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June 11, 1999

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555-0001

Gentlemen:

ULNRC-4051
TAC No. MA2312

Ameren UE

DOCKET NUMBER 50-483
CALLAWAY PLANT
REQUEST FOR RELIEF FROM ASME CODE

Reference: 1) NRC-3863 dated July 10, 1999
2) NRC Letter dated May 6, 1999

Reference 1 transmitted a request for relief from the requirements of the 1989 Edition of ASME Section XI which were encountered during Callaway Refuel 9. Reference 2 requested additional information relation to Relief Request ISI-16. The requested information is provided in the enclosure to this letter.

If you have questions concerning this matter please contact us.

Sincerely,

Daniel Shafer

for Alan C. Passwater
Manager, Corporate Nuclear Services

DS/jdg

Enclosure

A047

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RELIEF REQUEST ISI-16

1. Relief Request ISI-16 requests relief from the 100% volumetric examination requirement for the residual heat removal (RHR) suction to reactor coolant system (RCS) loop 1 cold leg branch connection, Weld 2-BB-01-S302-3. Should this weld be categorized as an Item B9.31 (branch connection) weld?

Response:

Yes, this is an Item B9.31 weld. Reference to B9.11 was a typo on Relief Request ISI-16. The Callaway ISI Program Plan and ISI database identifies the subject weld as a B9.31 weld. In addition, review of weld records and site controlled drawings verify this weld to be a B9.31 style branch connection.

2. The submittal states that a composite coverage of 23.35% of the weld volume was achieved with no credit taken for examinations in the circumferential direction (for flaws transverse to the weld). However, a previously approved relief request for this weld during the Callaway Plant, Unit 1 first ten year interval inservice inspection implied a 75% composite volumetric examination coverage with 100% of the volume examined with a 45 degree refracted longitudinal wave transducer in two beam path directions for reflectors transverse to the weld seam. (Reference Relief Request S-1, NRC Safety Evaluation for First Ten Year Interval Inservice Inspection Program Plan, provided to UE in NRC letter dated March 25, 1995). Please explain this reduction in coverage and discuss how the reduced coverage will provide reasonable assurance of quality and safety.

3. In the July 10, 1998 submittal, the conclusion is made that the ASME Code requirement is impractical to perform. The information provided in Relief Request ISI-16 does not adequately support the reduced composite examination coverage of 23%. Please provide information, with sketches if necessary, describing the limitations associated with this examination.

Response (This is a combined response to Items 2 & 3.):

The response to this item is divided into the following three parts:

1. A description of the weld as it relates to ultrasonic examination.
2. An explanation of the differences between the examination coverage reported between the first and second interval exams.
3. A discussion of how the reduced coverage provides reasonable assurance of quality and safety.

A description of the weld as it relates to ultrasonic examination:

The RHR suction line is connected to the RCS using the configuration shown on Attachment 1. The RHR piping nozzle is 6" NPS and the RCS Piping is 29" inside diameter. The RCS piping material is Centrifugally Cast Stainless Steel (SA-351 CF8A). ASME Section XI figure IWB-2500-11 Pipe branch connection (Attachment 1) shows two views (in one drawing) of the weld configuration.

Examination of this weld is limited to one side only due to the geometry of the nozzle (See Attachment 2). Due to the course grain structure of CCSS the only viable examination technique utilizes focused low frequency dual longitudinal wave transducers, limiting the examination to ½ vee path only. Attempts were made to use higher angles but the 3 to 1 signal to noise ratio required by ASME Code could not be achieved in this material.

An explanation of the differences between the examination coverage reported between the first and second interval exams:

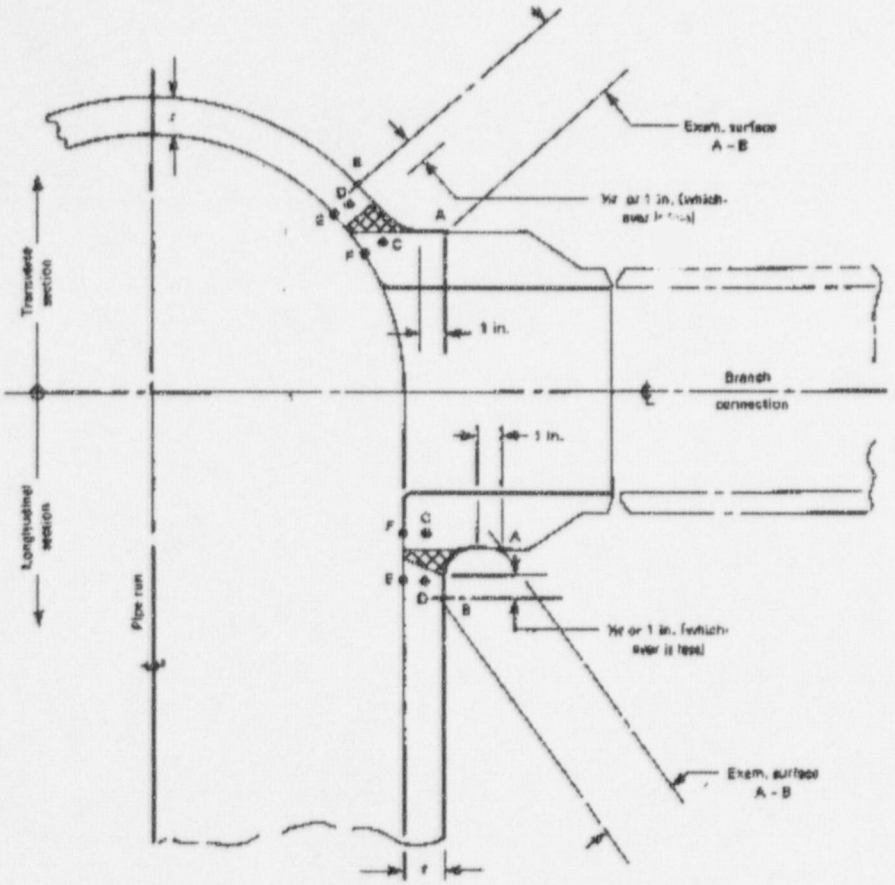
In the examination performed in Refuel 6, 75% of the weld volume was reported to have been examined. This is documented on Request for Relief S-1. In the section entitled "Basis for Relief", 100% of the volume was reported to be examined with a 45° refracted longitudinal wave transducer in two beam path directions for reflectors transverse to the weld seam. This is the crux of the difference between S-1 and ISI-16. The circumferential examination was interpreted at that time to be complete. It was recognized at the time that the examination could not be performed directly by scanning on the weld crown. However credit was taken for the circumferential examination by skewing sound in from the adjacent base material. Although the skewing process was performed during refuel 9, a more conservative approach was used to determine examination coverage.

