

①

Dynamic Web Page

ROP PIM Report - All Sites - Event Dates: 04/01/2000 - 2/9/2004
 By Types, Cornerstones, Event Dates, Sites
 711105T - Fire Protection

There are 109 Open/Closed PIMs selected on this web page generated on 02/9/2004 for all regions.

Apparent Violation - Green 1
 Apparent Violation - N/A 1
 Apparent Violation - TBD 1
 Finding - Green 3
 Finding - N/A 1
 NonCited Violation - Green 82
 NonCited Violation - N/A 9
 NonCited Violation - SL-IV 1
 Unresolved item - Green 1
 Unresolved item - TBD 8
 Violation - White 1

Cross Cutting Areas:

- SCWE - Safety Conscious Work Environment
- HP - Human Performance
- PIR - Problem Identification and Resolution

Apparent Violation						
Mitigating Systems	08/03/2001	ANO	TBD	*SCWE: N	*HP: N	*PIR: N
Docket/Status: 05000313 (O) , 05000368 (O)						
Open: <u>2001006</u>						
THE ACCEPTABILITY OF THE USE OF MANUAL ACTIONS IN LIEU OF PROVIDING PROTECTION FOR CABLES ASSOCIATED WITH EQUIPMENT NECESSARY FOR ACHIEVING AND MAINTAINING HOT SHUTDOWN.						
In a letter dated September 28, 2001, the licensee claimed the NRC position that manual actions cannot be used to comply with 10 CFR Part 50, Appendix R, Section III.G.2, was a backfit. The NRC convened a backfit panel and determined that the NRC's position did not constitute a backfit. On April 15, 2002, the NRC reclassified this unresolved item as an apparent violation pending assessment of the significance of the finding. The question of whether this position was a backfit generic to all plants was addressed in the NRC's letter to the Nuclear Energy Institute, dated May 16, 2002.						
Mitigating Systems	06/08/2000	PB	Green	*SCWE:	*HP:	*PIR:
Docket/Status: , 05000277 (O) , 05000278 (O)						
Open: <u>2000003</u>						
Assoc Circuit - Reliance on signal spurious assumption of one per system per fire.						
PECO's specification for performing circuit analyses of post-fire safe shutdown equipment stipulates that only one spurious actuation for each system affected by any one fire be analyzed. For the areas inspected, the team determined that PECO adequately protected against fire-induced spurious actuations. The team did not identify any additional spurious actuations which would have prevented achieving safe shutdown conditions in the post-fire operating environment. The assumption that only a single spurious actuation need be considered for any one system for any one fire is an apparent violation of the requirements of Section III.G. and III.L. of Appendix R to 10 CFR 50. PECO entered this issue into their corrective action program and have implemented reasonable compensatory measures. However, the issue of multiple spurious actuations of equipment in a post-fire environment is in contention between the NRC and the nuclear industry. As such, any further enforcement action will be deferred pending final resolution of this issue by the Nuclear Energy Institute and the NRC staff, in accordance with Enforcement Guidance Memorandum 98-02, Revision 2, issued February 2, 2000.						
Mitigating Systems	06/08/2000	PB	N/A	*SCWE:	*HP:	*PIR:
Docket/Status: , 05000277 (O) , 05000278 (O)						
Open: <u>2000003</u>						
Assoc Circuit - Mechanical Damage from Fire Induced Cable Faults not evaluated.						

KK-346

PECO adopted a licensing position that mechanical damage to alternative shutdown equipment resulting from fire-induced cable faults, as described in Information Notice 92-18, was outside the scope of the licensing and design bases of the facility. As a result, PECO did not evaluate the control circuits of the alternative shutdown equipment to determine if it was susceptible to this problem. Since a detailed review of the alternative shutdown capability at PBAPS was not performed as part of the scope of this inspection, the risk associated with this issue was not established. This issue is being treated as an apparent violation of Condition 2.C.4 of the operating licenses for both Unit 2 and Unit 3, which requires PECO to implement and maintain the fire protection program described in the NRC Safety Evaluation Reports. PECO has entered this issue into their corrective action program and has implemented reasonable compensatory measures pending final resolution of the issue. However, the issue of mechanical damage to safe shutdown equipment due to fire-induced cable faults is in contention between the NRC and the nuclear industry. As such, any further enforcement action will be deferred pending final resolution of this issue by the Nuclear Energy Institute and the NRC staff, in accordance with Enforcement Guidance Memorandum 98-02, Revision 2, issued February 2, 2000.

Finding						
Mitigating Systems	11/02/2001	MILL	Green	*SCWE: N	*HP: N	*PIR: N
Docket/Status: , 05000423 (C)						
Open: 2001012 Discussed: 2002003						
INSUFFICIENT COMPENSATORY MEASURES FOR REMOVAL OF CABLE SPREADING ROOM CO2 SUPPRESSION SYSTEM						
The NRC concluded that the measures implemented to compensate for locking out the cable spreading room fixed suppression system were not fully effective, which could result in delays in suppressing a fire in the area. Deficiencies related to selection and use of fire suppression equipment, fire fighting strategy content and usage, command and control, and communications delayed the application of a hose stream to a simulated fire during a fire brigade drill in the cable spreading room. This delay could have resulted in increased fire damage because the gaseous fixed suppression system was unavailable. This finding was of very low safety significance (Green) because the likelihood of occurrence of a fire that could damage safety-related equipment in this area is small, and equipment and procedures were available for alternate shutdown outside of the control room.						
Mitigating Systems	09/28/2001	POIN	N/A	*SCWE: N	*HP: Y	*PIR: N
Docket/Status: 05000266 (C) , 05000301 (C)						
Open: 2001012						
HUMAN PERFORMANCE CROSS-CUTTING ISSUE DUE TO WEAKNESSES IN FIRE PROTECTION ENGINEERING AREA						
The inspectors identified a number of issues which, collectively, indicated that human performance weaknesses existed in the fire protection engineering area.						
Mitigating Systems	01/26/2001	HOPE	Green	*SCWE: N	*HP: N	*PIR: N
Docket/Status: 05000354 (C)						
Open: 2001002 Discussed: 2002004						
SHUTDOWN OUTSIDE CONTROL ROOM PROCEDURE COULD NOT BE PERFORMED AS WRITTEN						
NRC Team identified a deficiency in the procedure for shutdown from outside the control room, which could have hampered the start of shutdown cooling to achieve cold shutdown. The procedure could not have been implemented as written because it did not provide instructions for securing the 'A' recirculation loop from outside of the control room. This finding was determined to be of very low safety significance (Green) because the procedure deficiency would not have prevented the operators from achieving cold shutdown with 72 hours.						
Mitigating Systems	04/07/2000	DIAB	Green	*SCWE:	*HP:	*PIR:
Docket/Status: 05000275 (C) , 05000323 (C)						
Open: 2000003						
Degraded 1-hour fire-rated ceiling in Fire Area 4A and degraded 2-hour fire-rated barrier between Fire Areas 4A and 4B.						
The team identified that the 1-hour fire-rated ceiling in Fire Area 4A (counting and chemistry laboratory) and the 2-hour fire-rated barrier between Fire Areas 4A and 4B (radiologically controlled area access) were degraded. Specifically, the team identified that the 1-hour fire-rated ceiling in the chemistry laboratory contained holes, non-fire-rated dampers, and gaps around the lighting fixtures. The NRC relied on the 1-hour fire rating of this ceiling as a basis for granting an exemption from the requirement to enclose redundant trains of safe shutdown equipment in a 1-hour fire-rated enclosure as described in 10 CFR Part 50, Appendix R, Section III.G.2.c. In addition, the team observed concrete spalling, holes, and a non-fire-rated penetration in the 2-hour fire-rated barrier between Fire Areas 4A and 4B. Upon further review, the team found that the licensee had previously identified most of these conditions and had taken appropriate compensatory measures. Although the team identified additional minor discrepancies, no additional compensatory measures were warranted. The conditions not previously identified by the licensee were entered into the licensee's corrective action program as Action Requests						

A05050857, A0505861, and A0505892. This issue was evaluated using the significance determination process and was determined to be of low risk significance, because barrier degradation was moderate; detection, automatic suppression, and manual suppression met the conditions of the licensing basis for Fire Areas 4A and 4B; and a safe shutdown path remained

NonCited Violation

Initiating Events	10/03/2003	BF	Green	*SCWE: N	*HP: N	*PIR: N
-------------------	------------	----	-------	----------	--------	---------

Docket/Status: , 05000260 (C) , 05000296 (C)

Open: 2003007

Changes Made to the Fire Protection Program Regarding Compensatory Fire Watch Implementation Without NRC Approval

A Severity Level IV non-cited violation (NCV) of 10 CFR 50.48(a) and the Unit 2 and 3 Operating License Conditions was identified for a change to the approved fire protection program (FPP) which removed the requirement to implement fire watches for impaired fire protection systems and features. On October 23, 2002, the licensee inappropriately used the fire protection license change process to revise the FPP to permit the removal of fire suppression systems and/or fire rated barrier assemblies, necessary to satisfy the separation and suppression requirements of 10 CFR 50, Appendix R, Section III.G, from service without compensatory measures being implemented (i.e., fire watches being posted) in the affected plant area. The change could adversely affect the ability to achieve and maintain safe shutdown (SSD) in the event of a severe fire in the affected area. This issue was not assessed in accordance with the SDP but instead was assessed in accordance with guidance in Sections IV.A.1 through IV.A.4 and Section IV.B of the NRC's Enforcement Policy. The issue was significant because the licensee's change process for the FPP allowed this degraded condition to be accepted without prior NRC approval. The inspectors concluded that this issue had a credible impact on safety because the licensee's failure to properly evaluate the removal of fire watch posting requirements could adversely affect or degrade the ability for achieving and maintaining SSD from the main control room, local shutdown stations, or alternate shutdown stations. However, the inspectors determined that this finding was of very low significance because, based on an assessment of the impacts of the identified fire protection features removed from service, the licensee's overall SSD capabilities in the affected fire areas and related FPP features (fire brigade) remained adequate to achieve and maintain SSD conditions. Therefore, this finding is characterized as Green.

Initiating Events	05/23/2003	NA	Green	*SCWE: N	*HP: N	*PIR: N
-------------------	------------	----	-------	----------	--------	---------

Docket/Status: , 05000339 (C)

Open: 2003006

Failure to Demonstrate the Fire Resistance Rating of 3-Hour Duct Wrap

The fire barrier wrap system installed for 3-hour protection of a main control room (MCR) exhaust duct routed through the Unit 2 Normal Switchgear Room (NSR) had an indeterminate fire resistance rating instead of the required three hours. The fire barrier wrap system had not been specifically determined through testing nor evaluated as being bounded by the referenced test configuration. This was identified as a non-cited violation of 10 CFR 50.48 and License Condition 2.D. This finding is greater than minor because it degraded the ability to meet the mitigating systems cornerstone objective. The finding is considered to have very low safety significance because the fire detection, automatic suppression, and manual suppression for the Unit 2 NSR fire area met the conditions of the licensing basis; a fire damper rated as a 3-hour fire barrier is located in the ventilation duct where it enters the MCR; and no equipment or cable for systems required for safe plant shutdown are located in the fire areas.

Initiating Events	10/25/2002	TMI	Green	*SCWE: N	*HP: N	*PIR: N
-------------------	------------	-----	-------	----------	--------	---------

Docket/Status: 05000289 (C)

Open: 2002011

Inadequate Control of Transient Combustibles

AmerGen Energy Company failed to control transient combustibles in the relay room in accordance with the limits established in the Fire Hazard Analysis Report and Administrative Procedures 1035, "Control of Transient Combustible Materials." The failure to properly control transient combustible materials can result in an increase in the ignition frequency for a fire area. This finding was determined to be greater than minor significance based on the example provided in Section 4.k of NRC Manual Chapter 0612, Appendix E, "Power Reactor Inspection Reports."

