

MAR 22 2011

LES-11-00041-NRC

Attn: Document Control Desk
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Louisiana Energy Services, LLC
NRC Docket No. 70-3103

Subject: Request for Approval to use AWS D1.1 alternate weld inspection method for Cascades 1, 2 and 3 (LAR 11-04)

Reference: LES-11-00039-NRC, Cascade 3 Weld Inspections, dated March 16, 2011.

In accordance with 10 CFR 70.34, URENCO USA (UUSA) hereby requests approval for use of an alternate acceptance method to be utilized for Cascades 1, 2 and 3. This would be implemented through an amendment to the Materials License SNM-2010 to revise the Quality Assurance Program Description (QAPD). Specifically, UUSA requests a note to be added to the QAPD Section 10 Inspection to document the methodology used for weld inspections performed on Cascades 1, 2 and 3. As discussed with members of your staff, LES is submitting this request to resolve issues using an inspection through paint approach on fillet welds in upper steel of the first three cascades. As noted in the referenced letter, LES agreed to pursue a license amendment request or strip paint to perform ANS/AWS D1.1 weld re-inspections for Cascade 3 and to address this approach on Cascades 1 and 2.

The background, proposed change, and basis for the proposed change to the license are provided in Enclosure 1. The proposed change to Section 10 of the QAPD is provided in Enclosure 2.

Should there be any questions concerning this LAR, please contact Wyatt Padgett, LES Licensing Manager, at 575.394.5257.

Respectfully,



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

- Enclosures: 1) License Amendment Request (LAR 11-04) Background, Proposed Change, Basis for Change.
2) QAPD Section 10, Inspection Markup

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CC:

M Scott Freeman
Chief, Construction Projects Branch 3
US NRC, Region II
245 Peachtree Center Ave, NE
Suite 1200
Atlanta, GA 30303-1257

Joselito O. Calle
Chief, Fuel Facility Branch 2
USNRC, Region II
245 Peachtree Center Ave, NE
Suite 1200
Atlanta, GA 30303-1257

Tyrone D. Naquin, Project Manager
Two White Flint
Mail Stop EBB2-C40M
11545 Rockville Pike
Rockville, MD 20852-2738

Anthony T. Gody
Director, Division of Fuel Facility Inspection
USNRC, Region II
245 Peachtree Center Ave, NE
Suite 1200
Atlanta, GA 30303-1257

Brian W. Smith
Chief, Enrichment and Conversion Branch
U.S. Nuclear Regulatory Commission
Executive Blvd Bldg
Mailstop: EBB2-C40M
Washington, DC 20555-0001

ENCLOSURE 1

License Amendment Request (LAR 11-04) Background, Proposed Change, Basis for Change

Background

The initial through paint accessible fillet weld inspections/assessments for Cascades 1, 2, and 3 were conducted under work plans 1001-MECH-453-017, 1001-MECH-453-019, and 1001-MECH-453-021 in March, April and August of 2010. Subsequent to the Cascade weld inspections, weld defects for Cascades 3, 4, and 5 were identified during through paint weld assessments of upper cascade steelworks in Mini-Hall 1A and 1B. As a result, in October of 2010 CR 2010-3400 was written to capture this condition and evaluate its cause. Several of the Condition reports listed in CR 2010-3400 reference use of the visual inspection assessment methodology being performed in accordance with AWS D1.1. Condition reports 2010-3525 and 3526 for Cascades 1 and 2 were written as part of the extent of condition review for CR 2010-3400. Results of the through paint weld inspection activities did not identify any instances that impacted structural integrity regarding the Cascades upper steelworks.

As part of the NRC Cascade 3 authorization inspections, the inspectors questioned whether the use of an alternate method as prescribed by AWS D1.1 Section 6.8 was justified for use in performance of weld inspections and Engineering evaluations for identified weld defects. TQ-2010-102, that provided justification for the alternate through paint weld assessment methodology, in addition to TQ-2011-004 which validates TQ-2010-102, were provided to the NRC for their review.

During the above mentioned inspections under AWS D1.1, approval by the regulatory authority for use of the alternate through paint assessment methodology was not obtained, nor considered warranted by UUSA. The engineer of record approved the use of alternate acceptance criteria in accordance with AWS D1.1 Section 6.8. Use of ANSI/AISC N690 Section Q1.0.1 to obtain regulatory approval for this approach was not considered necessary.

