

April 29, 2002

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

SUBJECT: BRAIDWOOD STATION, UNIT 1
NRC SUPPLEMENTAL INSPECTION REPORT 50-456/02-04(DRP)

Dear Mr. Skolds:

On February 15, 2002, the NRC completed a supplemental inspection at the Braidwood Station Unit 1. The results of this inspection were discussed on February 15, 2002, with Mr. J. von Suskil and other members of your staff. On March 1, 2002, this supplemental inspection was reopened and expanded to include an assessment of an additional failure of the 1B auxiliary feedwater pump on which occurred on February 25, 2002. This inspection effort was completed on March 31, 2002. A subsequent exit meeting was held on April 2, 2002. The enclosed report presents the results of these inspections.

The inspection examined activities conducted under your license as they relate to safety and to compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, and interviewed personnel. Specifically, this inspection focused on your corrective action process in regard to the evaluation of why the Unit 1 auxiliary feedwater system exceeded the NRC's performance indicator threshold during the last quarter of 2001.

The inspectors concluded that the level of detail of the root cause evaluation for exceeding the performance indicator threshold was adequate. However, the level of detail of previous apparent cause evaluations for events that led to exceeding the performance indicator threshold were poor. The inspectors identified that one apparent cause evaluation had to be re-opened twice because of deficiencies identified by the NRC inspectors. For example, the inspectors identified that a potential common mode failure for air operated valves was described in one apparent cause evaluation for which no corrective actions were identified. Further discussions with your staff indicated that the stated common mode failure was not credible. Also, as discussed below, your staff did not perform a root cause or an apparent cause evaluation for one failure of the 1B auxiliary feedwater system.

Based on the results of this inspection, one finding of very low safety significance (Green) was identified. Specifically, the licensee failed to identify the cause and prevent recurrence for the September 1999 failure of the 1B auxiliary feedwater system, a significant condition adverse to quality. The cause of the failure was not determined until a subsequent failure occurred in November 2001. The failure to identify the cause of the September 1999 failure was

considered a violation of 10 CFR 50 Appendix XVI. However, because of its very low safety significance and because it was entered into your corrective action program, the NRC is treating this issue as a Non-Cited Violation, in accordance with Section V1.A.1 of the NRC's Enforcement Policy.

If you deny this Non-Cited Violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspectors at the Braidwood Station.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Ann Marie Stone, Chief
Branch 3
Division of Reactor Projects

Docket Nos. 50-456; 50-457
License Nos. NPF-72; NPF-77

Enclosure: Inspection Report 50-456/02-04(DRP)

See Attached Distribution

DOCUMENT NAME: G:\BRAIBWD 2002-04 drp.wpd

To receive a copy of this document, indicate in the box: "C" = Copy without enclosure "E" = Copy with enclosure "N" = No copy

OFFICE	RIII						
NAME	AMStone:ntp						
DATE	04/29/02						

OFFICIAL RECORD COPY

cc w/encl: Site Vice President - Braidwood
Braidwood Station Plant Manager
Regulatory Assurance Manager - Braidwood
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 - Braidwood and Byron
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

cc w/encl: Site Vice President - Braidwood
Braidwood Station Plant Manager
Regulatory Assurance Manager - Braidwood
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 - Braidwood and Byron
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

ADAMS Distribution:

AJM
DFT
MLC
RidsNrrDipmlipb
GEG
HBC
CJP3
C. Ariano (hard copy)
DRPIII
DRSIII
PLB1
JRK1

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-456
License No: NPF-72

Report No: 50-456/02-04(DRP)

Licensee: Exelon Generation Company, LLC

Facility: Braidwood Station, Unit 1

Location: 35100 S. Route 53
Suite 84
Braceville, IL 60407-9617

Dates: February 11 through March 31, 2002

Inspectors: C. Phillips, Senior Resident Inspector
B. Dickson, Acting Senior Resident Inspector

Approved by: Ann Marie Stone, Chief
Branch 3
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000456-02-04(DRP); on 02/11-3/31/2002; Exelon Generation Company, LLC; Braidwood Station; Supplemental Inspection for Unit 1.

