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WASHINGTON, D.C. 20545

PDR

SEP 11 1973

Files (Docket No. 50-263)
THRU: D. L. Ziemann, Chief, ORB #2, L

MONTICELLO VACUUM BREAKER MEETING (NORTHERN STATES POWER COMPANY)

Representatives of Northern States Power Company (NSP) and AEC L:RP (attendees listed in enclosure) met in Bethesda, Maryland, on September 6, 1973, to discuss (1) the drywell-torus vacuum breaker valve position indicators and alarm circuits to assure valve closure, i.e., to detect valve disk unseating, and (2) changes to the Technical Specifications to include specific vacuum breaker leak test requirements.

The NSP representatives reported that the torus spray capacity was approximately 5% of the drywell spray capacity and as an example stated that with one of two drywell spray systems operative about 200 pounds/sec of steam could be condensed while 10 pounds/sec could be condensed in the torus by one of two torus spray systems. Two hundred pounds/sec steam leakage into the drywell corresponds to approximately a 0.1 ft^2 steam line break or 0.05 ft^2 primary coolant break. (Refer to NSP March 1973 letter to AEC - Figures 5, 5a, 7, and 8.)

A primary system line break ranging in size from 0.025 to 0.3 ft^2 results in containment pressurization to design limits (62 psig) within 15 minutes after the torus pressure reaches 35 psig for a 6" equivalent diameter drywell to torus leak unless the drywell-torus pressurization is terminated earlier by depressurization of the core coolant or spray action. Both drywell sprays and the torus spray activation, manually initiated, can terminate the containment pressure rise for up to a 0.2 ft^2 steam line break.

Primary coolant leak detection sensitivity is sufficient to detect and limit leakage of unknown origin to 5 gpm in accordance with the technical specification requirement; the drywell ventilation system coolers can remove approximately 1/2 gpm of condensed steam leakage. Leaks in excess of 1/2 gpm will cause drywell pressurization (and torus pressurization if there is bypass leakage from the drywell to the torus - for example, through unseated or leaky vacuum breaker valves) and at 2 psig, drywell pressure trip signals would scram the reactor.

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The following hardware considerations were discussed:

1. Vacuum breaker microswitch (plunger switch) position sensitivity.

2. Alarm circuits in addition to redundant indicator circuits to detect vacuum breaker valve disk unseating.

According to NSP, the microswitches can detect valve disk movement (unseating) before it exceeds 1/8 inch and in-line breakers with signals from the indicator coils can be provided to alarm in the control room when any one of the switches detects valve unseating. Since each valve disk position is sensed by two microswitches, both alarms would indicate valve movement. A single alarm could indicate an electrical fault.

The following technical specification test requirements were discussed:

1. Vacuum breaker valve disk torque measurements on an annual basis.

2. The necessity for confirmatory valve leakage measurements.

At the conclusion of the meeting it was agreed that NSP would submit a letter describing the measures to be taken to assure that the vacuum breaker valve disks are properly seated until system modifications, including valve position indicators and alarms, are completed and that AEC L:RP would determine the necessity for confirmatory valve leakage check and will prepare by the end of September 1973 a draft of a standard technical specification related to the vacuum breaker system for review and comments by NSP as it applies to the Monticello plant.

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Operating Reactors Branch #2
Directorate of Licensing

John I. Riesland
Operating Reactors Branch #2
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Enclosure:
List of Attendees

cc: See next page

cc: AEC PDR
Local PDR
RP Reading
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J. I. Riesland
R. Bevan
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R. F. Fraley (16)
L. Mayer, NSP

LIST OF ATTENDEES

MEETING WITH NORTHERN STATES POWER COMPANY

SEPTEMBER 6, 1973

Northern States Power Company

G. Neils
L. Mayer
D. James

AEC - Licensing

J. Shea
J. Riesland