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

May 4, 1999

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 NO. 1 - ISSUANCE OF AMENDMENT RE: ONE-TIME EXTENSION OF SURVEILLANCE INTERVAL (TAC NO. MA4554)

Dear Mr. Keiser:

The Commission has issued the enclosed Amendment No.222 to Facility Operating License No. DPR-70 for the Salem Nuclear Generating Station, Unit No. 1. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated January 15, 1999, as supplemented on March 31, 1999.

This amendment allows a one-time extension of the TS surveillance interval to the end of fuel Cycle 13 for certain TS surveillance requirements (SRs). Specifically, the amendment extends the surveillance interval in (a) SR 4.3.2.1.3 for the instrumentation response time and sequence testing of each engineered safety features actuation system (ESFAS) function; (b) SRs 4.8.2.3.2.f and 4.8.2.5.2.d for service testing of the 125-volt DC and the 28-volt DC distribution system batteries, respectively; (c) SR 4.8.2.5.2.c.2 for verification of the condition of the 125-volt DC battery connections; (d) SR 4.8.3.1.a.1.a and 4.8.3.1.a.1.b for channel calibration and integrated system functional test for containment penetration conductor overcurrent protection; (e) SR 4.1.2.2.c for verification that each automatic valve in the reactivity control system flow path actuate on a safety injection (SI) test signal; (f) SRs 4.3.1.1.1,Table 4.3-1, 4.3.2.1.1, Table 4.3-2, 4.3.3.5, Table 4.3-6, and 4.3.3.7, Table 4.3-11 for the channel calibration of containment water level - wide range, the manual solid-state protection system (SSPS) functional input check, and the ESFAS manual initiation channel functional test; (g) SR 4.5.1.d for verification that each accumulator isolation valve opens automatically on an SI test signal; (h) SR 4.5.2.e.1 for verification that each automatic valve in the ECCS flow path actuates on an SI test signal; (i) SR 4.7.6.1.d.2 for verification that the control room emergency air conditioning system automatically actuates in the pressurization mode on an SI test signal or control room intake high radiation test signal; (j) SR 4.7.10.b for verification that each automatic valve in the chilled water loop actuates on an SI signal; and (k) SR 4.8.1.1.2.d.7 which requires a test to verify that each emergency diesel generator operates for at least 24 hours. Because of the length of the last outage and delays in restart, the SRs will be overdue prior to reaching the next refueling outage (1R13). The SRs are to be completed during the 1R13 outage, prior to returning the unit to Mode 4 (hot shutdown) upon outage completion. The amendment also makes some administrative and editorial changes on some of the pages that will be affected by the above SR interval extensions.

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

Sincerely,

Original signed by:

Patrick D. Milano, Senior Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-272

Enclosures: 1. Amendment No. 222 to License No. DPR-70
2. Safety Evaluation

cc w/encls: See next page

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

Sincerely,

Patrick D. Milano, Senior Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-272

Enclosures: 1. Amendment No. 222 to
License No. DPR-70
2. Safety Evaluation

cc w/encls: See next page

Salem Nuclear Generating Station,
Unit 1

cc:

Jeffrie J. Keenan, Esquire
Nuclear Business Unit - N21
P.O. Box 236
Hancocks Bridge, NJ 08038

General Manager - Salem Operations
Salem Nuclear Generating Station
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Louis Storz
Sr. Vice President - Nuclear Operations
Nuclear Department
P.O. Box 236
Hancocks Bridge, NJ 08038

Senior Resident Inspector
Salem Nuclear Generating Station
U.S. Nuclear Regulatory Commission
Drawer 0509
Hancocks Bridge, NJ 08038

Dr. Jill Lipoti, Asst. Director
Radiation Protection Programs
NJ Department of Environmental
Protection and Energy
CN 415
Trenton, NJ 08625-0415

Maryland Office of People's Counsel
6 St. Paul Street, 21st Floor
Suite 2102
Baltimore, MD 21202

Ms. R. A. Kankus
Joint Owner Affairs
PECO Energy Company
965 Chesterbrook Blvd., 63C-5
Wayne, PA 19087

Mr. Elbert Simpson
Senior Vice President-
Nuclear Engineering
Nuclear Department
P.O. Box 236
Hancocks Bridge, NJ 08038

Richard Hartung
Electric Service Evaluation
Board of Regulatory Commissioners
2 Gateway Center, Tenth Floor
Newark, NJ 07102

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Lower Alloways Creek Township
c/o Mary O. Henderson, Clerk
Municipal Building, P.O. Box 157
Hancocks Bridge, NJ 08038

Director - Licensing Regulation & Fuels
Nuclear Busienss Unit - N21
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. David Wersan
Assistant Consumer Advocate
Office of Consumer Advocate
1425 Strawberry Square
Harrisburg, PA 17120

Manager - Joint Generation
Atlantic Energy
6801 Black Horse Pike
Egg Harbor Twp., NJ 08234-4130

Carl D. Schaefer
External Operations - Nuclear
Delmarva Power & Light Company
P.O. Box 231
Wilmington, DE 19899

Public Service Commission of Maryland
Engineering Division
Chief Engineer
6 St. Paul Centre
Baltimore, MD 21202-6806

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. 222
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 January 15, 1999, as supplemented on March 31, 1999, 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. 222 , 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: May 4, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 222

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. The pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages	Insert Pages
3/4 1-9	3/4 1-9
3/4 3-11	3/4 3-11
3/4 3-13	3/4 3-13
3/4 3-14	3/4 3-14
3/4 3-31a	3/4 3-31a
3/4 3-57	3/4 3-57
3/4 3-57a	3/4 3-57a
3/4 5-2	3/4 5-2
3/4 5-5	3/4 5-5
3/4 7-20	3/4 7-20
3/4 7-34	3/4 7-34
3/4 8-5	3/4 8-5
3/4 8-5a	3/4 8-5a
3/4 8-9a	3/4 8-9a
3/4 8-12	3/4 8-12
3/4 8-14	3/4 8-14

SURVEILLANCE REQUIREMENTS (Continued)

c. * At least once per 18 months during shutdown by verifying that each automatic valve in the flow path actuates to its correct position on a safety injection test signal.

d. At least once per 18 months by verifying that the flow path required by specification 3.1.2.2.a delivers at least 33 gpm to the Reactor Coolant System.