This report covers the supplemental inspection performed by the NRC to assess the licensee's evaluation of the unavailability/fault exposure time for the 1B auxiliary feedwater train which exceeded the NRC's performance indicator threshold during the last quarter of 2001. The inspection was conducted by the Braidwood Station Senior Resident Inspector and Acting Senior Resident Inspector in accordance with Inspection Procedure 95001, "Inspection for One or Two White Inputs in a Strategic Performance Area." The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process" (SDP). 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/NRR/OVERSIGHT/index.html>. Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation.

Inspector Identified Findings

Cornerstone: Mitigating Systems

Green. The licensee failed to identify the cause and prevent recurrence for the September 1999 failure of the 1B auxiliary feedwater system, a significant condition adverse to quality. The cause of the failure was not determined until a subsequent failure occurred in November 2001.

This finding was determined to be of very low safety significance because only one train of a Technical Specification safety-related system failed for less than the Technical Specification allowed outage time. The failure to identify the cause of the September 1999 failure was considered a Non-Cited Violation of 10 CFR 50, Appendix XVI, (Section 02.01.b).

Report Details

01 Inspection Scope

This supplemental inspection was performed by the inspectors to review the licensee's evaluation of the unavailability/fault exposure time for the 1B auxiliary feedwater (AF) train which exceeded the NRC's performance indicator threshold during the last quarter of 2001.

The following events/activities resulted in the Unit1 AF unavailability and/or fault exposure and were accounted for in the performance indicator data:

- November 2001, 1B AF pump failed to start (0 hours of unavailability and 335.8 hours of fault exposure);
- July 2001, 1B AF pump work window (54.3 hours of unavailability);
- April 2001, 1B AF pump room cooler isolation valve 1SX178 failed to open (0 hours of unavailability and 155.9 hours of fault exposure);
- April 2001, 1A AF pump work window (32.8 hours of unavailability);
- February 2000, 1B AF pump work window (50.8 hours of unavailability);
- December 1999, 1A AF pump work window (26.4 hours of unavailability);
- September 1999, 1B AF pump failed to start (9.9 hours of unavailability and 341.5 hours of fault exposure);
- November 1998 to November 2001, 1B AF pump work window (83.8 hours of unavailability); and
- November 1998 to November 2001, 1A AF pump work window (57.9 hours of unavailability).

The inspectors reviewed the licensee's root cause review (RCR) for the unavailability/fault exposure hours exceeding the performance indicator threshold and the apparent cause evaluations (ACEs) for the individual events that lead to exceeding the performance indicator threshold. The inspectors interviewed members of the RCR team and system engineering management personnel.

The inspectors reviewed condition reports (CRs) including the associated RCRs and ACEs:

- CR 00084527 1B AF Pump Failed To Start;
- CR 00085208 NRC Reactor Oversight Process Indicator For 1B AF Is White;
- CR A2001-02003 1SX178 - Inadequate ACE Performed Per CR A2001-01168;
- CR A2001-01168 Potential Rework - 1SX178 Failed To Open On 1B AF Diesel Start;
- CR A2000-04475 Unplanned Limiting Condition for Operation Entry For 2B AF pump During Surveillance Run;
- CR 00094186 ACE on 2SX178 Failure To Open Requires Updating; and
- CR A1999-02716 1B AF Pump Failure to Start.

This inspection was initially completed on February 15, 2002; however, on March 1, this effort was expanded to include an evaluation of the February 25, 2002, 1B AF system failure. The inspectors reviewed the licensee's troubleshooting plan and engineering evaluation regarding this event. The inspectors also interviewed members of the system engineering management personnel.

This supplemental inspection was performed in accordance with Inspection Procedure 95001. The following details are organized by the specific inspection requirements of Inspection Procedure 95001, which are noted in each section.

02 Evaluation of Inspection Requirements

02.01 Problem Identification

- a. Determination of who (i.e., licensee, self-revealing, or NRC) identified the issue and under what conditions.