Initiating Events	11/30/2000	BRAI	N/A	*SCWE: N	*HP: N	*PIR: N
-------------------	------------	------	-----	----------	--------	---------

Docket/Status: 05000456 (C) , 05000457 (C)

Open: 2000006

Molded Case Circuit Breakers Not Periodically Inspected and Tested

During the inspection, the licensee could not provide any objective evidence (e.g., procedures) that the molded case circuit breakers at the 120Vac and 125Vdc voltage levels had been periodically manually exercised, inspected, and tested. Periodic maintenance and testing of molded case circuit breakers is necessary to ensure ease of operation and to assure that set-point drift remains within that allowed by the circuit breaker coordination design calculations.

Initiating Events	11/30/2000	BRAI	N/A	*SCWE: N	*HP: N	*PIR: N
Docket/Status: 05000456 (C) , 05000457 (C)						
Open: <u>2000006</u>						
Instrumentation Not Available for Determining RCP Seal Temperature						
Due to the potential loss of RCP seal cooling and CCW flow to the thermal barriers, the licensee stated that the RCP seals could withstand a complete loss of seal cooling if the RCPs were tripped prior to seal temperature reaching 235°F. However, analyzed instrumentation for the RCP seal leak-off temperature indication was not available to the operators outside of the MCR. This temperature indication was not on the remote shutdown panel (RSP) or the fire hazard panel and was necessary for the plant operators to determine when to trip the RCPs. If the RCPs were not secured prior to reaching the temperature limit, the seals could fail resulting in a small LOCA and adversely impact reactor coolant makeup capability.						
Miscellaneous	12/15/2000	QUAD	N/A	*SCWE: N	*HP: Y	*PIR: N
Docket/Status: 05000254 (C) , 05000265 (C)						
Open: <u>2000016</u>						
Technical Errors in Appendix R Safe Shutdown Procedures						
The inspectors identified a number of technical errors in safe shutdown procedure QCARP 0050-02. The procedure errors were considered a Non-Cited Violation (NCV 50-254/00-16-03; NCV 50-265/00-16-03) of 10 CFR 50, Appendix R, Section III.L.5 (Section 40A4.1). The technical errors were determined to have no appreciable risk significance (No Color) because the errors would not have impacted safe shutdown. However, the errors were another example of a previously identified adverse trend in human performance.						
Miscellaneous	11/17/2000	GINN	Green	*SCWE: N	*HP: N	*PIR: N
Docket/Status: 05000244 (C)						
Open: <u>2000009</u>						
Failure to ensure that the alternate shutdown capability for the screen house was electrically and physically independent of the area.						
The failure to isolate all potentially affected cables within the screen house constitutes a violation of the requirements of 10 CFR 50, Appendix R, Section III.G.3. (reference LER 05000244/2000-002)						
Mitigating Systems	10/31/2003	HAR	Green	*SCWE: N	*HP: N	*PIR: N
Docket/Status: 05000400 (C)						
Open: <u>2003007</u>						
INADEQUATE IMPLEMENTATION OF THE FIRE PROTECTION PROGRAM FOR SAFE SHUTDOWN						
Green. The inspectors identified a non-cited violation (NCV) of Operating License Condition 2.F, the Fire Protection Program, and Technical Specification 6.8.1, Procedures and Programs, for inadequate implementation of the fire protection program. Physical and procedural protection for equipment that was relied on for safe shutdown (SSD) during a fire in fire safe shutdown analysis (SSA) areas 1-A-BAL-B-B1, 1-A-BAL-B-B2, 1-A-BAL-B-B4, 1-A-BAL-B-B5, 1-A-EPA, and 1-A-BAL-C of the reactor auxiliary building was inadequate. Consequently, a fire in one of these SSA areas could result in a reactor coolant pump seal loss of coolant accident event, a main steam power-operated relief valve failed open event, a loss of high pressure safety injection, and/or a loss of component cooling water to the reactor coolant pump seals. Licensee corrective action included assigning an additional operator to be available to perform post-fire SSD actions and performing a complete review of the SSA and related operating procedures. This finding was greater than minor because it involved a lack of required fire barriers for equipment that was relied upon for safe hot shutdown following a fire. The finding also had more than minor safety significance because it affected the objectives of the Mitigating Systems and Initiating Events Cornerstones. The finding affected the availability and reliability of systems that mitigate initiating events to prevent undesirable consequences and also affected the likelihood of occurrence of initiating events that challenge critical safety functions. The finding was of very low significance (Green) because of the low fire ignition frequencies, lack of combustible materials in critical locations, and the effectiveness of the fire protection features and the unaffected SSD equipment to mitigate a fire in each of the affected fire zones/areas.						
Mitigating Systems	10/31/2003	HAR	Green	*SCWE: N	*HP: N	*PIR: Y
Docket/Status: 05000400 (C)						
Open: <u>2003007</u>						
INADEQUATE CORRECTIVE ACTION FOR A PREVIOUS WHITE FIRE PROTECTION FINDING						

Green. The inspectors identified a non-cited violation (NCV) of Operating License Condition 2.F, the Fire Protection Program, and Technical Specification 6.8.1, Procedures and Programs, for inadequate corrective action for previous Violation 50-400/02-08-01. Corrective action for that violation had included creating a new auxiliary control panel fire area (1-A-ACP) in 2002. However, that corrective action was not adequate because physical and procedural protection for equipment that was relied on for safe shutdown (SSD) during a fire in the new fire area was inadequate. Consequently, a fire in area 1-A-ACP could result in a loss of auxiliary feedwater and a main steam power-operated relief valve failed open event. Licensee corrective actions in response to this finding included assigning an additional operator to be available to perform post-fire SSD actions and performing a complete review of the SSA and related operating procedures. This finding was greater than minor because it involved inadequate fire barriers for equipment that was relied upon for safe hot shutdown following a fire. The finding also had more than minor safety significance because it affected the objectives of the Mitigating Systems and Initiating Events Cornerstones. The finding affected the availability and reliability of systems that mitigate initiating events to prevent undesirable consequences and also affected the likelihood of occurrence of initiating events that challenge critical safety functions. The finding was of very low significance (Green) because of the very low ignition sources in the fire area, manual suppression capability, and the power conversion system not being affected by a fire in this fire area.

Mitigating Systems	10/21/2003	CALL	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000483 (C)

Open: 2003007

Failure to Take Required Compensatory Measures When CREVIS Operation Rendered ESF Switchgear Room Halon System Inoperable

The licensee did not recognize that the halon system protecting both engineered safety feature switchgear rooms was rendered inoperable and, therefore, failed to take the required compensatory action when the control room emergency ventilation and isolation system was in operation. Two ventilation dampers in parallel through the common fire wall between these rooms open when this system starts. The team identified that these dampers do not automatically shut when the halon system actuates. The halon system would not be capable of reaching the required concentration to suppress a fire because halon would be allowed to escape under these conditions. License Condition 2.C.(5)(c) requires that the licensee implement and maintain in effect all provisions of the approved fire protection program as described in the Standardized Nuclear Unit Power Plant System Final Safety Analysis Report. Updated Final Safety Analysis Report, Table 9.5.1-2, "Halon Systems," requires that when this halon system is inoperable, the licensee shall establish a continuous fire watch with backup fire suppression capability in the affected area. Contrary to this, on numerous occasions throughout the operating life of the plant, the team found that the licensee had failed to post a continuous fire watch whenever the vital switchgear room halon system was rendered inoperable due to testing of the control room ventilation system. This violation of License Condition 2.C.(5)(c) will be treated as a noncited violation, consistent with Section VI.A of the Enforcement Policy. This issue was in the licensee's corrective action program under Callaway Action Request 200307189. This finding was greater than minor because it involved the potential degradation of a fire protection feature protecting the electrical distribution equipment powering both trains of mitigating systems. This finding is of very low safety significance because the fire ignition frequency in the rooms affected is low, the remaining fire detection and suppression capability are unaffected, and sufficient accident mitigation equipment was available.

Mitigating Systems	08/19/2003	WAT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: , 05000382 (C)

Open: 2003011

Failure to test certain emergency diesel generator "B" mini-sequencer contacts.

The identified a violation of TS 6.8.1.f for failure to establish a procedure that implements a procedure to functionally test certain electrical circuits on the EDG mini-sequencer, which is relied upon for achieving shutdown in the event of a fire requiring control room evacuation and remote shutdown. Upon failure of this portion of the sequencer, automatic sequencing of certain components required for safe shutdown would be lost.

Mitigating Systems	08/19/2003	WAT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: , 05000382 (C)

Open: 2003011

Inadequate emergency lighting for supporting operator actions.

The team identified that the licensee had not provided sufficient emergency lighting for a safe shutdown of the plant following a fire and evacuation of the control room.

Mitigating Systems	08/19/2003	WAT	Green	*SCWE: N	*HP: N	*PIR: Y
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: , 05000382 (C)

Open: 2003011

Inadequate corrective actions for deficiencies associated with the emergency lighting system.

Two examples: 1. The licensee failed to complete actions to correct a conditions adverse to fire protection, in that, they inappropriately cancelled a full-field

verification test of their emergency lighting system. 2. The licensee failed to correct a deficiency in their methodology for determining if the emergency lighting system met the 10 CFR 50.65, Section (a)(1), maintenance rule goals.

Mitigating Systems	07/31/2003	PILG	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000293 (C)

Open: [2003005](#)

Inadequate diagnostic and indicating instrumentation was provided to the operators for post-fire shutdown outside the control room, contrary to requirements of license condition 2.F, Fire Protection.

The inspectors identified a non-cited violation of License Condition 2.F, Fire Protection, because the diagnostic and indicating instrumentation provided to the operators for post-fire shutdown outside the control room were inadequate for the operator to determine that actions were necessary, or that the manual action had caused the intended function to occur. The procedure for shutdown outside the control room called for evaluation of drywell temperature history prior to restoring the 'B' train of the reactor building closed cooling water system. This is due to the potential for high drywell temperatures to cause boiling, and voiding, in the non-essential loop of the reactor building closed cooling water system. The void collapse on subsequent starting of the system pump, could cause damage to the 'B' train piping system, rendering it unavailable for use. No protected train of drywell temperature instrumentation was provided for use in the post-fire operating environment. In addition, the instructions for operating motor control center (MCC) contactors manually at the MCC referred to the use of clamp-on ammeters to determine when valve motion had been completed, but no such ammeters were provided for use by the operators. The finding was considered more than minor, in that the issue was associated with the protection against external factors attribute of the Mitigating Systems cornerstone, and it affects the cornerstone objective. The mitigating systems cornerstone objective was affected because the finding adversely impacted the ability of the operators to achieve and maintain safe shutdown conditions in the event that a plant shutdown from outside the control room due to a fire was required. The finding was evaluated using IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The inspectors determined the finding does not represent a design or qualification deficiency, or an actual loss of safety function for either internal or external initiating events. Therefore, the inspectors concluded that the finding was of very low safety significance. (Section 1RO5.8)

Mitigating Systems	07/25/2003	HAT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: , 05000366 (C)

Open: [2003006](#)

Unapproved Manual Operator Actions for Post-Fire Safe Shutdown

Green. The team identified a non-cited violation of 10 CFR 50, Appendix R, Section III.G.2 in that the licensee relied on some manual operator actions to operate safe shutdown equipment, instead of providing the required physical protection of cables from fire damage without NRC approval. The finding is greater than minor because it affected the availability and reliability objectives and the equipment performance attribute of the mitigating systems cornerstone. Since the actions could reasonably be accomplished by operators in a timely manner, this finding did not have potential safety significance greater than very low safety significance.

