC specification for structural steel components, determined that "If the specified pretension is present in all bolts of the completed joint, the clamping force, which is equal to the total of the pretensions in all bolts, will be transferred at the locations that are in contact and the joint will be fully effective in resisting slip through friction." The information provided in NCR 2011-1312 also supports consideration of structure shift or tilt due to seismic forces. In addition, the evaluation is considered applicable to all steel connections, both upper and lower steel, in all cascades, including Cascades 1 through 8.

Action: Perform evaluation regarding CR 2011-1692 on expanded samples

Result for Cascade 3: Evaluation identified that, regarding CR 2011-745, weld wire sampling is needed for Cascade 3.

Action: Regarding CR 2011-745, conduct weld wire sampling for Cascade 3.

Result for Cascade 3: Weld wire samples were sent to Stork Laboratories for testing. No high carbon content was identified and other constituents are comparable to values obtained for Cascades 4, 5 and 6. UUSA is evaluating these constituents and will finalize the analysis prior to startup.

Category 2 Actions

Category 2 actions are those necessary for re-inspection of Cascade 3 upper steel H-Frame structural welds including technical evaluation and resolution of any identified non conformances in accordance with the Non Conformance Report (NCR) process.

Action: Perform inspection of Cascade 3 H-frame structural welds.

Result for Cascade 3: WP 1001-CIVIL-823-065 completed for re-inspection of H-Frame subject structural welds.

Action: Perform technical evaluation and resolution for H-Frame weld nonconformances identified during the weld re-inspection activity.

Result for Cascade 3: Cascade 3 weld non conformances noted during the re-inspection of the H-Frame welds were documented in CR 2011-1485 and NCR 2011-1485. NCR 2011-1485 evaluation and supporting documentation provided for a Use-as-is disposition for the identified weld nonconformances.

Category 3 Actions

Category 3 actions are those necessary for Root cause evaluation and completion of extent of condition actions, applicable to Cascade 3, resulting from the NRC identified concern regarding Quality Control (QC) H-Frame base fillet weld inspections on Cascade 4.

Action: Perform Root Cause Evaluation to determine causes and extent of condition for H-Frame vertical leg measurement deficiencies identified in CR 2011-1298.

Result for Cascade 3: The root cause team has determined the cause was inappropriate application of judgment by the QC weld inspectors when determining acceptance of welds to AWS D1.1 criteria. As a result relative to Cascade 3, UUSA performed a complete re-inspection of H-Frame structural steel welds and re-analysis of the as-found condition by the Engineer of Record to confirm structural design adequacy per applicable design criteria. The root cause evaluation team also confirmed these specific inspectors performed no other inspections on Cascade 3 nor were any other irregular welds identified in Cascade 3 upper steel comparable to the short leg noted in the H-Frame base that resulted from grinding off one edge.

Category 4 Actions

Category 4 actions are those related to re-verification of adequacy of select Cascade 3 Commercial Grade Dedication packages and review of prior Condition Report (CR) closures.

Action: Operations to review previously closed CRs on Cascade 3 for closure adequacy.

Result for Cascade 3: 48 CRs were reviewed and 14 were determined to need additional documentation to demonstrate closure adequacy. This documentation was assembled and added to the CR database, action is closed.

Action: Re-verification of adequacy of select Cascade 3 Commercial Grade Dedication packages

Result for Cascade 3: Review of Attributes 5 a, b, d – Material and Dimensions for UF6 Pipework, Attributes 6f, g – Weld Filler Material for UF6 Pipework, and Attributes 6a through 6e, 6g – Qualification of Welders and Weld Process for UF6 Pipework was performed to determine that proper CDG methods were present to support meeting Critical characteristic requirements. No issue were identified