Public Service Electric and Gas Company

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

Gentlemen:

REQUEST FOR ADDITIONAL INFORMATION REGARDING AUXILIARY BUILDING VENTILATION SALEM NUCLEAR GENERATING STATION UNIT NOS 1 AND 2 FACILITY OPERATING LICENSE NOS. DPR-70, DPR-75 DOCKET NOS. 50-272, AND 50-311

By letter dated September 21, 1998, Public Service Electric and Gas Company (PSE&G) provided the Nuclear Regulatory Commission (NRC) with the additional information relative to the PSE&G proposed amendment to modify Technical Specification 3/4 7.7 "Auxiliary Building Exhaust Air Filtration System." (TAC Nos. M99875 and M99876).

On November 2 and November 24, 1998 additional verbal information was provided to the NRC during a conference call. In attachment 1 to this letter, PSE&G documents its response to the additional clarification requested by the NRC. The original questions, as stated in the August letter is restated in boldface type as written in the NRC's request for additional information and each request is followed by the PSE&G response in regular (non-boldface) type. PSE&G will revise the proposed license amendment with the agreed to changes, following resolution of this request for additional information.

Should there be any additional questions or comments on this transmittal, please do not hesitate to contact us.

Sincerely,

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Attachment (1)





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C Mr. H. J. Miller, Administrator - Region I U. S. Nuclear Regulatory Commission 475 Allendale Road King of Prussia, PA 19406

> Mr. P. Milano, Licensing Project Manager - Salem U. S. Nuclear Regulatory Commission One White Flint North 11555 Rockville Pike Mail Stop 14E21 Rockville, MD 20852

Mr. S. Morris USNRC Senior Resident Inspector (X24)

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1. On page 9.4-10 of the SGS-UFSAR, it states: "The Auxiliary Building Ventilation System continuously maintains the building at a slight negative pressure with respect to outdoors." In Insert B(e) for the proposed TS LCO, the licensee states in part: "With Auxiliary Building pressure at or above zero inches water column (0.00" wg) with respect to atmospheric pressure......"

In accordance with Westinghouse Standard TS (WOG-STS), the Auxiliary Building Ventilation System (ABVS) should maintain the building at a specific negative pressure (e.g., -0.125 (1/8) inches water gauge with respect to atmospheric pressure). (For example, see WOG-STS 3.7.12 and 3.7.13.) The system should also maintain a negative pressure with respect to building adjacent areas. The proposed TS should be revised to specify negative pressure with respect to adjacent areas. If not, explain.

A review of NUREG 1431 Vol. 1, Rev.1 "Standard Technical Specifications Westinghouse Plants" did not identify a system like the Salem Auxiliary Building Ventilation System (ABVS). However, another ventilation system Technical Specification (TS) Limiting Condition for Operation (LCO) was identified. (E.g., The ECCS Pump Room Exhaust Air Cleanup System). Although this LCO specifies, in brackets, a pressure to be maintained, the differential pressure is required to be maintained relative to atmospheric pressure not adjacent rooms. PSE&G's understanding is that a bracketed number signifies that the value to be used is a plant specific value.

The Auxiliary Building Ventilation System (ABVS) is designed to control Auxiliary Building temperature during normal and emergency modes of operation, and to contain Auxiliary Building airborne contamination during Loss of Coolant Accidents (LOCA). As stated in the original PSE&G submittal dated October 24, 1997 (LR-N97488), the purpose of the change is to provide explicit operability requirements for the ABVS. Moreover, because the present ABV limiting condition for operation (LCO) does not require the auxiliary building to be maintained at a negative pressure, which is inconsistent with the dose analysis calculation relative to the ABV function, this license amendment request (LCR) also addresses this design requirement.

The present licensing basis dose analysis calculation relative to the ABVS implicitly assumes that the auxiliary building is at a "slight negative pressure relative to the

outside atmosphere." However, the analysis does not credit any charcoal filtration by the ABVS for the first two hours of the accident. Following this initial two-hour period, the analysis takes credit for the charcoal filter adsorbing a percentage of the airborne radioactivity that may be released into the building. For Salem Technical Specification purposes, a slight negative pressure can be defined as any measurable negative pressure below zero inches water gauge pressure (0.00"wg) with respect to the atmosphere. Therefore, consistent with the assumptions of the analysis, the proposed LCR does not identify any specific differential pressure to be maintained. Specifying an arbitrary value that is not supported by the current dose analysis calculation would not provide a meaningful benefit and may impose additional requirements to the system beyond those that are needed to maintain operability.

In summary, the proposed limiting condition of operation and its associated action statements will provide the necessary assurance that the ABV system will be operated in a manner that:

- 1) is consistent with the Salem Licensing basis, and
- 2) ensures that the auxiliary building is maintained at a negative pressure relative to outside atmosphere.

2. ABVS alignment appears to indicate that part of effluent flow out the plant vent is not being filtered by the charcoal filter during emergency operations. How does the licensee ensure that contaminated air inside the ECCS areas does not flow out the plant vent unfiltered? (See page 9.4-8 of SGS-UFSAR and Insert J for proposed TS bases.)

As part of the modification of the Emergency Air Conditioning System (EACS) for the Control Room, the Loss of Coolant Accidents (LOCA) releases to the site boundary and the Control Room were re-evaluated. The radiological release contribution from the Auxiliary Building due to a LOCA has been evaluated to assess its impact on the site boundary and the Control Room doses. The present licensing basis dose analysis calculation relative to the ABVS implicitly assumes that the auxiliary building is at a "slight negative pressure relative to outside atmosphere." However, the analysis does not assume any charcoal filtration by the ABVS for the first two hours of the accident. Following this initial two-hour period, the analysis takes credit for the charcoal filter adsorbing a percentage of the airborne radioactivity that may be released into the building.

The ABV system is designed to control Auxiliary Building temperature during normal and emergency modes of operation, and to contain Auxiliary Building airborne contamination during LOCAs. As stated in the original PSE&G submittal dated October 24, 1997 (LR-N97488), the purpose of the change is to provide explicit operability requirements for the ABV system. The ABV system exhaust fans are designed to exhaust more air than the supply fans can supply to the building, and thus maintain the building at design negative pressure, which ensures that air exhausted from Emergency Core Cooling System (ECCS) and Normal areas will be routed through the filtration units. The proposed TS LCO will ensure that the system will be operated in a manner that is consistent with UFSAR assumptions. (See response to question number 1 above)

As described in the Justification section of the proposed license amendment, the current limiting condition for operation does not provide the sufficient controls for the system configuration to ensure the system performs as described in the UFSAR. The following actions are being taken in accordance with procedures to preclude the system from being configured differently than described in the UFSAR:

- 1. Disable the automatic start of one ABV supply fan on a Safeguards Equipment Cabinet (SEC) signal
- 2. Fail open the outside air inlet damper
- 3. Fail open the inlet vortex dampers by isolating control air to the actuator

This provides an air flowpath with minimal resistance regardless of supply fan operation, thus ensuring that contaminated air inside the ECCS areas does not flow out the plant vent unfiltered. In addition, the procedure requires both supply fans and all three-exhaust fans to be available (although the automatic start feature of one supply fan will be disabled). As assumed in the dose analysis calculation, a two-hour period is available for operators to restart the disabled fan (assuming the other fan fails to start) before unacceptable building temperatures/pressures are reached.

The general design of the system provides supply air to the general areas such as hallways and corridors with the exhaust ventilating from the potentially more contaminated areas. This concept provides general flow paths within the building that migrate from radiological clean areas to areas with higher contamination levels.