Mitigating Systems	07/25/2003	HAT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: , 05000366 (C)

Open: [2003006](#)

Inadequate Emergency Lighting for Operation of Post-Fire SSD Equipment

Green. The team identified a non-cited violation 10 CFR 50, Appendix R, Section III.J because emergency lighting was not adequate for some manual operator actions that were needed to support post-fire operation of safe shutdown equipment. The finding is greater than minor because it affected the reliability objective and the equipment performance attribute of the mitigating systems cornerstone. Since operators would be able to accomplish the actions with the use of flashlights, this finding did not have potential safety significance greater than very low safety significance.

Mitigating Systems	07/11/2003	BRAI	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000456 (C) , 05000457 (C)

Open: [2003005](#)

FAILURE TO ASSESS AND ADDRESS COORDINATION CALCULATION CONCLUSIONS/RECOMMENDATIONS

A finding of very low significance was identified by the inspectors for a violation of 10 CFR 50, Appendix B, Criterion XVI. The licensee failed to assess and resolve recommendations to correct conditions adverse to quality as noted in the conclusion section of Calculation BYR 98-293/BRW 98-1287-E, dated October 1, 2001. The purpose of the calculation was to evaluate the 125Vdc and 120Vac circuits that supply safe shutdown equipment for adequate coordination such that a fire induced fault will not impact the shutdown capability of the plant. This issue is greater than minor because if these potential breaker coordination deficiencies were not corrected in a timely manner the undersized breaker may fail to clear a load fault and may trip the upstream MCC feed breaker resulting in the loss of the entire associated MCC. The issue was of very low safety significance because it did not result in loss of function per

Generic Letter 91-18. The issue was a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI.

Mitigating Systems	07/11/2003	BRAI	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000456 (C) , 05000457 (C)

Open: 2003005

MOLDED CASE CIRCUIT BREAKERS NOT PERIODICALLY CYCLED/EXERCISED

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR 50, Appendix B, Criterion XVI. The licensee failed to manually cycle/exercise numerous molded case circuit breakers (MCCBs) at the 120Vac, 125Vdc, and 480Vac voltage levels, on a pre-established periodic basis, as recommended by the MCCBs manufacturer, by NEMA AB-4, and as required by the Braidwood Station's Safe Shutdown Analysis. This issue was more than minor because if this concern is not corrected in a timely manner and the MCCB trip points drifts too high, or fails to trip, the breaker may fail to clear a load fault, as designed, and may trip the upstream motor control center (MCC) feed breaker resulting in the loss of the entire associated MCC. The issue was of very low safety significance because it did not result in loss of function per Generic Letter 91-18. This issue was a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI.

Mitigating Systems	06/20/2003	NMP	Green	*SCWE: N	*HP: Y	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: , 05000410 (C)

Open: 2003007

Failure to Promptly Correct Fire Protection Deficiency.

The inspectors identified a non-cited violation of 10 CFR 50.54(a)(1) that occurred because the fire protection corrective action requirements of the quality assurance program were not properly implemented to promptly address a problem with the adequacy of fire brigade member familiarity with all areas of the plants. This finding adversely impacted the manual fire suppression capability and because it affects the reactor safety mitigating systems cornerstone objective, the finding is greater than minor. The finding is of very low safety significance because delays in the fire brigade response during fire drills have not been frequent and the duration of the delay during the observed drill was relatively small with respect to the established response time goal such that equipment required for safe shutdown of the plant would not have been adversely affected. (Section 1R05.6).

Mitigating Systems	04/25/2003	PB	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	----	-------	----------	--------	---------

Docket/Status: , 05000277 (C) , 05000278 (C)

Open: 2003009

Failure To Provide Cable Protection in Accordance With 10 CFR Part 50, Appendix R, Section III.G.2

The team identified a non-cited violation of 10 CFR Part 50, Appendix R, Section III.G.2. Exelon included manual actions in Table A-1 of Specification NE-00296, Post-Fire Safe Shutdown Program Requirements, November 23, 1999, to operate equipment necessary for achieving and maintaining hot shutdown. Several of these manual actions did not meet the requirements of Appendix R, Section III.G.2 and the NRC had not granted exemptions to allow these actions. In accordance with the guidance provided in Inspection Procedure 71111.05, "Fire Protection," (Revision dated 3/6/03) this finding is greater than minor. The finding is of very low safety significance because the manual actions are reasonable and are expected to meet the criteria outlined in Enclosure 2 of Inspection Procedure 71111.05.

Mitigating Systems	04/22/2003	WNP	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: , 05000397 (C)

Open: 2003002

Unapproved use of manual actions to protect safe shutdown equipment from the effects of a fire

The inspectors identified a noncited violation of License Condition 2.C(14) and 10 CFR Part 50, Appendix R, Section III.G.2 for utilizing unapproved manual actions in Procedure ABN-FIRE, "Fire," in lieu of physical protection to assure than one train of safe shutdown equipment is free of fire damage. This finding is greater than minor because it impacts the mitigating systems cornerstone. Inspection Procedure 71111.05, "Fire protection," issued March 6, 2003, integrated inspector guidance for manual actions associated with licensee commitments to Section III.G.2 of Appendix R. This guidance is that if the manual actions are reasonable and are expected to meet the criteria outlined in Enclosure 2 to Inspection Procedure 71111.05, then the inspectors will identify this issue as a Green finding pending the Commission's acceptance of the staff initiative to incorporate the use of manual actions into Section III.G.2. The inspectors determined that the manual actions were reasonable and constituted appropriate compensatory measures. (Section 1R05.2)

Mitigating Systems	04/11/2003	COOK	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000315 (C) , 05000316 (C)

Open: [2003005](#)**Failure to Ensure Alternative Shutdown Capability Could Accommodate Post-Fire Conditions Where Off-Site Power is Not Available**

A finding of very low safety significance was identified by the inspectors in that the licensee failed to ensure that alternative shutdown capability for a fire area could accommodate post-fire conditions where offsite power would not be available. Specifically, for a postulated fire in fire zone 41, onsite power (i.e., emergency diesel generators) may not be available due to fire damage. This finding was more than minor because alternative shutdown capability was not assured for when off-site power would not be available. The finding was of very low safety significance because off-site power would not be affected by a fire in fire zone 41. This issue was a violation of 10 CFR 50.48 and 10 CFR Part 50, Appendix R, Section III.L.3 which required alternative shutdown capability to accommodate power-fire conditions where off-site power is available and where off-site power is not available for 72 hours.

Mitigating Systems	04/11/2003	COOK	Green	*SCWE: N	*HP: N	*PIR: Y
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000315 (C) , 05000316 (C)

Open: [2003005](#)**Failure to Ensure Control Room Ventilation Would be Free of Fire Damage**

A finding of very low safety significance was identified by the inspectors in that the control room heating, ventilation, and air conditioning (HVAC) system would be damaged for a postulated fire in fire zone 41. The cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. Despite previously identifying the issue, the licensee failed to properly address this issue in that they mistakenly believed that performing a repair to the control room HVAC system in the event of a fire would meet regulatory requirements. This finding was more than minor because one train of systems (i.e., control room HVAC) necessary to achieve and maintain hot shutdown conditions would not be free of fire damage for a postulated fire. The finding was of very low safety significance because actions to repair the control room HVAC system were proceduralized and provisions for providing temporary ventilation existed. This issue was a violation of 10 CFR 50.48 and 10 CFR Part 50, Appendix R, Section III.G.1 which required that one train of systems necessary to achieve and maintain hot shutdown conditions be free of fire damage.

Mitigating Systems	04/11/2003	COOK	Green	*SCWE: N	*HP: N	*PIR: Y
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000315 (C) , 05000316 (C)

Open: [2003005](#)**Failure to Provide Adequate Emergency Lighting**

A finding of very low safety significance was identified by the inspectors in that the licensee had failed to ensure that there was adequate emergency lighting (i.e., in the shift manager's office) for required safe shutdown actions (i.e., the retrieval of safe shutdown emergency procedures and equipment). The cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. Despite previously identifying this issue, the licensee failed to properly address this issue in that they mistakenly believed that the shift manager's office was not a safe shutdown pathway. This finding was more than minor because the lack of emergency lighting could result in delay of accomplishing safe shutdown actions. The finding was of very low safety significance because of the availability of portable head lamps. This issue was a violation of 10 CFR 50.48 and 10 CFR Part 50, Appendix R, Section III.J which required that emergency lighting units with at least an 8-hour battery power supply be provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto.

Mitigating Systems	04/11/2003	COOK	Green	*SCWE: N	*HP: N	*PIR: Y
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000315 (C) , 05000316 (C)

Open: [2003005](#)**Inadequate Carbon Dioxide Concentrations**

A finding of very low safety significance was identified by the inspectors in that the licensee had failed to ensure that minimum required carbon dioxide (CO2) system concentrations would be achieved for two fire zones. The cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. Despite previously identifying this issue, the licensee failed to properly address this issue because they failed to address non-compliance with the applicable National Fire Protection Association (NFPA) code. This finding was more than minor because a fire protection feature (i.e., a fixed suppression system) was adversely affected. The finding was of very low safety significance because of remaining available mitigation capability. This issue was a violation of a license condition which, by reference, invoked the applicable NFPA code which required a minimum CO2 concentration.

Mitigating Systems	03/28/2003	STL	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: , 05000389 (C)

Open: [2003002](#)**Cables in Containment Fail to Meet 10 CFR 50, Appendix R, Criterion III.G.2 Requirements**

Green. The inspectors identified a non-cited violation for the licensee's failure to comply with 10 CFR 50, Appendix R, Criterion III.G.2. This finding is related to a lack of spacial separation or barriers to protect cables in containment which could result in spurious opening of the pressurizer power operated relief valve (PORV) during a fire. This finding is greater than minor because it affected the mitigating systems cornerstone objective of equipment reliability, in that, spurious opening of the PORV during post-fire safe shutdown would adversely affect the ability to achieve and maintain the reactor in a hot shutdown condition. The finding is of very low safety significance because the initiating event likelihood was low, manual fire suppression capability remained unaffected and all mitigating systems except for the PORV and block valve were unaffected. (Section 40A5)

Mitigating Systems	03/07/2003	DUAN	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000331 (C)

Open: 2003002

Lack of Demonstrated Reactor Water Level Instrumentation

The inspectors identified that the licensee failed to demonstrate that instrumentation for reactor water level, required to support safe shutdown for a fire in Fire Area RB-1, would be free from fire damage. The failure to ensure that a means to monitor reactor water level would be free of fire damage is a violation of 10 CFR Part 50, Appendix R, Section III.G.2. This issue was greater than minor because instrumentation necessary to provide information to operators for safe shutdown was affected. The finding was determined to be of very low safety significance, i.e., Green, because site emergency operating procedures would have directed operators to operate equipment necessary to achieve safe shutdown conditions. 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 an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy (Section 1R05.3.b(1)).

