June 19, 2002

Mr. John L. Skolds, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: DRESDEN NUCLEAR POWER STATION
NRC INSPECTION REPORT 50-237/02-06(DRS); 50-249/02-06(DRS)

Dear Mr. Skolds:

On May 10, 2002, the NRC completed an inspection at your Dresden Nuclear Power Station facility. The enclosed report documents the inspection findings which were discussed on May 10, 2002, with Mr. R. Hovey and other members of your staff.

The inspection examined the effectiveness of activities conducted under your license as they related to implementation of your NRC approved Fire Protection Program. The inspection consisted of a selected examination of design drawings, calculations, analyses, procedures, audits, field walkdowns, and interviews with personnel.

Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green). This issue was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because the issue has been entered into your corrective action program, the NRC is treating this issue as a Non-Cited Violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny this Non-Cited Violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Dresden Nuclear Power Station facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your responses will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA by Roy Caniano Acting For/

John A. Grobe, Director
Division of Reactor Safety

Docket Nos. 50-237; 50-249
License Nos. DPR-19; DPR-25

Enclosure: Inspection Report 50-237/02-06(DRS);
50-249/02-06(DRS)

cc w/encl: Site Vice President - Dresden Nuclear Power Station
Dresden Nuclear Power Station Plant Manager
Regulatory Assurance Manager - Dresden
Chief Operating Officer
Senior Vice President - Nuclear Services
Senior Vice President - Mid-West Regional
Operating Group
Vice President - Mid-West Operations Support
Vice President - Licensing and Regulatory Affairs
Director Licensing - Mid-West Regional
Operating Group
Manager Licensing - Dresden and Quad Cities
Senior Counsel, Nuclear, Mid-West Regional
Operating Group
Document Control Desk - Licensing
M. Aguilar, Assistant Attorney General
Illinois Department of Nuclear Safety
State Liaison Officer
Chairman, Illinois Commerce Commission

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Vice President - Licensing and Regulatory Affairs
Director Licensing - Mid-West Regional Operating Group
Manager Licensing - Dresden and Quad Cities
Senior Counsel, Nuclear, Mid-West Regional Operating Group
Document Control Desk - Licensing
M. Aguilar, Assistant Attorney General
Illinois Department of Nuclear Safety
State Liaison Officer
Chairman, Illinois Commerce Commission

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U.S. NUCLEAR REGULATORY COMMISSION
REGION III

Docket Nos:	50-237; 50-249
License Nos:	DPR-19; DPR-25
Report No:	50-237/02-06(DRS); 50-249/02-06(DRS)
Licensee:	Exelon Generation Company
Facility:	Dresden Nuclear Power Station, Units 2 and 3
Location:	6500 North Dresden Road Morris, IL 60450
Dates:	April 22 through May 10, 2002
Lead Inspector:	R. Langstaff, Senior Reactor Inspector Mechanical Engineering Branch
Inspectors:	D. Chyu, Reactor Inspector Electrical Engineering Branch R. Daley, Reactor Inspector Electrical Engineering Branch
Approved By:	Ronald N. Gardner, Chief Electrical Engineering Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000237-02-06(DRS), 05000249-02-06(DRS), on 04/22-05/10/02-01, Exelon Generation Company, Dresden Nuclear Power Station. Fire Protection Triennial.

The inspection was conducted by a team of three Region III inspectors. The inspection identified one Non-Cited Violation (NCVs). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609m, "Significance Determination Process." The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/reactors/operating/oversight.html.

A. Inspector-Identified Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified, that in the event of a fire, reactor water level could decrease to below the top of active fuel. Although the licensee had taken credit for tripping the reactor recirculation pumps, the procedures for alternative safe shutdown did not direct operators to trip the pumps. The additional heat load from the reactor recirculation pumps would cause additional reactor coolant to be lost through the safety relief valves resulting in a lower reactor water level than assumed. The failure to ensure reactor water level would remain above the top of active fuel is a violation of 10 CFR Part 50, Appendix R, Section III.L.2.b.

  The finding was greater than minor because the failure to ensure that reactor water level would remain above the top of active fuel resulted in a reduction of safety margin. The finding was determined to be Green because the water level would remain above two thirds core height and core damage would not occur. Because the finding was of very low safety significance, and the finding was captured in the licensee's corrective action system, this finding is being treated as a NCV consistent with Section VI.A.1 of the NRC Enforcement Policy (Section 1R05.1.b.1).

Report Details

Summary of Plant Status: Both Unit 2 and Unit 3 were operated at or near 100 percent power throughout the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events and Mitigating Systems

1R05 Fire Protection (71111.05)

The purpose of this inspection was to review the Dresden Nuclear Power Station fire protection program for selected risk-significant fire areas. Emphasis was placed on verifying that the post-fire safe shutdown capability and the fire protection features were maintained free of fire damage to ensure that at least one post-fire safe shutdown success path was available. The inspection was performed in accordance with the NRC regulatory oversight process using a risk-informed approach for selecting the fire areas and attributes to be inspected. The lead inspector used the Dresden Individual Plant Examination for External Events (IPEEE) to choose several risk-significant areas for detailed inspection and review. The fire areas and zones chosen for review during this inspection were:

Fire Area	Fire Zone	Description of Fire Zones Reviewed Within Fire Area
TB-I	8.2.5.A	Unit 2 North Trackway/Switchgear Area
	9.0.A	Unit 2 Diesel Generator
TB-V	2.0	Control Room
	6.2	Auxiliary Electric Equipment Room (AEER)

The primary focus for this inspection was on the safe shutdown procedures and safe shutdown methodology for fire area TB-V and the fire protection features for fire zone 6.2, i.e., the AEER. To a lesser extent, the fire protection features for fire zones 8.2.5.A and 9.0.A of fire area TB-I were also reviewed. The determination of license commitments and changes to the fire protection program were reviewed for both fire areas.

.1 Systems Required to Achieve and Maintain Post-Fire Safe Shutdown

10 CFR Part 50, Appendix R, Section III.G.1, required the licensee to provide fire protection features that were capable of limiting fire damage to structures, systems, and components important to safe shutdown. The structures, systems, and components that were necessary to achieve and maintain post-fire safe shutdown were required to be protected by fire protection features that were capable of limiting fire damage to the structures, systems, and components so that:

- One train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station(s) was free of fire damage; and
- Systems necessary to achieve and maintain cold shutdown from either the control room or emergency control station(s) could be repaired within 72 hours.

