

U. S. NUCLEAR REGULATORY COMMISSION,
REGION I

DOCKET/REPORT NOS: 50-354/94-10
50-272/94-12
50-311/94-12

LICENSEE: Public Service Electric and Gas Company (PSE&G)
Hancocks Bridge, New Jersey

FACILITY: Hope Creek Nuclear Generating Station
Salem Nuclear Generating Station, Units 1 & 2

DATES: April 4-8, 1994 (Hope Creek)
April 18-22, 1994 (Salem)

INSPECTOR:



Ralph Paolino, Sr. Reactor Engineer
Electrical Section
Division of Reactor Safety

19 May '94
Date

APPROVED BY:



James Trapp, Acting Chief
Electrical Section
Division of Reactor Safety

5-19-94
Date

Areas Inspected: This was an announced safety inspection to review the overall adequacy and implementation of the Hope Creek fire protection program, and to determine the adequacy of Salem's resolution of previously identified unresolved Appendix R issues reported in NRC Inspection Report Nos. 272/311-93-80.

Results: The inspector's review of the fire protection program determined that the Hope Creek fire protection program was good. Control of combustibles and ignition sources was good. The facility tour noted adequate housekeeping, and good maintenance and surveillance of firefighting equipment and materials. Firewatch and general brigade training was good. Fire brigade members observed during a practice drill appeared well prepared and demonstrated proper skills in suppressing simulated fires.

Salem's evaluation and analysis of three previously identified unresolved Appendix R issues were acceptable. These items were closed. Closure for two of the three Appendix R items was based on adequately implementing Salem's alternate shutdown methodology. However, it should be noted that the final resolution of certain issues identified during the May 1993 inspection (50-272/311-93-80) may impact the acceptability of the methodology developed by Salem to achieve safe shutdown conditions from outside the control room. These issues, currently under review by the NRC, include hot shutdown repairs, single spurious operations, and electrical isolation (transfer switches).

DETAILS

1.0 FIRE PROTECTION/PREVENTION PROGRAM (64704)

1.1 Scope

An inspection was performed at Hope Creek to review areas important to health and safety of the public and to determine if the licensee had adequately maintained and implemented a fire protection/prevention program consistent with the fire hazard analysis (FHA), final safety analysis report (FSAR), and the technical specifications (TS). The inspection included verification of procedure implementation, technical adequacy of the fire program and procedures, inspection of plant facilities, fire brigade qualification and training, and review of licensee quality assurance audit findings. Surveillance tests and inspections related to fire protection were also reviewed with respect to administrative requirements. In addition, previously identified unresolved Appendix R items were reviewed to determine the adequacy of Salem's resolution and corrective actions. Attachment 2 identifies the documents selectively reviewed during this inspection.

2.0 PROGRAM ADMINISTRATION AND ORGANIZATION

2.1 Organization

Responsibility for the overall fire protection program was shared by the site protection and the engineering and plant betterment (E&PB) groups. Both of these groups have well-motivated and dedicated staffs who were well qualified to maintain the fire protection program. The site protection responsibility includes firefighting, development of procedures, and implementing of procedures and plant inspections. Site protection personnel also respond to medical emergencies and perform plant inspections involving combustible material controls, hot work permits, and fire equipment surveillance and testing. The E&PB group was responsible for design, plant modifications, and regulatory compliance issues.

The inspector noted that there was a good working arrangement between the site protection and E&PB groups. The overall effectiveness of the fire protection program was evident in the dedication of the fire protection staff.

2.2 Administration

The inspector reviewed Hope Creek Procedure No. NC.NA-AP.ZZ-0025 (Q), Revision 3, "Nuclear Department Operational Fire Protection Program," and other applicable documents listed in Attachment 2 to determine that:

- personnel were designated for implementing the fire protection program;
- qualifications were delineated for personnel designated to implement the program;

- periodic inspections of the plant were specified to verify compliance with fire protection program requirements;
- fire reporting instructions for general plant personnel were defined;
- periodic audits were conducted on the entire fire protection program;
- fire protection/prevention program was included in the licensee's quality assurance program;
- work authorization or similar arrangement was provided for review and approval of qualifications and maintenance activities, which could adversely affect fire protection and safety of the facility; and
- fire brigade organization and qualification of brigade members were delineated.

