



Nebraska Public Power District

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NLS940047
November 1, 1994

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Subject: Inservice Inspection Program Relief Request
Cooper Nuclear Station
NRC Docket No. 50-298, License No. DPR-46

Gentlemen:

Attached for your review and approval is Relief Request RI-07 to the Cooper Nuclear Station (CNS) Inservice Inspection (ISI) program. The Nebraska Public Power District (the District) is requesting relief from the ASME Section XI, Table IWB-2500-1 Code requirements regarding the surface examination requirements for the interior surface of the Reactor Pressure Vessel to support skirt weld. This relief request is necessary due to poor accessibility of the interior weld surface resulting from the configuration of the vessel skirt, lower vessel head insulation, and the lack of adequate skirt access manways and maneuverability space.

As described in the Attachment 1, the District proposes an alternate examination which consists of a surface examination on the accessible side of the subject weld (A-B area) and utilization of a volumetric method to examine the interior area of the weld. This alternate examination meets the intent of the subject code requirement and provides adequate assurance of the structural integrity of the subject weld. Attachment 2 provides an illustration of the subject weld area.

The District asks that this relief request, once granted, become effective immediately, and remain in effect through the second ten year ISI interval, which concludes subsequent to the conclusion of the next scheduled refueling outage.

Should you have any questions or require additional information regarding this request, please call.

Sincerely,

G. E. Horn
Vice President - Nuclear

GRH/MJB/dnm
Attachments

cc: NRC Regional Office
Region IV
Arlington, Texas

NRC Resident Inspector
Cooper Nuclear Station

NPG Distribution

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RELIEF REQUEST RI-07: REACTOR PRESSURE VESSEL TO SUPPORT SKIRT WELD

1. Identify component for which relief is requested.

Code Class:	ASME Section XI, Code Class 1
Component:	Reactor Pressure Vessel to Support Skirt Weld
Function:	Attachment weld for the reactor vessel support skirt to the reactor vessel lower head
References:	ASME Section XI, 1980 Edition - Winter 1981 Addenda Paragraph IWB-2500 Table IWB-2500-1 Figure IWB-2500-13
Examination Category:	B-H
Item Number:	B8.10
Inspection Program:	B

2. Specifically identify the ASME Code requirement that has been determined to be impractical for the component.

IWB-2500 states that components shall be examined and tested as specified in Table IWB-2500-1. Table IWB-2500-1 for Examination Category B-H, Reactor Vessel Integrally Welded Attachments, requires a surface examination of areas A - B and C - D for integral attachment welds corresponding to Figure IWB-2500-13.

3. Provide information to support the determination that the requirement in (2) is impractical; i.e., state and explain the basis for requesting relief.

The Cooper Nuclear Station construction permit was issued before the effective date of the implementation for ASME Section XI and, thus, the plant was not designed to meet the requirements for inservice inspection. Therefore, 100% compliance is not feasible in all cases.

Relief is requested for the surface examination requirements for the interior surface (C-D area) of the Reactor Pressure Vessel to support skirt weld. As can be seen in Figures BA-7 and BH-1 (attached), the design of this weld is such that the surface examination requirements of Table IWB-2500-1 are not possible. The interior surface area is not accessible due to the configuration of vessel skirt, lower vessel head insulation, close proximity of the CRD housings, and the lack of adequate skirt access manways and maneuverability space. There is a severe angle between the vessel bottom head and the vessel skirt which physically prohibits access to the root area of the weld.

4. Specify the inservice inspection (or testing) that will be performed in lieu of the ASME Code Section XI requirements that have been determined to be impractical.

In addition to the Code required surface examination on the A - B area, see Figure BH-1, a volumetric method will be used to examine the interior volume of the weld. This will consist of a ultrasonic examination utilizing a 0 degree longitudinal wave search unit, 45 degree shear wave search unit and a 60 degree shear wave search unit. Due to the configuration, the scanning will be performed in one direction only.

The 0 degree search unit will obtain approximately 100% coverage of the weld volume, the 45 degree search will obtain approximately 95% coverage, and the 60 degree search unit will obtain approximately 92% coverage, scanning from one side.

Performance of the above described volumetric and surface examinations will ensure that a flaw would be detected by one of the methods prior to exceeding the acceptance criteria of IWB-3516, thus providing adequate assurance of the structural integrity of the weld and ensuring that acceptable levels of quality and safety are being met.

A fracture mechanics evaluation has been performed for the support skirt to lower RPV head weld. The results of the evaluation indicate that, for a surface flaw, growth rate is extremely small, and such growth would provide negligible adverse impact upon the integrity of the weld for the remainder of plant life.