The failures of the 1B AF pump diesel engine to start on February 25, 2002, November 30, 2001, and September 10, 1999 were self-revealing. The diesel engine driver for the pump failed to start during routine surveillance testing activity as documented in CR 96695, CR 84527, and Problem Identification Form A1999-02716 respectively. The failure of the essential service water cooling outlet valve to open on April 20, 2001, was self revealing during routine surveillance testing as identified in CR A2001-01168.

- b. Determination of how long the issue existed and prior opportunities for identification.

The licensee determined that failures of the diesel's fuel shutoff solenoid valve was the single most significant contributor to the 1B AF unavailability issue. The valve was replaced in 1992 and the licensee determined that between 1992 and 1999, the 1B AF diesel was slow to start on five occasions. The licensee had not initiated actions to identify the cause of the slow starts. In September 1999, the diesel failed to start during a routine surveillance. Individual components were removed and analyzed for failure; however, when problems with the individual components were not identified, the licensee took no further actions to attempt to identify the root cause of the failure. The licensee did not perform a formal root cause or apparent cause evaluation after the inspections and testing failed to identify the cause of the problem. The 1B AF pump was returned to service with no further problems until November 2001.

In November 2001, the diesel engine failed to start again. This time, the licensee determined that the installed fuel shutoff solenoid valve was inappropriate for a fuel control system. Specifically, the licensee determined that in 1992, the engine manufacturer, Detroit Diesel, substituted the fuel shutdown solenoid valve with a type supplied by a different vendor. The licensee had performed Part Evaluation A-92-007-0207 and accepted the replacement. During the investigation into the November 2001 failure, the licensee determined that the replacement solenoid was designed for use in hydraulic oil applications; however, the valve was used in a lubrication oil application. The internal clearances in the valve were smaller and were negatively impacted by the higher particle counts in the lubricating oil even though the higher particle counts were

acceptable for diesel operation. The licensee also identified that due to unknown reasons, the 1B AF pump had a significantly higher (but still acceptable) particle count than the Unit 2 diesel driven AF pump or either of the Byron Station diesel driven AF pumps. This accounted for the increased number of failures on the 1B AF pump.

This finding was considered more than minor, as the failure to take corrective actions to prevent recurrence resulted in a credible impact on safety which was the repeat failure of the 1B AF pump. The inspectors entered the significance determination process using Manual Chapter 0609, Appendix A, "Significance Determination For Reactor Inspection Findings For At-Power Situations." The inspectors determined that the failure of the 1B AF pump impacted the mitigation system cornerstone only. The inspectors answered no to all five questions in the Phase I analysis under the mitigating systems cornerstone which resulted in the finding screening out as Green.

10 CFR Part 50, Appendix B, Criterion XVI, states, in part, that in cases of significant issues adverse to quality, measures shall be taken to assure that the cause of the condition is determined and corrective action is taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management. Contrary to the above, the licensee failed to identify the cause and prevent recurrence for the September 1999 failure of the 1B AF system, a significant condition adverse to quality. The cause of the failure was not determined until a subsequent failure occurred in November 2001. The failure to identify the cause of the September 1999 failure was a violation of 10 CFR 50, Appendix XVI. However, because this violation was of very low risk significance, was non-repetitive, and was captured in the licensee's corrective action program (CR 89570), it is considered a Non-Cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-456-02-04-01(DRP)).

- c. Determination of the plant-specific risk consequences (as applicable) and compliance concerns associated with the issue.

The licensee qualitatively assessed the consequences for the most limiting accidents associated with a loss of AF. A quantitative assessment of the impact on core damage frequency was not performed. The inspectors discussed the impact of increased unavailability of the 1B AF system on the Probabilistic Risk Assessment (PRA) model with the station PRA Coordinator. The PRA Coordinator stated that the number of fault exposure hours which were the most significant contributor to exceeding the performance indicator threshold, were not accounted for in the PRA model. Therefore, the PRA model was not impacted.

The licensee's evaluation did not address regulatory compliance. The inspectors verified that no reporting requirements were violated.

02.02 Root Cause and Extent of Condition Evaluation

- a. Evaluation of method(s) used to identify root cause(s) and contributing cause(s).