Mitigating Systems	02/14/2003	DUAN	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000331 (C)

Open: 2003002

Inadequate Circuit Breaker Coordination for Instrument Power Supply

Green. The inspectors identified that the licensee failed to demonstrate that process monitoring instrumentation, required to support safe shutdown for a fire in Fire Area RB-1, would be free of fire damage. Specifically, the licensee failed to ensure that there was adequate circuit breaker coordination for an instrument power supply. The failure to ensure that a train of process monitoring would be free of fire damage is a violation of 10 CFR Part 50, Appendix R, Section III.G.2. This issue was greater than minor because instrumentation necessary to provide information to operators for safe shutdown was affected. The finding was determined to be of very low safety significance, i.e. Green, because the licensee had proceduralized steps to restore power to the affected instrumentation bus. 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 an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy (Section 1R05.3.b(2)).

Mitigating Systems	02/14/2003	DUAN	Green	*SCWE: N	*HP: N	*PIR: Y
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000331 (C)

Open: 2003002

Inadequate Corrective Action for Potential for Smoke to Enter Control Room

Green. The inspectors identified that the licensee failed to adequately correct a previously identified condition adverse to quality relating to the potential for smoke to enter the control room due to fire outside the control room. The failure to take adequate corrective action is a violation of 10 CFR Part 50, Appendix B, Criterion XVI. This issue was greater than minor because the potential for smoke in the control room could affect operators ability to operate the plant. The finding was determined to be of very low safety significance, i.e. Green, because the plant could initially be maintained in hot shutdown due to the automatic actions of available equipment. 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 an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy (Section 40A2.b).

Mitigating Systems	02/14/2003	SUR	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: 05000280 (C) , 05000281 (C)

Open: 2003007

Failure to Adequately Test Diesel Driven Fire Pump Automatic Start Features

A failure to establish written operating test procedures to demonstrate the functional capability of the diesel-driven fire pump (DDFP) loss-of-power automatic start feature could have resulted in a loss of fire suppression water during a loss-of- offsite power condition. A non-cited violation of 10 CFR 50.48 was identified. This finding is greater than minor because it is associated with fire protection performance and degraded the ability to meet the mitigating systems cornerstone objective. The finding is considered to have very low safety significance because the DDFP successfully started when a loss-of-power test was performed.

Mitigating Systems	02/14/2003	SUR	Green	*SCWE: N	*HP: N	*PIR: N
Docket/Status: 05000280 (C) , 05000281 (C)						
Open: <u>2003007</u>						
Inadequate Control of Diesel Driven Fire Pump Fuel Oil Isolation Valve						
A failure to properly implement and maintain an adequate fire protection program inspection and valve position control process could have resulted in isolation of the fuel oil supply to the diesel-driven fire pump (DDFP). The position of the DDFP fuel oil supply valve was not being controlled by the licensee. A non-cited violation of 10 CFR 50.48 was identified. This finding is greater than minor because it is associated with fire protection performance and degraded the ability to meet the mitigating systems cornerstone objective. The finding is considered to have very low safety significance because the fuel oil supply valve was in its proper position and it had not been mis-positioned in the past.						
Mitigating Systems	01/17/2003	FCS	Green	*SCWE: N	*HP: N	*PIR: N
Docket/Status: 05000285 (C)						
Open: <u>2003002</u>						
Failure to Assure that at Least One Train of Charging Pumps Was Free of Fire Damage						
A fire in either of two different fire areas could result in the loss of normal charging, which is credited in the licensee's post-fire safe shutdown analysis for maintaining reactor coolant system inventory. The team identified a noncited violation of 10 CFR Part 50, Appendix R, Section III.G.2. This finding was of greater than minor significance because it impacted the mitigating systems cornerstone. This resulted from the finding's potential to affect the licensee's capability to maintain reactor coolant system inventory control in response to a fire in either Fire Areas 6 or 36A. This finding was determined to be of very low safety significance, due to the fact that operators would have sufficient time to perform manual actions to restore at least one train of the charging system prior to reactor coolant makeup being required. Because of the low safety significance and the licensee's actions to initiate compensatory measures and place the issue into their corrective action program, this violation is being treated as a noncited violation in accordance with Section VI.A of the Enforcement Policy (50-285/0302-01)						
Mitigating Systems	12/06/2002	FERM	Green	*SCWE: N	*HP: N	*PIR: N
Docket/Status: , 05000341 (C)						
Open: <u>2002008</u>						
Failure to Have Adequate Procedures for Alternative Shutdown in Effect						
The inspectors identified that the licensee failed to have adequate procedures in effect for alternative shutdown in accordance with their license conditions. Specifically, performance of necessary actions to conduct an alternative shutdown would have required operators to perform steps contrary to the emergency operating procedures. The failure to have adequate procedures in effect for alternative shutdown is a violation of a license condition. This issue was greater than minor because the conflict between procedures could result in operator delay and confusion for performance of necessary alternative shutdown steps. The finding was determined to be of very low safety significance, i.e., Green, because the finding did not affect a fire protection feature and interviews with operators indicated that they would take the necessary actions. 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.						
Mitigating Systems	12/06/2002	FERM	Green	*SCWE: N	*HP: N	*PIR: Y
Docket/Status: , 05000341 (C)						
Open: <u>2002008</u>						
Failure to Take Prompt Corrective Actions to Correct Identified Deficiencies in Alternative Shutdown Procedure						
The inspectors identified that the licensee failed to promptly correct identified deficiencies in the alternative shutdown procedure which specified safe shutdown actions to be taken in the event of a fire in an affected fire area. Specifically, the alternative shutdown procedure which specified operator actions in the event of a fire in fire area 11ABE relied upon operator actions to be taken in the same area. As such, operators may not have been able to perform the directed actions due to exposure to the fire, the actions may not have been effective due to fire damage, and the carbon dioxide fire suppression system for the area could have been adversely affected. The failure to take prompt corrective actions is a violation of a license condition. The issue was greater than minor because specified actions may not have been effectively accomplished and a fire protection feature was affected. The finding was determined to be of very low safety significance, i.e., Green, because there were no identified fire damage scenarios which would require alternative shutdown. 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.						
Mitigating Systems	10/11/2002	WC	Green	*SCWE: N	*HP: N	*PIR: N
Docket/Status: 05000482 (C)						

Open: 2002008

Inadequate Alternative Shutdown Procedure

The team identified a noncited violation of Technical Specification 5.4.1 for the failure to provide an adequate procedure for ensuring the safe shutdown of the reactor in the event of a fire in the control room that requires control room evacuation. Procedure OFN RP-17, "Control Room Evacuation," Revision 17, was inadequate because certain operator actions specified in Attachment C to the procedure could not be performed within the required time. The licensee entered this finding into their corrective action program as Performance Improvement Request 2002-2393. This finding was of greater than minor significance because it impacted the mitigating systems cornerstone. This resulted from the issue's potential to affect the licensee's capability to safely shutdown the reactor in response to a fire in the control room requiring control room evacuation and remote shutdown. For fire protection findings, the Phase 1 screening worksheet in Manual Chapter 0609, Appendix A, refers fire protection findings to Manual Chapter 0609, Appendix F, for significance evaluation. Using the significance determination process described in Appendix F, this finding was determined to be of very low safety significance, due to the licensee's demonstration that operators would have performed the most time-critical step (to isolate the power-operated relief valves) in time to prevent core damage.

Mitigating Systems

09/17/2002

GG

Green

*SCWE:

*HP:

*PIR:

Docket/Status: 05000416 (C)

Open: 2002007

Inadequate alternative shutdown procedure

A noncited violation of Technical Specification 5.4.1.a was identified for the failure to provide an adequate procedure for a control room fire. Technical Specification 5.4.1.a. requires the licensee to establish procedures for implementation of activities recommended in Regulatory Guide 1.33, which lists procedures for combating a fire in the control room and forced evacuation of the control room. The licensee's Alternative Shutdown Procedure 05-1-02-II-1, "Shutdown from the Remote Shutdown Panel," Revision 25, was inadequate, because it did not instruct operators to verify that a flow diversion pathway was closed, which could render the credited reactor vessel injection source unable to perform its safety function. In the event of a fire in the control room requiring control room evacuation and remote shutdown, this pathway could have diverted coolant to containment spray and away from the reactor vessel through a spuriously opened containment spray valve. Operators would not normally check the valve position on their own and would not have adequate indication from the remote shutdown panel to identify the potential flow diversion path. The licensee entered this finding into their corrective action program as Condition Report CR-GGN-2002-01460. The issue was of greater than minor significance because it impacted the mitigating systems cornerstone and affected the ability of the low pressure coolant injection system to provide adequate core cooling to prevent core damage. Using the Phase 2 Significant Determination Process, this finding was determined to be of very low safety significance, due to the extremely low fire ignition frequency in conjunction with the low probability that fire would cause the spurious opening of the containment spray valve (Section 1R05.3).

Mitigating Systems

09/13/2002

FAR

Green

*SCWE: N

*HP: N

*PIR: N

Docket/Status: 05000348 (C) , 05000364 (C)

Open: 2002006

Failure to Obtain NRC Approval Prior to Implementing Changes to the Approved Fire Protection Program

Green. A Severity Level IV NCV of Farley Unit 1 Operating License Condition 2.C.(4) and Farley Unit 2 Operating License Condition 2.C.(6) was identified for the licensee making a change to the approved fire protection program (FPP) without prior Commission approval. On January 20, 1992, and February 20, 1998, the licensee inappropriately used the 10 CFR 50.59 change process to revise the FPP to accept five fire areas (Fire Areas 51, 1-004, 1-042, 2-004, and 2-043) that did not satisfy the fire detection and suppression requirements of 10 CFR 50, Appendix R, Section III.G.3. These five fire areas contained unprotected, redundant electrical cables for both main control room (MCR) air conditioning (A/C) units. On Unit 1, the change decreased the effectiveness of the program in the event of a fire, while on Unit 2 the change adversely affected the ability to achieve and maintain safe shutdown (SSD) in the event of a fire. The team concluded that the finding had a credible impact on safety because the licensee's failure to properly evaluate changes to the FPP could adversely affect or degrade the reliability of SSD capability from the MCR. However, the team determined that this finding was of very low significance because the overall SSD capabilities in the affected fire areas and related FFP features were still adequate to ensure SSD capability. Therefore, this finding is characterized as Green.

Mitigating Systems

09/13/2002

FAR

Green

*SCWE: N

*HP: N

*PIR: N

Docket/Status: 05000348 (C) , 05000364 (C)

Open: 2002006

Failure to Revise Procedure AOP-29.0 Promptly

Green. An NCV of 10 CFR Part 50, Appendix B, Criterion XVI was identified for the licensee's failure to revise promptly plant procedure AOP-29.0, Plant Fire, to incorporate the use of alternative shutdown (ASD) procedures for Fire Areas 51, 1-004, 2-004, and 2-043, as specified in Production Change Notice (PCN) No. B-90-0-7074 dated January 20, 1992. This finding was more than minor since it affected the Reactor Safety Cornerstone objective to ensure the availability, reliability, and capability of SSD systems relied upon to respond to a fire initiating event and to prevent undesirable consequences. Required operator actions may not have been accomplished in a timely manner because an approved plant procedure was not promptly revised for mitigating a fire in

four fire areas. This finding is characterized as having very low safety significance (Green) because it did not affect detection, manual suppression capability, automatic suppression capability, fire barriers, or 20-foot separation. Further, upon the MCR becoming uninhabitable during a fire, it would likely have been evacuated and ASD procedures used to mitigate the effects of the fire

Mitigating Systems	09/13/2002	FAR	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: 05000348 (C)

Open: 2002006

Failure to Maintain and Implement Fire Protection Program Transformer Fluid Confinement Features Required by the Listing Agency

Green. An NCV of 10 CFR 50.48 and Farley Unit 1 Operating License Condition 2.C.(4) was identified for the licensee's failure to provide fluid confinement protection features, as required by the listing agency (Factory Mutual Data Sheet 5-4/14-8), in Train A load center (LC) Room 335 (Fire Area 1-041.) After replacing an Askarel-type insulating fluid with a silicone-type insulating fluid in two separate 600V transformers in Train A LC Room 335, the licensee failed to provide physical fire area boundary spill confinement protection features (curbs or ramps) at Doors No. 324 and 321, to prevent the spread of fluid fire resulting from a faulted transformer to adjacent fire areas. This finding was determined to be more than minor because it can be viewed as a precursor to a significant event where a combustible liquid fire in one fire area could potentially cause damage to the redundant train of SSD cables in an adjacent fire area. However, based on the self-extinguishment properties of the silicon-type insulating fluid, a fire in LC Room 335 involving the 600V transformer fluid would most likely extinguish prior to spreading into the adjacent fire area and hence, any damage would be confined to a single division (Train A) of SSD equipment. Thus, the finding did not affect the 3-hour rated fire barrier separating redundant SSD functions. Accordingly, this finding is of very low safety significance.