* A one time extension to this surveillance requirement which is satisfied by performance of the Manual SI test is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance testing is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. Manual Reactor Trip Switch	N.A.	N.A.	R(9)	1, 2, and *
2. Power Range, Neutron Flux	S	D(2), M(3) and Q(6)	Q	1, 2, and 3*
3. Power Range, Neutron Flux, High Positive Rate	N.A.	R(6)	Q	1, 2
4. Power Range, Neutron Flux, High Negative Rate	N.A.	R(6)	Q	1, 2
5. Intermediate Range, Neutron Flux	S	R(6)	S/U(1)	1, 2 and *
6. Source Range, Neutron Flux	S(7)	R(6)	Q and S/U(1)	2, 3, 4, 5 and *
7. Overtemperature ΔT	S	R	Q	1, 2
8. Overpower ΔT	S	R	Q	1, 2
9. Pressurizer Pressure--Low	S	R	Q	1, 2
10. Pressurizer Pressure--High	S	R	Q	1, 2
11. Pressurizer Water Level--High	S	R	Q	1, 2
12. Loss of Flow - Single Loop	S	R	Q	1

TABLE 4.3-1 (Continued)

NOTATION

* With the reactor trip system breakers closed and the control rod drive system capable of rod withdrawal.

(1) - If not performed in previous 31 days.

(2) - Heat balance only, above 15% of RATED THERMAL POWER.

(3) - Compare incore to excore axial offset above 15% of RATED THERMAL POWER. Recalibrate if absolute difference ≥ 3 percent.

(4) - Manual SSPS functional input check every 18 months. **

(5) - Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(6) - Neutron detectors may be excluded from CHANNEL CALIBRATION.

(7) - Below P-6 (Block of Source Range Reactor Trip) setpoint.

(8) - Deleted

(9) - The CHANNEL FUNCTIONAL TEST shall independently verify the OPERABILITY of the Undervoltage and Shunt Trip mechanism for the Manual Reactor Trip Function.

The Test shall also verify OPERABILITY of the Bypass Breaker Trip circuits.

(10) - DELETED

(11) - The CHANNEL FUNCTIONAL TEST shall independently verify the OPERABILITY of the Reactor Trip Breaker Undervoltage and Shunt Trip mechanisms.

(12) - DELETED

** A one time extension to this surveillance requirement which is satisfied by performance of the Manual SI test is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance testing is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2.1 The Engineered Safety Feature Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4 and with RESPONSE TIMES as shown in Table 3.3-5.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

a. With an ESFAS instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4, declare the channel inoperable and apply the applicable ACTION requirement of Table 3.3-3 until the channel is restored to OPERABLE status with the trip setpoint adjusted consistent with the Trip Setpoint value.

b. With an ESFAS instrumentation channel inoperable, take the ACTION shown in Table 3.3-3.

SURVEILLANCE REQUIREMENTS

4.3.2.1.1 Each ESFAS instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the MODES and at the frequencies shown in Table 4.3-2.

4.3.2.1.2 The logic for the interlocks shall be demonstrated OPERABLE during the automatic actuation logic test. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.

4.3.2.1.3* The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once per N times 18 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" Column of Table 3.3-3. The provisions of Specification 4.0.4 are not applicable to MSIV closure time testing. The provisions of Specification 4.0.4 are not applicable to the turbine driven auxiliary feedwater pump provided the surveillance is performed within 24 hours after the secondary steam generator pressure is greater than 680 psig.

* A one time extension to this surveillance requirement for performance of relay time response and sequence testing of the safeguard equipment control (SEC) system, which partially satisfies the surveillance requirement, is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance testing is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

TABLE 4.3-2

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. SAFETY INJECTION, TURBINE TRIP AND FEEDWATER ISOLATION				
a. Manual Initiation	N.A.	N.A.	R*	1,2,3,4
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	1,2,3,4
c. Containment Pressure-High	S	R	Q(3)	1,2,3
d. Pressurizer Pressure--Low	S	R	Q	1,2,3
e. Differential Pressure Between Steam Lines--High	S	R	Q	1,2,3
f. Steam Flow in Two Steam Lines--High coincident with Tavg--Low-Low or Steam Line Pressure-Low	S	R	Q	1,2,3
2. CONTAINMENT SPRAY				
a. Manual Initiation	N.A.	N.A.	R	1,2,3,4
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	1,2,3,4
c. Containment Pressure--High-High	S	R	Q(3)	1,2,3

* A one time extension to this surveillance requirement which is satisfied by performance of the Manual SI test is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance testing is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

TABLE 4.3-11

SURVEILLANCE REQUIREMENTS FOR

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	CHANNEL CHECKS	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1. Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	M	R	N.A.
2. Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	M	R	N.A.
3. Reactor Coolant Pressure (Wide Range)	M	R	N.A.
4. Pressurizer Water Level	M	R	N.A.
5. Steam Line Pressure	M	R	N.A.
6. Steam Generator Water Level (Narrow Range)	M	R	N.A.
7. Steam Generator Water Level (Wide Range)	M	R	N.A.
8. Refueling Water Storage Tank Water Level	M	R	N.A.
9. deleted			
10. Auxiliary Feedwater Flow Rate	S/U#	R	N.A.
11. Reactor Coolant System Subcooling Margin Monitor	M	N.A.*	N.A.

#Auxiliary Feedwater System is used on each startup and flow rate indication is verified at that time.

*The instruments used to develop RCS subcooling margin are calibrated on an 18 month cycle; the monitor will be compared quarterly with calculated subcooling margin for known input values.

