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

AUG 31 1989

Mr. Edward C. Sterling, III, Chairman
Combustion Engineering Owners Group
c/o Arizona Nuclear Power Project
11226 North 23rd Avenue
Phoenix, AZ 85029

Dear Mr. Sterling:

Thank you for your letter of July 26, 1989 providing Combustion Engineering Owners Group (CEOG) comments on the information presented in NUREG/CR-4821 and NUREG/CR-4948 which are some of the supporting documents for the resolution of Generic Issue 23 (GI-23), Reactor Coolant Pump Seal Failure. We have actively attempted to obtain, develop and use all information which might be relevant to the resolution of GI-23. As a result, the staff is generally familiar with the information provided in your letter. We do not believe this information conclusively demonstrates that reactor coolant pump (RCP) designs used in CEOG plants should be exempt from any new requirements.

We are currently preparing a proposed technical resolution for this issue. It is our intention to present several resolution alternatives for public comment. Each alternative will be evaluated on the basis of the estimated cost-benefit. At present, we are considering two distinct failure scenarios, one involving failure of the RCP seal during normal operation and one involving failure of the RCP seal during loss of all seal cooling.

Failures of RCP seals during normal operation are not typically a function of faulty seal design but are more often a result of improper operation, maintenance and quality assurance. Failures during normal operation continue to occur and the enclosed table lists the events that have occurred since May 1988. Although none of these failures have resulted in the large leakage rates seen in some of the earlier events, the seal failure rate appears to have remained relatively constant. Further, there appears to be a disproportionately large number of events involving the types of RCP seals used at CEOG plants.

Loss of all RCP seal cooling would occur during a station blackout or if there were a total loss of the component cooling water system. Also, loss of all service water for an extended period would also cause a loss of RCP seal cooling. At present we intend to propose allowing a licensee to address the loss of seal cooling aspect by either including additional seal cooling provisions in the plant or by demonstrating acceptable performance by a meaningful test.

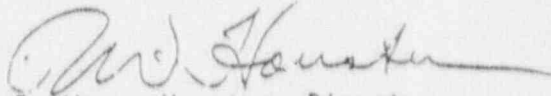
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Prior to issuing the proposed resolution package, it will be reviewed by NRC staff, the Advisory Committee for Reactor Safeguards (ACRS) and by the Committee for Review of Generic Requirements (CRGR). It is scheduled to be issued for public comment in the Spring of 1990. During the public comment period, CEOG will have the opportunity to review the basis for each alternative and provide comments.

Sincerely,



R. Wayne Houston, Director
Division of Safety Issue Resolution
Office of Nuclear Regulatory Research

Enclosure:
Table of Recent Seal Failure Events

To Assign DCC/DV		
JGH	0123	
BEB	0123	
DBA	0345	
PWH	0104	
RIA	6915	
JRL	6144	
LGP	0163	
DCC-DV	7012	
ECS	7004	enc
RWP	7122	
ONS	7202	
PFC	7434	
ACR	7048	
BSE	7035	
JEA	7106	
DW	7109	
WFO	7040	
EVB	7040	
WFC	9012	
DBK	7010	
DAB	7345	enc
DU-026		
FU		
LOG		
File # 89-010-207 enc		

Enclosure

RECENT SEAL FAILURE EVENTS

EVENT DATE	NUCLEAR PLANT	WSSS	SEAL VENDOR	DESCRIPTION OF FAILURE EVENTS
MAY 23, 1988	NINE MILE PT. 2	GE	BJ	RECIRC. PUMP SEAL LEAK, 5 GPM. PLANT SHUTDOWN, SEAL REPLACED
AUG 1, 1988	AWO-2	CE	BJ	LOWER & MIDDLE SEALS FAILED. LEAK 40 GPM
SEP 15, 1988	TMI-1	B & W	W	DAMAGED O-RING, CAUSING SEAL #1 FAILURE. LEAK 9 GPM
NOV 4, 1988	SEQUOYAH	W	W	DESCRIPTION NOT AVAILABLE
NOV 9, 1988	WATERFORD	CE	BJ W9000	SEALS FAILED AFTER START-UP. REPLACED PUMPS WITH OLD BJ SEAL
DEC 5, 1988	PALISADES	CE	BJ	DESCRIPTION NOT AVAILABLE
DEC 15, 1988	TMI-1	B & W	W	DAMAGED O-RING, SEAL#1 LEAK 8 GPM. WH UNABLE TO ADVISE SOLUTION
DEC 21, 1988	MAINE YANKEE	CE	BJ SU	DEGRADED SEAL PERFORMANCE. SEALS REPLACED WITH BJ W9000 SEAL
MAR 3, 1989	PALO VERDE 3	CE	KSB	SEALS LEAKED - LEAK 2 GPM
MAR 29, 1989	SAN ONOFRE 1	W	W	LEAK 33 GPM. RCS PRESSURE LOWERED TO ATMOSP. LEAK 22 GPM
MAY 29, 1989	MILLSTONE 1	CE	BJ	OUTER SEAL ON RECIRCULATION PUMP FAILED, LEAK 46 GPM
JUN 1, 1989	CLINTON 1	GE	BINGHAM	BOTH SEALS ON RECIRC.PUMP FAILED AFTER START-UP. LEAK 63 GP
JUN 16, 1989	KEWAUNEE	W	W	O-RING DEGRADED, SEAL#1 LEAK INDICATE LEAK BYPASS, REPLACED SEAL
JUN 19, 1989	INDIAN POINT 2	W	W	SEAL#1 FAILED, LEAK 14 GPM, SEAL REPLACED DURING OUTAGE
JUN 23, 1989	QUAD CITIES 1	GE	BJ	PRESSURE DIFFERENTIAL ACROSS OUTER SEAL TO 750 PSI CAUSING LEAKAGE
AUG 8, 1989	RIVER BEND	GE	BJ	RECIRC. PUMP SEAL LEAK, 4 GPM. PLANT SHUTDOWN, REPLACING SEAL

ENCLOSURE III