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TO: Mr. Victor Stello

FROM: NSP
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L. O. Mayer

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ENCLOSURE Consists of additional information to 09/19/77 submittal of License Amendment Request to revise Table 4.6.1 of Appendix Tech Specs, "In-Service Inspection Requirements for Monticello." concerning control rod housing pressure boundary welds...

2p

PLANT NAME: MONTICELLO
jcm 09/30/77

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FOR ACTION/INFORMATION

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NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

September 27, 1977

Mr Victor Stello, Director
Division of Operating Reactors
c/o Distribution Services Branch, DDC, ADM
U S Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr Stello:

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Supplement No. 1 to
<u>License Amendment Request Dated September 19, 1977</u>

On September 19, 1977 we submitted a License Amendment Request to revise Table 4.6.1 of the Appendix A Technical Specifications, "In-Service Inspection Requirements for Monticello." One of the requested changes would substitute an examination during system pressure tests for the volumetric examination now specified for control rod housing pressure boundary welds. This change is consistent with Section XI of the ASME Code (1974 Edition through Summer 1975 Addenda).

We have been requested to supply additional information to justify our determination that these welds are exempt from volumetric and surface examination by Article IWB-1220(b)(1) of Section XI of the Code. The purpose of this Supplement is to provide that information.

Attached you will find a drawing of the weld in question and a summary of the analysis showing that under postulated conditions of loss of coolant from the component during normal reactor operation, the reactor can be shut down and cooled down in an orderly manner assuming makeup is provided using normal systems supplied by onsite power.

Yours very truly,

David Musolf for

L O Mayer, PE
Manager of Nuclear Support Services

LOM/DMM/ak

cc: J G Keppler
G Charnoff
MPCA - Attn: J W Ferman
MECCA - Attn: R J Hatling
S J Gadler

Attachments

7712730151

Control Rod Housing Pressure Boundary Weld - IWB-1220(b)(1) Analysis Summary

Refer to Figure (1). Failure of control rod housing to internal nozzle weld results in maximum break area of:

D_1 = Maximum internal nozzle diameter = 6.000 inch

D_2 = Minimum CRD housing outside diameter = 5.985 inch

$$A_m = \frac{\pi}{4}(D_1 + D_2)(D_1 - D_2) = 0.14 \text{ in}^2$$

The CRD support structure (Reference 1) prevents the housing from dropping far enough to clear the vessel penetration.

The maximum two-phase vessel blowdown through this break area(Reference 2, Figure 2-4) assuming saturated liquid at 1025 psia is 7.8 lb_m/sec.

The capacity of the RCIC system is 400 gallons/minute of water (Reference 3). Assuming a water temperature of 140°F, this corresponds to a makeup rate of 54 lb_m/sec. The coolant loss through a failure of the control rod housing weld is therefore well within the capacity of the system.

References:

1. Van Zylstra, E. H., "Analysis of Potential Control Rod Drive System Failures Resulting in Control Rod Withdrawal," General Electric Topical Report GECR-5089, March, 1966.

2. Moody, F. J., "Maximum Two-Phase Vessel Blowdown from Pipes," General Electric Topical Report APED-4827, April 20, 1965.

3. Monticello Final Safety Analysis Report, Table 10-2-3, page 10-2.13.

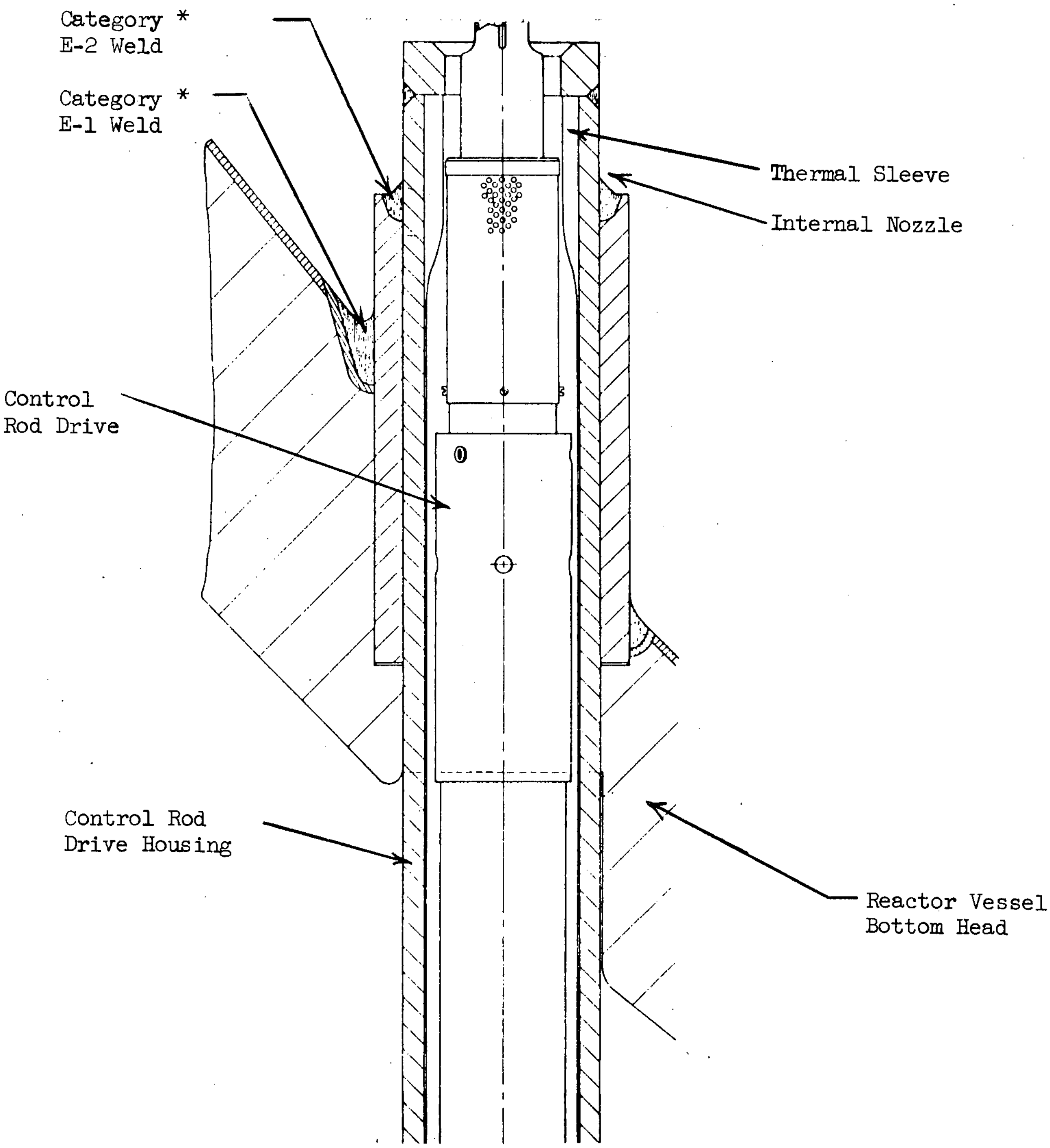

Figure 1 CRD Housing Welds

* Refer to Table 4.6.1, "In-Service Inspection Requirements for Monticello," of the Appendix A Technical Specifications for the Monticello Nuclear Generating Plant.