It was noted to LES by the NRC that ANSI/AISC N690 Section Q1.0.1, in part, requires approval from the Regulatory Authority for use of an alternate weld inspection methodology. This License Amendment is being generated to request NRC approval of the through paint weld inspections for alternate acceptance criteria performed on the subject Cascades and document in the QAPD that an alternate weld through paint inspection methodology, based on AWS D1.1, was used for accessible upper steel fillet welds on Cascades 1, 2, and 3..

Proposed Change

UUSA proposes the addition of a note to QAPD Section 10 Inspection to document the methodology used for the through paint weld inspections performed on Cascades 1, 2 and 3. The note states, "Fillet weld inspections performed on Cascades 1, 2 and 3 in SBM 1001 Assay Unit 1, under ANSI/AISC N690-1994 and AWS D1.1, involved use of an alternate weld inspection methodology as approved by the NRC in LAR 11-04. This

method involved a through paint weld assessment for accessible welds and subsequent engineering evaluation for disposition of identified weld defects.”

Technical Basis for Change

Multiple Condition Reports were written regarding upper cascade steelwork fillet welds AWS D1.1 non conformances for Cascade 3, 4, and 5. Condition report 2010-3400 was written to capture issues identified in these condition reports and evaluate for trends and extent of condition. Condition Reports 2010-3525 and 3526 were written to address the extent of condition review for operational Cascades 1 and 2 for the upper cascade steelwork fillet welds resulting from CR 2010-3400. As documented in CR 2010-3525, the evaluation of 49 fillet welds, determined by an EPRI sampling plan, for Cascade 1, resulted in identifying seven (7) fillet welds that did not meet the acceptance criteria of AWS D1.1. Evaluation of the seven (7) defective welds by a retained structural P.E. engineer and the design agency of record (ETC) ascertained that these fillet weld defects could be identified without the removal of paint. Remaining accessible fillet welds for Cascade 1 were inspected through paint and 100 out of 2500 fillet welds were identified as not meeting AWS D1.1 acceptance criteria. Accessible fillet welds that did not meet the acceptance criteria of AWS D1.1 were repaired under Urenco USA's QL1 maintenance program. Inaccessible fillet welds were evaluated and determined acceptable by the Engineer of Record. Reference TQ-2010-092 and TQ-2010-098.

Cascade 2 fillet welds were inspected through paint based on the criteria determined for Cascade 1. TQ-2010-102 was approved by the design agency (ETC) for the allowance of alternative acceptance criteria for weld utilization. Fillet welds that did not meet the acceptance criteria of AWS D1.1 were evaluated against utilization factor criteria of the joint and weld position and were sent to ETC for concurrence. Inaccessible Cascade 2 fillet weld information was also sent to ETC for disposition of rework or acceptance. All fillet welds that were determined to need repair were repaired under Urenco USA's QL-1 maintenance programs.

Visually accessible fillet welds for Cascade 3 were inspected through paint under construction Work Plans 1001-CIVIL-823-003 and 1001-CIVIL-823-052 and used the methodology developed for Cascade 2 using TQ-2011-001. Inaccessible Cascade 3 fillet welds were addressed by TQ-2011-007 by ETC for disposition of rework or acceptance. During the Cascade 3 inspection the NRC staff reviewed TQ-2011-007 inaccessible weld evaluation. Urenco USA engineering determination and Engineer of Record (ETC) concurrence for accessible fillet welds is found in TQ-2011-013.

ETC (not UUSA) stripped paint and inspected welds on Cascade 4. During the NRC inspection the staff questioned if there were impacts to Cascade 3, for which thru paint weld assessments were performed, as a result of the weld inspections being performed on Cascade 4. CR 2011-498 was generated to respond to this question. The data determined from the ETC weld inspections further substantiates the approach implemented on cascades 1 through 3. As documented in CR 2011-498, there were some weld repairs made in Cascade 4 due to the welds being undersized. The welds were undersized by a considerable amount and would be found with or without paint. Of the identified Cascade 4 weld repairs, none were a result of a weld discrepancy that was not found by the through paint assessments; this includes welds which have a higher utilization. The weld inspections on Cascade 4 were performed first with paint on and

then with the paint removed. Approximately 2700 fillet welds were inspected in Cascade 4, both through paint and bare metal. The bare metal inspection resulting in approximately 730 number of defects for which the majority were due to lack of fusion. These welds were dispositioned as acceptable through engineering analysis. There were some weld repairs made in Cascade 4 due to the welds being undersized. The welds were undersized by a considerable amount and would be found with or without paint. Of the identified Cascade 4 weld repairs, none were a result of a weld discrepancy that was not found by the through paint assessments; this includes welds which have a higher utilization. The results of the Cascade 4 weld inspections identified that for the Cascade 4 weld defects and subsequent weld repairs, that none were a result of a weld discrepancy that was not found by the through the paint inspections.