Specific design features for ensuring this capability were specified by 10 CFR Part 50, Appendix R, Section III.G.2.

a. Inspection Scope

The inspectors reviewed the plant systems required to achieve and maintain post-fire safe shutdown to determine if the licensee had properly identified the components and systems necessary to achieve and maintain safe shutdown conditions for each fire zone selected for review. Specifically, the review was performed to determine the adequacy of the systems selected for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring, and support system functions. This review included the fire protection safe shutdown analysis.

The inspectors also reviewed the operators' ability to perform the necessary manual actions for achieving safe shutdown including a review of procedures, accessibility of safe shutdown equipment, and the available time for performing the actions.

The inspectors reviewed the updated final safety analysis report and the licensee's engineering and/or licensing justifications (e.g., NRC guidance documents, license amendments, technical specifications, safety evaluation reports, exemptions, and deviations) to determine the licensing basis.

b. Findings

b.1 Performance Criteria for Achieving Shutdown Conditions Not Met

The inspectors identified a Non-Cited Violation for failure to meet the performance goal of maintaining the reactor coolant level above the top of the core as required for an alternative shutdown area by 10 CFR Part 50 Appendix R, Section III.L.2.b.

The Dresden Nuclear Power Station safe shutdown analysis for area TB-V assumed that reactor vessel makeup would be restored within 30 minutes of the analyzed fire event. The licensee had calculated that without makeup to the vessel, reactor vessel water level would decrease to the top of active fuel in 32 minutes due to loss of inventory thereby providing a margin of 2 minutes.

The Dresden Nuclear Power Station analysis which determined that vessel level would decrease to the top of active fuel within 32 minutes assumed that the recirculation pumps would be tripped off within 10 minutes of the fire event. However, the procedure for the fire scenario, DSSP 0100-CR, "Hot Shutdown Procedure - Control Room Evacuation," did not contain a step for tripping the recirculation pumps. Consequently, if this fire had occurred, the recirculation pumps could have continued to run contributing additional heat (approximately nine megawatts) to the reactor coolant system. This

additional heat would have caused more inventory to be lost from the reactor coolant system through the safety relief valves. During the inspection, the licensee had calculated that the extra loss of inventory could have resulted in the reactor vessel water level decreasing to the top of active fuel in 29 minutes, i.e., before reactor vessel makeup was assumed to be established.

10 CFR Part 50, Appendix R, Section III.L.2.b, requires that the reactor coolant makeup function shall be capable of maintaining the reactor coolant level above the top of the core for boiling water reactors. Dresden Nuclear Power Station is a boiling water reactor and fire area TB-V was an alternative shutdown area for which the licensee was required to comply with Section III.L of 10 CFR Part 50, Appendix R. The inspectors determined that the finding associated with the failure to ensure that reactor coolant level would remain above the top of active fuel in the event of a fire was greater than minor because the margin for preventing core damage was reduced to the point that the performance criteria of 10 CFR Part 50, Appendix R, Section III.L.2 would not be met. The inspectors determined that the finding was of very low safety significance because the reactor coolant level would have remained above two thirds core height and core damage would not have occurred. The failure to ensure that reactor coolant level would remain above the top of active fuel in the event of a fire is a violation of 10 CFR Part 50, Appendix R, Section III.L.2.b. This violation is associated with a finding that is characterized by the Significance Determination Process as having very low risk significance (i.e., Green) and is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report (CR) 00105408 (NCV 50-237/02-06-01; 50-249/02-06-01).

b.2 Emergency Diesel Generator Testing

During review of emergency power supplies used for safe shutdown, the inspectors determined that load testing of the 2/3 emergency diesel generator (EDG) at Dresden Nuclear Power Station was based upon the continuous load rating of 2600 kilowatts (kW). The continuous rating of the 2/3 EDG for Dresden Nuclear Power Station historically was bounded by the loads predicted for a loss of coolant accident (LOCA) coincident with a loss of offsite power (LOOP). However, because of recent changes to the predicted loads in the EDG loading calculation for Dresden Nuclear Power Station, the revised LOOP-LOCA predicted loads of 2677 kW for the 2/3 EDG exceeded the EDG continuous load rating. As a result, from a design basis accident perspective, the EDG testing requirements at Dresden Station were non-conservative. The inspectors reviewed a recent surveillance for the 2/3 EDG and did not identify any violations of surveillance requirements as specified by Technical Specification Sections, SR 3.8.1.3 and SR 3.8.1.15. The inspectors noted that Technical Specification Sections SR 3.8.1.3, SR 3.8.1.11, and SR 3.8.1.15 used a load band of 2340 kW to 2600 kW based on 90 to 100 percent of the 2/3 EDG continuous ratings of 2600 kW as basis for acceptability. The inspectors also noted that, for the surveillance reviewed, the 2/3 EDG had been tested within 90 to 100 percent of the predicted design basis loads as well. However, the inspectors questioned whether the Technical Specification surveillance requirements should have been revised to reflect the design basis loads which exceeded the EDG continuous ratings. This issue will be tracked as unresolved item (URI) pending further NRC review (URI 50-237/02-06-02; 50-249/02-06-02).

.2 Fire Protection of Safe Shutdown Capability

10 CFR Part 50, Appendix R, Sections III.G.2, required separation of cables and equipment and associated circuits of redundant trains by a fire barrier having a three hour rating. If the requirements cannot be met, then alternative or dedicated shutdown capability and its associated circuits, independent of cables, systems or components in the area, room, or zone under consideration should be provided (Section III. G.3).

a. Inspection Scope

For each of the selected fire areas, the inspectors reviewed the licensee's safe shutdown analysis to ensure that at least one post-fire safe shutdown success path was available in the event of a fire. This included a review of manual actions required to achieve and maintain hot shutdown conditions and make the necessary repairs to reach cold shutdown within 72 hours. The inspectors also reviewed procedures to verify that adequate direction was provided to operators to perform these manual actions. Factors, such as timing, access to the equipment, and the availability of procedures, were considered in the review.