TABLE 4.3-11 (Continued)
SURVEILLANCE REQUIREMENTS FOR
ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
12. PORV Position Indicator	M	N.A.	R
13. PORV Block Valve Position Indicator	M	N.A.	Q*
14. Pressurizer Safety Valve Position Indicator	M	N.A.	R
15. Containment Pressure - Narrow Range	M	R	N.A.
16. Containment Pressure - Wide Range	M	R	N.A.
17. Containment Water Level - Wide Range	M	R**	N.A.
18. Core Exit Thermocouples	M	R	N.A.
19. Reactor Vessel Level Instrumentation System (RVLIS)	M	R	N.A.

*Unless the block valve is closed in order to meet the requirements of Action b, or c in specification 3.4.3.

** A one-time extension to this surveillance requirement is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 31 days and within 6 hours after each solution volume increase of ≥ 1% of tank volume by verifying the boron concentration of the accumulator solution.

c. At least once per 31 days when the RCS pressure is greater than 1000 psig by verifying that the power lockout switch is in lockout.

d.* At least once per 18 months by verifying that each accumulator isolation valve opens automatically upon receipt of a safety injection test signal.

* A one time extension to this surveillance requirement which is satisfied by performance of the Manual SI test is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance testing is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

SURVEILLANCE REQUIREMENTS (Continued)

c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suctions during LOCA conditions. This visual inspection shall be performed:

1. For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and

2. At least once daily (24 hour consecutive period) the areas affected within containment by containment entry and during the final entry when CONTAINMENT INTEGRITY is established.

d. At least once per 18 months by:

1. A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or corrosion.

e. At least once per 18 months, during shutdown, by:

1.* Verifying that each automatic valve in the flow path actuates to its correct position on a safety injection test signal.

2. Verifying that each of the following pumps start automatically upon receipt of a safety injection test signal:

a) Centrifugal charging pump

b) Safety injection pump

c) Residual heat removal pump

* A one time extension to this surveillance requirement which is satisfied by performance of the Manual SI test is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance testing is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

SURVEILLANCE REQUIREMENTS

4.7.6.1 Each control room emergency air conditioning system filtration train shall be demonstrated OPERABLE:

a. At least once per 31 days by initiating flow through the HEPA filter and charcoal adsorber train(s) and verifying that the train(s) operates with each fan operating for at least 15 minutes.

b. At least once per 18 months or prior to return to service (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:

1. Verifying that the charcoal adsorbers remove ≥99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place while operating the ventilation system at a flow rate of 8000 cfm ± 10%.

2. Verifying that the HEPA filter banks remove ≥99% of the DOP when they are tested in-place while operating the ventilation system at a flow rate of 8000 cfm ± 10%.

3. Verifying within 31 days after removal that a laboratory analysis of a carbon sample from one of the charcoal adsorbers demonstrates a removal efficiency of ≥99% for radioactive methyl iodide when the sample is tested at 30°C, 95% relative humidity.

c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a carbon sample obtained from a test canister demonstrates a removal efficiency of ≥ 99% for radioactive methyl iodide when the sample is tested at 30°C, 95% relative humidity.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filter and charcoal adsorber bank is ≤ 3.5 inches water gauge while operating the ventilation system at a flow rate of 8000 cfm ± 10%.

2.* Verifying that on a safety injection test signal or control room intake high radiation test signal, the system automatically actuates in the pressurization mode by opening the outside air supply and diverting air flow through the HEPA filter and charcoal adsorber bank.

3. Verifying that the system can maintain the control room at a positive pressure ≥ 1/8" water gauge relative to the adjacent areas during system operation with makeup air being supplied through the HEPA filters and charcoal adsorbers at the design makeup flow rate of ≤ 2200 cfm.

*** A one time extension to this surveillance requirement which is satisfied by performance of the Manual SI test is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance testing is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.**

LIMITING CONDITION FOR OPERATION

ACTION: MODES 5 and 6 or during movement of irradiated fuel assemblies. *

a. With one chiller inoperable:

1. Remove the appropriate non-essential heat loads from the chilled water system within 4 hours and;

2. Restore the chiller to OPERABLE status within 14 days or;

3. Suspend CORE ALTERATIONS and movement of irradiated fuel assemblies.

b. With two chillers inoperable:

1. Remove the appropriate non-essential heat loads from the chilled water system within 4 hours and;

2. Align the control room emergency air conditioning system (CREACs) for single filtration operation using the Salem Unit 2 train within 4 hours and;

3. Restore at least one chiller to OPERABLE status within 72 hours or;

4. Suspend CORE ALTERATIONS and movement of irradiated fuel assemblies.

c. With one chilled water pump inoperable, restore the chilled water pump to OPERABLE status within 7 days or suspend CORE ALTERATIONS and movement of irradiated fuel assemblies.

SURVEILLANCE REQUIREMENTS

4.7.10 The chilled water loop which services the safety-related loads in the Auxiliary Building shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each manual valve in the chilled water system flow path servicing safety related components that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. ** At least once per 18 months, by verifying that each automatic valve actuates to its correct position on a Safeguards Initiation signal.

c. At least once per 92 days by verifying that each chiller starts and runs.

* During Modes 5 and 6 and during movement of irradiated fuel assemblies, chilled water components are not considered to be inoperable solely on the basis that the backup emergency power source, diesel generator, is inoperable.

**A one time extension to this surveillance requirement for performance of relay time response and sequence testing of the safeguard equipment control (SEC) system, which partially satisfies the surveillance requirement, is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance testing is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

SURVEILLANCE REQUIREMENTS (Continued)

c) Verifying that all nonessential automatic diesel generator trips (i.e., other than engine overspeed, lube oil pressure low, 4 KV bus differential and generator differential), are automatically bypassed upon loss of voltage on the vital bus concurrent with a safety injection actuation signal.

