



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

50-272

March 21, 2000

Mr. Harold W. Keiser
Chief Nuclear Officer & President-
Nuclear Business Unit
Public Service Electric & Gas
Company
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2, ISSUANCE
OF AMENDMENT RE: AUXILIARY BUILDING VENTILATION SYSTEM
(TAC NOS. M99875 AND M99876)

Dear Mr. Keiser:

The Commission has issued the enclosed Amendment Nos. 228 and 209 to Facility Operating License Nos. DPR-70 and DPR-75 for the Salem Nuclear Generating Station, Unit Nos. 1 and 2. These amendments consist of changes to the Technical Specifications (TS) in response to your application dated October 24, 1997, as supplemented January 8, September 21, and December 22, 1998; January 7, February 17, June 21, and August 23, 1999; and February 7, 2000. The supplement dated September 21, 1998, was in response to a request for additional information, dated August 3, 1998. The supplements provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

In your August 23, 1999, letter you withdrew from your request proposed revisions associated with engineered safety feature (ESF) filter testing. The proposed filter testing enhancements were incorporated in your response dated November 24, 1999, to Generic Letter 99-02, "Laboratory Testing of Nuclear Grade Activated Charcoal."

These amendments revise the Salem TSs, Section 3/4.7.7, "Auxiliary Building Exhaust Air Ventilation System," to require two auxiliary building ventilation system (ABVS) supply fans, and three ABVS exhaust fans to be operable, and clarify administrative controls and TSs bases.

ARC FILE CENTER COPY

H. W. Keiser

- 2 -

March 21, 2000

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/RA/

Robert J. Fretz, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-272 and 50-311

- Enclosures: 1. Amendment No. 228 to License No. DPR-70
2. Amendment No. 209 to License No. DPR-75
3. Safety Evaluation

cc w/encls: See next page

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H. W. Keiser

- 2 -

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,



Robert J. Fretz, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-272 and 50-311

Enclosures: 1. Amendment No. 228 to
License No. DPR-70
2. Amendment No. 209 to
License No. DPR-75
3. Safety Evaluation

cc w/encls: See next page

Salem Nuclear Generating Station,
Units 1 and 2

cc:

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

PUBLIC SERVICE ELECTRIC & GAS COMPANY

PHILADELPHIA ELECTRIC COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-272

SALEM NUCLEAR GENERATING STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 228
License No. DPR-70

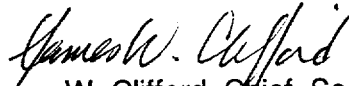
1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the Public Service Electric & Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees) dated October 24, 1997, as supplemented January 8, September 21, and December 22, 1998; January 7, February 17, June 21, and August 23, 1999; and February 7, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-70 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 228 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: March 21, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 228

FACILITY OPERATING LICENSE NO. DPR-70

DOCKET NO. 50-272

Replace the following pages of the Appendix A, Technical Specifications, with the attached revised pages as indicated. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change. Overleaf pages have been provided.

Remove Pages

3/4 7-22
B 3/4 7-5c

Insert Pages

3/4 7-22
B 3/4 7-5c
B 3/4 7-5d

PLANT SYSTEMS

3/4.7.7 AUXILIARY BUILDING EXHAUST AIR FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7.1 At least one Auxiliary Building exhaust air HEPA filter train, associated with the one charcoal adsorber bank, two supply fans, and three exhaust fans shall be OPERABLE (*)

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a) With the above required HEPA filter train inoperable, restore the HEPA filter train to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b) With the charcoal adsorber bank inoperable, restore the charcoal adsorber bank to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c) With one supply fan and/or one exhaust fan inoperable, restore the fan(s) to OPERABLE status within 14 days or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d) With two exhaust fans inoperable restore one inoperable exhaust fan to operable status within 24 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- e) With no supply fans operable, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- f) With no exhaust fans operable, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.7.1 The above required Auxiliary Building exhaust air filtration system shall be demonstrated OPERABLE:

- a. At least once per 31 days by initiating, from the control room, flow through the HEPA filter and charcoal adsorber train and verifying that the filter train and each fan operate for at least 15 minutes.
- b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system, by:

(*) One of the supply fans may be considered OPERABLE with its auto start circuit administratively controlled (removed from service) to prevent more than one supply fan from operating at any time.

PLANT SYSTEMS

BASES

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The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix "A", 10 CFR 50.