The inspector concluded that the administrative controls for the fire protection program were detailed, and provided adequate guidance for implementing and maintaining the fire protection program.

3.0 ADMINISTRATIVE CONTROL OF COMBUSTIBLE AND IGNITION SOURCES

The inspector reviewed the Hope Creek Administrative Procedure No. NC.NA-AP.ZZ-0025 (Q), "Nuclear Department Operational Fire Protection Program," dated January 11, 1994, to verify that a program for control of combustible materials and ignition sources was established, and included the following attributes:

- authorization was required for the use of combustible, flammable, or hazardous materials in safety-related areas;
- the storage of combustible materials in safety-related areas was restricted and controlled;
- all wastes, debris, rags, oil spills, or other combustible materials were removed upon completion of the work activities or the end of the shift, whichever is sooner;
- housekeeping was properly maintained in areas containing safety-related equipment and components;
- smoking in safety-related areas was prohibited, except where "Smoking Permitted" areas had been specifically designated by management; and

- requirements have been established for special authorization (permits) for activities involving welding, cutting, grinding, open flame or other ignition sources, and that they were properly safeguarded in areas containing safety-related equipment and components.

Based on the procedures review and the facility tour, the inspector concluded that there was an appropriate system in place that was effectively implemented to control combustible materials and ignition sources.

4.0 BRIGADE TRAINING

The inspector performed a review of Hope Creek training documents to determine whether the licensee developed procedures that included:

- requirements for announced and unannounced drills;
- requirements for a minimum of two drills per year for each brigade member;
- requirements for maintenance of training records; and
- requirements for fire brigade training and refresher training at prescribed intervals.

The inspector's review found that the above requirements were delineated in Procedure No. ND.FP-AP.ZZ-0009(Q), Revision 0, "Fire Department Training Program," dated April 20, 1993; NC.NA-AP.ZZ-0014(Q), Revision 2, "Training, Qualification, and Certification," dated September 12, 1993, and in other applicable documents listed in Attachment 2. Qualified status and training records for 1993 fire brigade members and firewatch personnel were reviewed by the inspector. Records indicated that all members attended the required quarterly training, participated in quarterly drills, received hands-on fire extinguishment practice, and received routine qualification reviews for continued brigade membership. The lesson plans and student handouts reviewed by the inspector, listed in Attachment 2, were comprehensive and contained the appropriate level of detail for the subject.

5.0 FACILITY TOUR

During this inspection, the inspector walked down accessible vital and non-vital areas of the Hope Creek facility and visually inspected fire protection water suppression systems, fire extinguishers, fire pumps, fire water piping and delivery systems, post-indicator valves, fire hoses, and contents of fire houses. The inspector observed general housekeeping conditions and randomly checked inspection tags on portable fire extinguishers to verify that the required monthly surveillance inspections were performed. The inspector noted that there was no deterioration of firefighting equipment, tank gauges registered full, hoses had recently tested date stamps, battery-powered lights functioned as required, and firefighting clothing

was in acceptable condition. In addition, based on interviews with firefighting personnel, the inspector concluded that licensee personnel were aware of the station policy and procedure requirements for firewatches and response to fires.

During the walk-through, the inspector observed that the water suppression systems sprinkler splash shields were loose at a number of locations in the cable spreading room. The splash shields are used to deflect cold water sprayed from the upper sprinklers onto the lower sprinkler heads. The spray from above could cool the lower sprinkler heads unintentionally and prevent their actuation. The site fire protection personnel took immediate corrective action to correct the discrepancy. The licensee stated that they were in the process of replacing the pie pan-type splash shields with a flat plate shield. The licensee committed to completing the splash shield replacement by July 1, 1994.