7.***Verifying the diesel generator operates for at least 24 hours*. During the first 2 hours of this test, the diesel generator shall be loaded to 2760-2860 kw.** During the remaining 22 hours of this test, the diesel generator shall be loaded to 2500-2600 kw**. The steady state voltage and frequency shall be maintained at $\geq$ 3910 and $\leq$ 4580 volts and 60 $\pm$ 1.2 Hz during this test.

8. Verifying that the auto-connected loads to each diesel generator do not exceed the two hour rating of 2860 kw.

9. Verifying that with the diesel generator operating in a test mode (connected to its bus), a simulated safety injection signal overrides the test mode by (1) returning the diesel generator to standby operation and (2) automatically energizing the emergency loads with offsite power.

e. At least once per ten years or after any modifications which could affect diesel generator interdependence by starting all diesel generators simultaneously*, during shutdown, and verifying that all diesel generators accelerate to at least 58.8 Hz in less than or equal to 13 seconds.

f. At least once per 18 months, the following test shall be performed within 5 minutes of diesel shutdown after the diesel has operated for at least two hours at 2500-2600 kw**:

Verifying the diesel generator starts and achieves $\geq$ 3910 volts and $\geq$ 58.8 Hz in $\leq$ 13 seconds, and subsequently achieves steady state voltage of $\geq$ 3910 and $\leq$ 4400 volts and frequency of 60 $\pm$ 1.2 Hz.

4.8.1.1.3 The diesel fuel oil storage and transfer system shall be demonstrated OPERABLE:

a. At least once per 31 days by:

1. Verifying the level in each of the above required fuel storage tanks.

2. Verifying that both fuel transfer pumps can be started and transfer fuel from the fuel storage tanks to the day tanks.

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 92 days by verifying that a sample of diesel fuel from each of the above required fuel storage tanks is within the acceptable limits specified in Table 1 of ASTM D975-77 when checked for viscosity, water and sediment.

4.8.1.1.4 Reports - NOT USED

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* Surveillance testing may be conducted in accordance with the manufacturer's recommendations regarding engine prelube, warm-up and loading (unless loading times are specified in the individual Surveillance Requirements).

** This band is meant as guidance to preclude routine exceedances of the diesel generator manufacturer's design ratings. Loads in excess of this band for special testing or momentary variations due to changing bus loads shall not invalidate the test.

*** A one-time extension to this surveillance requirement is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

SURVEILLANCE REQUIREMENTS (Continued)

3. The connection resistance is:
   ≤ 150 micro ohms for inter-cell connections,
   ≤ 350 micro ohms for inter-rack connections,
   ≤ 350 micro ohms for inter-tier connections,
   ≤ 70 micro ohms for field cable terminal connections, and
   ≤ 2500 micro ohms for the total battery connection resistance which includes all inter-cell connections (including bus bars), all inter-rack connections (including cable resistance), all inter-tier connections (including cable resistance), and all field terminal connections at the battery.

e. At least once per 18 months by verifying that the battery charger will supply at least 170 amperes at 125 volts for at least 4 hours.

f.* At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.

g. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Satisfactory completion of this performance discharge test shall also satisfy the requirements of Specification 4.8.2.3.2.f if the performance discharge test is conducted during a shutdown where that test and the battery service test would both be required.

h. At least once per 12 months, during shutdown, if the battery shows signs of degradation OR has reached 85% of the service life with a capacity less than 100% of manufacturers rating, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its capacity on the previous performance test, or is below 90% of the manufacturer's rating.

i. At least once per 24 months, during shutdown, if the battery has reached 85% of the service life with capacity greater than or equal to 100% of manufacturers rating, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test.

* A one-time extension to this surveillance requirement is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

SURVEILLANCE REQUIREMENTS (Continued)

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level, is greater than or equal to 1.200.

3. The pilot cell voltage is greater than or equal to 2.08 volts.

4. The overall battery voltage is greater than or equal to 27 volts.

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge and has not decreased more than 0.27 volts from the value observed during the original acceptance test.

2. The specific gravity, corrected to 77°F and full electrolyte level, of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.02 from the value observed during the previous test.

3. The electrolyte level of each connected cell is between the minimum and maximum level indication marks.

c. At least once per 18 months by verifying that:

1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.

2. * The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.

3. The battery charger will supply at least 150 amperes at 28 volts for at least 4 hours.

d.* At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Satisfactory completion of this performance discharge test shall also satisfy the requirements of Specification 4.8.2.5.2.d if the performance discharge test is conducted during a shutdown where that test and the battery service test would both be required.

* A one-time extension to this surveillance requirement is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

ELECTRICAL POWER SYSTEMS

3/4 8.3 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

LIMITING CONDITION FOR OPERATION

3.8.3.1 All containment penetration conductor overcurrent protective devices required to provide thermal protection of penetrations shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:
With one or more of the required containment penetration conductor overcurrent protective device(s) inoperable:

a. Restore the protective device(s) to OPERABLE status or de-energize the circuit(s) by tripping either the primary or backup protective device, or racking out or removing the primary or backup device within 72 hours, declare the affected system or component inoperable, and verify the primary or backup protective device to be tripped, or the primary or backup device racked out or removed at least once per 7 days thereafter; or

b. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.3.1 All required containment penetration conductor overcurrent protective devices shall be demonstrated OPERABLE:

a. At least once per 18 months:

1.*,** For at least one 4.16 KV reactor coolant pump circuit, such that all reactor coolant pump circuits are demonstrated OPERABLE at least once per 72 months, by performance of:

(a) A CHANNEL CALIBRATION of the associated protective relays, and

(b) An integrated system functional test which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and control circuits function as designed.