The licensee used several different analysis techniques during their investigation. These methods included Event and Causal Factor charting, Barrier Analysis, Failure Modes and Effects Analysis, Change Analysis, and Tap Root methodology. The inspectors reviewed the methods employed and concluded that a formal, structured approach was utilized to perform the common cause analysis to identify root causes and contributing factors. However, the inspectors noted that the licensee did not perform a task analysis which was included in the root cause charter. The licensee stated that a task analysis would have been used if human performance issues were identified. Because the fuel shutoff solenoid valve problem was viewed as a design issue, the licensee did not perform a Task Analysis. However, the inspectors noted that two events involved failures of essential service water room cooling valves due to poor maintenance practices. The inspectors concluded that a task analysis of the maintenance practices involving the essential service water solenoid valves may have been prudent.

- b. Level of detail of the root cause evaluation.

The inspectors concluded that the level of detail of the root cause evaluation for exceeding the performance indicator threshold was adequate. However, the level of detail of previous ACE determinations were poor. For example:

- CR A2001-02003, "1SX178 - Inadequate ACE Performed Per CR A2001-01168" documented the licensee's actions associated with an April 2001 valve failure. The inspectors identified that the original associated ACE was inadequate. The conclusions in the ACE were based on second hand knowledge and did not fully address the problem. The individuals performing the original ACE did not interview maintenance technicians involved in the maintenance activities and; therefore, the conclusion reached in the report was not supported by all of the facts.

The licensee rewrote the original ACE after interviewing the maintenance technicians. The inspectors reviewed this second ACE during this inspection and determined that a common cause failure mode was documented in the ACE; however, no corrective actions were discussed. Specifically, licensee stated in the ACE that the most probable cause for the failure of the solenoid valve was a combination of dirt, water or oil in the instrument air lines. When questioned by the inspectors, licensee management personnel stated that the common mode failure mechanism was not credible because there were no other valve failures attributed to poor quality instrument air and periodic instrument air quality samples were acceptable. The licensee generated CR 95028 to address the quality of the ACE. The inspectors concluded that the ACE successfully determined what failed (the solenoid) and why it failed (foreign material) but did not reach a conclusion as to how it failed (where the material came from). A Non-Cited Violation was previously documented in Inspection Report 50-456/01-07 for this event for the failure to have adequate work instructions.

The quality of this ACE was also discussed in the recent Problem Identification and Resolution Inspection.

- CR A1999-02716, "1B AF Pp Failure to Start," which documented the failure of the 1B AF pump to start on September 10, 1999. The licensee did not perform a root cause review or apparent cause evaluation for this failure as discussed in Section 02.01b of this report.

- c. Consideration of prior occurrences of the problem and knowledge of prior operating experience.

The licensee's review of previous operating history of both Braidwood and both Byron operating units was adequate. The licensee identified in the RCR that had a proper evaluation of the 1B AF pump failure to start on September 10, 1999, been performed, the problem with the fuel shutoff solenoid valve may have been identified and resolved at that time.

- d. Consideration of potential common cause(s) and extent of condition of the problem.

The licensee appropriately identified that the potential for a common cause failure mode based on the inappropriate application of the diesel fuel shutoff solenoid valve was applicable to the Braidwood and Byron diesel driven AF pumps and the Byron essential service water make-up pumps. The valves for the AF diesels were either replaced or are scheduled to be replaced.

02.03 Corrective Actions

- a. Appropriateness of corrective action(s).

Corrective actions generated as a result of the licensee's root cause evaluation for the November 2001 failure appeared to be adequate. A Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, was identified for the September 1999 failure as discussed in Section 02.01.b of this report.

- b. Prioritization of corrective actions.

The prioritization of the corrective actions generated as a result of the licensee's root cause evaluation were adequate commensurate with their safety and regulatory significance.

- c. Establishment of a schedule for implementing and completing the corrective actions.

The established schedule for implementing and completing the corrective actions was adequate.

- d. Establishment of quantitative or qualitative measures of success for determining the effectiveness of the corrective actions to prevent recurrence.