The inspector concluded that the corrective actions by the licensee were acceptable. The inspector determined that these actions would alleviate spray from the upper heads adversely affecting lower head operation.

6.0 FIRE PROGRAM AUDITS

The inspector reviewed the quality assurance biennial and triennial fire protection audits of the fire protection program to ascertain whether the audits were conducted in accordance with the technical specifications (TS). The inspector noted that the audit findings and observations were adequate to meet the requirements of the technical specifications. The audits indicated that Hope Creek demonstrated good control of the overall fire protection program. Audit 93-032 identified several fire doors that did not self-close. It appears that the fire doors were affected by the ventilation systems, which were adjusted by fire protection personnel as identified. Discussions with the site protection indicate this was a recent problem with Hope Creek, but continues to be a problem at the Salem site due to the inability of the doors to self-close because of pressure differentials of the ventilation system. Compensatory measures were in place at Hope Creek and Salem, consisting of hourly surveillances performed by site protection firewatch personnel and closure of doors that do not self-close. A task force was in place to evaluate the deficiency and make recommendations to correct and/or eliminate the problem.

Based on the above review, the inspector concluded the audits were detailed, comprehensive, and well managed. The inspector determined the compensatory measures taken by the licensee for the fire doors were adequate, pending completion of task force recommendations. The inspector concluded in the audit report conclusion that no conditions were observed that would threaten the safe and reliable operation of Hope Creek Station.

7.0 SURVEILLANCE TESTING OF FIRE SYSTEMS AND EQUIPMENT

Completed fire protection surveillance tests were selected from the Hope Creek records department to determine whether the required test or surveillance was performed in accordance with established procedures and at the required frequency.

The inspector reviewed the monthly fire pump test results for the first quarter of 1994. The inspector concluded that the fire pumps met the operating requirements of the applicable procedure, and determined that the fire pumps were tested at the required frequency.

The inspector reviewed the test results of the manual and automatic water suppression systems. The test data for these water suppression systems indicated the fire-sensing devices were functional and that the wet pipe, pre-action, and deluge systems were operational. The inspector verified that both the automatic and manual fire water suppression systems were tested at the required frequency.

The inspector evaluated the gaseous fire suppression systems that were used to protect sensitive electrical equipment at Hope Creek. For this inspection, the inspector selected the Hope Creek control room. The selection was considered representative of similar installations. The inspector verified that the Halon and CO₂ systems were operational, and that applicable procedure requirements (listed in Attachment 2) were met. Records indicated that the systems were tested at the required frequency.

The inspector determined that the site protection group was effectively implementing this phase of the fire protection program. The surveillances were completed in accordance with established procedures and at the specified frequency.

8.0 FIREWATCH

Training for firewatch personnel is provided in accordance with Lesson Plan M10-TNS-0303. The inspector reviewed the lesson plan to determine whether firewatch personnel received adequate training to perform the assigned task. The lesson plan was a detailed and comprehensive document. The plan contained instructions on fire behavior, fire extinguishment and control, firewatch duties and responsibilities, and reporting requirements. Additional training was provided on the type and use of fire extinguishers, including hands-on training with fire extinguishers. Upon completion of the training, each person was certified to perform firewatches.

During the facility tour, several firewatch personnel, encountered enroute through the Hope Creek facility, were interviewed. The inspectors determined that the firewatch personnel were knowledgeable and familiar with their assignments. The inspector determined that the training was adequate for the assigned task.

9.0 STATUS OF PREVIOUSLY-IDENTIFIED UNRESOLVED ITEMS

9.1 (Closed) Unresolved Item No. 50-272/311-93-80-04 Pertaining to Failure to Provide Time Line Analysis used to Evaluate Alternate Shutdown Capability for an Appendix R Fire Scenario.