The inspectors also evaluated the adequacy of fire suppression and detection systems, fire area barriers, penetration seals, and fire doors to ensure that at least one train of safe shutdown equipment was free of fire damage. To do this, the inspectors observed the material condition and configuration of the installed fire detection and suppression systems, fire barriers, and construction details and supporting fire tests for the installed fire barriers. In addition, the inspectors reviewed license documentation, such as deviations, detector placement drawings, fire hose station drawings, carbon dioxide pre-operational test reports, smoke removal plans, fire hazard analysis reports, safe shutdown analyses, and National Fire Protection Association (NFPA) codes to verify that the fire barrier installations met license commitments.

b. Findings

No findings of significance were identified.

.3 Post-Fire Safe Shutdown Circuit Analysis

10 CFR Part 50, Appendix R, Section III.G.1, required that structures, systems, and components important to safe shutdown be provided with fire protection features capable of limiting fire damage to ensure that one train of systems necessary to achieve and maintain hot shutdown conditions remained free of fire damage. Options for providing this level of fire protection were delineated in 10 CFR Part 50, Appendix R, Section III.G.2. Where the protection of systems whose function was required for hot shutdown did not satisfy 10 CFR Part 50, Appendix R, Section III.G.2, an alternative or dedicated shutdown capability and its associated circuits, was required to be provided that was independent of the cables, systems, and components in the area. For such areas, 10 CFR Part 50, Appendix R, Section III.L.3, specifically required the alternative or dedicated shutdown capability to be physically and electrically independent of the specific fire areas and capable of accommodating post-fire conditions where offsite power was available and where offsite power was not available for 72 hours.

a. Inspection Scope

On a sample basis, the inspectors investigated the adequacy of separation provided for the power and control cabling of redundant trains of shutdown equipment. This investigation focused on the cabling of selected components in systems important for safe shutdown. The inspectors' review also included a sampling of components whose inadvertent operation due to fire may adversely affect post-fire safe shutdown capability. The purpose of this review was to determine if a single exposure fire, in one of the fire areas selected for this inspection, could prevent the proper operation of both safe shutdown trains.

b. Findings

No findings of significance were identified.

.4 Alternative Safe Shutdown Capability

10 CFR Part 50, Appendix R, Section III.G.1, required that structures, systems, and components important to safe shutdown be provided with fire protection features capable of limiting fire damage to ensure that one train of systems necessary to achieve and maintain hot shutdown conditions remained free of fire damage. Options for providing this level of fire protection were delineated in 10 CFR Part 50, Appendix R, Section III.G.2. Where the protection of systems whose function was required for hot shutdown did not satisfy 10 CFR Part 50, Appendix R, Section III.G.2, an alternative or dedicated shutdown capability independent of the area under consideration was required to be provided. Additionally, alternative or dedicated shutdown capability must be able to achieve and maintain hot standby conditions and achieve cold shutdown conditions within 72 hours and maintain cold shutdown conditions thereafter. During the post-fire safe shutdown, the reactor coolant process variables must remain within those predicted for a loss of normal alternating current (AC) power, and the fission product boundary integrity must not be affected (i.e., no fuel clad damage, rupture of any primary coolant boundary, or rupture of the containment boundary).

a. Inspection Scope

The inspectors reviewed the licensee's systems required to achieve alternative safe shutdown to determine if the licensee had properly identified the components and systems necessary to achieve and maintain safe shutdown conditions. The inspectors also focused on the adequacy of the systems to perform reactor pressure control, reactivity control, reactor coolant makeup, decay heat removal, process monitoring, and support system functions.

b. Findings

No findings of significance were identified.

.5 Operational Implementation of Alternative Shutdown Capability

10 CFR Part 50, Appendix R, Section III.L.2.d, required that the process monitoring function should be capable of providing direct readings of the process variables necessary to perform and control the functions necessary to achieve reactivity control, reactor coolant makeup, and decay heat removal.

a. Inspection Scope

The inspectors performed a walkdown of a sample of the actions defined in procedure DSSP 0100-CR, "Hot Shutdown Procedure - Control Room Evacuation," which was the procedure for performing a plant alternative shutdown from outside the control room for fire area TB-V. The inspectors verified that operators could reasonably be expected to perform the procedure actions within the identified applicable plant shutdown time requirements and that equipment labeling was consistent with the procedure.

The inspectors' reviews of the adequacy of communications and emergency lighting associated with these procedures are documented in Sections 1R05.6 and 1R05.7 of this report.

b. Findings

No findings of significance were identified.

.6 Communications

For a fire in an alternative shutdown fire area such as the cable spreading room, control room evacuation is required and a shutdown is performed from outside the control room. Radio communications are relied upon to coordinate the shutdown of both units and for fire fighting and security operations. 10 CFR Part 50, Appendix R, Section III.H., required that equipment provided for the fire brigade include emergency communications equipment.

a. Inspection Scope

The inspectors reviewed the adequacy of the communication system to support plant personnel in the performance of alternative safe shutdown functions and fire brigade duties.

b. Findings

No findings of significance were identified.

.7 Emergency Lighting

10 CFR Part 50, Appendix R, Section III.J., required that emergency lighting units with at least an eight-hour battery power supply be provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto.

a. Inspection Scope

The inspectors performed a walkdown of a sample of the actions defined in procedure DSSP 0100-CR. As part of the walkdowns, the inspectors verified that sufficient emergency lighting existed for access and egress to areas and for performing necessary equipment operations.

b. Findings

No findings of significance were identified.

.8 Cold Shutdown Repairs

10 CFR Part 50, Appendix R, Section III.L.5, required that equipment and systems comprising the means to achieve and maintain cold shutdown conditions should not be damaged by fire; or the fire damage to such equipment and systems should be limited so that the systems can be made operable and cold shutdown achieved within 72 hours. Materials for such repairs shall be readily available onsite and procedures shall be in effect to implement such repairs.

a. Inspection Scope

The inspectors reviewed the licensee's procedures to determine if any repairs were required to achieve cold shutdown. The inspectors determined that the licensee did require repair of some equipment to reach cold shutdown based on the safe shutdown methods used. The inspectors reviewed the procedures for adequacy.

b. Findings

No findings of significance were identified.

