

SOUTH CAROLINA ELECTRIC & GAS COMPANY

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T.C. NICHOLS, JR.
VICE PRESIDENT AND GROUP EXECUTIVE
POWER PRODUCTION AND SYSTEM OPERATIONS

March 17, 1981



Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
Region II, Suite 3100,
101 Marietta Street,
Atlanta, Georgia 30303

Subject: Virgil C. Summer Nuclear Station
Docket No. 50/395
Reportable Item in Accordance with
10CFR50.55(e) - Full Penetration
Attachment Welds NRC Item 395/80-20-20

Dear Mr. O'Reilly:

On July 30, 1980, South Carolina Electric and Gas Company notified Region II of a potentially reportable item dealing with lack of full penetration welds for attachments to Class 1 pipe. Further information was transmitted by letter on August 28, 1980 which outlined a program for reworking Class 1 attachment welds to provide the required full penetration. In addition, the program called for inspection and evaluation of Class 2 and Class 3 full penetration pipe attachments to assure adequacy of attachment welds in these lines.

The welds in question were made by ASME qualified welders under approved site procedures. Radiographs were made of some of these pipe attachment welds while pursuing the separate problem of pipe "melt through". These radiographs revealed the condition of incomplete penetration and/or incomplete fusion of some of the full penetration welds.

The NDE required by the approved procedures and the ASME Code, that is Magnetic Particle (MT), Liquid Penetrant (PT), and Visual Inspection (VT), were performed. However, investigation has revealed that there was inadequate preparation of the second side of the welds by backgouging as required by the welding procedure. The Daniel Construction Company (DCC) QC procedure did not specifically require verification of second side preparation for full penetration welds although QC verification of fit-up and joint preparation of the first side was required. Consequently, verification of second side preparation was not performed, and the inadequate backgouging was not detected.

Class 1 welded attachments have all been examined and/or repaired to assure that full penetration welds were achieved. Therefore, no adverse safety significance will exist for Class 1 welded attachment. Class 2 and Class 3 welded attachments have been reviewed by DCC/QC inspectors and investigation has shown that in general approximately 75% penetration existed. Reported fillet weld sizes (as measured) were used to verify the welding requirement of each attachment. Where attachments were found to be deficient in the proper amounts of weld material, the welds were redesigned as partial penetration welds and conservatively evaluated based on 50% penetration and the as-measured fillet size. The design, then, achieves full strength of the attachment using partial penetration welds. Therefore, no adverse safety significance will exist for the Class 2 and Class 3 attachment welds.

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It should be noted that these designs still remain to be verified under the overall Design Verification Program now in progress at the Architect/Engineer home office.

It cannot be assumed that, if gone uncorrected, the lack of full penetration for a specific attachment would not have affected adversely the safety of a system. Since the program calls for reworking all questionable welds, however, no safety significance will exist. On this basis SCE&G conservatively classified this item as a potential significant deficiency.

Under control of, and in accordance with, the disposition of NCN-2137 R/2, all Class 1 hanger attachment welds have been reworked to obtain full penetration. In addition, under control of and in accordance with the disposition of NCN-3736 all Class 2 and 3 hanger attachment welds have been re-examined visually with the aid of fillet weld gauges. All Class 2 and 3 attachment welds were determined to have full strength welds or else they were to be reworked to obtain full strength welds.

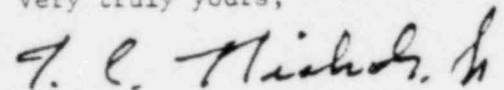
It should be noted that the large majority of welds examined were acceptable without the need for rework since they were found to have welds of adequate strength even without full penetration.

Those hanger attachment welds that do require rework are presently being reworked in support of our hydro test schedule. At this time there are approximately ten (10) hangers left to be corrected. Best estimate for completion of this work is August 3, 1981.

DCC/QC procedure P-II-03, "Welding of Materials", has been revised to require QC verification of second side preparation of Full Penetration Welds to assure proper backgauging so proper penetration can be achieved. This action should prevent recurrence of the problem.

SCE&G believes that the actions outlined above have adequately addressed and resolved the discrepancies noted herein. We also believe we now have programmatic control of this item. For these reasons, SCE&G considers this a final report on this subject. Information relative to this item will be available at the plant site for your further review as desired. Should any questions arise, or further information be required, please call.

Very truly yours,



T. C. Nichols, Jr.

HR:TCN:pj

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