PSE&G

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Nuclear Business Unit

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U.S. Nuclear Regulatory Commission
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**10CFR50 APPENDIX R SAFE SHUTDOWN CAPABILITY,
SALEM GENERATING STATION, UNITS 1 AND 2
FACILITY OPERATING LICENSE NO. DPR-70 AND DPR-75
DOCKET NOS. 50-272 AND 50-311**

Gentlemen:

The purpose of this letter is to provide information in support of the Public Service Electric and Gas (PSE&G) position that Safe Shutdown Capability as defined in 10CFR50 Appendix R should not adversely impact the current restart activities of Salem Unit 2. Specifically, PSE&G is in compliance with 10CFR50 Appendix R single hot short requirements. PSE&G maintains that multiple hot shorts is only a regulatory requirement for high-low pressure interface valves. PSE&G has implemented procedure changes to address multiple hot shorts, and is voluntarily pursuing modifications to address multiple hot shorts as discussed below. These modifications are scheduled to be installed prior to restart for Unit 1 and prior to restart from the next refueling outage for Unit 2.

BACKGROUND

On January 25, 1996, the NRC issued a letter along with a Technical Evaluation Report (TER) detailing concerns with the PSE&G, Salem Generating Station compliance with 10CFR50 Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior To January 1, 1979." In February of 1996, PSE&G met with the NRC to discuss these concerns. As a result of this meeting, three issues were identified as concerns: 1) the use of repairs to achieve electrical independence between the control room and remote operating stations, 2) fire induced spurious operation and mechanical damage to valves, (Information Notice 92-18, "Potential for Loss of Remote Shutdown Capability During a Control Room Fire") and 3) the lack of consideration of multiple hot shorts in our safe shutdown analysis.

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PSE&G believes the issue of repairs to achieve electrical independence was subsequently resolved by the installation of transfer switches for components required to achieve hot standby. Transfer switches will be installed on 32 components for Unit 1 prior to restart, and 34 transfer switches have been installed on Unit 2. Of these components, 13 valves for each unit were identified as needing to be addressed for IN 92-18 should we assume multiple hot shorts. These concerns are discussed below.

PSE&G's TER response dated June 19, 1996, provided a summary of the actions taken, and a commitment to address NRC concerns for Unit 2 prior to restart from the next refueling outage. On October 30, 1996 the NRC made a Request for Additional Information (RAI) to PSE&G which focused on specific functions and components relied upon to achieve safe shutdown, and did not express concerns over the schedule. On December 2, 1996, PSE&G responded to this RAI, and reiterated the schedule provided in the June 19, 1996, response.

As discussed in the TER and our subsequent correspondence, an apparent conflict exists in the interpretation of Generic Letter 86-10. PSE&G believes there is no regulatory requirement to assume multiple hot shorts for alternate or dedicated shutdown capability. PSE&G reached this conclusion through consideration of Generic Letters 86-10, "Implementation of Fire Protection Requirements," and 81-12, "Fire Protection Rule (45 FR 76602, November 19, 1980)," and after consulting with others in the industry. The Nuclear Energy Institute (NEI) acting on behalf of the industry, submitted a letter to the NRC on January 14, 1997, that details issues that are consistent with this conclusion. PSE&G believes that NEI and the NRC are best suited to effectively resolve this generic industry concern, and will actively participate in the dialogue.

ISSUES

1: VALVES REQUIRED TO OPERATE TO ACHIEVE HOT STANDBY (13 VALVES)

As stated above, steps taken to achieve electrical independence involved 34 components for Unit 2, and 32 components for Unit 1. A review of the alternate safe shutdown methodology revealed that 13 of these valves, which are required to be operated to achieve hot standby, needed to be further evaluated against the concerns expressed in IN 92-18.

As discussed in IN 92-18, it was recommended that licensees assure that valves necessary to achieve hot standby have adequate protection against mechanical damage that could occur as a result of fire induced spurious operation. A single spurious operation will not impact the ability of Salem Unit 1 or 2 to achieve hot standby. Redundant components are available to assure hot standby can be achieved. Multiple spurious operations do not have to be considered because of the installed isolation devices for 12 of these 13 valves. Administrative controls have been implemented to address the remaining valve. This remaining valve, the Non-Nuclear Service Water Isolation Valve has 2 valves that provide a redundant function, and procedures have been implemented to allow the operators to control these redundant valves. As an added measure of protection for these 13 valves, PSE&G committed to install a modification to provide protection against mechanical damage caused by fire induced spurious operation.

2: VALVES THAT COULD BLOCK OR DIVERT FLOW NECESSARY TO ACHIEVE HOT STANDBY (10 VALVES)

PSE&G has addressed the concern of a single spurious valve operation blocking or diverting flow that is necessary to achieve hot standby. The spurious operation of any one of these 10 valves will not have an adverse impact, because in each case, a redundant flow path exists to achieve the function necessary to support hot standby.

PSE&G has implemented adequate compensatory measures to address the concern of multiple spurious valve operations that could block or divert flow. For 8 of these 10 valves the implementing procedures for a control room evacuation direct operators to remove power to achieve electrical independence. For the other 2 valves, the Service Water Header cross connect valves, spurious operation would not impact system availability. Procedures have been implemented to direct operation of any of these 10 valves if necessary. These compensatory actions are considered adequate since removal of power achieves electrical independence, and because a redundant path is available to support hot standby. As an added measure of protection, PSE&G has committed to install transfer switches and provide protection against mechanical damage caused by fire induced spurious operation for these 10 valves.

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CONCLUSIONS

PSE&G committed to the two sets of modifications discussed above as a voluntary action. PSE&G estimates, a minimum of, 10 to 12 weeks to complete the design, review, approval, installation, testing, and operator training for these modifications. This time frame is viewed by PSE&G to be excessive for this outage in light of our existing schedule, our implemented compensatory measures, and the redundant capability that exists at Salem. Further, PSE&G does not anticipate NEI and the NRC will resolve this generic issue in time to support restart.

PSE&G provided consistent and comprehensive schedules to the NRC in the June 19, 1996 response, and the December 2, 1996 RAI response. The RAI from the NRC was silent on the Unit 2 schedule and instead concentrated on specific valves and components required to achieve safe shutdown. PSE&G is in compliance with respect to the single hot short issue, and has implemented procedure changes to address potential multiple spurious operation issues with the valves that could block or divert flow. Although we believe we have satisfied the regulatory requirements, modifications are being developed voluntarily to address your concerns with the multiple hot shorts issue. PSE&G believes it is an unnecessary burden to accelerate the implementation of either of the modifications beyond what we have already committed.

If you have any questions regarding this submittal please feel free to contact us.

Sincerely,

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