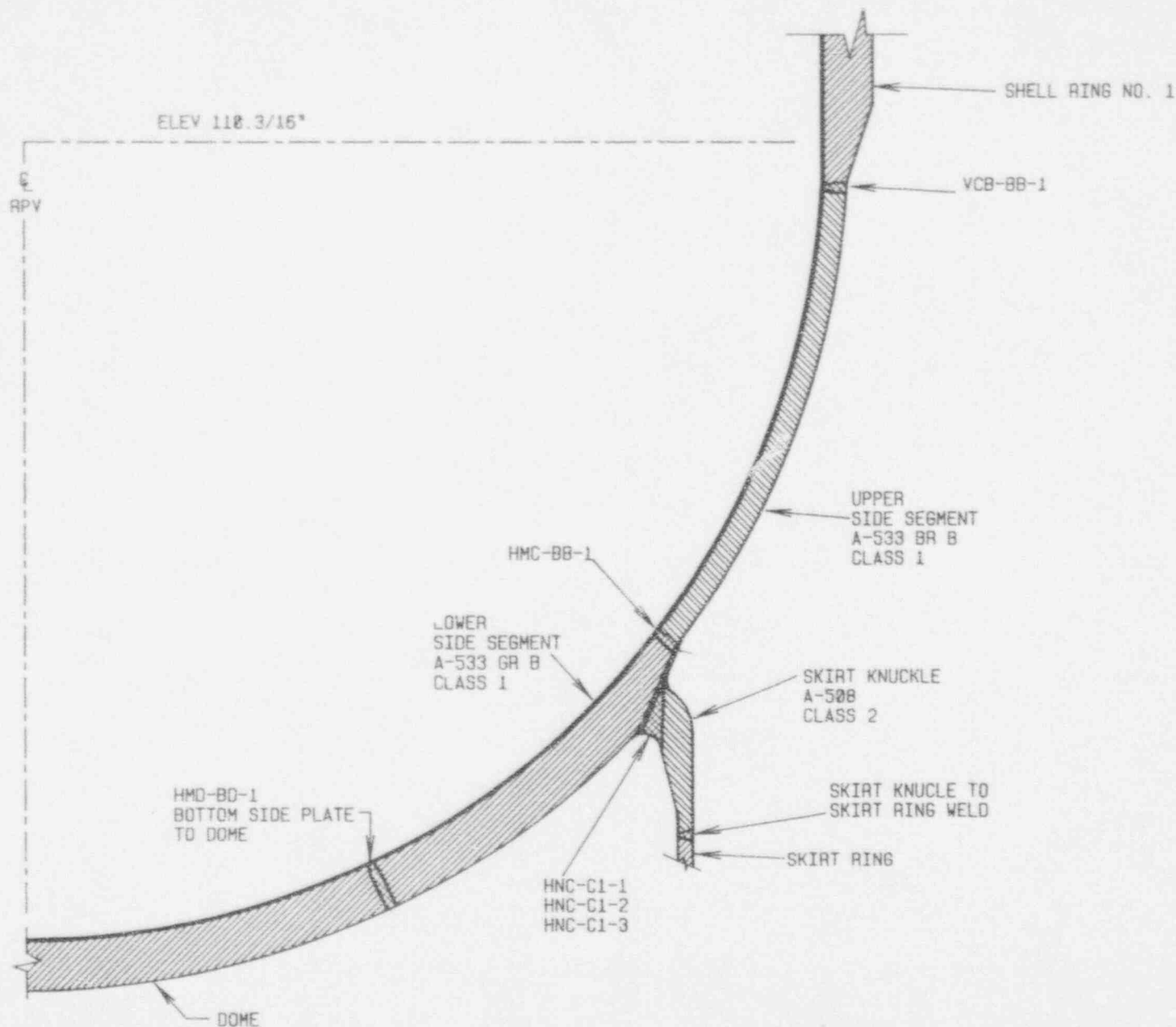
The District asks that this relief request, once granted, become effective immediately, and remain in effect for the second inspection interval of the Inservice Inspection program for CNS, which concludes subsequent to the conclusion of the next scheduled refueling outage.

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SEP 29 1994

N.P.D., C.N.S.

