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TO: Mr. Victor Stello

FROM: NSP
Minneapolis, Minnesota 55401
L. O. Mayer

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DESCRIPTION Furnishing information concerning
Feedwater Nozzle Repair Program activities
during the Sept. 1977 refueling and maintenance
outage...Trans The Follwoing:

ENCLOSURE Consists of info concerning nozzle
spacing...

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2p

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ACKNOWLEDGED

PLANT NAME: MONTICELLO

jcm 09/07/77

SAFETY

FOR ACTION/INFORMATION

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NSP

NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

August 31, 1977

Regulatory

ENR. CV



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

Feedwater Nozzle Repair Program

During the September 1977 Monticello refueling and maintenance outage, Northern States Power Company plans to engage in a feedwater nozzle repair program consisting of the following major activities:

- a) Removal of existing feedwater spargers and thermal sleeves, making the four nozzles accessible for modification.
- b) Machining of the nozzle bore and safe ends to accommodate a new interim designed thermal sleeve and machining of the nozzle blend radius and bore to remove the stainless steel cladding.
- c) Installing new feedwater spargers with new thermal sleeves into the machined nozzle. The new thermal sleeves will be interference fit piston ring seal sleeves in place of the existing interference fit sleeves.

The above repair program will be performed in accordance with the ASME Code Section XI, 1974 Edition, with Addenda up to and including the Winter of 1976 Addenda.

Surface indications which might exist in the feedwater nozzles are being removed by machining off the cladding and approximately one half inch of heat affected base metal underneath. This repair will be done in accordance with Article IWB 4310 of Section XI. The design analysis requirements are in compliance with the requirements of Article NB-3000 of ASME Code Section III, 1974 Edition, with Addenda to and including the Winter 1976 Addenda. Since removal of some base metal is planned, the adequacy of reinforcement is being recalculated according to the requirements of NB-3330, and specifically to the alternate rules of NB-3339. Since the feedwater nozzle is slightly closer to the CRD and instrument

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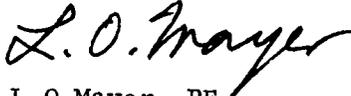
Mr Victor Stello

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line nozzles than is allowed by NB-3339.1, we propose to invoke the rules of Code Case 1804. Attachment 1 shows that the nozzle spacing is well within the limits established by Code Case 1804.

Yours very truly,



L O Mayer, PE

Manager of Nuclear Support Services

LOM/MHV/deh

cc: J G Keppler

G Charnoff

MPCA

Attn: J W Ferman

Attachment

Attachment 1

8/31/77 Letter from Mr L O Mayer (NSP) to
Mr V Stello (USNRC)

ASME Code, Case 1804, for reinforced nozzles which are repaired by mechanical removal of material containing surface indications, states:

"The spacing, L_s , between the edge of the opening being considered and the nearest edge of any other opening is not less than the smaller of $1.25 (d_1 + d_2)$ or $2.5 \sqrt{RT}$ but in any case not less than $1.0 (d_1 + d_2)$, where d_1 and d_2 are the inside diameters of the openings."

The proximity of the CRD return line and the instrument line nozzles to the nearest feedwater nozzle is as follows:

<u>Nozzle</u>	<u>Edge to Edge Nozzle Spacing, L_s</u>	<u>Minimum Code Allowable Spacing, $1.25 (d_1 + d_2)$</u>
CRD Return	36.89"	20.33"
Instrument	37.35"	18.91"

For both nozzles in question, the separation from the feedwater nozzle is well in excess of the minimum allowed by Code Case 1804 and is therefore acceptable.

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