3/4.7.7 AUXILIARY BUILDING EXHAUST AIR FILTRATION SYSTEM

The Auxiliary Building Ventilation System (ABVS) consists of two major subsystems. They are 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). The two subsystems are:

1. A once through filtration exhaust system, designed to contain particulate and gaseous contamination and prevent it from being released from the building in accordance with 10CFR20, and
2. A once through air supply system, designed to deliver outside air into the building to maintain building temperatures within acceptable limits. For the purposes of satisfying the Technical Specification LCO, one supply fan must be administratively removed from service such that the fan will not auto-start on an actuation signal; however, the supply fan must be OPERABLE with the exception of this administrative control.

These systems operate during normal and emergency plant modes. Additionally, the system provides a flow path for containment purge supply and exhaust during Modes 5 and 6.

The exhaust system consists of three 50% capacity fans that are powered from vital buses. These fans exhaust from a common plenum downstream from three High Efficiency Particulate Air (HEPA) filter banks, two of which, 11 & 12 can be interchangeably aligned to discharge to a single carbon adsorber bed. Filter unit 11 is limited in capacity and can only be aligned to the ECCS areas of the Auxiliary Building for HEPA only or HEPA + Carbon modes of filtration. Filter unit 12 can be used to ventilate the normal areas of the Auxiliary Building in HEPA only, or when used in conjunction with 13, may be used to ventilate the ECCS areas of the Auxiliary Building in HEPA + Carbon. Filter unit 13 does not communicate with the carbon adsorber housing and is used for exhausting air from the normal areas of the Auxiliary Building during any plant Mode or purging the Containment Building during Modes 5&6. The fans are designed for continuous operation, to control the Auxiliary Building pressure at -0.10" Water Gauge with respect to atmosphere.

The supply system consists of two 100% capacity fans that are powered from vital buses, and distribute outdoor air to the general areas and corridors of the building through associated ductwork.

AUXILIARY BUILDING VENTILATION ALIGNMENT MATRIX

Unit 11 from ECCS HEPA only, with
Unit 12 from Aux. Normal HEPA only; or

PLANT SYSTEMS

BASES

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3/4.7.7 AUXILIARY BUILDING EXHAUST AIR FILTRATION SYSTEM (cont'd)

NORMAL VENTILATION (Normal plant operations)*

Unit 11 from ECCS HEPA only, with
Unit 13 from Aux. Normal HEPA only; or

Unit 12 from ECCS HEPA only, with
Unit 13 from Aux. Normal HEPA only; and

Any two of the three exhaust fans;and

Either of the two supply fans.

* The normal alignment is two exhaust fans and one supply fan. During cooler seasons, and with the absence of the system heating coils, it may be required to limit the amount of colder outside air entering the building. In this case, it is acceptable to secure both supply fans from operation and reduce the number of operating exhaust fans to one. There is sufficient capacity with the single exhaust fan to maintain the negative pressure within the auxiliary building boundary.

EMERGENCY VENTILATION (Emergency plant operations)

Unit 11 from ECCS HEPA + Unit 14, with
Unit 12 from Aux. Normal HEPA only; or

Unit 11 from ECCS HEPA + Unit 14, with
Unit 13 from Aux. Normal HEPA only; or

Unit 12 from ECCS HEPA + Unit 14, with
Unit 13 from Aux. Normal HEPA only; and

At least two of the three exhaust fans; and

Either one of the two supply fans.

Note: During a Safety Injection (SI) all three exhaust fans and one of the supply fans will start. This is acceptable and will maintain the boundary pressure while supplying the required cooling to the building. Should access/egress become difficult with the three exhaust fans running, then one of the exhaust fans should be secured.

OPERABILITY of the Auxiliary Building exhaust air filtration system ensures that air, which may contain radioactive materials leaked from ECCS equipment following a LOCA, is filtered and monitored prior to release from the plant. Operation of this system and the resultant effect on off site dosage calculations was assumed in the accident analyses. ABVS is discussed in Updated Final Safety Analysis Report (UFSAR) Section 9.4.2.

3/4.7.8 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values.