* A one time extension to this surveillance requirement for inspection calibration and meggaring of the 1F 4KV Bus overload relays, which partially satisfies this surveillance requirement, is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance testing is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

** A one time extension to this surveillance requirement for inspection calibration and meggaring of the 1A, 1B, and 1C 460 transformer relays and CT's, which partially satisfy this surveillance requirement, is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance testing is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 222 TO FACILITY OPERATING LICENSE NO. DPR-70

PUBLIC SERVICE ELECTRIC & GAS COMPANY

PHILADELPHIA ELECTRIC COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

SALEM NUCLEAR GENERATING STATION, UNIT NO. 1

DOCKET NO. 50-272

1.0 INTRODUCTION

By letter dated January 15, 1999, as supplemented on March 31, 1999, Public Service Electric & Gas Company (the licensee) submitted a request for changes to the Salem Nuclear Generating Station, Unit No. 1, Technical Specifications (TSs). The requested changes would allow a one-time extension of the TS surveillance interval to the end of fuel Cycle 13 for certain TS surveillance requirements (SRs). Specifically, the amendment extends the surveillance interval in (a) SR 4.3.2.1.3 for the instrumentation response time and sequence testing of each engineered safety features actuation system (ESFAS) function; (b) SRs 4.8.2.3.2.f and 4.8.2.5.2.d for service testing of the 125-volt and the 28-volt DC distribution system batteries, respectively; (c) SR 4.8.2.5.2.c.2 for verification of the condition of the 125-volt DC battery connections; (d) SR 4.8.3.1.a.1.a and 4.8.3.1.a.1.b for channel calibration and integrated system functional test for containment penetration conductor overcurrent protection; (e) SR 4.1.2.2.c for verification that each automatic valve in the reactivity control system flow path actuate on a safety injection (SI) test signal; (f) SRs 4.3.1.1.1,Table 4.3-1, 4.3.2.1.1, Table 4.3-2, 4.3.3.5, Table 4.3-6, and 4.3.3.7, Table 4.3-11 for the channel calibration of the containment water level - wide range, the manual solid-state protection system (SSPS) functional input check, and the ESFAS manual initiation channel functional test; (g) SR 4.5.1.d for verification that each accumulator isolation valve opens automatically on an SI test signal; (h) SR 4.5.2.e.1 for verification that each automatic valve in the ECCS flow path actuates on an SI test signal; (i) SR 4.7.6.1.d.2 for verification that the control room emergency air conditioning system automatically actuates in the pressurization mode on an SI test signal or control room intake high radiation test signal; (j) SR 4.7.10.b for verification that each automatic valve in the chilled water loop actuates on an SI signal; and (k) SR 4.8.1.1.2.d.7 which requires a test to verify that each emergency diesel generator operates for at least 24 hours. Because of the length of the last outage and delays in restart, the SRs will be overdue prior to reaching the next refueling outage (1R13). The SRs are to be completed during the 1R13 outage, prior to returning the unit to Mode 4 (hot shutdown) upon outage completion. The amendment also makes some

administrative and editorial changes on some of the pages that will be affected by the above SR interval extensions. The March 31, 1999, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

On May 16, 1995, the licensee voluntarily shut down Salem Unit 1 to resolve concerns with the switchgear room supply fans and initiated a high-level review of the problems which led to the Unit 1 shutdown. Because of this issue and the problems resulting from the Salem Unit 2 reactor trip on June 7, 1995, that highlighted some long-standing equipment performance issues along with deficiencies in the licensee's performance relative to timely recognition and resolution of specific safety and technical concerns, a Confirmatory Action Letter (CAL) was issued on June 9, 1995, to confirm the licensee's commitment to maintain both Salem units in a shutdown condition pending completion of a number of actions. The resolution of these actions and other emergent issues were covered under the Salem Restart Plan. On April 1, 1998, the U.S. Nuclear Regulatory Commission (NRC) staff modified its CAL to allow the licensee to restart Salem Unit 1, and on April 7, 1998, the unit was made critical.

Although the required surveillance tests were performed during the extended shutdown, the licensee indicated that the length of the outage and delays in the unit restart will cause some of the surveillances to become due prior to reaching the next refueling outage that is currently scheduled to begin on September 18, 1999.

In its January 15, 1999, letter, the licensee requested a one-time extension of a number of TS surveillance intervals during fuel Cycle 13 to allow Salem Unit 1 to operate to the thirteenth refueling outage (1R13). The licensee stated that these surveillance requirements would be completed during the 1R13 outage, prior to returning the unit to Mode 4 upon outage completion.

ESFAS Time Response Testing

The ESFAS instrumentation is comprised of redundant sensors and logic and coincidence networks that actuate associated ESF equipment, motor starters, and valve operators. The ESF systems are tested periodically to provide assurance that the systems will function as designed and will be available in the event of an accident and/or loss of offsite power.

The safeguards equipment control (SEC) system is included in the logic networks. The SEC system includes a control electronic unit (ceu) that responds to a safety injection, blackout and voltage degradation or a combination of these signals. The SEC system accepts and combines accident and undervoltage input signals to select the proper mode of operation of the ESFAS. On the basis of the inputs, the SEC system provides the appropriate outputs for equipment loading.

In its January 15, 1999, letter, the licensee proposed to extend on a one-time basis the relay time response and sequence testing of the SEC system. The licensee has proposed extending the interval for completion of the 18-month surveillance requirement per TS 4.3.2.1.3 until the 1R13 refueling outage. Although TS 4.0.3 allows a 25 percent interval extension for scheduling, the licensee stated that service tests will become overdue for (a) the

1A SEC on September 19, 1999, (b) the 1B SEC on September 6, 1999, and (c) the 1C SEC on September 23, 1999. The licensee has stated that the response time testing of other portions of the ESFAS will not be overdue until after the start of 1R13.

The SEC system has the following test capability during power operation:

1. Check the operational capability of each bus undervoltage sensor and its input to the logic.

2. Check the operational capability of the Loss-of-Coolant Accident (LOCA) signal from the solid state protection system.

3. Check that the logic combinations of input signals result in proper operation of the various functions without actuation of any motors, and a verification of the timed loading sequence.