The difference between the S-1 and ISI-16 relief requests is due therefore to the difference in interpretation of results. Callaway believes that the results reported in ISI-16 better reflect the percentage of weld volume examined. The differences between S-1 and ISI-16 are summarized in the table below:

	Axial		Circumferential		Total
	Upstream	Downstream	Clockwise	Counter Clockwise	
Refuel 6	0%	100%	100%	100%	75%
Refuel 9	0%	93.40%	0%	0%	23.36%

A discussion of how the reduced coverage provides reasonable assurance of quality and safety:

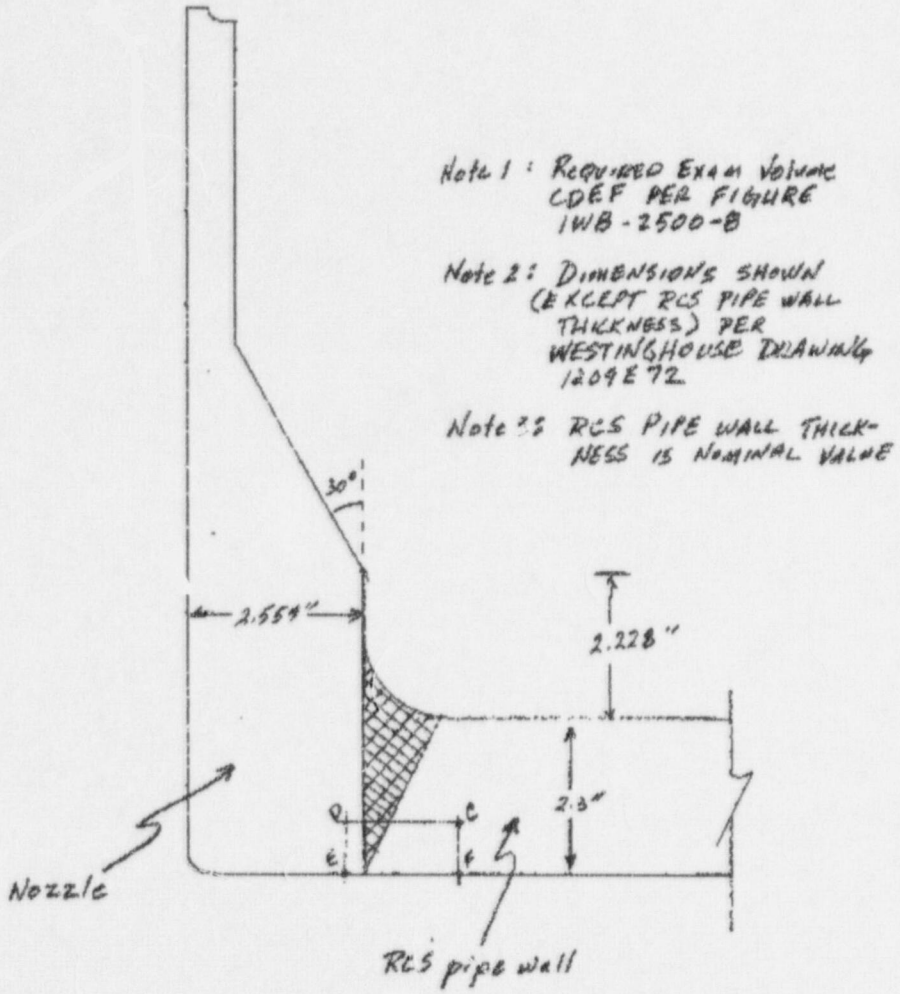
The Refuel 9 examination of weld 2-BB01-S302-3 resulted in successfully examining essentially 100% of the required weld volume from a position Axial to the weld. Additionally, a PT examination was performed on the weld with no relevant indications noted. The Section XI VT-2 (visual) examination for leakage performed every refueling outage and the reactor coolant leakage detection system also verifies weld integrity. Considering the exceptional operating experience in the use of Centrifugally Cast Stainless Steels by the nuclear industry, it is felt that the examination performed is adequate to ensure quality and safety is maintained. Therefore, relief is requested pursuant to 10CFR50.55a(g)(5)(iii).



GENERAL NOTE: Examination volumes C - D - E - F are defined per Fig. IWB-2500-8.

FIG. IWB-2500-11 PIPE BRANCH CONNECTION

Attachment 1



Scale (½" = 1") Sketch of
2-BB01-5302-3

Attachment 2