The NRC Appendix R inspection team identified that time line analyses were not used to evaluate the alternate shutdown capability for the Appendix R fire scenarios. The licensee stated that a time line analyses would be performed to address this concern.

The inspector reviewed the Salem Engineering Evaluation S-C-ZZ-NEE-0839, dated December 8, 1993. The engineering evaluation expands upon an original analysis performed by the TERA Corporation (DC-86-219) by providing the detailed action and time response for a single unit. The original timeline analysis was performed to demonstrate the capability of placing Salem Units 1 and 2 in a natural circulation cooldown to cold shutdown (CSD) condition, using the minimum operations staff, as specified by the technical specification (TS) given a control room fire.

The time line analysis provided by S-C-ZZ-NEE-0839 focused on the first two hours of the fire, as they were the most restrictive from a manpower loading viewpoint. The time line analysis demonstrated the ability to achieve a safe shutdown condition following a control room evacuation, using Operations Procedure No. SI(2).OP-AB.CR-0002(Q).

The inspector concluded that the time line analysis had been developed and used to evaluate the alternate shutdown capability for the Appendix R fire scenarios. This item is closed.

9.2 (Closed) Unresolved Item No. 50-272/311-93-80-05 Pertaining to the Time Required to Bring the Salem Plant to Cold Shutdown Conditions from Hot Shutdown in the Event of an Appendix R Fire.

During the May 17-26, 1993, Appendix R inspection (Report Nos 50-272/311-93-80) at Salem, the inspection team was concerned with the plant's ability to achieve cold shutdown conditions within 72 hours, as required by Section III.6 of 10 CFR 50, Appendix R.

The inspector reviewed the Salem analysis and calculation, S-C-ZZ-NDC-1315, which was generated to demonstrate that the Salem plant could be brought to cold shutdown within 72 hours, in the event of an Appendix R fire. Eight separate cases (two for normal shutdown and six for alternate shutdown) were developed that reflect the safe shutdown capability, as contained in Salem's safe shutdown analysis and abnormal operating procedures. The assumptions used to develop each case were adequately described and reasonable. The most limiting case for normal shutdown was the Case A.1, which assumed that a loss of offsite power occurred coincidentally with a reactor trip, reactor coolant pump (RCP) trip, and feedwater isolation. This case used one train of residual heat removal (RHR), component cooling water (CCW) (one pump), and service water trip to bring the reactor to cold

shutdown. The inspector confirmed that the RHR initiation time of 19 hours and 20 hours to reach 200°F from hot shutdown conditions; the total cooldown time required to reach cold shutdown condition was 39 hours, well within the required time of 72 hours.

The most limiting condition for the alternate shutdown was Case Item B.6, which assumed a loss of offsite power coincident with a reactor trip, RCP trip, and feedwater isolation. With an RHR initiation time of 25 hours, the total cooldown time to reach cold shutdown, was 28 hours.

This item is closed based on adequate implementation of Salem's alternate shutdown methodology, as stipulated in the control room Evacuation Procedure S2.OP-AB.CR-0002(Q), Rev. 3, to achieve and maintain cold shutdown conditions within 72 hours. However, the final resolution of certain issues, identified as a result of the May 1993 inspection (50-272/311-93-80), may impact the acceptability of the methodology developed by Salem to achieve safe shutdown conditions from outside the control room. These issues, currently under review by the NRC, include hot shutdown repairs, single spurious operation, and electrical isolation (transfer switches).

9.3 (Closed) Unresolved Item No. 272/311-93-80-09 Pertaining to the Lack of Electrical Protection for Non-Essential Circuits.

Sections III.G and III.L of 10 CFR 50, Appendix R, require protection for associated non-safety circuits that could prevent operation or cause malfunction of systems necessary to achieve and maintain hot shutdown. Review of the electrical protection provided for a small sample of nonessential cables, which share a common enclosure with cables of equipment required to achieve post-fire safe shutdown, identified an example of inadequate electrical protection for the size and type of cables reviewed.