4. Check the output relay capability to actuate the driven equipment.

The SEC system has a self-test process which continually tests each sequencing circuit and the continuity of the output relay coils. If a problem is detected, the self-test will energize the local and control room alarms. The self-test feature alerts the operators to failures that could affect the operability of the SEC.

Response time testing of the ESFAS is required every 18 months in accordance with TS 4.3.2.1.3. The evaluation of the overall response time of each actuation function train is conducted per Salem Procedure S1.IC - TR.ZZ - 0002(Q), Revision 13, "Unit 1 Master Time Response." The response time testing of the specific portions of the ESFAS function train are performed under various implementing procedures. The test results are evaluated under these implementing procedures and then transcribed into the Master Time Response procedure to verify that the overall time response for the functional train from sensor to actuated device is within the acceptance criterion. In this regard, the response time for the SEC is tested under Maintenance Procedure S1.MD - ST.SEC-0001, "SEC - 18 Month Relay Time Response and Sequence Test."

In addition to the internal self-test feature for the SEC, the licensee has stated that a functional test is performed monthly on each SEC as added assurance of operability. During these tests, dummy test signals are injected and the timing and operability of all relays internal to the SEC are monitored.

The NRC staff found that the previous response time testing of the SECs has met the applicable acceptance criteria. Additionally, the other portions of each ESFAS function train have likewise met the acceptance criteria. Because of the continuous self-test feature for the SEC, the successful completion of the response time testing of the other portions of the ESFAS, and the prior test history of the SEC, the NRC staff finds that the proposed extension of TS 4.3.2.1.3 to the 1R13 refueling outage is acceptable. Further, the completion of this test during an appropriate outage period would prevent the possibility of causing an inadvertent actuation should the test be attempted during power operation.

125-Volt DC Distribution System Batteries

The 125-volt DC (VDC) distribution system includes three 125-volt batteries that are individually connected to the three 125-VDC buses. The 125-VDC buses supply power for operation of 13 KV, 4160 volt, and 460-volt switchgear, annunciators, station essential control inverters, emergency lighting, communications, turbine generator emergency auxiliaries, and the vital instrument bus inverters. During normal operation, these loads are fed by battery chargers powered from the 250-VDC subsystem with the 125-VDC batteries on a float charge. The 125-VDC batteries provide power to the loads if power from the chargers is lost. If a loss of offsite power (LOOP) occurs, the battery chargers are energized from the emergency diesel generators (EDGs).

With regard to the batteries, the TSs detail a series of measurements, inspections, and tests that verify the operability of the batteries. The 18-month battery service test is conducted during shutdown to verify its capability to supply and maintain emergency loads operable for the design duty cycle. This is a test of the as-found battery's ability to satisfy the duty cycle. Since the service test is conducted on a regular basis, it also reflects the maintenance practices that the battery has received. The licensee stated that in order to conduct the 18-month surveillance test, the entire 125-VDC train will be tagged out resulting in the associated EDG being unable to start in the event of a LOOP event.

The licensee proposed extending the interval for completion of the 18-month service tests for 125-volt batteries until the 1R13 refueling outage. Although TS 4.0.3 allows a 25 percent interval extension for scheduling, the licensee stated that service tests will become overdue for (a) the 1A battery on June 4, 1999, (b) the 1B battery on September 4, 1999, and (c) the 1C battery on August 21, 1999.

The licensee stated that the service test for each battery was conducted twice during the extended shutdown and that the results from these tests indicate that the batteries were capable of meeting the design requirements of the systems to which they are connected. In addition, a review of the actual test results showed that the batteries showed no signs of degradation, nor had trends developed that indicated the batteries would not remain above the required limit until the next test is performed. The IEEE Standard 450, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Application," defines degradation as being indicated when the battery capacity drops more than 10 percent from its capacity on the previous performance test, or is below 90 percent of the manufacturer's rating.

The Salem Unit 1 125-VDC batteries were placed in service in November 1987, January 1988, and October 1997, for batteries 1A, 1B, and 1C, respectively. The capacity factors found during previous testing were between 109.5 and 115.7 percent of the manufacturer's specified rating. The NRC staff reviewed the results of the last service tests conducted during the extended outage and found that (a) the results of the service test on each battery was acceptable, and (b) the minimum observed battery terminal voltages at each point in the load profile when compared to the initial performance test indicated that the batteries were above the manufacturer's rating.

Since the battery shows no signs of degradation and the trend information shows that the battery should deliver a capacity above that necessary for its duty cycle, the licensee's weekly and quarterly testing and performance monitoring will provide assurance that the battery condition and performance will not deteriorate during the deferral period. Industry experience for similar batteries on 24-month cycles also supports this determination. Therefore, the NRC staff finds the proposed one-time extension of the 18-month service test surveillance interval to be acceptable.

28-Volt DC Distribution System Batteries

The 28-VDC distribution system supplies power to the auxiliary control system relay cabinets for manual control of ESF equipment and non-safety related equipment and to the status recorder panel RP4 in the main control room. During normal operation, DC power is supplied by the battery chargers with the batteries floating on the system. If power from the chargers is interrupted, power to the loads is drawn from the batteries. If a LOOP event occurs, the battery chargers are energized from the EDGs.

As with the 125-VDC batteries, the licensee has stated that the service test for each battery was conducted twice during the extended shutdown and that the results from these tests were satisfactory. Including the 25 percent allowance for scheduling, the 28-VDC battery tests would become overdue on July 22 and November 4, 1999, for the 1A and 1B batteries, respectively. A review of the actual test results showed that the batteries showed no signs of degradation and trends indicated that the batteries would remain above the required limit until the next test is performed.

The Salem Unit 1 28-VDC batteries were placed in service in March 1989. The capacity factor for each battery as found during the prior performance testing was 115 percent of the manufacturer's specified rating. The NRC staff reviewed the results of the last service tests conducted during the extended outage and found that (a) the results of the service test on each battery was acceptable, and (b) the minimum observed battery terminal voltages at each point in the load profile when compared to the initial performance test indicated that the batteries were above the manufacturer's rating.