Mitigating Systems	08/30/2002	SUSQ	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000387 (C) , 05000388 (C)

Open: 2002008

Inadequate Fire Barrier Surveillance

The inspectors identified a Green non-cited violation of License Condition 2.C(6) of operating license NPF-14 (Unit 1) and License Condition 2.C.3 of operating license NPF-22 (Unit 2) because PPL failed to identify and correct degraded gypsum board during the surveillance of the upper cable spreading room (UCSR) structural fire barriers. This surveillance was conducted on April 30, 2002, in accordance with Procedure SE-013-007, "24 Month Inspection of Unit Common Fire Barriers," and the provisions of section 1.4.2, "Compliance," of the approved fire protection program described in the Susquehanna Steam Electric Station (SSES) Fire Protection Review Report (FPRR). The failure to identify and correct degraded fire barriers could result in a fire impacting multiple fire areas thereby having an adverse impact on safety. This finding was of very low safety significance (Green) because the likelihood of occurrence of a fire that could damage safety-related equipment in this area and propagate to other areas is small, and because equipment and procedures were available to shutdown the plants from the control room.

Mitigating Systems	08/30/2002	SUSQ	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000387 (C) , 05000388 (C)

Open: 2002008

Inadequate UCSR Under-Floor CO2 Suppression System

The inspectors identified a Green non-cited violation of License Condition 2.C(6) of operating license NPF-14 (Unit 1) and License Condition 2.C.3 of operating license NPF-22 (Unit 2) because PPL could not demonstrate that the Units 1 and 2 total flooding CO2 system would be able to reach and maintain the required concentration of CO2 to extinguish a deep seated fire affecting the Units UCSR under-floor area. The need to reach and maintain the required CO2 concentrations are established by NFPA 12 "Standard on Carbon Dioxide Extinguishing Systems," (1973 Edition) and required by the SSES FPRR. The failure to ensure the design adequacy of the CO2 systems could result in a more challenging fire which would stress the remaining defense-in-depth elements and, thereby, have an adverse impact on safety. This finding was of very low safety significance (Green) because the likelihood of occurrence of a fire that could damage safety-related equipment in the UCSRs under-floor area is small, and equipment and procedures were available to shutdown the plants from the control room.

Mitigating Systems	08/30/2002	SUSQ	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000387 (C) , 05000388 (C)

Open: 2002008

Inadequate UCSR and LCSR Pre-Action Sprinkler System

The inspectors identified a Green non-cited violation of License Condition 2.C(6) of operating license NPF-14 (Unit 1) and License Condition 2.C.3 of operating license NPF-22 (Unit 2) because PPL could not demonstrate that the pre-action sprinkler system in the Units 1 and 2 UCSRs and lower cable spreading rooms (LCSR) met the requirements of NFPA 13, "Standard for the Installation of Sprinkler Systems" with regard to the placement of the

sprinkler heads, area of sprinkler head coverage and obstruction of the sprinkler heads. NFPA 13 (1974 Edition) is the SSES code of record for the pre-action sprinkler system and required by the SSES FRR. The failure to ensure the design adequacy of the pre-action sprinkler systems could result in a more challenging fire which would stress the remaining defense-in-depth elements and thereby have an adverse impact on safety. This finding was of very low safety significance (Green) because the likelihood of occurrence of a fire that could damage safety-related equipment in the affected areas is small, and equipment and procedures were available to shutdown the plants from the control room.

Mitigating Systems	06/21/2002	MONT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000263 (C)

Open: 2002011

Failure to Meet the Separation Criteria for Redundant Cabling and Equipment in Fire Zone 23A, Intake Structure Pump Room

The inspectors identified a NCV of 10 CFR Part 50, Appendix R, Section III.G.2 associated with a failure to protect redundant trains of equipment and cabling in the intake structure area. Specifically, the inspectors identified the presence of intervening combustible between two trains of Emergency Service Water (ESW) system. The two trains were separated by more than 20 feet and the fire area contained detection and suppression capabilities. This finding was determined to be more than minor because it affected the mitigating system cornerstone objective. This finding was evaluated using the SDP and determined to be Green. Because the finding was of very low safety significance, and 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.

Mitigating Systems	06/21/2002	MONT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000263 (C)

Open: 2002011

Procedures C.4-b-8.5.A, "Plant Fire," C.4-C, "Shutdown Outside the Control Room," and Other Related Procedures Associated with Responding to a Plant Fire Were Not Appropriate to the Circumstances.

The inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion V associated with a failure to ensure that some operations procedures were appropriate to the circumstances. Specifically, the inspectors determined that some operations procedures did not clearly identify the minimum set of actions necessary to ensure a safe shutdown of the reactor, following a fire, and ensure that adequate emergency lighting and communications were available to support those operator actions. This finding was determined to be more than minor because it could reasonably be viewed as a precursor to a significant event where required operator actions may not be accomplished in a timely manner due to inadequate operations procedures, and a lack of emergency lights and radios. Using the IMC 0609, Appendix F, this finding is characterized as Green because it did not affect detection, manual suppression capability, automatic suppression capability, fire barriers, or 20-foot separation.

Mitigating Systems	06/21/2002	MONT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000263 (C)

Open: 2002011

Failure to Maintain Full Area Detector Coverage in Zones 23A, 14A, 13B, 19A, and 19B.

The inspectors identified a NCV of 10 CFR 50.48 associated with inadequate fire detection capabilities in several fire areas. Specifically, the inspectors identified inadequate number and spacing of smoke detectors in two 4160-volt switchgear rooms and inadequate number and spacing of heat activated detectors in the reactor feed pump (RFP) area. This finding was determined to be more than minor because it could reasonably be viewed as a precursor to a significant event where a delay in fire detection in safety related switchgear and RFP areas could result in a more severe fire and render more equipment inoperable. In addition, the finding affected the mitigating system cornerstone objective in that the necessary number of detectors were needed to ensure the reliability, availability, and capability of systems that respond to initiating events to prevent undesirable consequences. Since the finding did not affect the 3-hour fire barrier separating redundant safe shutdown functions (IMC 0609, Appendix F, Figure 4-5), this finding was characterized as Green.

Mitigating Systems	06/21/2002	MONT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000263 (C)

Open: 2002011

Failure to maintain Complete Sprinkler Coverage in Fire Zones 13A and 13B.

The inspectors identified a NCV of 10 CFR 50.48 associated with inadequate fire suppression capabilities in several fire zones. Specifically, the inspectors determined that the sprinkler systems in fire zones 13A and 13B did not provide complete coverage of the areas. This finding was determined to be more than minor because it can be reasonably viewed as a precursor to a significant event where an uncontrolled fire in these areas could spread and potentially cause damage to the redundant trains of safe shutdown equipment in other fire zones. Since the finding did not affect the 3-hour fire barrier separating redundant safe shutdown functions (IMC 0609, Appendix F, Figure 4-5), this finding is Green.

Mitigating Systems	06/21/2002	MONT	Green	*SCWE: N	*HP: N	*PIR: Y
Docket/Status: 05000263 (C)						
Open: 2002011						
Failure to Enter Conditions Adverse to Quality into the Corrective Action Program and to Correct Conditions Adverse to Quality.						
<p>The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, associated with a failure to document conditions adverse to quality in the corrective action program and a failure to resolve several fire protection-related conditions adverse to quality entered into the corrective action program. Specifically, some findings, developed as a part of an internal self-assessment, were not entered into the corrective action program and other conditions adverse to quality, associated with transfer of fire protection requirements out of the Technical Specifications and inspection findings, were not corrected. This finding is more than minor because if left uncorrected, the finding would become a more significant safety concern. Failure to enter fire protection non-compliance items and failure to resolve the items entered into the corrective actions program could potentially affect the availability, reliability, and capability of fire protection safe shutdown equipment and response efforts. This finding is not suitable for SDP analysis. However, the inspectors determined that this finding was of very low significance (Green) because each associated performance deficiency, identified during this inspection, was of very low significance. Therefore, the finding was characterized as Green.</p>						
Mitigating Systems	06/21/2002	MONT	SL-IV	*SCWE: N	*HP: Y	*PIR: N
Docket/Status: 05000263 (C)						
Open: 2002011						
Failure to Perform Written Safety Evaluations and Submit a Summary to the NRC for Changes Made to the FPP, FHA, and SSA from 1984 to 2001.						
<p>The inspectors identified a Severity Level IV NCV of 10 CFR 50.59 associated with a failure to control and maintain changes made to the fire protection program (FPP) since 1984. Because violations of 10 CFR 50.59 are considered to be violations that could potentially impede or impact the regulatory process, they are dispositioned using the traditional enforcement process instead of the SDP. Since the SDP is not designed to assess the significance of violations that could potentially impact or impede the regulatory process, the "results of a 10 CFR 50.59 violation" are assessed using the SDP and the severity level of the 10 CFR 50.59 violation is then based on this significance determination. In this case, the licensee's failure to control and evaluate changes to components of the FPP resulted in the implementation of the program in a manner different than approved by the NRC, as documented in relevant Safety Evaluation Reports (SERs). Examples of these differences are presented in other sections of this report. The inspectors concluded that the issue had a credible impact on safety because the licensee's failure to control and evaluate changes to the FPP could adversely affect the reliability, capability, and availability of safe shutdown capabilities, as discussed in the other sections of this report. However, based upon a review of the current plant configuration and an assessment of the impacts of the examples discussed in this report, the inspectors determined that the licensee's failure to properly control and evaluate changes to be of very low safety significance. Therefore, the issue was determined to be of very low safety significance, i.e., a Green finding.</p>						
Mitigating Systems	05/10/2002	DRES	Green	*SCWE: N	*HP: N	*PIR: N
Docket/Status: , 05000237 (C) , 05000249 (C)						
Open: 2002006						
Reactor Water Level Could Drop Below Top of Active Fuel in the Event of Fire						
<p>The inspectors identified, that in the event of a fire, reactor water level could decrease to below 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 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).</p>						
Mitigating Systems	03/29/2002	SEQ	Green	*SCWE: N	*HP: N	*PIR: N
Docket/Status: 05000327 (C)						
Open: 2002003						
INADEQUATE PROTECTION OF SAFE SHUTDOWN (SSD) COMPONENTS						
<p>The inspectors identified a non-cited violation of 10 CFR 50, Appendix R, III.G.2, Fire Protection SSD Capability, for failure to ensure that one of the redundant trains necessary to achieve and maintain hot shutdown conditions would be free of fire damage. Electrical cables for redundant charging flow isolation valves were located in fire area FAA-029 without adequate spatial separation or fire barriers. The finding had very low safety significant because the ignition frequency was relatively low, fire detection and suppression systems were not degraded, and there were no components in this area whose</p>						

failure would result in an accident initiator (i.e., loss of offsite power, loss of main feedwater).