The licensee assigned an effectiveness review for the corrective action associated with the RCR for the failure of the fuel shutoff solenoid valve. The licensee identified a quantitative measure (monitor the performance of the new valves, for example) to evaluate the effectiveness of the corrective actions.

02.04 Assessment of Licensee's Actions to Address An Additional Failure of the AF System

a. Inspection Scope

On February 25, 2002, the 1B AF pump failed to start during the performance of 1BwOSR 3.7.5.3-2 "Unit One Diesel Driven Auxiliary Feedwater Pump Monthly Surveillance." In response to this event, the licensee developed a troubleshooting plan to identify the cause of the failure. Using the results of this troubleshooting plan, the licensee developed an engineering evaluation to justify the continued operability of the AF pump. It was also used to develop a short and term long action plan to improve the overall performance of the system. The inspectors evaluated the adequacy of the executed troubleshooting plan and the follow-up engineering evaluation. The licensee documented this failure in CR 96695, "1B AF Diesel Locked Out on Overcrank After First Attempt by Operators."

b. Findings

Evaluation of Troubleshooting Plan and Engineering Evaluation.

Following the execution of the troubleshooting plan, the licensee was unable to identify the cause of the February 25, 2002, 1B AF pump's failure to start.

During the evaluation of the licensee's troubleshooting plan and subsequent engineering evaluation, the inspectors did not identify significant personnel performance or compliance issues that caused the event. The inspectors did not identify significant programmatic weaknesses in the licensee's corrective action program to address the failure. However, the inspectors identified a number of weaknesses regarding the troubleshooting effort and engineering evaluation. These weaknesses did not impact the operability of the 1B AF.

Troubleshooting Effort

Following the failure to start, the licensee quarantined the 1B AF pump as recommended in licensee's troubleshooting guideline MA-AA-716-004 "Conduct of Troubleshooting." The licensee developed a troubleshooting plan that to address the following six possible failure modes for the diesel engine:

- a) Loss of Fuel Prime;
- b) Governor Malfunction;
- c) Fuel Shutoff Solenoid Valve Malfunction;
- d) Low Cranking Speed;
- e) Diesel Fuel Quality; and
- f) Intermittent Electrical Problems.

For each of these proposed failure modes the licensee developed reasons/causes for why each failure mode would occur. The licensee investigated each cause.

A major portion of the licensee's troubleshooting effort concentrated on the fuel shutoff solenoid valve for the AF pump's diesel engine and intermittent electric problems in the diesel's starting circuitry. The fuel shutoff solenoid valve was important because on a start of the diesel this valve must close and seat in order for the governor to develop sufficient oil pressure to operate the diesel fuel racks. In addition, as discussed in Section 02.02 of this report, the licensee identified the misapplication of this valve as the root cause of two previous failures of this diesel engine.

As part of the licensee troubleshooting plan, maintenance workers removed the fuel shutoff solenoid valve. The inspectors noted that this valve was removed without collecting any "as found" data such as resistance at the electrical connection for the solenoid. A new shutoff solenoid was installed and the wires connecting the solenoid were clean and re-terminated. This was of concern to the inspectors because as noted in the troubleshooting guideline, emphasis should be placed on collecting and preserving data and evidence to support further evaluation. The inspectors noted that the licensee may have missed an opportunity to collect important information for its evaluation. Moreover, an investigation following a very similar failure of the Byron 2B AF in May 1997, revealed very high resistance at the electrical connections for the solenoid valve.

The inspectors also noted that the licensee's troubleshooting plan lacked formal testing of the diesel startup sequencing relays. The 1B AF diesel engine was designed to crank using a crank time/rest time, startup logic sequence. Upon startup initiation, the electrical starting circuitry cranks for five seconds and rests for ten. This starting sequence repeats for fifty-five seconds. After fifty-five seconds, the cranking sequence is locked out. The licensee stated that the relays were tested on a 18-month cycle and demonstrated that the "as found" and "as left" condition for these relays were acceptable. Additionally, the licensee stated that although not described as a test monitoring point in the special troubleshooting procedure, the system engineer made a mental note that the starting sequence seemed to work appropriately during the special test. The inspectors concluded that this issue should have been formally validated during the troubleshooting test to strengthen engineering evaluation.