.9 Fire Barriers and Fire Zone/Room Penetration Seals

10 CFR Part 50, Appendix R, Section III.M, required that penetration seal designs be qualified by tests that are comparable to tests used to rate fire barriers.

a. Inspection Scope

The inspectors reviewed the test reports for three-hour rated barriers installed in the plant and performed visual inspections of selected barriers to ensure that the barrier installations were consistent with the tested configuration.

b. Findings

No findings of significance were identified.

.10 Fire Protection Systems, Features, and Equipment

a. Inspection Scope

The inspectors reviewed the material condition, operations lineup, operational effectiveness, and design of fire detection systems, fire suppression systems, manual fire fighting equipment, fire brigade capability, and passive fire protection features. The inspectors reviewed deviations, detector placement drawings, fire hose station drawings, halon and carbon dioxide (CO_2) system pre-operational test reports, and fire hazard analysis reports to ensure that selected fire detection systems, sprinkler systems, portable fire extinguishers, and hose stations were installed in accordance with their design, and that their design was adequate given the current equipment layout and plant configuration.

b. Findings - AEER Fixed Suppression Systems

The inspectors identified one finding with respect to the Halon and CO_2 fixed suppression systems in the AEER. The finding is being treated as an unresolved item pending NRC review of whether the inspectors' positions represent a backfit as described by 10 CFR 50.109, Backfitting.

b.1 General Information

The AEER at Dresden Station is located directly below the control room. The AEER contained electrical switchgear and cabinets at the floor level with a cable spreading area above the electrical switchgear and cabinets. Additionally, the fire area envelope of the AEER included a portion of a cable tunnel and a computer room. Fixed suppression for the AEER was provided by both an automatically actuated Halon suppression system and a manually actuated CO_2 suppression system.

b.2 Historical Background

In the Branch Technical Position (BTP) APCSB 9.5-1, Appendix A, review documented in the Safety Evaluation Report (SER), dated March 22, 1978, the NRC requested additional information in the form of design details to ensure that the design was acceptable prior to actual implementation of the automatic Halon suppression system and the manually actuated CO_2 suppression system for the AEER and computer room.

The licensee submitted the AEER gas suppression system hydraulic calculations (further discussed below) and design drawings in a letter dated September 28, 1978. As a result of the NRC review, the NRC requested, by letter dated October 27, 1980, that additional nozzles be provided in the underfloor of the computer room and in the small tunnel area. By letter dated February 6, 1981, the licensee committed to provide discharge nozzles in the underfloor area of the computer room and in the tunnel area of the AEER. Based on the licensee's commitment, the NRC concluded in a SER dated February 12, 1981, that the gas suppression systems were acceptable.

In 1982, the NRC conducted a review of the Halon and CO_2 systems. The results of this review were documented in Inspection Report 50-237/82-02; 50-249/82-02 as an open item. The following is an excerpt from the inspection report:

> The inspector toured the new HALON CO_2 fire protection system to verify installation and equipment operability, and found the equipment satisfactory. A review of the station documentation package for the modification indicated that adequate controls were used for procurement, installation, design, and shop testing of equipment. Records of onsite testing for correctness of installation and equipment operability were largely missing from the documentation. The licensee included a memorandum to file in the package to note this fact; however, the overall adequacy of the equipment (operability, etc.) has not been documented.

In 1984, the above open item was administratively closed out with the following discussion:

> The licensee acquired a copy of the installation test results from the manufacturer and placed it in the modification package. Discussion with the fire marshal revealed that the licensee conducted a review of the system against as-built drawings and reviewed the design philosophy, and found them to be as required.

During the Appendix R review process in the late 1980's, the licensee submitted a copy of their fire hazard analysis (FHA), Amendment 2, dated February 1986. The submitted FHA included a comparison table of guidelines of Appendix A to BTP APCSB 9.5-1 and whether the licensee met or the reason for deviating from the guidelines. The licensee indicated the following in the FHA:

NRC Position in Guidelines of Appendix A to BTP APCSB 9.5-1	Implementation of Justification for Noncompliance (Licensee Position)
E.4 Halon Suppression Systems The use of Halon fire extinguishing agents should as a minimum comply with the requirements of NFPA 12A and 12B, "Halogenated Fire Extinguishing Agent System - Halon 1301 and Halon 1211."	Comply with intent: Dresden Units 2 and 3 utilize Halon 1301 for protection of the Auxiliary Electric Equipment Room. This installation meets the requirement of NFPA 12A. NFPA 12A was reviewed and deviations justified (FPPDP Volume 5)

E.5 Carbon Dioxide Suppression Systems The use of carbon dioxide extinguishing systems should as a minimum comply with the requirements of NFPA, "Carbon Dioxide Extinguishing Systems." Particular consideration should also be given to: (a) minimum requirement CO_2 concentration and soak time; (b) toxicity of CO_2; (c) possibility of second thermal shock (cooling damage); (d) offsetting requirements for venting during CO_2 injection to prevent overpressurization versus sealing to prevent loss of agent; (e) design requirements from overpressurization.	Partial comply: (a) NFPA 12 was used in design although installation acceptance tests were not specifically performed. (b) all carbon dioxide systems have predischarge alarms. (c) Nozzles do not discharge directly on equipment (d) See part (a). (e) See part (a).

The inspectors reviewed the Fire Protection Program Documentation Package (FPPDP) Volumes 8 and 9 which documented the licensee's NFPA code conformance review. For gaseous suppression systems, the licensee did not identify any deviations from the NFPA codes regarding a lack of acceptance testing for CO_2 and Halon systems installed in AEER.