Mitigating Systems	03/29/2002	SEQ	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: 05000327 (C) , 05000328 (C)

Open: 2002003

INADEQUATE PROCEDURE GUIDANCE FOR PLANT FIRES

The inspectors identified a non-cited violation of Technical Specification 6.8.1.a, Procedures and Programs, for inadequate procedure guidance related to the transition from Abnormal Operating Procedure (AOP), Plant Fires, to AOP, Shutdown From Auxiliary Control Room (ACR), in the event of a severe fire. The delayed transition to the ACR could challenge the operators' ability to perform certain critical safe shutdown functions within the times specified in the licensee's safe shutdown calculation for Appendix R. This finding had very low safety significance because it did not affect fire detection, fire suppression, or fire barriers.

Mitigating Systems	03/29/2002	SEQ	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: 05000327 (C) , 05000328 (C)

Open: 2002003

INADEQUATE EMERGENCY LIGHTING FOR REFUELING WATER STORAGE TANK (RWST) SUCTION VALVES

The licensee identified a non-cited violation of 10 CFR 50 Appendix R, III.J, Emergency Lighting, for failure to provide emergency lighting with at least an 8-hour battery power supply for Unit 1 and 2, RWST suction valves. Manual operation of these valves is required in the event of a severe fire in accordance with licensee's shutdown procedures.

Mitigating Systems	03/29/2002	SEQ	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: 05000327 (C) , 05000328 (C)

Open: 2002003

INADEQUATE PROTECTION FOR VOLUME CONTROL TANK (VCT) SUCTION VALVES

The licensee identified a non-cited violation of 10 CFR 50 Appendix R, III. G.2, Fire Protection Safe Shutdown Capability, for failure to protect cables to the VCT suction valves to prevent maloperation of components necessary to achieve and maintain hot shutdown conditions.

Mitigating Systems	02/21/2002	INP3	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: , 05000286 (C)

Open: 2001012

INADEQUATE PROCEDURE FOR TRANSITION TO COLD SHUTDOWN DURING SHUTDOWN FROM OUTSIDE THE CONTROL ROOM

The team identified a non-cited violation of 10 CFR 50, Appendix R for failure to have adequate procedures to achieve cold shutdown conditions within 72 hours following a fire. The team found that the procedures for shutdown from outside of the control room did not provide sufficient direction to assure that pressurizer pressure could be reduced to allow initiation of the residual heat removal system for decay heat removal in sufficient time to ensure that cold shutdown could be achieved within 72 hours of plant shutdown. A delay in achieving cold shutdown following a fire that required shutdown from outside of the control room was considered a credible impact on safety. This finding was of very low safety significance because the likelihood of a fire that could necessitate a shutdown from outside of the control room and cause a loss of reactor coolant system letdown capability was small.

Mitigating Systems	02/08/2002	CP	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	----	-------	----------	--------	---------

Docket/Status: 05000445 (C)

Open: 2002006

Failure to establish and maintain adequate procedures covering activities associated with fire protection program implementation

A violation of Comanche Peak Steam Electric Station Technical Specification, Section 5.4.1.a, was identified for failure to establish and maintain adequate procedures implementing the fire protection program. In particular, Abnormal Conditions Procedure ABN-803A, "Response to a Fire in the Control Room or Cable Spreading Room," did not direct operators to transfer control of the Train B power-operated relief valve from the control room, leaving it vulnerable to spurious operation in the event of a fire in the control room envelope requiring control room evacuation and remote shutdown. This violation is being treated as a noncited violation in accordance with Section VI.A.1 of the NRC Enforcement Policy. This finding was first identified in NRC Inspection Report 50-445/02-03; 50-446/02-03 as an unresolved item (URI 50-445/0203-01) pending significance determination. This issue was determined

to be more than minor, because it is associated with the reactor safety mitigating systems cornerstone and affects the cornerstone objective as described in NRC Manual Chapter 0612, Appendix B. Specifically, this finding affected the licensee's capability to mitigate the consequences of a fire in the control room in order to achieve and maintain safe shutdown. In a Phase 3 risk analysis, the NRC determined that significance of this finding was GREEN, based on a relatively low fire ignition frequency plus a low likelihood that fire damage would cause the Train B power-operated relief valve to spuriously open.

Mitigating Systems	12/29/2001	COOK	N/A	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-----	----------	--------	---------

Docket/Status: 05000315 (C) , 05000316 (C)

Open: [2001019](#)

Failure to Ensure That Breaker Coordination and Selective Tripping was Provided at the 4.16 kV System

No Color. The inspectors identified a Non-Cited Violation for failure to ensure that coordination and selective tripping was provided in accordance with the Safe Shutdown Capability Assessment. The current transformers for protective relaying at the 4.16 kV level were undersized and could reach saturation conditions if a bolted fault were to occur on the associated cabling. This condition could result in inadvertent tripping of 4.16 kV circuit breakers supplying safe shutdown equipment. The failure to ensure coordination and selective tripping is a violation of the D. C. Cook Operating License Section 2.C.(4) for Unit 1 and Section 2.C.(3)(0) for Unit 2. The finding was determined to be No Color because the finding was not suitable for Significance Determination Process evaluation because it did not involve the impairment or degradation of a fire protection feature.

Mitigating Systems	11/28/2001	SUM	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: 05000395 (C)

Open: [2001009](#)

Emergency Lighting Installation Deficiencies for Performing Alternative Shutdown Actions

A non-cited violation of Virgil C. Summer Operating License Condition 2.C. (18), Fire Protection System, was identified for failure to install battery pack emergency lighting units, in accordance with the approved V.C. Summer Fire Protection Program, in 13 areas (access and egress routes included) where manual operator actions were required to support post-fire safe shutdown. This finding had a potential to impact the licensee's ability to shut down the plant in the event of a loss of power to normal lighting during a fire. The finding was of very low safety significance because it did not affect fire detection, fire suppression, or fire barriers.

Mitigating Systems	09/28/2001	POIN	N/A	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-----	----------	--------	---------

Docket/Status: 05000266 (C) , 05000301 (C)

Open: [2001012](#)

INSUFFICIENT EMERGENCY LIGHTING TO SUPPORT SAFE SHUTDOWN

The inspectors identified that there was insufficient emergency lighting to support performance of required safe shutdown actions. Specifically, there was insufficient emergency lighting in the Unit 1 and Unit 2 façade areas to support performing confirmatory actions to fail air to the Unit 1 and Unit 2 main steam isolation valves so as to ensure these valves would not spuriously reopen. The failure to have adequate emergency lighting is a violation of 10 CFR Part 50, Appendix R, Section III.J. The finding was greater than minor because a delay in performing safe shutdown actions could occur due to the lack of emergency lighting. The finding was determined to be No Color because the finding did not involve the impairment or degradation of a fire protection defense-in-depth element. 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.

Mitigating Systems	09/28/2001	POIN	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000266 (C) , 05000301 (C)

Open: [2001012](#)

AUXILIARY FEEDWATER PUMP ROOM HALON SYSTEM INADEQUATE

The inspectors identified that the automatic fire suppression system for the auxiliary feedwater pump room was not adequate. The installed fire suppression system was only designed for surface fires and was not designed to provide the necessary soak time for deep-seated fires. However, deep-seated fire hazards had been introduced to the room. The failure to have an adequate automatic suppression system is a violation of 10 CFR Part 50, Appendix R, Section III.G.2. The finding was determined to be greater than minor because the finding involved automatic suppression, a fire protection defense-in-depth element. The finding was determined to be of very low safety significance (Green) because the inspectors were not able to postulate a fire scenario which could sustain a deep-seated fire and damage redundant trains of equipment. 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.

Mitigating Systems	09/28/2001	POIN	N/A	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-----	----------	--------	---------

Docket/Status: 05000266 (C) , 05000301 (C)

Open: 2001012**INSUFFICIENT APPENDIX R FUEL OIL SUPPLY**

The inspectors identified that the licensee had failed to maintain a 72-hour fuel supply on-site for generator G-05 relied upon for safe shutdown in the event of a fire. The failure to maintain a 72-hour supply of fuel is a violation of 10 CFR Part 50, Appendix R, Section III.L.3. The finding was greater than minor because the capability to achieve and maintain cold shutdown conditions for 72 hours was not provided. The finding was determined to be No Color because the finding did not involve the impairment or degradation of a fire protection defense-in-depth element. 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.

Mitigating Systems	09/28/2001	POIN	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000266 (C) , 05000301 (C)

Open: 2001012**POSSIBLE SPURIOUS OPENING OF POWER-OPERATED RELIEF VALVE DURING FIRES**

10 CFR Part 50, Appendix R, Section III.G.1.a required, in part, that one train of systems necessary to achieve and maintain hot shutdown conditions be free of fire damage. As discussed in LER 50-266/1999-006-00; 50-301/1999-006-00, hot shutdown conditions would not have been able to be maintained during the ensuing plant transient which would have resulted from a stuck open pressurizer PORV (power-operated relief valve).

Mitigating Systems	09/22/2001	BF	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	----	-------	----------	--------	---------

Docket/Status: , 05000260 (C)

Open: 2001003**INADEQUATE FIRE DAMPER MAINTENANCE PROCEDURE RESULTS IN INOPERABLE EMERGENCY DIESEL GENERATORS**

The licensee identified a non-cited violation for failure to meet Technical Specification 5.4.1.a (Procedures). A fire protection procedure did not contain adequate checks for diesel generator damper chain alignment and blow off clip engagement in accordance with vendor recommendations necessary to assure proper operation including preventing inadvertent actuation.

Mitigating Systems	09/14/2001	CALV	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000317 (C)

Open: 2001007

Inadequate abnormal operating procedures for post-fire safe shutdown. (Section IRO5.07)

Contrary to 10 CFR 50, Appendix R, Section III.L.3, "Alternative and Dedicated Shutdown Capability: procedures AOP-9A and -9B (Unit 1) were inadequate in that they contained numerous deficiencies that presented challenges to the operators' ability to achieve and maintain safe shutdown.

Mitigating Systems	09/14/2001	CALV	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000317 (C)

Open: 2001007

Failure to account for steam generator inventory losses due to blow down flow. (Section IRO5.07).

Contrary to 10 CFR 50, Appendix B, Criteria III, "Design Control" design calculations and analysis for AOP-9 and loss of feedwater analysis were not adequate in that they failed to include inventory losses due to steam generator blow down flow.

Mitigating Systems	09/14/2001	CALV	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: , 05000318 (C)

Open: 2001007

22 Saltwater air compressor Appendix R handswitch fuses shunted. LER 50-318/2001-001 (Section 40A3.1)

While performing preventive maintenance the licensee found that an extra (spare) wire was installed in the circuit breaker control circuit for the 22 salt water air compressor (SWAC). This wire should have been removed during a modification that was performed in 1999. In the event of a control room fire,

this wire could shunt the control pwler fuses and thereby remove the overcurrent protection for the control transformer. The transformer is necessary to operate the circuit breaker locally as was assumed in the Appendix R analysis. The spare wire was removed to correct this deficiency.

Mitigating Systems	08/09/2001	KEWA	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000305 (C)

Open: [2001011](#)

NON-RATED FIRE BARRIER

A Non-Cited Violation [of 10 CFR Part 50, Appendix R, Section III.G.2.a] was identified for failure to provide a 3-hour rated fire barrier to separate redundant trains of safe shutdown equipment. This finding was of very low safety significance because the licensee tested a replica of the fire barrier and demonstrated that the fire barrier provided protection for at least 60 minutes, which was sufficient for the hazards in the area.

