

MEMORANDUM TO: File Center

FROM: William C. Gleaves, Project Manager, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

SUBJECT: CONFERENCE CALL DOCUMENTS

Please place the attached letter in the Public Document Room.

Docket No. 50-272

Attachment: faxed letter dated 1/21/00.

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

MEMORANDUM TO: File Center

FROM: William C. Gleaves, Project Manager, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

A handwritten signature in black ink, appearing to read "W.C. Gleaves".

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Docket No. 50-272

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LR-N00xxx

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Gentlemen:

**REQUEST FOR REGIONAL ENFORCEMENT DISCRETION  
TECHNICAL SPECIFICATION 3.5.2  
EMERGENCY CORE COOLING SYSTEMS  
SALEM GENERATING STATION, UNIT 1  
FACILITY OPERATING LICENSES DPR-70  
DOCKET NO. 50-272**

Public Service Electric and Gas Company (PSE&G) hereby requests Regional Enforcement Discretion from the provisions of Technical Specification (TS) 3.5.2, "Emergency Core Cooling Systems."

On January 24, 2000, 0244 hours, the Salem Unit 1 will be required to enter into a 12-hour HOT SHUTDOWN Action Statement associated with Limiting Condition for Operation (LCO) 3.5.2 due to the inoperability of the 11 centrifugal charging pump. The centrifugal charging pumps at Salem serve a dual purpose to provide charging flow during normal plant operation and to act as part of the engineered safeguards system during plant accidents. The 11 centrifugal charging pump was declared inoperable on January 21, 2000, at 0244 hours when elevated bearing temperatures were observed on the charging pump speed increaser. Subsequent investigation into the elevated temperatures identified that bearing failure was imminent on the speed increaser high-speed gear bearings. Corrective maintenance activities were immediately initiated upon conclusion of these investigations to replace the centrifugal charging pump speed increaser skid. However, the extent of the maintenance activities and the required retests to demonstrate operability are expected to go beyond the 72 hour time limit, imposed by LCO Action Statement 3.5.2.a, when the station would be required to enter HOT SHUTDOWN within the next 12 hours.

The requested NOED would allow an additional 24 hours to complete repairs to the centrifugal charging pump speed increaser and associated retest activities. If restoration does not occur within 24 hours, the plant would be placed in HOT SHUTDOWN within 12 hours in accordance with the TS. For the duration that the

enforcement discretion is in effect, the remaining ECCS systems will be maintained in an operable condition.

This NOED is requested based upon plant specific considerations and is not considered generic in nature. Attachment 1 provides information in support of the request for NOED in accordance with NRC Administrative Letter (AL) 95-05, Revision 2, "Revisions to Staff Guidance for Implementing NRC Policy on Notices of Enforcement Discretion." In accordance with Criterion B.2.1 of AL 95-05, the requested NOED is necessary to avoid undesirable transients as a result of forcing compliance with the license condition and, thus, minimize potential safety consequences and operational risks.

As discussed in Attachment 1 to this letter, PSE&G concludes that granting this request would not be a potential detriment to the public health and safety and would involve neither a significant hazards consideration nor any adverse environmental consequences. PSE&G understands that, if granted, the requested enforcement discretion is for the conditions described in this request. For any other conditions that would adversely impact the ability of the control rods to automatically or manually scram, the appropriate Technical Specification action statements would apply.

If you have any questions concerning this request, please contact Mr. James Priest at 856-339-5434.

Sincerely,

M. B. Bezilla  
Vice President -  
Nuclear Operations

Attachment (1)

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JPP

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## ATTACHMENT 1

### REQUEST FOR ENFORCEMENT DISCRETION FACILITY OPERATING LICENSE DPR-70 SALEM GENERATING STATION

This request for enforcement discretion includes the following information pursuant to NRC Inspection Manual Part 9900: Operations - Notices of Enforcement Discretion.

#### 1. THE TECHNICAL SPECIFICATION OR OTHER LICENSE CONDITIONS THAT WILL BE VIOLATED

Technical Specification (TS) 3.5.2, Action a., will be violated during the period of requested enforcement discretion.

TS 3.5.2, Action a., states that with one ECCS subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within 12 hours.