During the NRC Appendix R onsite audit conducted in 1988 (documented in Inspection Report 50-237/88010; 50-249/88012), the licensee had provided total flooding CO_2 suppression systems for the diesel generator rooms, day tank rooms, and the AEER. During that inspection, the NRC requested to review the CO_2 discharge test result for the emergency diesel generator rooms. The NRC identified the lack of concentration tests documented for these areas and requested the licensee to perform discharge tests for the rooms reviewed. The licensee subsequently completed the concentration tests for the Unit 2, Unit 2/3, and Unit 3 EDG rooms in November 1988, January 1989, and June 1988, respectively.

b.3 Gas Suppression System Design - Concentration and Soak Time

The inspectors reviewed the sizing calculations for the Halon and CO_2 systems for the AEER. The design specifications for the gas suppression systems were as follows:

	Halon	CO_2
Concentration	5%	50%
Soak Time	10 minutes	10 minutes

The licensee stated during this inspection that the design for Halon and CO_2 systems with the above specifications was to extinguish surface and deep-seated fires, respectively. The vendor stated in the CO_2 calculation for AEER that the CO_2 system was designed for a deep seated fire hazard. The inspectors noted that the design concentration and soak times for the Halon system were consistent with Halon systems designed for suppression surface fires. Specifically, Section 2420 of NFPA 12A-1973, "Halogenated Fire Extinguishing Agent Systems," the code of record for Dresden stated:

> These fires [solid surface fires] are easily extinguished with low concentration (e.g., 5%) of Halon 1301. Although glowing embers may remain at the surface of the fuel following extinguishment of flames, these embers will be completed extinguished with a short time (e.g., 10 minutes).

However, the inspectors could not determine that the concentration and soak time for CO_2 system were adequate to suppress a deep-seated fire. NFPA 12-1973, "Carbon Dioxide Extinguishing Systems," considered as the code of record, provided the following requirements for deep seated fires:

Section 1322	These plans shall contain sufficient detail to enable the authority having jurisdiction to evaluate the hazard or hazards and to evaluate the effectiveness of the system.
Section 241	The quality of carbon dioxide for deep seated type fires is base on fairly tight enclosure because the concentration must be maintained for a substantial period of time to assure complete extinguishment. Any possible leakage shall be given special consideration since no allowance is included in the basic flooding factors.
Section 2421	The flooding factor for dry electrical, wiring insulation hazards in general was established to be at 50%.
App. A-21	For deep-seated fires the critical concentration required for extinguishment is less definite and has in general been established by practical test work.

NFPA 12-1973 did not specify the soak time for a deep-seated fire. Although the calculation for CO_2 was submitted to the NRC during the Appendix A to BTP APCSB 9.5-1 review as discussed above, the licensee did not provide justification, through either empirical or experimental data, that the soak time of 10 minutes was adequate to suppress a deep-seated fire. During this inspection, the licensee stated their position was that the NRC had approved the concentration and soak time for both the Halon and CO_2 systems because the NRC had reviewed the design calculations for both systems in the AEER and had no concerns except for the placement of discharge nozzles. Although the calculations were sent to the NRC, the inspectors could not determine

whether the NRC had granted tacit approval for the Halon and CO_2 system concentration and soak times. The inspectors noted that the licensee had not submitted a technical justification which supported the design concentrations and soak times for suppressing a deep-seated fire to the NRC during either the Appendix A review or this inspection.

The Halon and CO_2 systems were approved for installation in February 1978 (Mod M12-2/3-7639). Installation of the system was completed on June 4, 1979 and QA approval on February 16, 1981. The licensee did not commit to install additional nozzles in the sub-floor area of the computer room and in the small area of the cable tunnel until February 6, 1981. During this inspection, the licensee could not determine when additional nozzles were installed and speculated that the nozzle addition was completed as part of the modification.

Based on fire tests conducted by Sandia National Laboratory, the NRC determined that the minimum concentrations and soak times required to suppress a deep-seated electrical fire involving IEEE-383 rated cables were as outlined below. (See Table 9 of NUREG/CR-3656, "Evaluation of Suppression Methods for Electrical Cable Fires," dated October 1986, for additional information.)

	Halon	CO_2
Concentration	6%	50%
Soak Time	15 minutes	15 minutes

During this inspection, the licensee stated that some IEEE [Institute of Electrical and Electronics Engineers] -383 rated cables were installed in the AEER at the time the Halon and CO_2 systems were installed. The licensee estimated that at the time of this inspection, approximately 24% of the cables installed in the AEER were IEEE-383 cables. The majority of IEEE-383 cables had been installed during the late 1980s and early 1990s.

Based on the above information, the inspectors were not able to conclude that either the installed Halon system or installed CO_2 system was capable of a extinguishing fire in the AEER.

b.4 Lack of Discharge Testing for the Gas Suppression Systems

The inspectors noted that there were no discharge tests performed to ensure that the required concentration and soak time were achievable with the room configuration.

For the Halon systems, the inspectors noted that NFPA 12A-1973 stated the following testing requirements:

> Section 1310 The specifications shall include all pertinent items necessary for the proper design of the system such as the designation of the authority having jurisdiction, variance from the standard to be

permitted by the authority having jurisdiction and the type and extend of the approval testing to be performed after installation of the system.

Section 1340 The completed system shall be tested by qualified personnel to meet the approval of the authority having jurisdiction. These tests shall be adequate to determine that the system has been properly installed and will function as intended.

App. A-1340 A suitable discharge test or concentration analysis should be made when conditions prevail that make it difficult to determine adequately the system requirement or design

The inspectors noted that the purpose of Appendix A in NFPA-12A was to explain the basic principles, agent and equipment characteristics, and maintenance and installation practices. As discussed on Page 6 of NFPA 12A, the word "shall" was intended to indicate requirements and the word "should" was intended to indicate recommendations or that which was advised but not required. As such, the inspectors considered the wording of Section 1340 to take precedence over the recommendations specified in Section A-1340. The inspectors did not consider it possible to adequately determine that a Halon system is properly installed and will function as intended without measuring concentrations resulting from a full discharge test.

With respect to the CO_2 system, NFPA 12-1973 stated the following requirements:

Section 134 The completed system shall be tested by qualified personnel to meet the approval of the authority having jurisdiction. These tests shall be adequate to determine that the system has been properly installed and will function as intended.

Section 213 Total flooding systems shall be designed, installed, tested and maintained in accordance with the applicable requirements in the previous chapter and with the additional requirements set forth in this chapter.

The inspectors considered the word "tests," as used in the NFPA code, to include a discharge test. The NRC considers that a discharge test is necessary to demonstrate that total flooding gaseous suppression systems have been properly installed and will function as intended. In this case, the Halon and CO_2 systems depend heavily on a reasonably well enclosed space in order to minimize losses of the extinguishing medium. Additionally, the AEER contains significant fire hazards (i.e., electrical cables) in the upper portions of the room. The inspectors noted that it would be more difficult to establish and maintain minimum concentrations in the upper portions of the room because both Halon and CO_2 are heavier than air and would tend to sink to the lower portions of the room. Without a discharge test, there is no reasonable assurance that

the enclosure is adequate to enable the required concentration to be built up and maintained at all necessary elevations for the required period of time to ensure the effective extinguishment of the fire. Based on review of the codes of record for both the Halon and CO_2 systems, the inspectors determined that neither system had been adequately tested to demonstrate that the system had been properly installed and will function as intended.

