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SPECIAL SERVICES AND PURCHASING

January 14, 1980

United States Nuclear Regulatory Commission
Attn: Mr. James P. O'Reilly
Director
Region II
101 Marietta Street, N.W.
Atlanta, Georgia 30303

Subject: V. C. Summer Nuclear Station
Unit #1
Reportable Item in Accordance
With 10CFR50.55(e)

Gentlemen:

The purpose of this letter is to provide a final written report of an item relative to vendor radiography previously communicated orally to SCE&G's Principal Inspector (T. Burdette) on December 13, 1979.

Nature of Condition

A piping subassembly supplied to SCE&G by Southwest Fabricating and Welding Company, Inc. (SFW) Houston, Texas, has a butt weld that contains an apparent defect. The spool piece involved was I-SI-04-08 and the weld was number 2. The apparent defect is outside the Radiographic (RT) acceptance criteria for this weld and was discovered during a reshot of the joint on site in conjunction with a 100% review of Southwest RT film.

Cause

The specific cause of the condition being reported is that weld number 2 on I-SI-04-08 had views 2-3 & 3-4 rejected by Southwest Fabricating & Welding upon initial radiography in Houston. These views, in the original weld, showed a slag inclusion as a result of submerged arc welding. The piece was returned to the shop and repair was made using the TIG process. The piece was returned to the x-ray department and new film exposed on the wrong weld. These reshots were identified as weld number 2 views 2-3R & 3-4R. Based on these film, the weld was considered acceptable and the spool piece shipped. It

was discovered at Southwest Fabricating & Welding, during the review of film of weld #2, exposed on site by Conam (a qualified RT service for Southwest Fabricating & Welding), that the attempted repair at Southwest Fabricating & Welding was unsuccessful. The site exposed film showed the slag inclusion was removed but the TIG process employed in the repair, had left an unacceptable concave area on the ID surface. Southwest Fabricating & Welding presented this determination to SCE&G on December 13, 1979, during a joint review on site of the Conam film. The condition was then reported to the NRC (T. Burdette).

The reason weld number 2 of spool I-SI-04-08 was reshot on site was in pursuit of resolution of a generic Southwest Fabricating & Welding program problem which, taken alone, had no direct safety implications until the reported condition was discovered. The NRC Resident Inspector (J. Skolds) was made aware of the generic Southwest Fabricating & Welding program problem and its basis for not being reported on October 11, 1979, when SCE&G was evolving problem identification extent and resolution with Southwest Fabricating & Welding.

The program problem was discovered by SCE&G during the review of Southwest Fabricating & Welding shop film in conjunction with determining wall thickness of butt welds that had been prepared for preservice inspection. It was determined on October 5, 1979, that SCE&G had two spool pieces (SI-13-01 & SI-24-13) that had two different exposures of the same weld within the spool piece, and no film for another weld within the spool piece. SCE&G immediately had the two welds with no film coverage radiographed and the joints were determined to be acceptable. Southwest Fabricating & Welding was contacted and the problem explained. A SCE&G Corrective Action Request (CAR) was presented to Southwest Fabricating & Welding to obtain the cause of the program problem, the extent of the problem, corrections to any film discrepancies, and corrective action. Southwest Fabricating & Welding acknowledged SCE&G's conclusions and a course of action was developed by Southwest Fabricating & Welding to respond to the CAR. On a systematic basis, Southwest Fabricating & Welding performed a full scale 100% review of all radiographs taken on safety related piping subassemblies supplied SCE&G. The review constituted the only mutually acceptable method that could disclose the discrepancies. The review procedure was to compare each film with the two adjacent film of a weld joint to determine continuity of weld configuration in the overlapped areas, and then to review weld vs. weld on a combination basis within a spool piece to see if total welds had duplicate film. A total of 746 pipe spools containing 2,767 welds were reviewed entailing scrutiny of approximately 13,500 radiographs. SCE&G performed plant surveillance on the Southwest Fabricating & Welding review to assure it was progressing correctly.

The results of the review completed on 10/24/79, disclosed ten of 2,767 welds had not been properly radiographed and 19 of 13,500 film were affected. Southwest Fabricating & Welding qualified Conam Inspection Division of Nuclear Energy Services, Inc. who are at the V. C. Summer Site to reradiograph the welds involved. The condition reported above on weld 2 of I-SI-04-08 is the only defect noted. Southwest Fabricating & Welding attributes the generic program problem to human error in working within their RT system. They acknowledge that some practices within the Radiographic Department could be improved upon to establish and maintain weld identification and have made necessary program modifications.

Safety Implications

The defective weld in I-SI-04-08 was evaluated by SCE&G's architect engineer. It was concluded that the defect may have caused the weld to fail during service. And, since the weld is in the suction piping of the RHR pipe, its failure would result in the loss of the RHR system and the safety of operations of the plant would be adversely affected.

Actions to Correct Condition

The defective weld was documented on a site Nonconformance Notice (NCN A) Number 1173, and the disposition will be to cut out the weld entirely and replace it with a field weld produced by the Constructor on site within the Constructor's ASME program. Appropriate isometric drawings are to be revised to reflect the weld as a field weld and documentation from Southwest Fabricating and Welding will reflect two spool pieces in lieu of one. The new field weld will be radiographed and inspected within the constructor's program.

Corrective Actions to Prevent Recurrence

In response to the SCE&G CAR, Southwest Fabricating & Welding has indicated actions they intend to take to prevent recurrence of problems. SCE&G is accepting the corrective actions in conjunction with the CAR response without verification since the order for piping supply at Southwest Fabricating & Welding is complete. SCE&G will utilize information on program corrective action for possible future use of Southwest Fabricating & Welding. The corrective actions identified by Southwest Fabricating & Welding to be implemented by January 15, 1980 are:

1. Radiographers are to stencil all welds prior to making exposure on any piece. In the event of repairs or retakes, he shall verify Shop Order, Sheet Number, Weld Number, and Station Mark numbers prior to making exposures.

2. The Radiographer shall review the shop copy (MRS) to determine that the correct weld was repaired.

3. The Radiographer shall work from an actual copy of the original Reader Sheet to determine the exact weld areas to be reradiographed.

4. Personnel performing final review of radiographs of repairs or retakes shall verify that continuous coverage has been obtained on each weld. This shall be done by comparing repair or retake film to the original film for that same area and to the two film adjacent to the repair or retake area.

5. All personnel involved in radiography have been apprised of these happenings, and have been reinstructed in their duties and responsibilities to preclude recurrence.

SCE&G believes the actions outlined above will adequately resolve the reported condition. Since all necessary corrective actions have been identified and are in the process of being completed, we consider this a final report of this item. All actions taken will be available at the construction site for NRC review. Should further information be required, please let us know.

Very truly yours,

DRM/MCJ/jls

cc: C. J. Fritz
G. C. Meetze
Office of Director
Inspection & Enforcement
Washington, DC