



ENTERGY

Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72801
Tel 501 858-5077

May 31, 1995

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U. S. Nuclear Regulatory Commission
Document Control Desk
Mail Station P1-137
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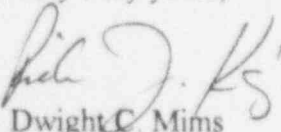
Subject: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Inservice Inspection Relief Request 95-001

Gentlemen:

Entergy Operations performed inservice inspection (ISI) of reactor vessel welds during the last Arkansas Nuclear One, Unit 1 (ANO-1), refueling outage (1R12). The reactor vessel transition-piece-to-bottom-head weld (01-006) was scheduled to be examined during this outage. However, due to the limited coverage obtainable for the weld (~10%) and the lack of identification of service-induced flaws in other reactor vessel welds examined during 1R12, Entergy Operations decided to delay performance of the inspection while relief from inspection of this weld was pursued. A preliminary discussion of the potential relief request was discussed with the staff on March 6, 1995. Relief Request 95-001 (attached) provides a detailed justification of the basis for relief and proposed alternative examinations to the ultrasonic examination of weld 01-006 during the second 10-year interval. Not performing ISI of this weld will save approximately 12 hours of critical path time (~\$250,000) during the next refueling outage. Therefore, we request that this submittal be reviewed as a cost beneficial licensing action (CBLA).

Should you have any questions concerning this submittal, please contact me.

Very truly yours,


Dwight C. Mims
Director, Licensing

DCM/jjd

attachment

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cc: Mr. Leonard J. Callan
Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

NRC Senior Resident Inspector
Arkansas Nuclear One
1448 S. R. 333
Russellville, AR 72801

Mr. George Kalman
NRR Project Manager Region IV/ANO-1 & 2
U. S. Nuclear Regulatory Commission
NRR Mail Stop 13-H-3
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

ANO-1
Inservice Inspection
Relief Request 95-001

Applicable Interval:

Second

Applicable Edition and Addenda of ASME Section XI:

1980 Edition with Addenda through Winter 1981

Code Class:

1

Code Examination Category:

B-A

Code Item No.:

B1.21

Code Required Examination:

Volumetric Examination of Pressure-Retaining Welds in Reactor Vessels

Component(s) or Relief Area(s):

Reactor Vessel Transition-Piece-to-Bottom-Head Weld - ISI Exam Number 01-006

Requirement from which Relief is Requested:

IWB-2500 requires that the accessible length of one reactor vessel lower-head weld be examined during the current (second) interval. The lower head of the reactor vessel contains only one weld. Therefore, this one weld (01-006) is required to be examined each interval.

Basis for Relief:

Accessibility to this weld is severely limited by the flow stabilizer lugs, the core stop lugs, and the incore instrumentation nozzles. ASME Code coverage of the weld and base material would be limited to approximately 10%. In order to achieve this very limited examination, Entergy Operations estimates that the critical-path outage time required would be a minimum of 12 hours, which is estimated to cost approximately \$250,000.

