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U. S. Nuclear Regulatory Commission
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Subject: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Request for Relief for Reactor Coolant System Weld Examination

Gentlemen:

The purpose of this submittal is to request relief from the requirements of 10CFR50.55(a)(g). Entergy Operations at Arkansas Nuclear One, Unit 1 (ANO-1) was unable to examine 100% of the weld volumes of two reactor coolant system welds during the last inservice inspection (ISI). Attached is a relief request for the two welds whose volumes could not be examined 100%. This request is for the second interval which ended June 1, 1997. Should you have any questions, please contact me.

Very truly yours,

for Dwight C. Mims
Director, Nuclear Safety

DCM/nbm
Attachment

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ANO-1 Inservice Inspection Relief Request 96-005

Component Identification

Code Class: 1

Applicable Interval: Second

Applicable Edition and Addenda of ASME Section XI: 1980 Edition with Addenda through Winter 1981

Code Examination Category: B-D, B-F

Code Item Numbers(s): B3.130. B5.130

Code Required Examination: Volumetric examination of pressure-retaining full-penetration nozzle-to-vessel welds in steam generators (primary side); volumetric and surface examination of pressure-retaining dissimilar metal welds

Component(s) or Relief Area(s):

- Steam generator E24B inlet-nozzle-to-upper-head weld, ISI exam number 04-004
- Steam generator E24B to reactor coolant pump P32A pipe-to-pipe circumferential seam, ISI exam number 10-002

Requirement from which Relief is Requested:

Code Case N-460 requires that when the entire examination volume or area cannot be examined due to interference by another component or part geometry, a reduction in examination coverage on any class 1 or class 2 weld may be accepted provided the reduction in coverage for that weld is less than 10%. During refueling outage 1R11, which ended in October of 1993, the two pressure-retaining welds listed above received an examination that had a reduction in coverage for the weld greater than the 10% allowed by Code Case N-460 requirements. The lack of completeness of the examination is a result of limited accessibility due to geometry and interference by another component.

Basis for Relief:

The Code of Federal Regulations 10CFR50.55(a)(g) and ANO-1 Technical Specification 4.0.5 require that ASME Code Class 1, 2, and 3 systems be routinely inspected as an assurance of continued structural integrity of the reactor coolant system pressure boundary. These regular inspections must be performed per Section XI of the ASME Boiler and Pressure Vessel Code. Section XI, which is entitled "Rules for Inservice Inspection of Nuclear Power Plant Components," requires the inspection of all class 1 welds (Code Category B-D and B-F) once during each 10-year interval of operation.

The obstructions located on or adjacent to these welds produce an area in which it is very difficult or impossible to maneuver the ultrasonic transducer in a way to obtain full coverage of the welds. For ISI exam number 04-004 the percent of coverage is 47.6%, and for ISI exam number 10-002 the percent of coverage is 85.78%. The results of the limited examinations were that no service-induced flaws were found in either of the welds inspected.

Since complete examination of these welds is not practical, Entergy Operations has examined the ANO-1 welds to the maximum extent possible using the technologies that are commercially available. Examination of the accessible weld volumes is sufficient to provide reasonable assurance of system integrity, especially since past examinations of accessible welds have revealed no service-induced flaws. It is therefore reasonable to conclude that the same results would be obtained for the inaccessible portions of the welds if it were possible to inspect them.

Inspection of less than 100% of the weld volumes does not endanger the public since the reactor coolant system is designed and constructed to have a low probability of gross rupture or significant leakage throughout its design life. In addition, any leakage that might occur would be easily detected and contained within the reactor building.

Alternative Examinations:

As part of the continuing regularly-scheduled inservice inspection scope, the other Category B-D welds have been examined ultrasonically. In addition, the steam generators receive a visual (VT-2) examination each refueling outage. No service-induced cracking or degradation has been found either with the ultrasonic examinations or with the visual inspections.