

Public Service  
Electric and Gas  
Company

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**FEB 22 1999**

LR-N990039

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

Ladies and Gentlemen:

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION AND  
CHANGES TO DIFFERENTIAL PRESSURE ACCEPTANCE CRITERIA  
CONTROL ROOM EMERGENCY AIR CONDITIONING SYSTEM  
SALEM GENERATING STATION UNIT NOS. 1 AND 2  
FACILITY OPERATING LICENSES DPR-70 AND DPR-75  
DOCKET NOS. 50-272 AND 50-311**

Public Service Electric and Gas (PSE&G) is submitting the information contained in Attachment 1 in response to the NRC's request for additional information regarding the Control Room Emergency Air Conditioning System dated January 7, 1999. Attachment 2 contains a revised no significant hazards evaluation related to the changes to technical specification acceptance criteria contained in Attachment 1. The revised technical specification mark-ups are contained in Attachment 3.

If you have any questions concerning the contents of this submittal, please do not hesitate to contact us.

Sincerely,

*E. C. Simpson*

Attachments (3)

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PDR ADOCK 05000272  
P PDR

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FEB 22 1999

C Mr. Hubert J. Miller, Administrator - Region I  
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STATE OF NEW JERSEY )  
                                  ) SS.  
COUNTY OF SALEM        )

E. C. Simpson, being duly sworn according to law deposes and says:

I am Senior Vice President - Nuclear Engineering of Public Service Electric and Gas Company, and as such, I find the matters set forth in the above referenced letter, concerning Salem Generating Station, Units 1 and 2, are true to the best of my knowledge, information and belief.

  
\_\_\_\_\_

Subscribed and Sworn to before me  
this 22nd day of February 1999

  
\_\_\_\_\_  
Notary Public of New Jersey

My Commission expires on June 16/2003

ATTACHMENT 1  
LR-N990039

The following is provided in response to the NRC's request for additional information regarding the Control Room Emergency Air Conditioning System (CREACS) dated January 7, 1999.

**NRC Question 1:**

**The assumption of 1/8" water gauge (W.G.) positive differential pressure in the main control room envelope (MCRE) is directly related to the amount of unfiltered inleakage assumed in your accident dose analysis, and therefore, a change to a value other than 1/8" W. G. positive pressure will change the amount of unfiltered inleakage. With the proposed change to an unquantifiable value of positive differential pressure, describe how you determine the amount of unfiltered inleakage. In addition, with the proposed change to an unquantifiable value for differential positive pressure, describe how you address toxic concerns with respect to the MCRE.**

**Response:**

The assumption that a 1/8" w.g. positive pressure in the Control Room Envelope (CRE) is directly related to the amount of inleakage is invalid. A decrease in the positive pressure in the CRE will not result in an increase in unfiltered inleakage to the CRE, provided the CRE remains at a positive pressure relative to adjacent spaces. The CRE remains at a positive pressure relative to the adjacent spaces due to the amount of make-up air the filtration system brings into the CRE from outside to make up for losses (air passing from the CRE to the adjacent spaces).

The physical layout of the Control Room Emergency Air Conditioning System (CREACS) equipment precluded duct sections penetrating the CRE (with the exception of the pressurized supply duct), which means that there are no potentially radioactive unfiltered air ducts penetrating the CRE. Further, there is only a small section of the CREACS ducts (between the filters and the fans) where there is a negative pressure and a potential for unfiltered inleakage. This amount of unfiltered inleakage is accounted for in the dose analysis (50 CFM). This value of unfiltered inleakage assumed in the dose analysis was verified to be conservative by measurement of the inleakage during system post modification testing and is not affected by a decrease in the amount of positive pressure in the CRE relative to adjacent spaces. Therefore, as previously stated, if the CRE is at a higher pressure than the adjacent spaces then no additional unfiltered inleakage can result.

Also, 10 CFM of unfiltered inleakage is assumed for access/egress from the CRE. Since the 1/8" W.G. positive pressure to the areas of access/egress is being maintained, there is no change in this assumption.

ATTACHMENT 1  
LR-N990039

In the event of a fire outside the CRE, a toxic chemical release or receipt of Ammonium Hydroxide shipments, CREACS will be manually initiated in the recirculation mode (not pressurized) whereby all outside air is isolated and the air within the CRE is recirculated through the CREACS filter bank. Therefore a change in the differential pressure between the CRE and any adjacent area when the CREACS is pressurizing the CRE does not impact the response or consequences of the above events.

Although PSE&G stands behind the assumptions presented above, a review of the post-modification test data indicates that an acceptance criteria of 1/20" W.G. can be met when the system is operated in single train alignment with the vent path (doors) to the relay room closed. Therefore, PSE&G is revising the proposed change in acceptance criteria contained in the July 30, 1998 request from:

July 30, 1998 proposed changed:

"...maintain the control room at a positive pressure  $\geq$  1/8-inch W.G. relative to all areas directly accessible (Work Control Center and Control Room Equipment Rooms) from the control room and a positive pressure to all other areas adjacent to the control room..."

New Acceptance Criteria:

"...1) maintain the control room at a positive pressure  $\geq$  1/8-inch W.G. relative to the outside atmosphere, Work Control Center and Control Room Equipment Rooms and 2) maintain the control room at a positive pressure  $\geq$  1/20-inch W.G. relative to the Relay Rooms and the Auxiliary Building ..."

The above change adds the outside atmosphere as requiring a positive 1/8" W.G. pressure in addition to the areas of access/egress and a positive 1/20" W.G. pressure to all other areas. The revised Technical Specification pages are contained in attachment 3. The significant hazards evaluation provided in LR-N970738, dated July 30, 1998, is being revised to reflect the above changes to the acceptance criteria. However, the conclusions of the no significant hazards evaluation contained in LR-N970738 remain unchanged. PSE&G continues to conclude that the proposed changes to the TS do not involve a significant hazards consideration.