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

PUBLIC SERVICE ELECTRIC & GAS COMPANY

PHILADELPHIA ELECTRIC COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-311

SALEM NUCLEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

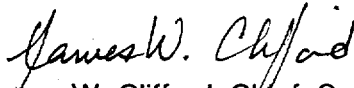
Amendment No. 209
License No. DPR-75

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the Public Service Electric & Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees) dated October 24, 1997, as supplemented January 8, September 21, and December 22, 1998; January 7, February 17, June 21, and August 23, 1999; and February 7, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-75 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

- The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 209 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.
3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: March 21, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 209

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Replace the following pages of the Appendix A, Technical Specifications, with the attached revised pages as indicated. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change. Overleaf pages have been provided.

Remove Pages

3/4 7-18
B 3/4 7-5c

Insert Pages

3/4 7-18
B 3/4 7-5c
B 3/4 7-5d
B 3/4 7-5e

PLANT SYSTEMS

3/4.7.7 AUXILIARY BUILDING EXHAUST AIR FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7 At least one Auxiliary Building exhaust air HEPA filter train, associated with the one charcoal adsorber bank, two supply fans, and three exhaust fans shall be OPERABLE (*)

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a) With the above required HEPA filter train inoperable, restore the HEPA filter train to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b) With the charcoal adsorber bank inoperable, restore the charcoal adsorber bank to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c) With one supply fan and/or one exhaust fan inoperable, restore the fan(s) to OPERABLE status within 14 days or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d) With two exhaust fans inoperable restore one inoperable exhaust fan to operable status within 24 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- e) With no supply fans operable, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- f) With no exhaust fans operable, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.7 The above required Auxiliary Building exhaust air filtration system shall be demonstrated OPERABLE:

- a. At least once per 31 days by initiating, from the control room, flow through the HEPA filter and charcoal adsorber train and verifying that the filter train and each fan operate for at least 15 minutes.
- b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system, by:

(*) One of the supply fans may be considered OPERABLE with its auto start circuit administratively controlled (removed from service) to prevent more than one supply fan from operating at any time.

PLANT SYSTEMS

BASES

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The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix "A", 10 CFR Part 50.

3/4.7.7 AUXILIARY BUILDING EXHAUST AIR FILTRATION SYSTEM

The Auxiliary Building Ventilation System (ABVS) consists of two major subsystems. They are 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). The two subsystems are:

1. A once through filtration exhaust system, designed to contain particulate and gaseous contamination and prevent it from being released from the building in accordance with 10CFR20, and
2. A once through air supply system, designed to deliver outside air into the building to maintain building temperatures within acceptable limits. For the purposes of satisfying the Technical Specification LCO, one supply fan must be administratively removed from service such that the fan will not auto-start on an actuation signal; however, the supply fan must be OPERABLE with the exception of this administrative control.

These systems operate during normal and emergency plant modes. Additionally, the system provides a flow path for containment purge supply and exhaust during Modes 5 and 6.

The exhaust system consists of three 50% capacity fans that are powered from vital buses. These fans exhaust from a common plenum downstream from three High Efficiency Particulate Air (HEPA) filter banks, two of which, 21 & 22 can be interchangeably aligned to discharge to a single carbon adsorber bed. Filter unit 21 is limited in capacity and can only be aligned to the ECCS areas of the Auxiliary Building for HEPA only or HEPA + Carbon modes of filtration. Filter unit 22 can be used to ventilate the normal areas of the Auxiliary Building in HEPA only, or when used in conjunction with 23, may be used to ventilate the ECCS areas of the Auxiliary Building in HEPA + Carbon. Filter unit 23 does not communicate with the carbon adsorber housing and is used for exhausting air from the normal areas of the Auxiliary Building during any plant Mode or purging the Containment Building during Modes 5&6. The fans are designed for continuous operation, to control the Auxiliary Building pressure at -0.10" Water Gauge with respect to a tmosphere.

The supply system consists of two 100% capacity fans that are powered from vital buses, and distribute outdoor air to the general areas and corridors of the building through associated ductwork.

PLANT SYSTEMS

BASES

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3/4.7.7 AUXILIARY BUILDING EXHAUST AIR FILTRATION SYSTEM (cont'd)

AUXILIARY BUILDING VENTILATION ALIGNMENT MATRIX

NORMAL VENTILATION (Normal plant operations)*

Unit 21 from ECCS HEPA only, with
Unit 22 from Aux. Normal HEPA only; or

Unit 21 from ECCS HEPA only, with
Unit 23 from Aux. Normal HEPA only; or

Unit 22 from ECCS HEPA only, with
Unit 23 from Aux. Normal HEPA only; and

Any two of the three exhaust fans; and

Either of the two supply fans.

