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Attachments

cc: Mr. Victor Stello (15)  
Director-Office of Inspection & Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. G. McDonald, Director (1)  
Office of Management Information & Program Control  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. Robert M. Gallo  
U. S. Nuclear Regulatory Commission  
P.O. Box 52  
Shickshinny, PA 18655

DESCRIPTION OF DISCREPANCY

NCR-5241 was issued on 1/25/80 to identify a noncompliance to Specification M213, Revision 7, related to small pipe hanger installation. Hanger 19 on Hanger Iso Drawing SP-DCA-137-4H, Revision 0 was not installed in the orientation and location intended by the design engineer. Item 2 (4" x 10 1/2" x 6" plate) identified on Standard Detail SPA 804 was welded on the Reactor Pressure Vessel (RPV) instead of being installed on the Biological Shield liner plate.

CAUSES

1. The causes contributing to this deviation were determined to be human error compounded by the fact that the construction drawings were unclear. The installation orientation was misinterpreted by both the installers and the responsible Field Engineer, resulting in improper mounting of the pipe support in a horizontal position rather than vertical (see Figure 1.) This involved welding the pipe support to the RPV rather than attaching it to the top of the Biological Shield as the designer intended.
2. It appears that the Small Pipe Hanger Engineer failed to perform the walk-down required by FP-P-11, Paras. 6.2.2 and 6.2.3 and he failed to perform a conscientious investigation regarding the concerns of the pipefitter foreman.
3. Construction management failed to post adequate notice of restrictions, i.e. for work on or around the reactor vessel. Construction management had, however, met its commitment in response to NRC Inspection Report 50-387/79-01 and GE letter EAG-1039, dated 2/2/79, to alert its supervision to the need for caution while working near or around the vessel.

REMEDIAL ACTION

In response to NCR-5241 and Bechtel letter M-1-1397 dated January 31, 1980, General Electric issued FDDR-KRL-193 to cover removal of the hanger and attachment weld and to remove the heat-affected material from the RPV surface. Following completion of this portion of the work, as-built data of the vessel surface and wall thickness were forwarded to GE/NEBG for final dispositioning of the FDDR and NCR.

Thickness measurements by means of UT have been taken of the RPV wall where Hanger H19 had been attached by welding. They indicate an existing minimum wall thickness of approximately 6-7/16 inches (excluding cladding thickness) vs. a minimum specified wall thickness of 6-3/16 inches. This provided sufficient excess wall to permit removal of the weld and heat-affected zone without need for a weld repair. Blending and NDE of the RPV surface was all that was required for the final disposition of FDDR-KRL-193.

The Field initiated FCI-M-180 to describe this ASME Section XI repair of the vessel surface and its approval by PP&L (including PP&L's ANI), GE/NEBG and Bechtel was obtained by June 30, 1980. Completion of the initial work, submittal of the as-built data, reissuance of FDDR-KR1-193, and reapproval of FCI-M-180 by all applicable parties was accomplished by July 7, 1980. Also, completion of the repair, close-out of NCR-5241 and submittal of final as-built data to GE/NEBG was accomplished by August 7, 1980.

#### ACTION TO PREVENT RECURRENCE

Letter M-1-1414 dated February 11, 1980 requests permission from General Electric to paint permanent signs on the RPV's stating:

REACTOR VESSEL  
DO NOT BURN OR WELD  
ON VESSEL

Bechtel, with GE concurrence, put up these permanent signs on the exposed surface of Unit 1 and Unit 2 RPV above the reactor shield by March 7, 1980. To prevent similar occurrences on other susceptible equipment and components (including other NSSS items), Bechtel compiled a list of components and investigated acceptable methods of posting similar precautionary notices on such components in both Unit 1 and Unit 2. Also Bechtel verified that the posting of such notices was completed and included as a monitoring activity in their storage and maintenance program.

To ensure that all craftsmen are made aware of the restrictions on arc strikes, welding or grinding on completed equipment or components, the subject was reviewed with the applicable foremen and general foremen at a series of weekly safety meetings that were completed February 29, 1980. Also at the meetings, the instructor further stressed the importance and necessity of continuing to obtain assistance and direction from Field Supervision and Field Engineering whenever there is the slightest doubt concerning work to be performed, and if the direction received did not seem proper, personnel should continue to pursue the matter.

A memo was sent to all Lead Field Engineers by the Project Field Engineer on February 7, 1980, requiring training sessions to be held by each discipline. Field Engineers were reminded of their responsibility to perform adequate investigation and research for all problems which confront them and they were advised of the need for accurate and explicit engineering instructions to prevent similar situations from occurring. The Field Engineer responsible for hangers on night shift at the time this incident occurred has been replaced by a person more experienced in design and installation of pipe hangers.

In order to prevent delays in notification of potentially reportable situations, a memo from the Project Field Engineer to the Lead Engineers reminded them of the requirement to notify the appropriate supervisors of any deficiency which may involve a reportable condition. This subject was also addressed in the discipline training sessions. Lead Quality Control Engineers were directed by Project Quality Control Engineer to immediately report any potentially reportable condition to him, and to instruct all their personnel with regards to the requirements for immediate notification. This subject was also addressed at a Quality Control training session on NCRs held on February 8, 1980.

CONCLUSION

As of the release of this report, all necessary rework has been completed and the Unit 1 RPV is in an acceptable state as confirmed by the NSSS.

FIGURE 1.