During this inspection, the licensee stated that the design review performed by the NRC during the Appendix A to BTP APCSB 9.5-1 review, the Appendix R review, and the previous NRC inspection granted the approval for the lack of discharge testing. The inspectors noted the following:

- During the Appendix A to BTP APCSB 9.5-1 review, the licensee did not specifically request not to perform discharge tests for both systems.

- In 1982 and 1984, Region III inspectors did review the modification package for installation of Halon and CO_2 systems. At that time, the majority of package documentation was missing and the open item was administratively closed out based on discussion with plant personnel.

- During the Appendix R review, the licensee did inform the NRC that the installation acceptance test was not performed for the CO_2 system. During the Appendix R inspection, the inspectors noted the lack of discharge testing for the EDG rooms and requested the licensee to perform such tests accordingly. The AEER was not specifically reviewed during that inspection because it was not part of the inspection sample. The licensee did not inform the NRC that discharge testing was not performed for the Halon system.

The inspectors determined that there was no explicit request, recognition, or acknowledgment for a lack of discharge testing for both Halon and CO_2 systems by either the licensee or the NRC during plant licensing. As such, the licensee was expected to comply with design basis requirements set forth in Guidelines of Appendix A to BTP APCSB 9.5-1 which required the Halon and CO_2 systems to comply with the requirements of NFPA 12A and 12, respectively. Furthermore, as discussed above, the codes of record required testing to meet the approval of the authority having jurisdiction (AHJ) and to demonstrate the systems were properly installed and will perform their intended functions.

The inspectors reviewed the sizing calculations to see if the design could be proven acceptable analytically. The Halon calculation, dated April 1979, considered room volume for initial and extended discharges. However, the calculation failed to address the acceptability of the extended discharge since it did not address room leakage from openings such as fire doors, the east turbine building ventilation dampers, and rated fire dampers (actuated by heat instead of Halon actuation). Therefore, when the Halon system actuated, the envelope may not be sufficiently sealed to ensure the required concentration and soak time could be maintained. The inspectors identified similar issues with respect to the CO_2 system sizing calculation.

During this inspection, a contractor for the licensee performed additional calculations with the intent of demonstrated that the Halon and CO_2 systems would meet original design specifications for concentrations and soak times. The inspectors did not have the opportunity to review the calculations in detail because the calculations were completed after the on-site portion of the inspection. However, the inspectors noted the following with respect to the calculation results: (1) the Halon system would not be able to achieve a 6% concentration in the AEER; and (2) the CO_2 system would not be able to maintain a 15 minute soak time in the cable tunnel area. The inspectors did not consider the additional calculations to provide substantial assurance that either the Halon or the CO_2 suppression system was functionally capable of suppressing a deep-seated fire.

b.5 Regulatory Requirements for Suppression System in AEER

10 CFR 50.48 (a)(1) required, in part, that each operating nuclear power plant have a fire protection plan that satisfies Criterion 3 of appendix A to this part. Criterion 3 of 10 CFR Part 50, Appendix A, "Fire Protection," required, in part, fire detection and fire fighting systems of appropriate capacity and capability shall be provided and designed to minimize the adverse effects of fires on structures, systems, and components important to safety. 10 CFR 50.48 (b)(2) required, in part, that with respect to all other fire protection features covered by Appendix R, all nuclear power plants licensed to operate before January 1, 1979, must satisfy the applicable requirements of Appendix R to this part, including specifically the requirements of Sections III.G, III.J, and III.O. 10 CFR Part 50, Appendix R, Section III.G.3, required, in part, that fire detection and a fixed fire suppression system shall be installed in the area, room, or zone under consideration for alternative or dedicated shutdown capability. The AEER was an alternate shutdown area and, as such, required a fixed fire suppression system of appropriate capacity and capability. During this inspection, the inspectors could not conclusively determine that the gas suppression systems, namely Halon and CO_2 systems installed for AEER, were of appropriate capacity and capability to minimize the adverse effects of and to suppress fires in AEER which required alternative shutdown capability. This issue will remain an Unresolved Item pending further NRC review. The NRC review will specifically determine: (1) whether the lack of discharge testing was previously accepted by the NRC for the AEER Halon and CO_2 systems; and (2) whether the design concentration and soak times were previously accepted by the NRC for the AEER Halon and CO_2 systems (URI 50-237/02-06-03; 50-249/02-06-03).

.11 Compensatory Measures

a. Inspection Scope

The inspectors conducted a review to verify that adequate compensatory measures were put in place by the licensee for out-of-service, degraded or inoperable fire protection and post-fire safe shutdown equipment, systems, or features. The inspectors also verified that short term compensatory measures were adequate to compensate for a degraded function or feature until appropriate corrective actions were taken.

b. Findings

No findings of significance were identified.

.12 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the corrective action program procedures and samples of corrective action documents to verify that the licensee was identifying issues related to fire protection at an appropriate threshold and entering them in the corrective action program. The inspectors reviewed selected samples of condition reports, work orders, design packages, and fire protection system non-conformance documents.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA6 Meeting(s)

Exit Meeting

On May 10, 2002, at the conclusion of the on-site inspection activities, the inspectors presented their initial findings to Mr. R. Hovey and other members of licensee management at the Dresden Nuclear Power Station. The licensee representatives acknowledged the findings presented. The inspectors identified the proprietary information reviewed during the inspection and noted that the information would be handled accordingly. The licensee did not identify any other material reviewed during the inspection as being proprietary.