The inspectors also noted that the licensee's troubleshooting plan lacked validation that the diesel air blower was operating per design. The diesel air blower was designed to supply air to each diesel cylinder to complete the diesel fuel combustion process. This air blower was designed to deliver the air at a specific pressure and flow rate. The air blower was not noted as a potential failure mode in the licensee's troubleshooting plan; therefore, a validation of the operating characteristics were not noted. This issue is of lesser concern for the inspectors as the licensee has successfully started the 1B AF several times since the February 25, 2002 failure.

The licensee noted each of the troubleshooting plan weaknesses identified by the inspectors and included these items in the action plan to improve AF performance.

03 Management Meetings

Exit Meeting Summary

The inspectors initially presented the inspection results to Mr. J. von Suskil and other members of licensee management on February 15, 2002. The licensee acknowledged the findings presented.

On April 2, 2002, the inspectors presented results of the assessment regarding the actions taken in response to the February 25, 2002, 1B AF failure to start, to Mr. K. Schwartz and other members of his staff. The licensee again acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

KEY POINTS OF CONTACT

Licensee

J. von Suskil, Site Vice President
K. Schwartz, Plant Manager
G. Bal, System Engineering
J. Bailey, Regulatory Assurance - NRC Coordinator
G. Baker, Security Manager
S. Butler, CAP Administrator
C. Dunn, Engineering Director
A. Ferko, Regulatory Assurance Manager
R. Graham, Work Management Director
L. Guthrie, Maintenance Director
F. Lentine, Design Engineering Manager
S, Nykkubsm System Engineering
G. Scott, Capco - Training

Nuclear Regulatory Commission

M. Chawla, Project Manager, NRR
A. Stone, Chief, Reactor Projects Branch 3

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-456/02-04-01 NCV failure to identify and document failure of AF pump

Closed

50-456/02-04-01 NCV failure to identify and document failure of AF pump

Discussed

50-456/01-07 NCV Failure to have adequate work instructions

LIST OF ACRONYMS AND INITIALISMS USED

ACE	Apparent Cause Evaluations
ADAMS	Agencywide Documents Access and Management System
AF	Auxiliary Feedwater
AR	Action Request
CFR	Code of Federal Regulations
CR	Condition Report
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulations
PARS	Publicly Available Records
PIF	Problem Identification Form
PRA	Probabilistic Risk Assessment
RCR	Root Cause Report
SDP	Significant Determination Process
SX	Essential Service Water

LIST OF DOCUMENTS REVIEWED

95001 Inspection For One or Two White Inputs In A Strategic Performance Area

CR 96695	1B AF Diesel Locked Out on Overcrank After First Attempt by Operators	
AR 00084527	Root Cause Investigation Charter Excessive Diesel Driven AF Pump Unavailability	January 25, 2002
AR 00085208	NRC Rx Oversight Process Indicator for 1B AF SSU is White	November 30, 2001
AR 00089570	Inappropriate Fuel Solenoid Valve Installed in AF Diesels	October 27, 1992
AR 00094186	ACE on 2SX178 Failure to Open (39827-02) Requires Updating	March 13, 2001
AR 00095028	NRC Questions Wrt CA's Assigned in Response to A/R 56396	July 31, 2001
CR 2000-04475	Unplanned LCO Entry for 2B AF pp During Surveillance Run	December 1, 2000
CR A2001-01168	Potential Rework - 1SX178 Failed to Open on 1B AF Diesel Start	April 20, 2001
CR A2001-02003	1SX178 - Inadequate ACE Performed per CR A2001-01168	April 20, 2001
PIF A1999-02716	1B AF Pp Failure to Start	September 10, 1999
EC335710	Engineering Evaluation of the Troubleshooting Corrective Maintenance, and Testing to Restore the Auxiliary Feedwater Pump (1AF01PB) to Service	
WO 00401105 05	MM-Change Oil Clean Oil Pan and Gov EM-Replace Contrl Switch "S5" at 1	March 27, 2002
WC-AA-110	Complex Troubleshooting (Troubleshooting Data Sheet)	Revision 1