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Principal Staff Participants

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DOCKET NOS.: 50-269/270/287

DATE: August 4, 1976

LICENSEE: Duke Power Company (DPC)

FACILITY: Oconee Units 1, 2 and 3

SUMMARY OF MEETING HELD ON JULY 8, 1976, TO DISCUSS PWR REACTOR
VESSEL OVERPRESSURIZATION EVENTS

On July 8, 1976, representatives of DPC met with the NRC staff to discuss reported instances of reactor vessel overpressurization at various PWR facilities and to discuss specific methods employed at the Oconee facilities to prevent similar occurrences.

A list of attendees is enclosed.

Significant discussions/agreements are summarized below.

The staff provided a summary of the 26 instances of reported reactor vessel overpressurization which have occurred in PWR facilities over the past four years. Included in the discussion were a description of plant conditions at the time of each event, the causes which contributed to the overpressurization and its magnitude relative to 10 CFR Part 50, Appendix G criteria. The staff indicated the need for interim and long term fixes to prevent any similar occurrences in the future.

The licensee provided a description of their experience at the Oconee Station and stated that they have reduced the problem of reactor vessel overpressurizations to a low probability. This has been accomplished by avoiding water solid conditions by requiring that either a steam bubble or a nitrogen blanket be maintained in the pressurizer when the reactor coolant system is at lower temperatures and pressures. In addition, the licensee indicated that pressurizer power operated relief valve design includes a dual setpoint to provide over pressure protection both at normal operating conditions and while shutdown. The lower setpoint of 550 psig provides NDT protection.

The licensee described the pressurizer Nitrogen Blanketing System as occupying approximately one-half of the pressurizer volume with the pressure normally maintained between 30 and 45 psig. No operating difficulties have been attributable to the nitrogen blanket. The

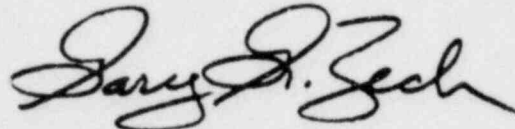
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August 4, 1976

pressurizer power operated relief valve design consists of a low range (0-600 psig) band and a high range (0-2500 psig) band which is selected by the operator. Separate pressure transmitters provide an input for each band into the relief valve control circuitry. When a unit is being shut down, the low range pressure transmitter is valved in at < 600 psig and the operator selects the low setpoint (550 psig) when the reactor coolant system pressure is < 500 psig and temperature is < 275°F.

The licensee indicated that the volume of the nitrogen blanket would provide approximately 12-15 minutes before water solid conditions would be reached in the pressurizer for the worst-case event reviewed involving the HP injection pumps. The licensee also indicated that the volume of the Letdown Storage Tank which supplies the HP injection pumps is not great enough to fill the pressurizer, therefore, this particular accident could not occur during normal shutdown conditions.

The staff indicated that they would review the system diagrams, control logics and operating procedures provided by the licensee and would contact the licensee should additional information be required or to identify any future action that may be found necessary.



Gary G. Zech, Project Manager
Operating Reactors Branch #1
Division of Operating Reactors

Enclosure:
List of Attendees

cc w/encl:
See next page

NRC STAFF MEETING WITH

DUKE POWER COMPANY

JULY 8, 1976

NRC

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A. Schwencer
J. Slider
G. Manz
R. Gamble
E. Gottfried
O. Parr
R. Fluegge
R. Baer
R. Klecker
C. Berlinger
T. Novak
V. Stello
G. Zech

DPC

D. Holt
T. Crawford
M. Tuckman
E. Blakeman

Babcock & Wilcox

W. Keyworth