ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
WELD FABRICATION DEFICIENCIES IN SIS ACCUMULATORS
NCR 1395R AND NCR 1402R
FINAL REPORT

Description of Deficiency

This deficiency involves poor vendor workmanship in a weld deposited clad area adjacent to the accumulator outlet nozzles. The accumulator vessels are carbon steel, with an austenitic stainless steel clad. In the area of the nozzles, the clad is hand deposited weld material. It is in these areas on six of eight accumulators installed in both units (4 accumulators in each unit) that the deficient areas were discovered.

This deficiency was discovered during an inspection by TVA Construction personnel made during installation of a field modification by Westinghouse. The TVA inspectors initially found evidence of porosity and pitting on the backclad areas next to the accumulator nozzles.

Upon liquid penetrant examination of the suspected areas, it was determined that rounded and linear indications were present that should not have been accepted on final examination of the vessels by the manufacturer (Delta-Southern Company of Baton Rouge, Louisiana). These indications do not appear, based on the liquid penetrant examination, to penetrate the clad.

We believe an apparent breakdown in the manufacturer's quality assurance inspection procedures resulted in this deficiency. We understand that this manufacturer is no longer in the nuclear field.

Safety Implications

If this condition had remained undetected, the integrity of the accumulator vessels would not have been compromised, and therefore, the safety function of these accumulators would not have been impaired. This can be stated because the surface indications do not penetrate the clad, and hence accelerated corrosion could not affect the accumulators.

Corrective Actions

Immediately following discovery of this deficiency by TVA, Westinghouse site personnel were contacted. Westinghouse welding and materials personnel subsequently made a detailed liquid penetrant examination of the affected areas of the SIS accumulators. Several of the indications found during the liquid penetrant examination are unacceptable under the inspection criteria of the ASME Code, Section II, 1971, Winter 1971 Addenda (the Code of record for the vessels).

TVA and Westinghouse are presently developing a repair procedure to correct the unacceptable areas identified by the liquid penetrant examination.

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