The inspector reviewed Salem's engineering evaluation, S-C-230-EEE-0837, Revision 1, that evaluated the 230 Vac cable group (#12-AWG and #14-AWG) based on protection provided to the cable by their current breakers from reaching damage or ignition temperatures. The objective of the evaluation was to determine whether cable insulation heating, due to a fault on one cable, could effect other cables routed with it in the same tray. The area of concern was whether the protective devices associated with the services (within the scope of the calculation) would interrupt a short circuit before the ignition temperature of the cable was reached.

In this analysis, for faults with a duration of up to 10 seconds, short-circuit withstand curves for #12-AWG and #14-AWG cables were established for conductor temperatures of 250°C (insulation damage) to 410°C (ignition temperature).

Of the 333 cables (175 in Unit 1 and 158 in Unit 2) evaluated by PSE&G, 65 resulted in no damage to faulted cables or adjacent cables; 254 make up the remaining categories, and 14 involved spared cable. Of those that make up the remaining categories, 81 were susceptible

to short-circuit damage; 123 cables were susceptible to overload damage; and 50 were subject to both the short-circuit and overload. Of the 333 cables, 184 required some type of modification. Recommended corrective action included replacement of circuit breakers, the addition of fuses, replacement of tray barrier wraps, and replacement or adjustment of thermal overload devices.

The scheduled completion dates for the proposed corrective actions is the twelfth (IR/12) refueling outage for Unit 1 and the eighth (2 R/8) refueling outage for Unit 2.

Based on the above review and review of S-C-230-EEE-0870, Revision 1, the inspector determined that these completion dates were acceptable. The inspector concluded that the deficiency in cable protection did not create any safe shutdown concerns. This was evident from the following key factors:

- Safe shutdown can be accomplished with two out-of-three buses being functional. The inspector confirmed that this deficiency would not affect more than one bus because of the electrical separation requirement; and
- A single failure, such as a "locked rotor" or "high impedance" fault condition must occur to cause cable ignition. The inspector verified that this condition could not occur to more than one channel due to a single failure.

The inspector concluded that the licensee's evaluation was appropriate, and that hot shutdown could be achieved and maintained based on the demonstrated level of electrical protection. This item is closed.

10.0 EMERGENCY BATTERY POWERED LIGHTING

In reviewing the final safety analysis report (FSAR), the inspector noted that Section 9.5.3.1 states, in part, that, "the emergency lighting battery supports are designed to withstand seismic forces." Data to support the FSAR statement was not available for all emergency lighting installations. An inspection of several emergency battery lighting installations (EBL) indicated two types of supports were used. The Appendix R EBL units were installed on steel support brackets, while the remaining EBL installations used the emergency lighting metal enclosure for mounting.

Generic Letter 86-10, Section 7.2, states, in part, that, "Worst-case fire need not be postulated to be simultaneous with nonfire-related failures in safety systems, plant accidents, or the most severe natural phenomena."

The inspector reviewed Discrepancy Report (DEF) No. 94-00051, dated April 11, 1994, that references a Civil Calculation No. 650-1717 that indicates the emergency lighting battery supports could be either Seismic Category 2 or non-seismic, depending on location.

Based on these two documents, the licensee concluded that there was no requirement for seismic integrity of the emergency lighting battery supports. However, based on conservative assumptions, the Calculation 650-1717 demonstrated that only the Appendix R emergency battery lighting with steel support bracket design was capable of withstanding the seismic forces for this location. The licensee committed to revising the FSAR statement to address Appendix R emergency lighting only.