KEY POINTS OF CONTACT

Licensee

D. Bost, Station Manager
K. Bowman, Operations Manager
R. Hovey, Site Vice-President
T. Luke, Engineering Manager
B. Rybak, Acting Regulatory Assurance Manager

NRC

R. Caniano, Deputy Director, Division of Reactor Safety
R. Gardner, Chief, Electrical Engineering Branch

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

050-237/02-06-01 050-249/02-06-01	NCV	Reactor Water Level Could Drop Below Top of Active Fuel in the Event of Fire
050-237/02-06-02 050-249/02-06-02	URI	Non-Conservative Emergency Diesel Generator Testing
050-237/02-06-03 050-249/02-06-03	URI	Halon and CO_2 Fixed Suppression System Functionality Issues

Closed

050-237/02-06-01 050-249/02-06-01	NCV	Reactor Water Level Could Drop Below Top of Active Fuel in the Event of Fire

LIST OF ACRONYMS USED

AC	Alternating Current
AEER	Auxiliary Electric Equipment Room
BTP	Branch Technical Position
CFR	Code of Federal Regulations
CO_2	Carbon Dioxide
CR	Condition Report
DPR	Demonstration Power Reactor
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
FHA	Fire Hazards Analysis
FPPDP	Fire Protection Program Documentation Package
IEEE	Institute of Electrical and Electronics Engineers
IMC	Inspection Manual Chapter
IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
kW	kiloWatt
LOCA	Loss of Coolant Accident
LOOP	Loss of Off-site Power
NCV	Non-Cited Violation
NFPA	National Fire Protection Association
NRC	U.S. Nuclear Regulatory Commission
SER	Safety Evaluation Report
URI	Unresolved Item

LIST OF DOCUMENTS REVIEWED

The following is a list of licensee documents reviewed during the inspection, including documents prepared by others for the licensee. Inclusion on this list does not imply that NRC inspectors reviewed the documents in their entirety, but, rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort.

Analyses

FPPDP, Volume 1	Updated Fire Hazards Analysis,	Amendment 13
FPPDP, Volume 5	Safety Evaluation Reports,	Amendment 13
FPPDP, Volume 8	NFPA Code Conformance	Amendment 13
FPPDP, Volume 9	NFPA Code Conformance	Amendment 13

Calculations

88-50540	#M Fire Warp Qualification Evaluation	Revision 0
7056-00-19-5	Load Estimation of 125 VDC Buses	Revision 35
9389-46-19-3	Calculation for Diesel Generator 2/3 Loading Under Design Bases Loading Condition	Revision 2A
BSA-D-99-04	Reconstitution of Isolation Condenser Design Bases with Respect to Decay Heat Loads and Long Term Makeup Requirements	Revision 1
DRE97-0072	Dresden Station Fire Main C-Factors	Revision 3
DRE97-0105	Determination of Combustible Loading	Revision 4
DRE97-0214	Reactor Building Post-LOCA Temperature Analysis	Revision 1
DRE97-0256	Dresden Station Fire Protection System Design Basis Hydraulic Calculations	Revision 2
DRE02-0027	Isolation Condenser Area Temperature During an Appendix R Scenario Following a Fire in the Control Room	Revision 0
EC EVAL 336953	Isolation Condenser Area Average Temperature Following Station Blackout (SBO)	May 3, 2002
GE-NE-A22-00103-56-01-D	Dresden and Quad Cities Extended Power Uprate - Task T0611, Appendix R Fire Protection	Revision 1

NDIT S040-DH-0822	Cable Length Inputs for Combustible Loading Calculations Associated with Fire Zone 6.2 and 11.3	Revision 0
NDIT S040-DH-0822	Cable Length Inputs for Combustible Loading Calculations Associated with Fire Zone 6.2 and 11.3	Revision 1

Condition Reports

D2000-06142	Potential Exists That Safe Shutdown Surveillance No Longer Required	November 11, 2000
D2000-06314	MSA Air Packs Used For Fire Drill Not Set up Properly For Quick Use	November 20, 2000
D2000-06316	Fire Brigade Member Left Without Fire Gear During Fire Drill	November 20, 2000
D2001-00090	Failed Fire Drill Due to Poor Decision by The Safety Officer	November 20, 2000
D2001-01682	Lack of Fire Gear	March 26, 2001
00072943	Unannounced Fire Drill Critique	August 22, 2001
00073170	NOS/NEXUS Identified Enhancements For Safe Shutdown Timeline	August 17, 2001
00084203	4th Quarter Fire Drill Identify Improvements	November 27, 2001
00096739	Fire Protection SA Identifies Issues with Unit Dependence	February 26, 2002
00096750	Fire Protection SA Identified SSD Equipment Cart Location Concern	March 1, 2002
00096768	Fire Protection SA Identifies Cold Shutdown Repair Discrepancies	February 26, 2002
00097716	Fire Drill Identified Strengths And Weaknesses	March 1, 2002
00098819	Unannounced Fire Drill Shift c	March 14, 2002
00101015	Inconsistency Between the Safe Shutdown Report and SER	March 26, 2002
00102056	Protection of 250 VDC Control Circuits	April 2, 2002

Condition Reports Initiated As A Result of Inspection

00103348	SSD Emergency Light 400A Lamps Slightly Mis-aimed	April 11, 2002
00104855	Cubicle identified in DSSP 0100-CR is shown as spare on dwg	April 22, 2002
00105314	Misapplied Assumption in Combustible Load Calc DRE97-0105	April 25, 2002
00105045	Discrepancy in Fire Stop Surv procedure DFPS 4175-02	April 23, 2002
00105147	Emergency Light 229 not aimed per the surveillance criteria	April 24, 2002
00105410	NRC Concern over RB Temperature during App. R	April 25, 2002
00105417	NRC Concerns over DG Loading and Testing	April 25, 2002
00105419	AEER Gaseous Suppression (Halon) System Concerns	April 25, 2002
00105423	Provision of Diesel Fuel Oil Requirements for Appendix R	April 26, 2002
00105516	Calculations contain outdated references	April 26, 2002
00106996	Detector Spacing on Computer Room	May 6, 2002
00107050	Potential enhancement to Safe Shutdown Procedures	May 7, 2002
00107223	SSR Tables do not identify LPCI Valve as required	May 8, 2002

Correspondence

	Letter from J. A. Zwolinski to D. L. Farra dated July 1, 1985, Additional Information on Appendix R (Fire Protection)	July 1, 1985
	Letter to Mr. T. O'Brien, Dresden Station Diesel Generator Fuel Oil Calculations	June 25, 1991
	Letter - Response to NRC Staff Request for Additional Information (RAI) Regarding the Technical Specification Upgrade Program (TSUP)	May 15, 1995

