

From: "BENNETT, STEVE A" <SBENNE2@entergy.com>
To: Tom Alexion <twalexion@nrc.gov>
Date: 3/24/03 5:51 PM
Subject: Revised Response on ANO L-3 Crane Weld Inspection

Tom,

Attached is the revised response to EMEB RAI #7. This includes the commitment for performing additional NDE of the girder. Note that we are committing to perform this prior to lifting the max critical load. We plan to perform the examination at the soonest possible time prior to any cask movement. However, if our NDE preps and NDE gets delayed we do not believe that an unloaded dry cask would affect the ability of the crane since we have not identified any flaws to date from our visuals.

steve

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NRC EMEB RAI 7

In response to RG 1.104, positions C.1.b(3), C.1.b(4), C.4.d, and C.3.1, you state in Attachment 4 to the license amendment request, that a commercial grade dedication plan and various nondestructive testing will be implemented. Describe the current status of implementation and available results of nondestructive examinations and fatigue life evaluations.

ANO Response:

The Ederer quality assurance program was invoked on the replacement trolley. Ederer quality assurance program complies with the requirements of 10CFR50, Appendix B and ANSI/ASME NQA-1. The program encompasses the procurement of basic components from approved suppliers and the dedication of commercial grade items by Ederer for use in safety related applications. This dedication was done in accordance with EPRI NP-5652, *Guideline for the Utilization of Commercial Grade Items in Nuclear Safety Related Applications* (NCIG-07). After arrival on site ANO quality assurance was invoked for the installation process using the engineering design change process. The trolley met the non-destructive examination (NDE) requirements as reflected in EDR-TOP-1 Appendix A, as applicable.

The girder and end trucks meet the QA requirements of the original purchase specification. This specification invoked designs per EOCI #61 (CMAA-70) specifying all material to be A-36 steel with a factor of safety of 5, for this section. Calculations were performed on the girder and end trucks to verify that the existing welds and connections were adequate for the upgrade. The calculations identified that portions of the girder around the existing wheels required additional support due to the added seismic requirements of the new trolley and maximum critical loads. Additional reinforcement was added along the box girder. Welding, welding procedure qualification, and welder qualifications were performed in accordance with ANSI/AWS D1.1 and D14.1. NDE requirements for this change included Magnetic particle examination. The results of these calculations are documented in the design change package for the crane upgrade.

In accordance with NUREG-0554, a visual inspection of the existing box girder was performed prior to and following the cold load test. This inspection did not reveal any areas requiring additional rework due to cracked welds or misaligned components. If problems were identified during this step in the installation process, they were to be documented and corrective measures, as necessary implemented prior to final acceptance. There were no identified deficiencies noted during this inspection that required modification or correction. However, in further discussion with the NRC Staff, Entergy is committing to perform additional surface NDE of the critical welds associated with the box girder. Based on our review, the critical welds which could have the potential for girder failure involve certain welds connecting the end trucks to the box girder. This surface inspection using magnetic particle (MT) examinations will be performed and documented per the Entergy MT examination procedure which is consistent with AWS D1.1. The acceptance criteria will be that any confirmed cracks or linear indications are unacceptable. Individuals performing MT exams will be qualified per this Entergy MT procedure. The proposed NDE will be performed

prior to lifting a fully loaded cask which is the maximum critical load.

The use of "commercial grade dedication" is meant to demonstrate that all the required controls necessary to meet the requirements of the single failure proof crane and those of the Ederer topical report are adequately maintained during the procurement of the new trolley components and during the installation process. Since the crane is non safety related, contract purchase documents invoked all the necessary QA requirements to address those requirements of NUREG-0554 and to apply those same requirements as necessary to the installation package. By doing so the entire replacement activity would adequately capture all the QA requirements for meeting single failure proof criteria.

A fatigue review was performed based on the fatigue stress provisions of CMAA 70. This review is addressed through the re-evaluation of the box girder and its connections to meet the requirements of CMAA.

Appendix C to EDR-1 for the ANO L-3 crane has been updated to reflect more appropriate discussion for the 10CFR50, Appendix B application and is provided in Attachment 2.

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