In addition to the inspection performed on Cascade 4, some bare metal inspections were performed on Cascade 3. 334 fillet welds were inspected in Cascade 3, both through paint and bare metal. The bare metal inspection resulting in 31 defects for which the majority were due to lack of fusion, consistent with Cascade 4 results. These welds were dispositioned as acceptable through engineering analysis in NCR 2011-597. Of the 334 welds inspected, there were 11 welds that had been identified as having a thru paint defect but were later found satisfactory once the paint was removed.

In Summary, URENCO USA established an alternate acceptance criteria for Cascades 1 through 3 via inspect through paint and completed the structural analysis in accordance with AWS D1.1 to demonstrate acceptability. The fillet welds for the upper cascade steelwork of Cascades 1, 2, and 3 have been inspected and reworked or justified through analysis, based on requirements of ANSI AISC N690, to perform their intended function. It was also determined by engineering analysis that both Cascade 1 and 2 upper cascade steelwork were operable before repairs were made due to low utilization factors of structural joints and the apparent high level of structural redundancy. Structural integrity of both Cascade 1 and 2 upper cascade steelwork have been deemed structurally sound and pose no hazard in the support of process piping. Additionally, upper steelwork fillet welds of Cascade 3 have been analyzed to justify their intended function.

Safety Significance

Post-operability determinations were performed for all upper steelwork welds in Cascade 1 and 2 that included the performance of IROFS41 surveillances for both Cascades 1 and 2 (attachments found in Condition Reports 2010-3525 and 3526). Further, this approach has determined weld quality for Cascade 3 is acceptable as is.

Therefore, there is no safety significance associated with the proposed license amendment since the change does not impact any hazards evaluations or accident analyses previously conducted to support the affected license basis document.

Environmental Considerations

There are no environmental impacts associated with the change proposed in this LAR. The proposed change does not meet the criteria specified in 10 CFR 51.60(b)(2) since it

does not involve an expansion of the site, a change in the amounts of effluents, an increase in individual or cumulative occupational radiation exposure, or an increase in potential for or consequences from radiological accidents. Consequently a separate supplement to the Environmental report is not being submitted.

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ENCLOSURE 2

QAPD Section 10, Inspection

SECTION 10 INSPECTION

The elements of the LES QA Program described in this section and associated procedures implement the requirements of Criterion 10, Inspection, of 10 CFR 50, Appendix B, and the commitment to Basic Requirement 10 and Supplement 10S-1 of NQA-1-1994 Part I.

Inspections required to verify conformance of an item or activity to specified requirements are planned and executed. Characteristics to be inspected and inspection methods to be employed are specified in procedures. Inspection results are documented. Persons other than those who performed or directly supervised the work being inspected shall perform inspection for acceptance. Inspection requirements and acceptance criteria shall include specified requirements contained in the applicable design documents or other pertinent technical documents approved by the responsible design organization. Inspection activities are documented and controlled by instructions, procedures, drawings, checklists, travelers or other appropriate means.

Historical Note: Fillet weld inspections performed on Cascades 1, 2 and 3 in SBM 1001 Assay Unit 1, under ANSI/AISC N690-1994 and AWS DI.1, involved use of an alternate weld inspection methodology as approved by the NRC in LAR 11-04. This method involved a through paint weld assessment and engineering evaluation for disposition of identified weld defects.

INSPECTION PLANNING

Inspection planning shall be performed and documented in accordance with approved procedures controlled under the QAPD, which satisfy NQA-1 requirements.

SELECTING INSPECTION PERSONNEL TO PERFORM INSPECTION

The individual who performs an inspection to verify conformance of an item to specified acceptance criteria shall be qualified to perform the assigned inspection tasks in accordance with the requirements of Section 2, QA Program. Data recorders, equipment operators or other inspection team members who are supervised by a qualified inspector shall not be required to be a qualified inspector. Verification of conformance shall be by a qualified person. Inspections shall be performed by personnel other than those who performed or directly supervised the work being inspected. Inspection personnel shall not report directly to the immediate supervisors who are responsible for performing the work being inspected.

INSPECTION HOLD POINTS

When mandatory hold points are used to control work that shall not proceed without the specific consent of the organization responsible for the hold point, the specific hold points shall be indicated in implementing documents. Consent to waive specified hold points shall be documented and approved before continuing work beyond the designated hold point.