#### 2. THE CIRCUMSTANCES SURROUNDING THE SITUATION, INCLUDING ROOT CAUSES, THE NEED FOR PROMPT ACTION AND IDENTIFICATION OF ANY RELEVANT HISTORICAL EVENTS:

On January 20, 2000 the 11 centrifugal charging pump was placed in service after corrective maintenance activities to resolve biofouling concerns in its associated cooler unit were completed. After being in service for approximately four hours, an equipment operator observed that the centrifugal charging pump speed increaser gear oil temperature was greater than 200F on two indicators monitoring temperature on the high speed gear bearings. The charging pump was taken out of service to obtain an oil sample and replacement oil was added. The pump was restarted and bearing temperatures were observed to immediately increase beyond the normal operating range. The pump was then taken out of service and investigations initiated to determine the cause of the high bearing temperatures.

The investigations revealed the speed increaser high speed gear bearings had failed, which requires the replacement of the entire speed increaser skid. The replacement of the speed increaser skid is currently underway. These repairs, and associated re-test activities are expected to be completed by 1800 hours on January 24, 2000. Since the repair and re-test activity would exceed the TS LCO Allowed Outage Time (AOT) time limits for one inoperable charging pump, enforcement discretion from the shutdown requirements of LCO Action Statement 3.5.2.a for an additional 24-hour period is requested. There are no relevant historical events

associated with the operation of the charging pump and all related preventative maintenance activities were current.

**3. THE SAFETY BASIS FOR THE REQUEST, INCLUDING AN EVALUATION OF THE SAFETY SIGNIFICANCE AND POTENTIAL CONSEQUENCES OF THE PROPOSED COURSE OF ACTION. THIS EVALUATION SHOULD INCLUDE AT LEAST A QUALITATIVE RISK ASSESSMENT DERIVED FROM THE LICENSEE'S PRA:**

The safety-related Charging System provides high head injection to the Reactor Coolant system during both normal and abnormal (accident) conditions. Two centrifugal charging pumps are provided for injection coolant into the Reactor Coolant System (RCS). The centrifugal pumps have a high flow capacity and are used during periods of maximum letdown or purification flow. Each pump is designed to provide rated flow against a pressure equal to the sum of the RCS normal maximum pressure (existing when the pressurizer power operated relief valve is operating) and the piping, valve, and equipment pressure losses at the design charging flows.

Under normal conditions, a centrifugal charging pump will take suction from the volume control tank and discharge to the normal charging and reactor coolant pump seal water injection paths. Flow control is accomplished by a modulating valve on the discharge side of the centrifugal pumps. For periods when maximum letdown or purification flow is required, a centrifugal pump is operated to provide the necessary flow. The centrifugal charging pumps also serve as safety injection pumps in the Emergency Core Cooling System.

The high head system provides borated water to the RCS to decrease core reactivity and protects the core from Departure from Nucleate Boiling (DNBR). The following accidents require at least one safety related high head Charging pump be available to provide high head safety injection to the RCS:

- Reactivity Control (RCS integrity maintained, but RCS pressure decreasing)
- Main Steam Line Break (UFSAR 15.4.2)
- Minor Secondary System Pipe Breaks (UFSAR 15.3.2 – NOTE: This analysis is bounded by MSLB analysis above)
- Accidental Depressurization of the MS System (UFSAR 15.2.13).
- Core Cooling (RCS integrity breached, LOCA)



During the period of enforcement discretion, the remaining charging pump will remain in an OPERABLE condition to mitigate the above spectrum of accidents. In addition, the intermediate head Safety Injection pumps will also remain operable in order to provide injection capability when RCS pressure decreases below 1500 psi. Salem Emergency Operating Procedures direct the operators to reduce RCS pressure in order to maximize the ECCS injection capability (when no charging pumps are available) provided by the Safety Injection pumps.

The PSA Group has analyzed the risk level of the 11 charging pump out of service for the requested period of enforcement discretion. The calculated CDF is  $8.8E-5$ /year. With the base line value of  $5.0E-5$ /year, the delta CDF is  $3.8E-5$ /year. Using the Incremental Conditional Core Damage Probability (ICCDP) criteria of  $5.0E-7$  established in Regulatory Guide 1.177, a time period of 4.8 days is calculated and can support a one time AOT extension of up to 24 hours.

The increase in risk to core damage and to the public is insignificant. The basis for this judgment is the relatively short duration of 24 hour period and the continued ability of the Salem ECCS to mitigate design basis events as described in Salem Updated Final Safety Analysis Report (UFSAR).