Mitigating Systems	06/30/2001	STL	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: 05000335 (C)

Open: [2001003](#)

Inoperable Cable Spreading Room Smoke Detector

Operating License DPR-67 (Unit 1), Condition 2.C(3), specifies that the licensee implement all provisions of the approved fire protection program as described in the UFSAR and as approved by NRC safety evaluation reports (SERs). UFSAR Table 9.5A-2 identified NFPA 72A-1972 as the code of record for original installation of the fire detection system. NFPA 72A-1972, requires that smoke detectors shall be located and adjusted to operate reliably in case of smoke at any part of the area protected. Contrary to the above, smoke detector 7B-4 could not detect smoke in the cable spreading room (Fire Zone 57) because it was surrounded by a Thermo-lag enclosure. This condition was identified on March 26, 1998. This issue is in the licensee's corrective action program as CR 98-0259. (Green)

Mitigating Systems	06/30/2001	STL	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: , 05000389 (C)

Open: [2001003](#)

Fire Detection Electrical Monitoring System Not in Accordance with Requirements

Operating License NPF-16 (Unit 2), Condition 2.C(20), specify that the licensee implement and maintain in effect all provisions of the approved fire protection program as described in the UFSAR and as approved by NRC SERs. NRC SER for Unit 2 dated October 1981 specifies that all fire detection systems used to actuate fire suppression systems will be Class A systems. Section 3.5.2.b of the Unit 2 UFSAR, Appendix 9.5A requires that fire protection systems shall be designed to ensure that any detector failure, single break, ground fault or wire to wire short will not prevent the transmission of an alarm, resulting in false operation, or cause a false indication of fire. The Unit 2 fire detection system had Class B style monitoring installed where Class A was required. With a Class B style electrical monitoring system, a single break or ground fault will result in a "trouble" condition for the initiating device circuits. This problem has existed since the original system installation and was discovered on February 14, 1998, and documented in the licensee's corrective action program as CR 98-0260. (Green)

Mitigating Systems	06/30/2001	STL	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: 05000335 (C) , 05000389 (C)

Open: [2001003](#)

Inadequate Testing of Sprinkler System

Operating License DPR-67 (Unit 1), Condition 2.C(3) and NPF-16 (Unit 2), Condition 2.C(20), specify that the licensee implement and maintain in effect all provisions of the approved fire protection program as described in the UFSAR and as approved by NRC SERs. Section 4.3.1.5 Automatic Water Suppression Systems of the UFSAR, Amendment 33, dated August 17, 1979, indicated that all station automatic water suppression systems conformed to NFPA 13 or 15. The testing and installed design for the water suppression sprinkler system was not consistent with NFPA 13 or NFPA 15. This condition has existed since the original system installation and was identified on February 20, 1998, and documented in the licensee's corrective action program as CR (s) 98-0307, 98-0405, 98-0429. (Green)

Mitigating Systems	06/08/2001	BV	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	----	-------	----------	--------	---------

Docket/Status: 05000334 (C)

Open: [2001005](#)

INADEQUATE PROCEDURE FOR SAFE SHUTDOWN FROM OUTSIDE OF THE CONTROL ROOM COULD RESULT IN DAMAGE TO EMERGENCY DIESEL GENERATOR

The team identified a non-cited violation of 10 CFR 50, Appendix R for failure to have adequate procedures to assure safe shutdown capability. The team found that the procedure for shutdown from outside the control room did not provide adequate direction to promptly verify river water (RW) cooling to the protected emergency diesel generator (EDG). The delay in verifying RW cooling to the running EDG could result in damage to the EDG and a loss of all AC power. The safety significance of this finding was very low because the likelihood of a fire that would cause a loss of all RW and necessitate a shutdown from outside of the control room was small.

Mitigating Systems	04/13/2001	INPT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: , 05000247 (C)

Open: 2000004

Failure to have adequate length of fire hose staged for manual fire fighting in the central control room

The team determined that the 100 feet long fire hoses on the primary and secondary hose reels for central control room (CCR) were too short to reach all areas of the CCR. ConEd took immediate corrective action to stage additional hose lengths near the primary hose station for the CCR, and documented the deficiency in the corrective action program. The failure to be able to reach all areas of the CCR with 100 feet length fire hose is a violation of the Fire Protection Program Plan, which is incorporated into the operating license, by reference, in License Condition 2.K. The significance determination process characterized this condition as being of very low risk significance because the control room is continuously manned, and most fires would be detected and extinguished at the incipient stage using portable extinguishers. This violation of the operating license is being treated as a Non-Cited Violation (NCV 050000247/2000-004-02), consistent with Section VI.A. of the Enforcement Policy.

Mitigating Systems	04/13/2001	INPT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: , 05000247 (C)

Open: 2000004

Failure to provide adequate isolation of circuits from the central control room

The team found that the remote control switches, and their associated wiring, in Unit 1 control panel board located in the CCR of several 13.8 kV light and power breakers (SB1-2, SB1-3, SB1-T, SB2-2 and GT-1) of Alternate Safe Shutdown System (ASSS) power supply were not capable of being isolated from central control room circuit wiring, an area for which the system is credited. This is contrary to section III G.3 of Appendix R. In the event of a fire in the control room, the control of these breakers could be adversely affected and the alternate safe shutdown power relied upon could become unavailable. No procedural steps exist to recover these breaker functions. ConEd entered this deficiency into the corrective action program on April 13, 2001, to address this issue. The team determined that this issue was of very low risk significance (Green). This violation of 10 CFR 50, Appendix R, section III.G.3 requirement, not providing adequate isolation of circuits from the central control room, is being treated as a non-cited violation (NCV 050000247/2000-004-03), consistent with Section VI.A. of Enforcement Policy.

Mitigating Systems	03/12/2001	KEWA	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000305 (C)

Open: 2001002

INADEQUATE SMOKE DETECTOR COVERAGE IN FIRE ZONE TU-95B.

Licensee identified violation of licensee's operating license that the licensee failed to install a detector in each beam pocket in Fire Zone TU-95B.

Mitigating Systems	02/13/2001	KEWA	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000305 (C)

Open: 2001004

FAILURE TO TEST FIRE DOOR IN ACCORDANCE WITH FIRE PLAN.

The inspectors identified a non-cited violation for failure to properly test a fire door in accordance with the facility's fire protection program plan. The finding was of very low safety significance because, although the fire door separated both trains of service water pumps and did not fully close as designed when subsequently tested, the fire loading in the area was insufficient to credibly impact more than two of the four service water pumps in the area.

Mitigating Systems	12/15/2000	QUAD	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000254 (C) , 05000265 (C)

Open: 2000016

Failure to Seal Tops of Electrical Cabinets

The team identified that electrical cabinets in the auxiliary electric equipment room were not sealed at the top to protect equipment from water damage. The failure to seal the top of the cabinets was considered a Non-Cited Violation (NCV 50-254/00-16-01; NCV 50-265/00-16-01) of Operating Licenses DPR-29 and DPR-30, Section h.3.F (Section 1R05.2.b.1). The failure to seal the cabinets, a fire protection feature, involved very low risk (Green) because a fire protection defense-in-depth element, as described by MC 0609, Appendix F, Fire Protection Significance Determination Process, was not affected.

Mitigating Systems	12/15/2000	QUAD	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000254 (C) , 05000265 (C)

Open: 2000016

Failure to Provide Fire Stops in Cable Trays

The team identified that fire stops were not installed in divisional cable trays for which specified separation had not been maintained. The failure to install fire stops was considered a Non-Cited Violation (NCV 50-254/00-16-02; NCV 50-265/00-16-02) of Operating Licenses DPR-29 and DPR-30, Section H.3.F (Section 1R05.2.b.2). The failure to install fire stops, a fire protection feature, involved very low risk (Green) because a fire protection defense-in-depth element, as described by MC 0609, Appendix F, Fire Protection Significance Determination Process, was not affected.

Mitigating Systems	11/30/2000	BRAI	N/A	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-----	----------	--------	---------

Docket/Status: 05000456 (C) , 05000457 (C)

Open: 2000006

ESW Suction Valves Not Protected from Fire Induced Spurious Actuations

During the licensee's self-assessment activities in May 2000, prior to the NRC inspection, the licensee identified that the circuit breakers supplying power to ESW suction valves (1SX001A, 1SX001B, 2SX001A and 2SX001B) were not de-energized during normal plant operations in accordance with the response to FSAR Question 10.65. These valves supplied ESW to both units. The power removal commitment was to ensure that the valves would not close due to fire-induced spurious operations.

Mitigating Systems	11/02/2000	PERR	N/A	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-----	----------	--------	---------

Docket/Status: 05000440 (C)

Open: 2000010

Failure to update procedures

The team identified that Attachment 2 of procedure ONI-P54, "Off-Normal Instruction - Fire," Revision 3, did not include potential fire impacts upon selected RHR valves in Room ICC-3a and CC-2a, despite the fact that such potential impacts were identified in the safe shutdown capability report (SSCR). Failure to update procedure ONI-054, in a timely manner, to include information used to alert operators as to which components could be potentially impacted by a fire is considered a nonconforming condition and is an example of a violation of Perry's license condition (Section 1R05.1).

Mitigating Systems	11/02/2000	PERR	Green	*SCWE: N	*HP: N	*PIR: Y
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000440 (C)

Open: 2000010

Failure to address extended inoperability of the control room sub floor CO2 system.

The team determined that the licensee failed to promptly address extended inoperability of the control room subfloor CO2 system. This was a violation of the facilities license condition. The CO2 system inoperability resulted in an extended degradation of the manual fire fighting capability, one of the defense-in-depth elements for fire protection, for the control room (Section 1R05.12).

Mitigating Systems	09/28/2000	WAT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: , 05000382 (C)

Open: 2000007

Failure to demonstrate the ratings of 3-hour fire barriers.

The licensee failed to ensure through testing or evaluation that the configurations of Penetration Seals IIIA0204 and IIIA0251 were 3-hour fire rated. These

penetration seals separated fire areas containing equipment required for safe shutdown. This was identified as a violation of License Condition 2.C.9, with two examples, and is being treated as a Non-Cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy. The licensee entered this finding into their corrective action program as Condition Report CR-WF3-2000-1153, and the licensee implemented compensatory measures in the affected fire area in accordance with their fire protection program. This finding was of very low safety significance because the ignition frequencies were relatively low, and fire detection and suppression systems were not degraded. The licensee subsequently performed a Generic Letter 86-10 evaluation which qualified these penetration seals.

Mitigating Systems	09/27/2000	WAT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: , 05000382 (C)

Open: 2000007

Failure to initiate condition reports for emergency lighting battery test failures.

The licensee failed to initiate corrective action reports to document and evaluate failures of emergency lighting batteries to pass the 8-hour discharge tests. The team determined that five maintenance action items documented emergency lighting batteries that failed their 8-hour discharge tests. However, the failures were not entered into the licensee's corrective action program, as required by procedure. This was identified as a violation of Technical Specification 6.8.1.f. This violation is being treated as a Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy. The licensee entered this finding into their corrective action program as Condition Report CR-WF3-2000-1141. This finding was of very low safety significance because the batteries would have provided lighting for a certain amount of time and handheld lights would be available, if required.

Mitigating Systems	09/18/2000	WAT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-------	----------	--------	---------

Docket/Status: , 05000382 (C)

Open: 2000007

Failure to maintain in effect a 1-hour rated fire barrier between redundant trains of equipment necessary to achieve and maintain safe shutdown.