* The normal alignment is two exhaust fans and one supply fan. During cooler seasons, and with the absence of the system heating coils, it may be required to limit the amount of colder outside air entering the building. In this case, it is acceptable to secure both supply fans from operation and reduce the number of operating exhaust fans to one. There is sufficient capacity with the single exhaust fan to maintain the negative pressure within the auxiliary building boundary.

EMERGENCY VENTILATION (Emergency plant operations)

Unit 21 from ECCS HEPA + Unit 24, with
Unit 22 from Aux. Normal HEPA only; or

Unit 21 from ECCS HEPA + Unit 24, with
Unit 23 from Aux. Normal HEPA only; or

Unit 22 from ECCS HEPA + Unit 24, with
Unit 23 from Aux. Normal HEPA only; and

At least two of the three exhaust fans; and

Either one of the two supply fans.

Note: During a Safety Injection (SI) all three exhaust fans and one of the supply fans will start. This is acceptable and will maintain the boundary pressure while supplying the required cooling to the building. Should access/egress become difficult with the three exhaust fans running, then one of the exhaust fans should be secured.

OPERABILITY of the Auxiliary Building exhaust air filtration system ensures that air, which may contain radioactive materials leaked from ECCS equipment following a LOCA, is filtered and monitored prior to release from the plant. Operation of this system and the resultant effect on off site dosage calculations was assumed in the accident analyses. ABVS is discussed in Updated Final Safety Analysis Report (UFSAR) Section 9.4.2.

PLANT SYSTEMS

BASES

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3/4.7.8 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values.

Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism (i.e., sealed sources within radiation monitoring or boron measuring devices) are considered to be stored and need not be tested unless they are removed from the shielded mechanism.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AUXILIARY BUILDING VENTILATION SYSTEM (ABVS)

AMENDMENT NOS. 228 AND 209 TO FACILITY OPERATING

LICENSE NOS. DPR-70 AND DPR-75

PUBLIC SERVICE ELECTRIC & GAS COMPANY

PHILADELPHIA ELECTRIC COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-272 AND 50-311

1.0 INTRODUCTION

By letter dated October 24, 1997, as supplemented January 8, September 21, and December 22, 1998; January 7, February 17, June 21, and August 23, 1999; and February 7, 2000, the Public Service Electric & Gas Company (the licensee) submitted a request for changes to the Salem Nuclear Generating Station, Unit Nos. 1 and 2, (Salem) Technical Specifications (TSs). The requested changes would revise the Salem TSs, Section 3/4.7.7, "Auxiliary Building Exhaust Air Ventilation System," to provide requirements for the auxiliary building ventilation system (ABVS) to be operable. Specifically, the revised TS would (1) require 2 ABVS supply fans to be operable, (2) require 3 ABVS exhaust fans to be operable, and (3) add a TS footnote that 1 ABVS supply fan is operable with its start circuit administratively controlled. In addition, the licensee provided associated TS bases changes that reflect the proposed revisions. The supplemental letters provided clarifying information that did not change the initial proposed no significant hazards consideration determination or expand the application beyond the scope of the original notice.

In the August 23, 1999, letter, the licensee withdrew from its request proposed revisions associated with engineered safety feature (ESF) filter testing. The proposed filter testing enhancements were incorporated in the licensee's response dated November 24, 1999, to Generic Letter 99-02, "Laboratory Testing of Nuclear Grade Activated Charcoal."

The proposed amendment incorporates provisions which include supply and exhaust fan configurations in the TS Limiting Condition for Operation (LCO). The proposed TS revisions require all fans to be operable and limit the time allowed for ABVS operation in a degraded

condition. The proposed TS revisions provide requirements for the ABVS to be operable such that single failure of the fans or their support systems can be accommodated.

2.0 BACKGROUND

The Auxiliary Building is a multi-level compartment structure containing the auxiliary nuclear equipment and systems required for normal, shutdown, and emergency modes of unit operation. The ABVS, a once-through heating and ventilating system for each unit, operates continuously during these modes of operation to perform its design functions. Principal functions include providing satisfactory ambient temperatures for vital equipment within the Auxiliary Building, and maintaining the Auxiliary Building at a negative pressure to control the release of particulate and gaseous contamination from the Auxiliary Building in accordance with 10 CFR Part 100 limits and General Design Criteria 19 of Appendix A to 10 CFR Part 50.