**4. THE BASIS FOR THE LICENSEE'S CONCLUSION THAT THE NONCOMPLIANCE WILL NOT BE OF POTENTIAL DETRIMENT TO THE PUBLIC HEALTH AND SAFETY AND THAT NO SIGNIFICANT HAZARD CONSIDERATION IS INVOLVED:**

Determination of No Significant Hazards Consideration

This proposed enforcement discretion:

**Does not involve a significant increase in the probability or consequences of any accident or malfunction of equipment important to safety previously evaluated.**

The requested NOED does not involve any physical alteration of plant systems, structures or components. The requested NOED provides a 24-hour period to permit necessary repairs and retests to the 11 charging pump. The operation of the charging pump is not assumed to be an initiating condition of any accident analysis evaluated in the safety analysis report (SAR). Therefore, the allowance of an additional limited time for one charging pump to be inoperable does not

involve an increase the probability of an accident previously evaluated in the safety analysis report.

The operation of the charging pump is required to mitigate accidents described in the Salem UFSAR. With the 12 charging pump in service, and maintained in an operable condition, the station will continue to mitigate the spectrum of accidents described in the UFSAR. PSA analyses demonstrated that the period of enforcement discretion would not result in a significant increase in core damage frequency.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated in the SAR.

**Does not create the possibility of a new or different kind of accident from any previously evaluated.**

This requested NOED does not involve any physical alteration of plant systems, structures or components. The extended inoperability of the 11 charging pump for the requested enforcement discretion period does not introduce new failure mechanisms for systems, structures or components not already considered in the SAR. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

**Does not involve a significant reduction in a margin of safety.**

For the duration of the requested enforcement discretion, safety-related systems will remain capable of performing their required safety functions. Sufficient safety-related equipment and systems will remain available to ensure that the consequences of design basis transients and accidents are mitigated as assumed in the Salem UFSAR. Therefore, the requested enforcement discretion involves no significant reduction in the margins of safety as discussed in the bases for the Technical Specifications.

**5. THE BASIS FOR THE LICENSEE'S CONCLUSION THAT THE NONCOMPLIANCE WILL NOT INVOLVE ADVERSE CONSEQUENCES TO THE ENVIRONMENT:**

The requested enforcement discretion does not cause any increase in effluents that may be released offsite, does not involve an increase in radiation exposure to the

public, and does not involve a Significant Hazards Consideration. Therefore, the request does not involve any irreversible environmental consequences.

**6. ANY PROPOSED COMPENSATORY MEASURES:**

No elective work that has the potential to adversely affect plant electrical systems will be performed during the duration of the requested enforcement discretion. Specifically, activities that may result in the inoperability of ECCS components or their support systems have been curtailed. Restoration of the 11 charging pump will continue to be performed in an expedited manner.

**7. THE JUSTIFICATION FOR THE DURATION OF THE NONCOMPLIANCE**

The time necessary to remove, replace and re-install the affected 11 charging pump components and the duration of the retest activities is greater than the time remaining in the allowed outage time specified in TS 3.5.2. An additional 24 hours will provide sufficient time to complete the repair, retest and surveillance activities. Based upon the continued availability of remaining safety-related systems, the impact of the requested 24 hour extension upon core damage frequency is insignificantly small and the increase in risk to the public is negligible.

**8. A STATEMENT THAT THE REQUEST HAS BEEN APPROVED BY THE FACILITY ORGANIZATION THAT NORMALLY REVIEWS SAFETY ISSUES (PLANT ONSITE REVIEW COMMITTEE, OR ITS EQUIVALENT):**

This request has been reviewed and approved by the Salem Station Operations Review Committee, which normally reviews safety issues.

**9. THE REQUEST MUST SPECIFICALLY ADDRESS HOW ONE OF THE NOED CRITERIA FOR APPROPRIATE PLANT CONDITIONS SPECIFIED IN SECTION B IS SATISFIED:**

Enforcement discretion is being requested to avoid an undesirable transient (plant shutdown) as a result of forcing compliance with the license condition (12 hour entry into HOT SHUTDOWN with one inoperable charging pump for a period greater than 72 hours). Continued plant operation for 24 hour period with only one charging

pump inoperable results in minimal potential safety consequences and reduces operational risks.

**10. IF A FOLLOW UP LICENSE AMENDMENT IS REQUIRED, THE NOED REQUEST MUST INCLUDE MARKED-UP TS PAGES SHOWING THE PROPOSED TS CHANGES. THE ACTUAL LICENSE AMENDMENT REQUEST MUST FOLLOW WITHIN 48 HOURS:**

No follow-up license amendment is required for this enforcement discretion.