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DENTON,H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards response to NRC request for addl info rel overpressurization mitigating sys analysis.

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November 24, 1981
AEP:NRC:00083B

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
OVERPRESSURIZATION MITIGATING SYSTEM TECHNICAL SPECIFICATIONS

Mr. Harold R. Denton, Director
Office of Nuclear Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Denton:

This letter and its attachment respond to a request from members of your staff concerning the Cook Plant Overpressurization Mitigating System (OMS) analysis.

The revised heatup/cooldown limits in Unit 1 have made necessary a recalculation of the peak Reactor Coolant System pressures reached for cold overpressurization transients. Accordingly, we have revised Tables 2, 3 and 5 which were enclosed with our August 4, 1977 submittal. To generate the revised tables contained in the Attachment to this letter, we have used the actual Power Operated Relief Valve (PORV) low temperature setpoint of 435 psig instead of the generic analysis setpoint of 500 psig for the Heat Input cases. In generating the revised tables, we have utilized the September 1977 Supplement to the July 1977 report prepared by Westinghouse ("Pressure Mitigating Systems Transient Analysis Results"), which covers a wider spectrum of PORV setpoints for the heat input cases than the July 1977 report. The latter was the basis for our August 4, 1977 submittal. The revised Tables demonstrate the ability of the Cook Plant's OMS to maintain all credible cold overpressurization transients below the 10.CFR.50, Appendix G pressure/temperature limits.

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Mr. Harold R. Denton, Director AEP:NRC:00083B

This document has been prepared following Corporate Procedures which incorporate a reasonable set of controls to insure its accuracy and completeness prior to signature by the undersigned.

Very truly yours,

R. S. Hunter
Vice President

cc: John E. Dolan - Columbus
R. W. Jurgensen
D. V. Shaller - Bridgman
R. C. Callen
G. Charnoff
Joe Williams, Jr.
Region III Resident Inspector - Bridgman

Attachment to
AEP:NRC:0083B

Table 2

Donald C. Cook Nuclear Plant Unit Nos. 1 & 2
Mass Input Factors

Transient	System Delivery (lb/sec)	$\Delta P_{REF.}$ (PSI)	F_V	F_S	F_Z
Letdown Isolation	Used generic analysis results directly				
Single High Pressure Safety Injection Pump *	72	98	0.52	1.21	1.00

* This case covers the inadvertent injection of a high pressure safety injection pump (centrifugal charging pump) through the ECCS flow path during cold shutdown conditions. The other ECCS pumps are de-energized as required by the proposed Technical Specifications.

Table 3

Donald C. Cook Nuclear Plant Unit Nos. 1 & 2
Mass Input Overpressurization Analysis Summary

Transient	T_{RCS} (°F)	Setpoint Overshoot (PSI)	P_{max} (PSIG)	Unit 1 $P_{APP.G}$ (PSIG)	Unit 2 $P_{APP.G}$ (PSIG)
Letdown Isolation	100	10	445	500	510
Single high Pressure Safety Injection Pump*	100	62	497	500	510

* This case covers the inadvertent injection of a high pressure safety injection pump (Centrifugal charging pump) through the ECCS flow path during cold shutdown conditions. The other ECCS pumps are de-energized as required by the proposed Technical Specifications.

Table 5

Donald C. Cook Nuclear Plant Unit Nos. 1 & 2
Heat Input Overpressurization Analysis Summary

Transient	T_{RCS} (°F)	T_{SG} (°F)	Setpoint Overshoot (PSI)	P_{MAX} (PSIG)	$P^{Unit\ 1}_{APP.G}$ (PSIG)	$P^{Unit\ 2}_{APP.G}$ (PSIG)
RCP Startup*	100	150	16	451	500	510
"	140	190	38	473	570	600
"	180	230	60	495	680	780
"	250	300	92	527	1150	1450

* This analysis assumes a water-solid system while starting an RCP however a PZR steam bubble must be formed prior to starting a RCP at the Cook Plant as explained in March 3, 1977 letter item 7.