Since the battery shows no signs of degradation and the trend information shows that the battery should deliver a capacity above that necessary for its duty cycle, the licensee's weekly and quarterly testing and performance monitoring will provide assurance that the battery condition and performance will not deteriorate during the deferral period. Industry experience for similar batteries on 24-month cycles also supports this determination. Therefore, the NRC staff finds the proposed one-time extension of the 18-month service test surveillance interval to be acceptable.

The licensee has also proposed to similarly extend the surveillance period for TS 4.8.2.5.2.c.2 which requires the verification that the cell-to-cell and terminal connections on the 28-VDC batteries are clean, tight, and coated with anti-corrosion material. The NRC staff finds that the quarterly inspection of these batteries per Salem Maintenance Procedure SC.MD-ST.28D-003Q, Revision 9, dated November 14, 1997, "Quarterly Inspection and Preventive Maintenance of 28-Volt Batteries," verifies the condition of the terminals and the anti-corrosive coatings. If major corrosion and lack of anti-corrosion coating are found, the terminal posts are

required to be cleaned and regreased. Also, other attributes are observed to verify the physical condition of the batteries. Therefore, the NRC staff finds that the one-time extension of the 18-month surveillance requirement is acceptable.

Containment Penetration Conductor Overcurrent Protection

The containment electrical penetrations/conductors are protected by deenergizing circuits which are not required for reactor operation and by ensuring the operability of primary and backup overcurrent protective devices through periodic testing. In this regard, SR 4.8.3.1 requires every 18 months that containment penetration conductor overcurrent protective devices be demonstrated operable by performance of channel calibration of associated protective relays and an integrated system functional test. However, for the 4.16 kV reactor coolant pump (RCP) circuit, at least one 4.16 kV RCP circuit needs a channel calibration and functional test once per 18 months (such that all RCP circuits are demonstrated operable at least once per 72 months). Thus, the licensee has indicated that the 1F 4 kV Bus Overload Relays will become overdue on September 1, 1999.

The licensee has also stated that the 460 VAC transformer overload relays and current transformers (CTs) that are part of the 1A, 1B, and 1C 4.16 kV vital bus breaker cubicles and associated with the power supplies to the containment fan cooler units (and are also used for overcurrent protective devices for electrical penetrations) will likewise become overdue on May 26, August 4, and July 8, 1999, for transformers 1A, 1B, and 1C, respectively.

The licensee stated that the surveillance inspection work orders covering the channel calibration and functional testing of these protective devices were reviewed and the as-found test data were within the acceptance criteria. Furthermore, during discussions with the licensee's electrical engineering organization, the licensee indicated that no corrective action requests were identified through the material history review of this equipment. The licensee also reviewed the relay manufacturer's service information bulletins and found no problems with the relays used at Salem Units 1 and 2.

On the basis of the observed reliability and stability of the circuit protective relays and the good maintenance history of the relays and CTs, the one-time extension of the channel calibration is acceptable. Also, because of this and the short duration of the proposed extension, the one-time extension of the functional test is acceptable and will not impose a risk to safe plant operation.

Containment Water Level Instrument

Two channels of containment liquid level (water level-wide range or sump level) are available as indications for the plant operators during post accident conditions. The containment water level instruments provide indication and alarm functions but no automatic control functions. These instruments are GEMS TransAmerica Delaval Model XM-54855 float-type level devices.

SR 4.3.3.7 requires that each accident monitoring instrumentation channel be demonstrated operable by performance of, in part, channel calibration operations. For the two channels of containment water level - wide range, channel calibration is required at least once per 18 months as stated in Table 4.3-11, item 17. The licensee indicated that these instrument

(1LT938 and 1LT939) channels were calibrated during the second half of 1997 and therefore, would be overdue on August 18 and 28, 1999, for 1LT938 and 1LT939, respectively.

The licensee stated that a review of the containment sump level data from the Safety Parameter Display System (SPDS) showed a maximum deviation from the mean of less than 0.2 percent compared to an allowed value of 1.44 percent. The NRC staff reviewed a sample of the data and found that the data supported the licensee's stated instrument deviation.

Because of the limited period of the surveillance interval extension and the observed stability of these instruments, the NRC staff finds the one-time extension of the surveillance interval for the channel calibration of the containment water level instruments to be acceptable.

In its March 31, 1999, letter, the licensee withdrew the request for the one-time extension of the surveillance interval for the channel calibration of the pressurizer water level instrument per TS Table 4.3-1 item 11. The licensee performed this calibration on March 2, 1999, during a short outage of Salem Unit 1.

Functional Testing Associated with Safety Injection Signal Test

The licensee has proposed a one-time extension of several SRs that are satisfied by the performance of the manual safety injection (SI) channel functional test required by TS 4.3.2.1.1, Table 4.3-2, item no. 1.a. The licensee stated that the manual SI test was last performed during the second half of 1997 and would become overdue September 16, 1999. This test can only be performed during shutdown in modes 5, 6, or defueled.

The manual solid-state protection system (SSPS) functional input check per SR 4.3.1.1.1, Table 4.3-1, Note (4), is required to be completed every 18 months. However, portions of this system are checked during other surveillance tests conducted every two months. The licensee stated that the automatic logic portion of the system verifies functionality and continuity to the output slave relays. Further, the ESF SSPS slave relays are also tested every two months to verify their operation and to check continuity to the final control element on the safety equipment. In this regard, there is an overlap between these tests in that continuity of the safeguards output relay coils is checked by the logic testing, and these coils are energized during the ESF SSPS test. The manual SI test only provides the additional actual verification of operation of the final control element and actuated safety equipment.