The inspector also reviewed Salem's emergency battery-powered lighting surveillance procedures (Attachment 2), and noted that the licensee has established a new procedure [S2.FP-ST.LTS-0070(Q), Revision 0, dated February 7, 1994] to perform the eight-hour functional test. Vendor documents reviewed by the inspector indicated the Exide Models F-100 and B-200, installed at Salem, were tested for periods of time in excess of eight hours. All other surveillance tests were performed within the stated frequency period.

11.0 UNRESOLVED ITEMS

Unresolved items are matters about which additional information is necessary to determine whether they are acceptable, a deviation, or a violation. Several unresolved items are discussed in detail under Section 9.0.

12.0 EXIT MEETING

The inspectors met with licensee representatives, denoted in Attachment 1 by an asterisk (*), at the conclusion of the Hope Creek inspection on April 8, 1994, and at the conclusion of the Salem inspection on April 22, 1994. The licensee agreed with the findings as stated at the exit meeting.

ATTACHMENT 1

Persons Contacted

Public Service Electric and Gas Company (Hope Creek)

- * R. Bashall, Fire Protection & Seal Penetration Supervisor
- * R. Beckwith, Station Licensing Engineer
- R. Braddick, Fire Protection Engineer (E & PB)
- * J. Clancy, Technical Manager
- M. Gray, Licensing Engineer
- * J. Kerin, Senior Fire Protection Supervisor
- * T. McIlvaine, Fire Protection Supervisor
- * J. Miller, Fire Protection Supervisor
- P. Moeller, Site Protection

Note: Personnel identified with an asterisk (*) were present at the exit meeting of April 8, 1994.

Public Service Electric & Gas Company (Salem Units 1 &2)

- * J. Bailey, Nuclear Engineering Sciences Manager
- * R. Beckwith, Station Licensing Engineer
- L. Hajos, Electrical Engineering Supervisor
- * J. Kerin, Senior Fire Protection Supervisor
- * Wm. McDevitt, Senior Staff Engineer (EAG)
- * R. Pande, Senior Staff engineer (EAG)
- * R. Rose, Electrical Lead Designer (EAG)
- P. Sharp, Nuclear Engineer
- * P. Steinhauer, Supervisor - Engineering Assessment Group (EAG)

Note: Personnel identified with an asterisk (*) were present at the exit meeting of April 22, 1994.

ATTACHMENT 2

Documents Reviewed

Nuclear Administrative Procedures (Common)

- NC.NA-AP.ZZ-0002(Q), Revision 0, "Nuclear Department Organization," issued May 7, 1992
- NC.NA-AP.ZZ-0008(Q), Revision 5, "Control of Design and Configuration Change, Tests, and Experiments," issued August 25, 1993
- NC.NA-AP.ZZ-0009(Q), Revision 5, "Work Control Process," issued January 28, 1993
- NC.NA-AP.ZZ-0011(Q), Revision 2, "Records Management Program," issued September 13, 1993
- NC.NA-AP.ZZ-0012(Q), Revision 3, "Technical Specification Surveillance Program," issued September 13, 1993
- NC.NA-AP.ZZ-0013(Q), Revision 1, "Control of Temporary Modifications," issued May 7, 1992
- NC.NA-AP.ZZ-0014(Q), Revision 2, "Training, Qualification, and Certification," issued September 12, 1993
- NC.NA-AP.ZZ-0033(Q), Revision 1, "Scaffolding and Transient Loads Control," issued March 17, 1994
- NC.NA-AP.ZZ-0025(Q), Revision 3, "Nuclear Department Operational Fire Protection Program," issued January 11, 1994
- NC.NA-AP.ZZ-0031(Q), Revision 1, "Artificial Island Inspection/Housekeeping Program," issued July 3, 1991
- NC.NA-AP.ZZ-0042(Q), Revision 2, "Fitness for Duty Program," issued October 13, 1992

Fire Department Administrative Procedures

- ND.FP-AP.ZZ-0001(Q), Revision 0, "Organization and Responsibilities for Fire Protection," dated March 3, 1993
- ND.FP-AP.ZZ-0002(Q), Revision 0, "Fire Department Manning and Qualifications," dated March 3, 1993