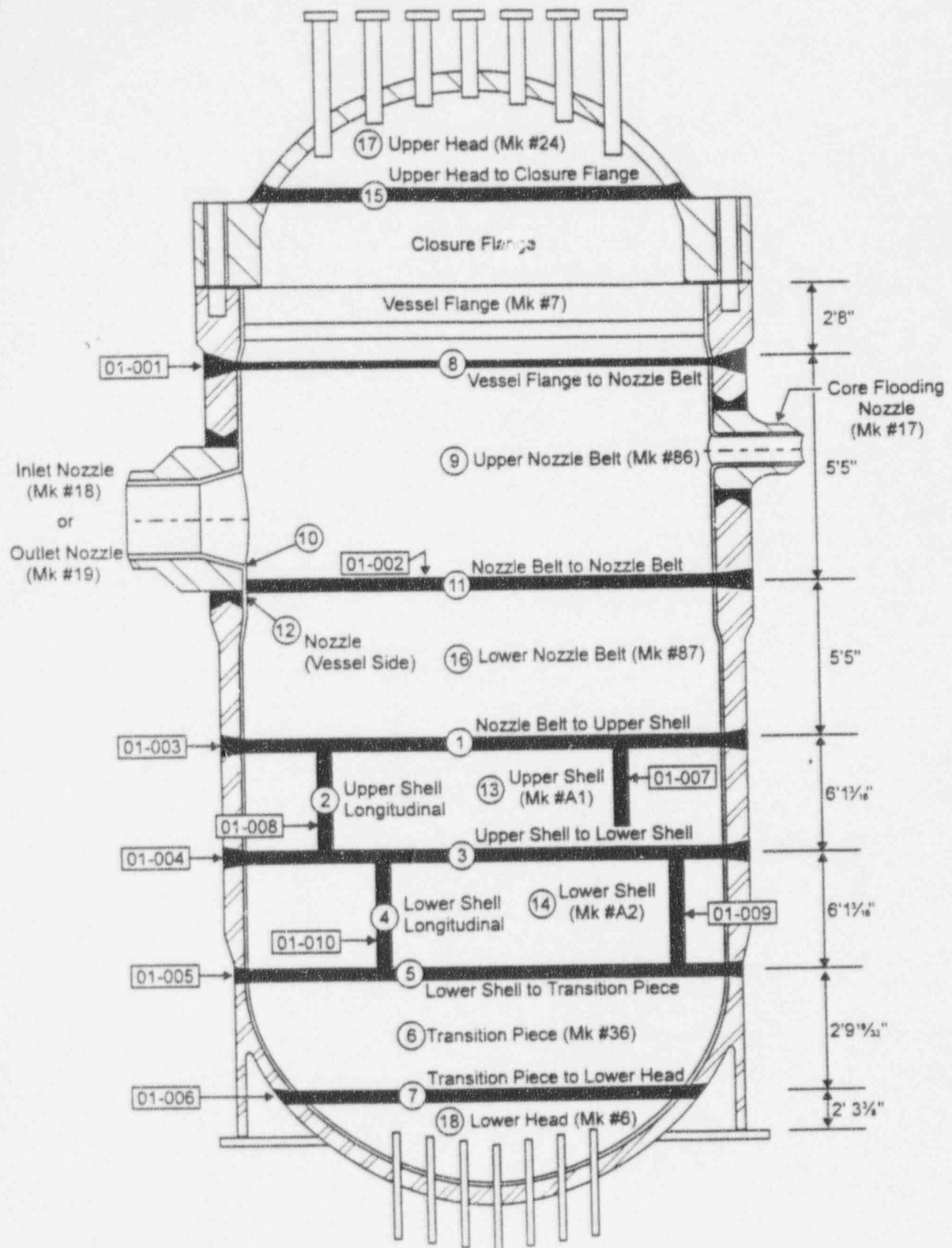
The obstructions located on and adjacent to this weld produce an area in which it is very difficult to maneuver the ultrasonic transducer manipulator. Of particular interest are the incore instrumentation nozzles. These nozzles are small and manufactured to close tolerances. If inadvertently bumped by the manipulator, these nozzles could be damaged. A damaged nozzle could prevent the reinsertion of an incore instrument or could require a critical-path in-vessel repair.

The majority of the neutron flux escaping from the nuclear core impacts the reactor vessel beltline area, rather than the bottom head. Therefore, the potential for neutron embrittlement of this bottom-head weld is considerably less than for the beltline welds. If a flaw were to exist in this weld, it would be far less likely to propagate than if a flaw of the same size and configuration were to exist in one of the shell welds. During the most recent refueling outage (1R12), which ended in April 1995, the remainder of the reactor vessel welds scheduled to be inspected during the second interval were examined, including all of the beltline welds. Since no service-induced flaws were found, Entergy Operations has a high degree of confidence that the structural integrity of the reactor vessel is assured.

The likelihood of a significant flaw existing in this weld is very small. When the vessel was originally fabricated, this full-penetration weld was completely radiographed and found to be acceptable. Since that time, the weld has been ultrasonically inspected once preservice, prior to installation (essentially 100% coverage), and once during the first interval (approximately 10% coverage). Both of these examinations determined the weld to be satisfactory.

Alternative Examinations:

As part of the recent 1R12 scheduled outage scope, all of the reactor vessel shell welds were examined ultrasonically. In addition, the reactor vessel interior surfaces and interior welded attachments received visual (VI-1 and VT-3) inspections as required by Section XI of the ASME Code. Also, a visual (VT-2) examination is performed on the exterior of the vessel each refueling outage. No service-induced cracking or degradation has been found either with the ultrasonic examinations or with the visual inspections.



Plates and Weld Locations of ANO-1 Vessel