

FROM:

Northern States Power
Minneapolis, Minn.
D.F. McElroy

DATE OF DOCUMENT

1-7-70

DATE RECEIVED

1-7-70

NO.:

62

LTR.

MEMO:

REPORT:

OTHER:

X

TO:

Morris

ORIG.:

CC:

OTHER:

1

ACTION NECESSARY

☐

CONCURRENCE

☐

DATE ANSWERED

NO ACTION NECESSARY

☐

COMMENT

☐

BY:

CLASSIF:

U

POST OFFICE

REG. NO:

FILE CODE:

50-263

DESCRIPTION: (Must Be Unclassified)

Ltr fm NSP re-meeting 1-6-70 with DRL
Staff recording understanding on several
concerned items for ACRS

REFERRED TO

DATE

RECEIVED BY

DATE

Muller

1-8-69

W/I cys

Other cys advanced.

ENCLOSURES:

DISTRIBUTION:

Reg file cy

AEC PDR

Compliance (2)

OGC Room P-506-A

H. Price & Staff

Dube/Levine

T. R. Wilson

Boyd

D. Thompson

Rosen

Moore

Howe

Dromerick (2)

Collins (2)

DTIE-Laughlin

NSIC- Buchanan

REMARKS:

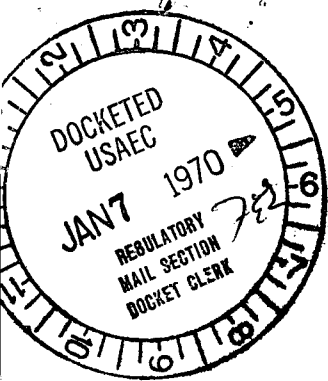
NOTE Above hand carried....18 cys
sent to ACRS -1-7-69...Per,
N.Blunt

ACKNOWLEDGED

Do Not Remove

62

FEL

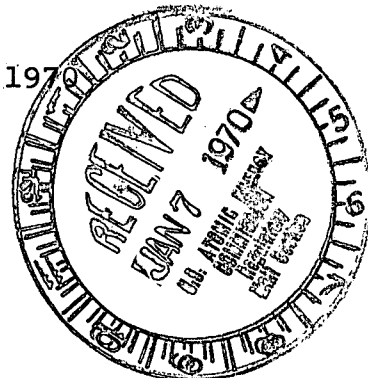


NSP

NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

January 7, 1970



Dr. Peter A. Morris, Director
Division of Reactor Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Dr. Morris:

MONTICELLO NUCLEAR GENERATING PLANT E-5979
Docket Number 50-263

Regulatory

File Cy

In a meeting with your staff yesterday, we reached an understanding on several concern items. This letter is to record these understandings so that they can be communicated to the ACRS.

Protection against a leak in the HPCI line in the steam tunnel has been a staff concern item. Presently this leak is limited to a maximum flow of approximately 200,000 lbs/hr or 200% of the HPCI system flow. The HPCI line was to be isolated on a total flow of 300% with 100% flow to the HPCI Turbine.

Presently we assume that the operator does not isolate the unprotected leak (less than 300% flow) for a ten minute period. During this time some 33,000 lbs. of steam is released and the resulting radiological consequences (off-site) are much less 1/3000) than for a main steam line break.

To further reduce the release from a HPCI line leak, we will modify the instrumentation to isolate the line for a flow of 120-150% of system flow. This means a leak of 20-50% flow will be automatically isolated. A timed delay will temporarily over-ride the isolation signal to allow for flow transients caused by the HPCI turbine start. Assurance of detecting leaks of this magnitude will be obtained by calibrating the elbow flow element located in the HPCI steam line. The resulting radiological consequences will be reduced by at least an additional factor of four (assuming 150% flow isolation).

- 2 -

The fourth paragraph of Page 3-6.9 should be revised to read:

"The largest peak strain intensity range was found to occur at point B. An 'Upper bound' strain range was determined to be 8.64%. This value of strain range is the largest value to occur in the reactor internals. This value is based on the following: A finite element model of the support plate-to-shroud junction in which inelastic strains are considered, the actual temperature distribution in the geometry and conservatively defined deformation boundary conditions."

The effect of HPCI transient operation on the reactor pressure vessel has been analyzed in response to the AEC staff questions for the following affected components:

Shroud Support Geometry

$$P + Q \text{ (Max.)} = 79,756 \text{ psi}$$

$$(3 S_m = 69,900)$$

$$S_a \text{ (Max.)} = 121,000$$

Usage factor for 15 cycles - 0.02 - allowable cycles - 732 (by elastic-plastic analysis).

The usage factor for other transients is negligible.

CRD Geometry

A Stainless

$$P + Q \text{ (Max.)} = 38,700 \text{ psi.}$$

$$(3 S_m = 48,000)$$

B Inconel

$$P + Q \text{ (Max.)} = 52,300 \text{ psi}$$

$$(3 S_m = 60,000)$$

Usage factor for 385 specified cycles (includes 15 HPCI + 370 others) = 0.15. Total allowable cycles are 2500.

The effect of each HPCI operation on the feed water nozzle is a less severe transient than that for which the nozzles were

analyzed. Reference FSAR Vol. VII, Exhibit 4. The vessel nozzle was specified for 1500 such cycles, however only 1350 cycles have been assigned. The difference of 150 cycles is more than adequate to accommodate the 15 cycles of HPCI operation.

The following statement should be made in connection with the seismic stress discussion on Page 12-2.11:

"The maximum primary plus secondary bending stress intensity for the suction header nozzle in the suppression chamber vessel is 32,470 psi for the design basis earthquake. This maximum stress intensity is below the yield strength of the material which is 38,000 psi."

All of the above information will be formally confirmed by later submission of an appropriate amendment to our application.

Sincerely,

NORTHERN STATES POWER COMPANY

By: 

D. F. McElroy

Vice President-Engineering

CC: D. E. Nelson
J. Barnard
J. B. Violette