**NRC Question 2:**

**In the design basis accident radiological consequences analysis, PSE&G assumed that one train of CREACS is capable of maintaining 1/8" W.G. positive differential pressure. However, during the testing to meet the surveillance requirements (SR), you use two trains to obtain the 1/8" W.G. positive pressure in the MCRE with respect to all adjacent areas. Discuss how you justify the difference between the system operation assumed in the accident dose analysis and the in the SR testing.**

Response:

The design basis radiological consequences analysis assumes one train of CREACS filtration is in service. This assumption was based on considering the level of iodine protection when one train or two trains of CREACS are available during an accident. With two CREACS filtration trains in-service during an accident, the level of iodine protection is almost double the level of iodine protection with one CREACS filtration train. The level of iodine protection increases with two filtration trains in-service since the amount of filtered recirculation flow is increased.

During post-modification testing performed in 1997 for the CREACS, tests were performed to demonstrate the 1/8" W.G. differential pressure between the CRE and the adjacent spaces could be met when the system is operated with one train in-service or two trains of CREACS in-service. During testing of the system with one train of CREACS in-service, testing revealed that the differential pressure between the CRE and the relay room could not meet the 1/8" W.G. acceptance criteria but remained positive. The reason for the relay room not meeting the 1/8" W.G. differential pressure was due to an increase in pressure in the relay room. To alleviate the pressure build up in the relay room, a vent path from the relay room to the outside was established by opening doors. Re-testing of the system in single train alignment with the vent path to the relay rooms established verified that the 1/8" W.G. differential pressure acceptance criteria could be met. The final acceptance testing data was taken in single train alignment with the doors to the relay room open. Operations procedures for aligning the CREACS to single train operation were revised to include the opening of the doors to the relay room to establish this vent path.

Based upon a review of the final post-modification testing data, the lowest value for differential pressure between the CRE and the adjacent spaces was seen with the system aligned with two trains of CREACS filtration in-service. Since the lowest differential pressure was measured with two trains in-service, surveillance testing to demonstrate that the differential pressure requirement of surveillance requirement 4.7.6.1.d.3 was met was performed with both trains in-service.

**SALEM GENERATING STATION UNIT NOS. 1 AND 2  
FACILITY OPERATING LICENSES DPR-70 AND DPR-75  
DOCKET NOS. 50-272 AND 50-311  
CHANGE TO TECHNICAL SPECIFICATIONS  
CONTROL ROOM EMERGENCY AIR CONDITIONING SYSTEM**

10CFR50.92 EVALUATION

Public Service Electric & Gas (PSE&G) has concluded that the proposed changes to the Salem Generating Station Unit Nos. 1 and 2 Technical Specifications (TS) do not involve a significant hazards consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

**REQUESTED CHANGE**

The proposed TS change revises the acceptance criteria of the Control Room Emergency Air Conditioning System (CREACS) to ensure that the control room envelope (CRE) is maintained at a positive pressure  $\geq$  1/8-inch W.G. relative to outside atmosphere and the areas directly accessible (Work Control Center and Control Room Equipment Rooms) from the control room and a positive pressure  $\geq$  1/20-inch W.G. relative to all other areas adjacent to the control room.

**BASIS**

1. The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

CREACS ensures adequate protection after an accident and is not an accident initiator. The change to the acceptance criteria for CREACS does not affect the probability of an accident.

Revising the acceptance criteria for the CREACS from a '1/8-inch W.G. positive pressure in the control room with respect to the adjacent areas' to 'a positive pressure  $\geq$  1/8-inch W.G. relative to the outside atmosphere and the areas directly accessible (Work Control Center and Control Room Equipment Rooms) from the control room and a positive pressure  $\geq$  1/20-inch W.G. relative to all other areas adjacent to the control room' does not alter the assumptions in the radiological dose assessment provided to the NRC and approved under Amendments 190 (Unit 1) and 173 (Unit 2). Therefore the conclusions of the radiological dose assessment reviewed and approved by the NRC under the

above Amendments remain unchanged. The radiological dose assessment provided under Amendments 190 and 173 demonstrates that operation of the CREACS in the pressurized mode at the initiation of an accident will ensure that the requirements of General Design Criterion (GDC) 19 will be met.

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

2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Since the CREACS is an accident mitigation system that does not communicate with the Reactor Coolant Pressure boundary or interface with Emergency Core Cooling Systems (ECCS), the proposed change to the acceptance criteria for CREACS pressurization cannot result in new accident scenarios. The function of the CREACS system is to maintain the habitability of the CRE following an accident.

Therefore, the proposed TS change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed change does not involve a significant reduction in a margin of safety.

The CREACS ensures that (1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for equipment and instrumentation cooled by the CREACS and (2) the Control Room will remain habitable for operations personnel during and following all credible radiological accident conditions. Revising the acceptance criteria to maintaining the control room at a positive pressure  $\geq 1/8$ -inch W.G. relative to the outside atmosphere and the areas directly accessible (Work Control Center and Control Room Equipment Rooms) from the control room and a positive pressure  $\geq 1/20$ -inch W.G. relative to all other areas adjacent to the control room does not alter the assumptions used in the radiological dose assessment nor revise the conclusions of the dose assessment which was reviewed under Amendments 190 and 173. Since the assumptions and conclusions of the dose assessment remain unchanged, the CREACS continues to ensure that the requirements of GDC 19 continue to be met, and there is no reduction in the safety provided to the control room operators.

Therefore, the proposed change to the TS does not involve a reduction in the margin of safety.

## **CONCLUSION**

Based on the above, PSE&G has determined that the proposed change does not involve a significant hazards consideration.