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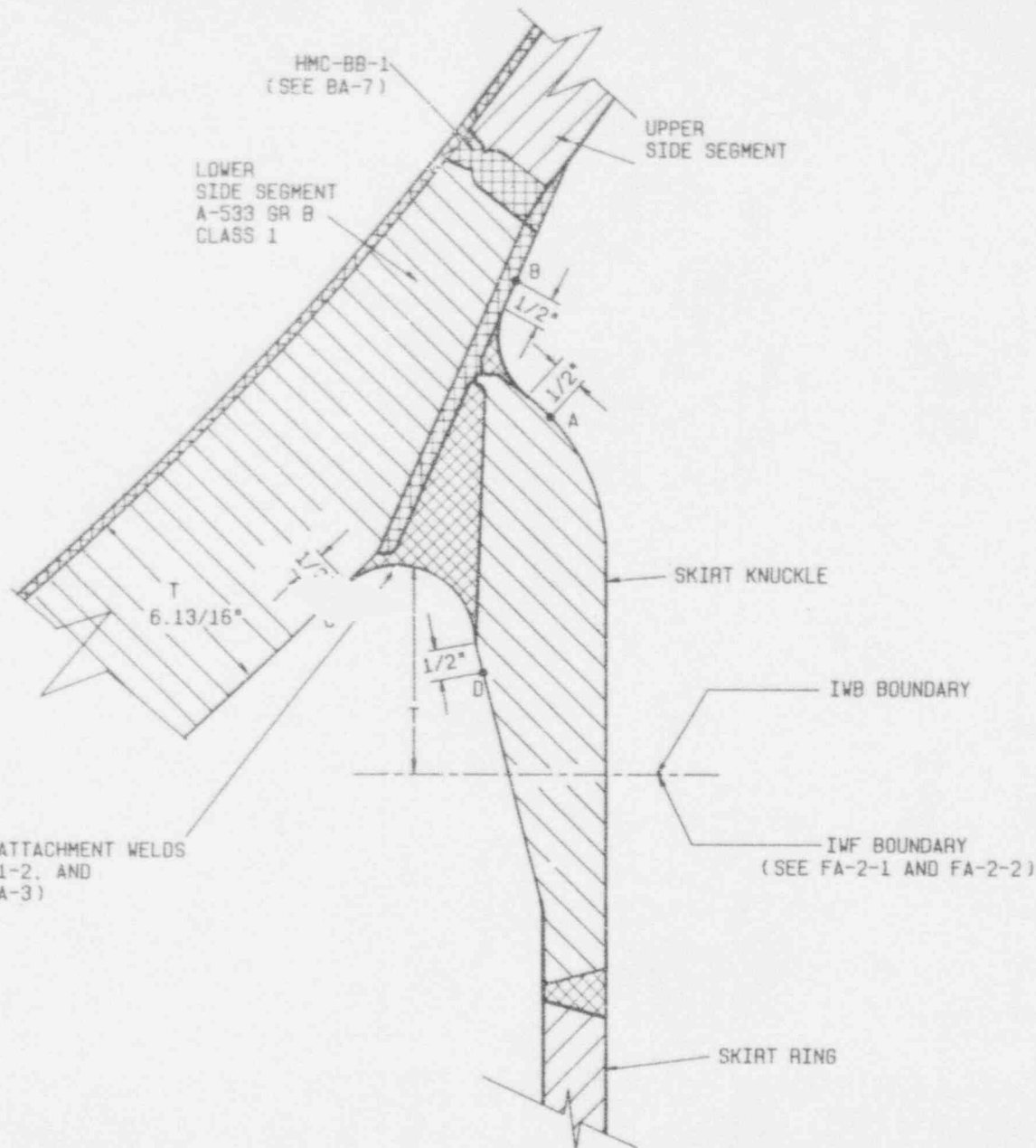


DATE	04-15-89
REV	0

PROJECT	COOPER NUCLEAR STATION
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TITLE	BOTTOM HEAD WELD LOCATION MAP
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GE NUCLEAR ENERGY	REFERENCE DRAWINGS CE 232-233-10 CE 232-232-6	GE REVIEW E P BAILEY 04-15-89	NPPD APPROVAL S S FREBORG	DRAWN BY R J DILL 11-30-88	FIGURE NUMBER BA-7
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SURFACE EXAMINATION AREAS A-B AND C-D

PROJECT	COOPER NUCLEAR STATION			TITLE	RPV SKIRT WELD TO BOTTOM HEAD DETAIL	
GE REVIEW	E P BAILEY	04-15-89	NPPD APPROVAL	S S FREBORG	DRAWN BY	R J DILL
						12-20-88
					FIGURE NUMBER	BH-1

GE NUCLEAR ENERGY

REFERENCE DRAWINGS
CE 232-235
CE 232-232