- ND.FP-AP.ZZ-0005(Q), Revision 2, "Fire Protection Surveillance and Periodic Test Program," dated August 27, 1993
- ND.FP-AP.ZZ-0007(Q), Revision 2, "Preparation, Review, Approval, Control, and Retention of NFP Procedures and Documents," dated March 10, 1993
- ND.FP-AP.ZZ-0008(Q), Revision 0, "Fire Department Drill Program," dated May 14, 1993
- ND.FP-AP.ZZ-0009(Q), Revision 0, "Fire Department Training Program," dated April 20, 1993
- ND.FP-AP.ZZ-0014(Q), Revision 1, "Fire Department Physical Fitness Requirements," dated May 18, 1990
- ND.FP-AP.ZZ-0017(Q), Revision 1, "Hot Work Authorization," dated March 5, 1987
- ND.FP-AP.ZZ-0018(Q), Revision 0, "Fire Protection Impairments," dated March 3, 1993

Fire Department Training

- M10-TNB-010, "Fire Department Overview"
- M10-TNB-020, "Fire Prevention Inspection"
- M10-TNB-030, "Fire Hazards Identification"
- M10-TNB-040, "Products of Combustion"
- M10-TNB-050, "Fire Extinguishers"
- M10-TNB-100, "Firefighting Methods"
- M10-TNB-120, "Firefighting Equipment"
- M10-TNB-170, "Firefighting Strategies"
- M10-TNB-200, "Pre-Fire Plans"

Hope Creek Fire Protection Surveillance Program

- HC.FP-ST.KC-0006(F), Revision 0, "Fire Pump Annual Capacity Test," issued March 22, 1994
- HC.FP-ST.KC-0009(F), Revision 1, "Diesel-Driven Fire Pump Operability Test," issued March 22, 1994
- HC.FP-ST.KC-0016(F), Revision 0, "Pre-Action Sprinkler System Functional Test and Inspection," issued December 30, 1993
- HC.FP-ST.KC-0023(F), Revision 0, "Fire Hose Station Detailed Inspection," issued March 22, 1994

- HC.FP-ST.KC-0025(F), Revision 3, "Fire Hose Station Hydrostatic Test," issued June 18, 1990
- HC.FP-SV.ZZ-0027(F), Revision 4, "Fire Door Inspection and Operability Test," issued February 15, 1991
- HC.FP-SV.ZZ-0028(F), Revision 1, "Fire Damper Visual Inspection," issued January 30, 1991
- HC.FP-ST.QK-0029(F), Revision 0, "Fire Detector Operability Test," issued June 11, 1993
- HC.FP-PT.ZZ-0031, Revision 1, "Fire Damper Operability Test," issued May 15, 1990
- HC.FP-PM.KC-0036(Z), Revision 0, "Fire Hydrant Inspection," issued April 27, 1992
- NC.FP-PM.KC-0038(Z), Revision 1, "Fire Extinguisher Inspection," issued March 3, 1993
- HC.FP-PM.ZZ-0062(Z), Revision 1, "Fire Department Equipment Locker Inventory," issued November 3, 1993

Audits

- Audit Report 93-032, dated November 12, 1993
- Audit Report 93-170, dated February 23, 1994
- Audit Report 92-032, dated October 16, 1992

Safe Shutdown Methodology

- TERA Document No. DC-86-219
- Salem Fire Protection Report - Safe Shutdown Analysis No. DE-PS.ZZ-001(Q)-A3-55A, Revision 1
- Operating Procedure No. SI(2).OP-AB-CR-0002(Q)
- Reactor Cooldown Times For a Postulated Appendix R Fire - S-C-ZZ-NDC-1315
- Salem Generating Station, Units 1 and 2 Fire Protection Program Safe Shutdown and Interaction Analysis September 1986