The ABVS is comprised of supply and exhaust air subsystems. The supply air subsystem consists of 2 fans, each with 100% capacity, powered from vital buses that deliver outside air via duct work distribution throughout the Auxiliary Building. Supply fan start circuits are administratively controlled to prevent more than 1 supply fan from operating at any time to avoid pressurization of the Auxiliary Building. The subsystem normally operates with 1 supply fan running; however, given a sufficiently low ambient temperature, there may be no supply fans in operation.

The exhaust air subsystem consists of 3 exhaust fans, each with 50% capacity, taking exhaust from a common plenum, 3 high efficiency particulate air (HEPA) filters, and 1 charcoal adsorber. Contaminated exhaust is filtered through 1 HEPA filter and the charcoal adsorber and is discharged out the plant stack via a common exhaust duct plenum.

The charcoal adsorber can be aligned interchangeably between either of 2 of 3 HEPA filters and the common plenum. The third HEPA filter cannot be aligned to the charcoal adsorber. The charcoal adsorber is placed in the exhaust stream only during post-LOCA conditions to remove radioactive iodine which may be introduced to the Auxiliary Building through the emergency core cooling system (ECCS) equipment. The exhaust fans are powered from vital buses and are designed for continuous operation. The subsystem is normally operated with 2 exhaust fans, and with the remaining exhaust fan in stand-by.

The licensee's proposed revisions modify TS 3/4.7.7 for both Salem units and provide the following new requirements and clarification:

- (1) require 2 ABVS supply fans to be operable,
- (2) require 3 ABVS exhaust fans to be operable,
- (3) add a TS footnote that 1 ABVS supply fan is operable with its start circuit administratively controlled, and
- (4) the licensee also provided associated TS bases changes that reflect the proposed revisions.

With regard to fan operability, the current TS 3/4.7.7 only provides requirements for 2 ABVS exhaust fans to be operable.

3.0 EVALUATION

3.1 TS Limiting Condition For Operation, and Action Statements

The current TS 3/4.7.7 LCO requires that at least 1 Auxiliary Building exhaust air HEPA filter train, associated with the 1 charcoal adsorber bank, and at least 2 exhaust fans shall be operable. With only 1 exhaust fan operable, the TS requires that at least 2 exhaust fans be restored to operable status within 7 days or the plant be placed in hot standby within the next 6 hours. The third exhaust and both supply fans are not required to maintain the ABVS in an operable status, and can be removed from service with no limitations imposed by the TS. Application of the single-failure criterion to the ABVS can result in a configuration whereby for the Auxiliary Building, supply fan capacity exceeds exhaust fan capacity or post-LOCA building temperatures cannot be maintained. These conditions could result in an inability to maintain negative pressure with respect to atmospheric pressure accompanied by the uncontrolled release of radioactive materials, or the overheating of ESF equipment required to mitigate the consequences of design-basis accidents.

The proposed TS 3/4.7.7 LCO requires that at least 1 Auxiliary Building exhaust air HEPA filter train associated with 1 carbon adsorber bank, 2 supply fans, and 3 exhaust fans shall be operable. The licensee stated that proposed TS revisions eliminate the possibility of the above ABVS configuration by requiring all fans (supply and exhaust fans) to be operable and adequately limit the time allowed for ABVS operation in a degraded condition. With 1 supply fan and/or 1 exhaust fan inoperable, the proposed TS require that the inoperable fan be restored to operable status within 14 days or the plant be placed in hot standby within 6 hours. With 2 exhaust fans inoperable, the proposed TSs require that at least 1 exhaust fan be restored to operable status within 24 hours or the plant be placed in hot standby within 6 hours. With no exhaust fans operable, the proposed TSs require that the plant be placed in hot standby within 6 hours. The licensee stated that since the proposed TS LCO and its corresponding action statements require all ABVS fans to be operable and adequately limits the time for the degraded operation, the capability to maintain ABVS functions during single-failure events has been enhanced.

The proposed 14-day allowed outage time (AOT) for 1 inoperable exhaust fan is acceptable to the staff because (1) this AOT is more restrictive than that for the current TS, which allows 1 exhaust fan to be inoperable indefinitely, and (2) the Salem ABVS design is unique compared to Standard TS. Although the licensee provided a probabilistic risk evaluation for the 14-day AOT, the staff's acceptance is not based on this risk evaluation. This is because the ABVS is a post-LOCA mitigative system and makes no significant contribution to core damage frequency or large early release. The staff reviewed the licensee's probabilistic risk evaluation and agreed that the proposed TS revisions would not result in a significant increase in core damage probability.