SR 4.1.2.2.c verifies that each automatic valve in the reactivity control system flow path actuates on an SI test signal. SR 4.5.2.e.1 verifies that each automatic valve in the ECCS flow path actuates on an SI test signal. SR 4.7.6.1.d.2 verifies that the control room emergency air conditioning system (CREACS) automatically actuates in the pressurization mode on an SI test signal or control room intake high radiation test signal. SR 4.7.10.b verifies that each automatic valve in the chilled water loop actuates on an SI signal.

The licensee has reviewed the results of the last three performances of the manual SI test used to satisfy the above surveillance requirements. The licensee has stated that no failure of a final control element or actuated component occurred during the tests. With regard to SR 4.7.6.1.d.2 for the CREACS test, the system was tested on July 11, 1998, in response to the

control room high radiation test signal that further verifies the ability of this system to align properly if required.

Because of the successful performance during previous testing, the limited length of time that the SR intervals will be extended, and the bimonthly testing of the logic and actuation circuitry, the NRC staff finds that the one-time extension of these SRs to the 1R13 refueling outage is acceptable.

ECCS Accumulator Isolation Valves

As part of the ECCS, there are four ECCS accumulator tanks, one connected to each RCS cold leg, that are available to passively inject borated water into the RCS during a large break loss of coolant accident. During normal operation, the accumulator tanks are pressurized to about 600 psig with nitrogen gas. Although a remotely operated valve can isolate the accumulator during plant cooldowns, it is open (with its actuator in power lockout) during normal plant operations. In particular, TS 3.5.1 requires the isolation valves to remain open during modes 1, 2, and 3.

SR 4.5.1.d requires that at least once every 18 months each accumulator isolation valve be verified to open automatically on an SI test signal. The accumulator isolation valves were last tested during the manual SI test conducted in the second half of 1997 and would become overdue on September 18, 1999.

Because the accumulator isolation valves are in the required safety position (open), the period of the surveillance interval extension is short, and the test would require a plant shutdown and cooldown, the NRC staff finds the one-time extension of SR 4.5.1.d to be acceptable.

Emergency Diesel Generator 24-hour Endurance Test

The 4160-volt subsystem of the on-site AC electrical power system consists of three vital sections, two circulating water sections, and four non-vital group sections. The vital and circulating water section buses are normally powered from the nos. 13 and 14 station power transformers. In the event of a LOOP, three emergency diesel generators will automatically start and repower the vital buses. The EDGs have a continuous rating of 2600 kilowatts. The short-term ratings are: 2000 hours of 2750 kW, 2 hours of 2860 kW, and ½ hour of 3100 kW. The EDGs are capable of supplying power for the safe shutdown of the unit. Any two of the three EDGs can supply sufficient power for operation of the safety equipment during a design basis event coincident with a loss of offsite power.

In order to demonstrate that each EDG remains operable, the TSs require the completion of surveillance test requirements. In addition to monthly and semiannual operational tests in accordance with TS 4.8.1.1.2, TS 4.8.1.1.2.d.7 requires that the EDG be operated for at least 24 hours at least once per 18 months during shutdown. During the first 2 hours of this test, it is loaded to 2760-2860 kW. During the remaining 22 hours, it is loaded to 2500-2600 kW.

The licensee stated that the 24-hour endurance runs of the Salem Unit 1 EDGs were performed during the second half of 1997. Specifically, the tests will become overdue on July 19, August 13, and July 20, 1999, for EDG Nos. 1A, 1B, and 1C, respectively. The licensee

also stated that the results of the last 21 endurance runs were reviewed. Although some problems were noted during three of these tests, the problems were of a nature that they did not affect the completion of the load run. In February 1998, a Salem Unit 2 EDG experienced catastrophic failure of its turbocharger. Subsequent failure analysis showed that this was an isolated occurrence, and the root cause was not attributed to a potential common mode failure of the turbochargers.

The licensee has shown that the overall reliability of the EDGs has satisfied the requirements of the Maintenance Rule. The reliability has remained above 97.5 percent. The licensee has also reviewed the results of the other surveillance requirements, such as the monthly 1-hour load tests, and found them to be satisfactory.

On the basis of the overall reliability of the EDGs and the satisfactory results of the periodic operational testing, the NRC finds the one-time extension of SR 4.8.1.1.2.d.7 to be acceptable.

Summary

The NRC staff finds that the proposed one-time extension of the surveillance intervals in SRs 4.1.2.2.c, Table 4.3-1 Note (4), 4.3.2.1.3, Table 4.3-2 item 1a, Table 4.3-6 item 2, Table 4.3-11 items 4 and 17, 4.5.1.d, 4.5.2.e.1, 4.7.6.1.d.2, 4.7.10.b, 4.8.1.1.2.d.7, 4.8.2.3.2.f, 4.8.2.5.2.c.2, 4.8.2.5.2.d, and 4.8.3.1.a.1 until completed during the 1R13 refueling outage is acceptable.

Administrative and Editorial Changes

The licensee has proposed to make several administrative and editorial changes. Specifically, the licensee proposed to capitalize the defined terms used in TS 3/4.7.10 to be consistent with TS Section 1.0. In TS Table 4.3-11, the licensee proposed to change the abbreviations for "not applicable" from "N/A or NA" to "N.A." and the abbreviation for "startup" from "SU#" to "S/U#." Additionally, the surveillance interval specified in TS Table 4.3-11 item 15, for the channel calibration of Containment Pressure - Narrow Range was proposed to be changed from "not applicable" (N.A.) to "every 18 months" (R) to coincide with the licensee's current instrument calibration practice. The licensee believed that this was a typographical error created in Salem Unit 1 Amendment No. 79. Lastly, the licensee proposed to change the column heading in TS Table 4.3-1 from "CALIBRATION" to "CHANNEL CALIBRATION" to be consistent with the terminology used in TS 4.3.1.1.1.

The NRC staff finds that these changes are minor in nature and improve the consistency within the TS sections. Thus, the NRC staff finds these changes to be acceptable.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes

surveillance requirements. The NRC staff has determined that the amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding (64 FR 6709). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (c)(10). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: P. Milano

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