	Letter - Issuance of Amendments Related to TSUP Section 3/4.9	September 18, 1995
PSLTR 00-0068	Request for Additional Information Regarding Individual Plant Examination of External Events	March 30, 2000
	Chemetron Letter to Mr. D. Galanis, Calculations and Various Support Documents for Dresden Station AEER Halon and Low Pressure CO_2 Fire Suppression Systems	May 20, 2002

Drawings

12E-2052	Cable Routing and Fire Stops Electrical and Computer Room Ground Floor	Revision AN
12E-2053	Cable Routing and Fire Stops Control Room Area	Revision W
12E-2056M	Electrical installation Fire Protection System TB Elev. 517'-6"	Revision R
12E-3440	Schematic Control Diagrams LPCI/Containment Cooling System MOVs	Revision W
12E-3441A	Schematic Control Diagrams LPCI/Containment Cooling System MOVs	Revision U
12E-6400B	Motor Operated Valves Limit Switch Development	Revision C
F-220	Fire Wrap Turbine Building Control Room Area	Revision C
F-363	Fire Suppression System TB Corridor	Revision P
F-382	Fire Suppression System Day Tanks	Revision C
F-384	Fire Suppression System Piping Plans Trackway Areas G&E	Revision N
F-430	Fire Suppression System Unit 2 Trackway Area	Revision B
F-431	Fire Protection System TB Ground Floor	Revision B
FLR-25062	Low Pressure Carbon Dioxide Fire Protection System, sheet 5	Revision C
FLR-25062	Low Pressure Carbon Dioxide Fire Protection System, sheet 6	Revision F
FLR 25062	Low Pressure Carbon Dioxide Fire Protection System, sheet 7	Revision D

FLR 25062-1	Halon 1301 Fire Suppression System, sheet 2	Revision A
FLR 25062-1	Halon - LP/CO_2 System, sheet 4	Revision A
FLR 25063-1	Halon 1301 Fire Extinguishing/Supersession System, sheet 1	Revision B
M-936	Diagram of East Turbine Room Ventilation System	Revision L

Fire Test Reports

NTSC Report No. 96-100.001	Dresden Fire Protection Program Document Package	Rev. 0
Southwest Research Institute 01-2912a	Qualification Fire Test of a Protective Envelope System	02/95

License Documents

TRM Section 3.3.e	Fire Detection Instrumentation	Rev. 0
TRM Section 3.7.i	Fire Water Supply System	Rev. 0
TRM Section 3.7.j	Water Suppression Systems	Rev. 0
TRM Section 3.7.k	Gaseous Suppression System	Rev. 0
TRM Section 3.7.l	Fire Hose Stations	Rev. 0
TRM Section 3.7.m	Safe Shutdown Lighting	Rev. 0
TRM Section 3.7.n	Fire Rated Assemblies	Rev. 0
DPR-19, Technical Specification	Section 3.12, Fire Protection Systems (Deleted)	Amendment 82

Procedures

CC-AA-10	Configuration Control Process Description	Revision 1
CC-AA-309	Control of Design Analysis	Revision 1
DFPS 4123-08	Fire Water System Flow Test	Revision 5
DHP 0120-07	Control of Ladders	Revision 3
DOP 3900-01	Service Water System Operation	Revision 7
Unit 2(3) DOS 0010-14	Safe Shutdown Equipment Inspection	Revision 19

DOS 1300-03	2/3A(B) Isolation Condenser Makeup Pump Quarterly Operability	Revision 8
Unit 2(3) DSSP 0010-01	Determining Safe Shutdown Paths for Extensive Plant Damage	Revision 8
Unit 2(3) DSSP-0100-B1	Hot Shutdown Procedure - Path B1	Revision 21
Unit 2(3) DSSP 0100-CR	Hot Shutdown Procedure - Control Room Evacuation	Revision 24
Unit 2(3) DSSP 0100-CR	Hot Shutdown Procedure - Control Room Evacuation	Revision 25
Unit 2(3) DSSP 0200-S	SDC Cold Shutdown Method	Revision 10
DSSP 0200-T2	Diesel Generator 2 (3) Local Manual Start	Revision 6
DSSP 0200-T3	Diesel Generator 2/3 Local Manual Start	Revision 8
DSSP 0200-T5	Repair of Dedicated Unit 3 D/G for Cold Shutdown with Loss of Remote Control Capability Due to Fire Damage	Revision 5
DTS 6600-02	Diesel Generator Fuel Consumption Test	Revision 5
NES-G-14	Calculations	Revision 1
RM-AA-102	Control of Documents	Revision 2
SA-AA-111	Heat Stress Control	Revision 0
Special Procedure 85-9-146	Radio Test for Appendix R Loss of Off-site Power Scenario	September 24, 1985
Special Procedure 88-4-27	Unit 2 Diesel Generator and Day Tank Room Low Pressure CO_2 Fire Suppression System Functional Operation and Concentration Test	Revision 0
Unit 2 Fire Pre-Plan U2TB-46	Unit 2 Turbine Building 517’ Elevation Computer room/Auxiliary Electric Equipment Room, Fire Zone 6.2	Revision 5

Safety Evaluations

1997-03-204	AEER A/C Air Handling Unit, DCP 9700222	Rev. 0
1998-02-165	Amendment 11 of the Dresden Fire Protection Report (FPR) and Fire Protection Program Documentation Package (FFPDP)	Rev. 0

Self Assessments

	Dresden Station Triennial Fire Protection Assessment Report	September 14, 2001
	Dresden Station Fire Protection Self-Assessment Report	April 2, 2002
NO. Letter 12-02-13	Nuclear Oversight Readiness Letter for NRC Fire Protection Inspection - NRC Inspection Procedures 71111.05	April 9, 2002

System Descriptions

System Description Manual 286002	Gaseous Fire Protection Systems	Rev. 1
System Description 286N-01	Fire Protection Systems	Rev. 6

Work Orders

00420835	D3, D2, and D 2/3 TS Unit Diesel Generator Operation	Revision 73
00421905	D3, D2, and D 2/3 TS Unit Diesel Generator Operation	Revision 73
00424846	D3, D2, and D 2/3 TS Unit Diesel Generator Operation	Revision 73