With 2 exhaust fans inoperable, the proposed 24-hour AOT is acceptable to the staff because this AOT is more restrictive than the 7-day AOT in current TS. With 3 exhaust fans inoperable, the proposed TS action statement is acceptable to the staff because this statement requires that the plant be placed in hot standby within 6 hours.

With regard to the case whereby 2 supply fans for the ABVS are inoperable, the proposed TS LCO action statement requires that the plant be placed in hot standby within 6 hours since the post-accident design-basis temperatures cannot be assured in the Auxiliary Building. The licensee stated that this proposed action statement is appropriate since it is more restrictive in the time required to reach the safe shutdown condition than is currently specified using the provisions of TS 3.0.3. The licensee also stated that the proposed action statement imposes adequate restrictions on plant operations given the inoperability of 2 ABVS supply fans and ensures the maintenance of design-basis temperatures in the Auxiliary Building under post-LOCA conditions.

Compared to the current ABVS TS, the proposed TS revisions are conservative and enhance ABVS capability to respond to single-failure events involving ABVS exhaust or supply fans. Therefore, the staff finds the proposed TS revisions to be acceptable.

With regard to other ABVS equipment, the proposed LCO action statements specify the following AOTs:

- 1) 24 hours to restore 1 inoperable HEPA filter train (consistent with the current LCO action statement)
- 2) 24 hours to restore 1 inoperable carbon adsorber unit (consistent with the current LCO action statement)

3.2 Risk Evaluation of TS Changes

The staff evaluated the risks associated with the proposed TS changes in the ABVS for Salem Units 1 and 2. We focused specifically on the risk implications associated with the proposed AOTs for inoperable equipment in the ABVS. The licensee requested an AOT extension from 7 to 14 days for 1 inoperable supply fan or 1 exhaust fan, and creation of a 24-hour AOT for 2 or more inoperable exhaust fans.

The ABVS was designed to control release of contamination, and to control temperature within allowable levels in the auxiliary building during normal and accident conditions. Controlling release of contamination in the auxiliary building is beyond the scope of a typical PRA, and beyond that of the Salem PRA. The release here is not associated with post-core damage large release. A few PRAs, however, take credit for the ABVS as a backup to room coolers for safety-related equipment within the auxiliary building to maintain room temperature within allowable levels. The current Salem PRA takes credit for the ABVS in case of the failure of room coolers for Safety Injection (SI) pumps and Component Cooling Water (CCW) pumps during an event. From a core damage risk perspective, the proposed AOTs play an insignificant role relative to the overall core damage frequency. A total failure of the ABVS does not initiate or cause any accident or transient condition; in addition, the SI or CCW pump unavailability stemming from ABVS unavailability is not expected to be significant. Furthermore, the proposed AOTs are expected to have a small contribution to the overall ABVS unavailability. The proposed changes in the ABVS equipment AOTs do not increase the initiating frequencies for events analyzed in PRA. Therefore, the increase in core damage risk due to the proposed AOTs would be insignificant.

The ABVS will not be able to contain any large early release in the auxiliary building, and the proposed changes do not introduce new large early release mechanisms. Therefore, the risk impact of the proposed AOTs in terms of large early release would be bounded by the impact on core damage sequences from which plant damage states associated with large early release stem. Since the risk impact on core damage sequences is insignificant, large early release would also be insignificant, being a fraction (the conditional containment failure probability resulting in large early release) of the core damage risk impact.

4.0 STAFF CONCLUSION

In general, the revisions set forth in the proposed TS Section 3/4.7.7 will enhance the Salem TSs by providing ABVS criteria that must be met in order for the system to be considered operable. These criteria are related to the ABVS design-basis as provided in the licensee's Updated Final Safety Analysis Report, and will enhance system capability to respond to single-failure events as required. Therefore, the staff finds the proposed TS revisions to be acceptable.

The staff also finds that the proposed changes would result in an insignificant risk impact in terms of core damage and large early release. Therefore, within the scope of the staff PRA review, the staff concludes that the PRA findings and insights support the proposed AOTs in the ABVS. Therefore, the staff finds the proposed TS revisions to be acceptable.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State official was notified of the proposed issuance of the amendments. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (62 FR 66140). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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