In Fire Area RAB-2 (heating and ventilation mechanical room), it was determined that equipment required for safe shutdown of the plant following a fire were not separated by 1-hour fire barriers. Specifically, several cables for the redundant Train A/B of the chilled water system had either missing or damaged 1-hour fire wrap. This was identified as a violation of Operating License Condition 2.C.9, and is being treated as a Non-Cited Violation consistent with Section VI.A of the NRC Enforcement Policy. The licensee entered this finding into their corrective action program as Condition Report CR-WF3-2000-1088, and the licensee implemented compensatory measures in the affected fire area in accordance with their fire protection program. This finding was of very low safety significance because the ignition frequency was relatively low, fire suppression and detection systems were not degraded, and actions were available to ensure a safe shutdown path in Fire Area RAB-2.

Mitigating Systems	08/22/2000	CALL	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000483 (C)

Open: 2000013

Three examples of making a change to the fire protection program, without prior Commission approval, that adversely affected the ability to achieve and maintain safe shutdown.

In Fire Area A-27 (reactor trip switchgear room) the team found that redundant equipment required for safe shutdown of the plant following a fire was not separated in accordance with Section C.5.b of Branch Technical Position Chemical Engineering Branch 9.5-1, in that the 20 feet of horizontal space between redundant trains of safe shutdown equipment contained intervening combustibles. Subsequent to this finding, the licensee identified similar conditions in Fire Areas A-1A (west corridor of the 1974 foot elevation of the auxiliary building), and Fire Area A-18 (north electrical penetration room in the auxiliary building). The team also found that in 1989, and 1996, the licensee performed engineering evaluations to justify installed configurations in several fire areas, including Fire Areas A-1A, A-18, and A-27, which did not meet the separation criteria of Section C.5.b of Branch Technical Position Chemical Engineering Branch 9.5-1. In performing these evaluations, however, the licensee failed to consider, as intervening combustibles or fire hazards, non-safety-related cables and other equipment located in the 20 foot separation areas between redundant trains of equipment necessary to achieve and maintain safe shutdown conditions. Therefore, the licensee did not identify the safe shutdown equipment which could be vulnerable to fire damage and the operator actions to restore that equipment to service. The failure to identify and evaluate these additional operator actions were considered by the team to have an adverse affect on the licensee's ability to achieve and maintain safe shutdown in the event of a fire. Therefore, the team concluded that without prior approval of the Commission, the licensee made changes to their approved fire protection program that adversely affected their ability to achieve and maintain safe shutdown in the event of a fire in Fire Areas A-1A, A-18, and A-27. This is a violation of Operating License Condition 2.C(5)(d), with three examples, and is being treated as a Non-Cited Violation consistent with Section VI.A of the NRC Enforcement Policy. The licensee entered this finding into their corrective action program as Suggestion-Occurrence-Solution 00-2070 and posted compensatory measures in accordance with the provisions of their fire protection program. Each example of this violation was evaluated using the significance determination process, which indicated that, for each of the fire areas involved, the violation had very low safety significance, because the ignition frequencies were relatively low, fire detection and suppression systems were not degraded, and operator actions were available to ensure a safe shutdown path for a fire in each of the fire areas.

Mitigating Systems	08/18/2000	PILG	Green	*SCWE:	*HP:	*PIR:
--------------------	------------	------	-------	--------	------	-------

Docket/Status: 05000293 (C)

Open: 2000004

Emergency Lighting Units were not installed to support manual operation

The NRC identified that emergency lighting units (ELUs) were not installed to support manual operation of the service water outlet valves for the reactor building closed cooling water heat exchangers. Additionally, these valves were not accessible for local, manual operation. Local, manual operation of these valves would be required in certain circumstances for post-fire shutdown. This finding is characterized as a condition for very low safety significance in accordance with the Fire Protection Significance Determination Process because it does not affect fire barriers, or fire detection or suppression capability.

Mitigating Systems	08/18/2000	PILG	Green	*SCWE:	*HP:	*PIR:
--------------------	------------	------	-------	--------	------	-------

Docket/Status: 05000293 (C)

Open: 2000004

Emergency diesel generator watt-meter cables in the cable spreading room were neither protected nor isolated

Emergency diesel generator (EDG) watt-meter cables in the cable spreading room, which could be damaged by a fire, were neither protected nor isolated as part of the Appendix R modifications. This led to the potential for a cable spreading room fire to cause a loss of the EDGs on the start of a residual heat removal pump, resulting in a station blackout condition in the post-fire operating environment. The Significance Determination Process characterizes this finding as a condition of very low safety significance because of the ability to diagnose the problem and recover electrical power.

Mitigating Systems	08/09/2000	CALL	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: 05000483 (C)

Open: 2000013

Failure to maintain in effect a 3-hour rated fire barrier between redundant trains of equipment necessary to achieve and maintain safe shutdown.

The inspectors identified that a 3-hour rated fire door between the Train A and Train B safety-related ac switchgear rooms was ajar. This failure to properly maintain in effect all provisions of their NRC-approved fire protection program is a violation of Operating License Condition 2.C(5)(c). This violation is being treated as a Non-Cited Violation consistent with Section VI.A of the NRC Enforcement Policy. The licensee entered this finding into their corrective action program as Suggestion-Occurrence-Solution 00-1927. This finding was of very low safety significance, because the door was ajar for less than 3 hours, the ignition frequency was relatively low, and the fire detection and suppression systems were minimally affected.

Mitigating Systems	07/01/2000	NA	Green	*SCWE:	*HP:	*PIR:
--------------------	------------	----	-------	--------	------	-------

Docket/Status: 05000338 (C) , 05000339 (C)

Open: 2000003

INADEQUATE PROCEDURE FOR ALTERNATIVE SHUTDOWN FOR A CONTROL ROOM FIRE

A non-cited violation was identified for the failure to have an adequate procedure in effect to provide alternative shutdown capability (i.e., to achieve and maintain a safe shutdown condition) in the event of a main control room fire. This is a violation of Technical Specification 6.8.1.a and is in the licensee's corrective action program as DR N-99-0795. This item is associated with Licensee Event Report 50-338, 339/99-003-00 which has an event date of March 31, 1999. The issue was of very low safety significance due to the very low fire initiating event frequency associated with the condition.

Mitigating Systems	05/05/2000	WNP	Green	*SCWE:	*HP:	*PIR:
--------------------	------------	-----	-------	--------	------	-------

Docket/Status: , 05000397 (C)

Open: 2000007

Detectors found not installed in accordance with the fire code.

Green. The team identified several fire areas without detectors installed as required by the 1974 National Fire Protection Association Code 72E. Section 4-4.6 of the Code states, in part, "In beam construction over 8 inches in depth, movement of heated air and smoke may be slowed by the pocket or bay formed by the beams. In this case, spacing shall be reduced. If beams exceed 18 inches in depth and are more than 8 feet on centers, each bay shall be treated as a separate area requiring at least one detector." The team identified fire areas (RC-4, RC-9, RC-14, and RC-19) that did not meet the Code requirement. Operating License Condition 2.C.14 requires that the licensee implement and maintain the approved fire protection program. This approved program is committed to the 1974 National Fire Protection Association Code 72E. The failure to maintain the Code requirement for fire detector placement is a violation of Operating License Condition 2.C.14. This violation is being treated as a Non-Cited Violation (50-397/0007-01), consistent with Section VI.A of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Problem Evaluation Request 200-0751. This issue was evaluated using the NRC's Significance Determination Process and was screened out as low risk significance in Phase 1 because redundant safe shutdown

functions were separated by a 3-hour fire barrier (Section 1R05.2b.1).

Mitigating Systems	05/05/2000	WNP	Green	*SCWE:	*HP:	*PIR:
--------------------	------------	-----	-------	--------	------	-------

Docket/Status: , 05000397 (C)

Open: 2000007

A degraded 1-hour rated Darmatt raceway fire barrier found with an unsealed annular gap through the post-fire safe shutdown barrier envelope.

Green. The team identified one small opening in a 1-hour Darmatt fire barrier where a Whittaker cable penetrated. The fire barrier protected the Division 2 safe shutdown cables. The opening was in the shape of an isosceles triangle with the base measuring about one-half inch and the height measuring about three-eighths inch. This fire area (RC-3) was of high risk consequence because if a postulated cable fire occurred in this area both divisions of post-fire safe shutdown capability would be lost. Operating License Condition 2.C.14 requires that the licensee implement and maintain the approved fire protection program. The approved program requires that a 1-hour rated barrier be maintained between redundant safe shutdown trains in this fire area. The failure to maintain a 1-hour rated fire barrier is a violation. This violation of the Operating License Condition 2.C.14 is being treated as a Non-Cited Violation (50-397/0007-02), consistent with Section VI.A of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Problem Evaluation Request 200-0736. This issue was evaluated and was determined to be of low risk significance because barrier degradation, detection, and automatic and manual suppression for Fire Area RC-3 were in the normal operating state (Section 1R05.2b.2).

Mitigating Systems	04/28/2000	NA	N/A	*SCWE:	*HP:	*PIR:
--------------------	------------	----	-----	--------	------	-------

Docket/Status: 05000338 (C)

Open: 2000007

FAILURE TO ANALYZE NON-SAFETY CIRCUITS WHICH COULD PRODUCE TRANSIENTS DUE TO POTENTIAL FIRE INDUCED SPURIOUS OPERATION

The licensee's analyses for associated circuits was limited to the emergency power system and did not include associated non-safety circuits. The non-safety associated circuits could produce transients due to potential fire induced spurious operations that were not considered by the licensee in their Safe Shutdown Analysis. Although the licensee had not analyzed for associated non-safety circuits, there were no specific examples of associated non-safety circuits identified by the team. This issue is in the licensee's corrective action program as item N-02-98-2218-001. A non-cited violation of 10 CFR 50, Appendix R, Section III.G.2, was identified.

Mitigating Systems	04/28/2000	NA	Green	*SCWE:	*HP:	*PIR:
--------------------	------------	----	-------	--------	------	-------

Docket/Status: 05000338 (C) , 05000339 (C)

Open: 2000007

INADEQUATE PROCEDURE GUIDANCE FOR IMPLEMENTING ALTERNATE SHUTDOWN FOR A FIRE IN THE MAIN CONTROL ROOM

The licensee's procedure for implementation of alternative shutdown capability was inadequate. The alternative shutdown procedure for a fire in the main control room (MCR) directed the operator to monitor steam generator level using the indication provided on the alternative shutdown panel located in the emergency switchgear room. This indication was not protected and was not electrically isolated from the MCR. The protected indication was located on the fuel building monitoring panel. The fuel building indication was also specified in the procedure, but was only to be used if an indication could not be obtained from the alternative shutdown panel instrument. The licensee was tracking this issue in their corrective action program as item N-02-2218-001. A non-cited violation of Technical Specifications 6.8.1.a was identified.

Mitigating Systems	04/01/2000	HAR	Green	*SCWE:	*HP:	*PIR:
--------------------	------------	-----	-------	--------	------	-------

Docket/Status: 05000400 (C)

Open: 2000001

Fire protection wrap/penetration seal interface problems

A non-cited violation of the fire protection program was identified for failing to maintain adequate procedures for the installation of fire barriers where penetration seals interface with electrical raceway fire barrier wrap. This resulted in six examples where safe shutdown cables did not meet fire protection program requirements. The safety significance was low because for each example identified a diverse safe shutdown function was provided in another fire area to accomplish the same function. Consequently safe shutdown could have been achieved with the available equipment.

Unresolved item

Barrier Integrity	10/21/2003	CALL	TBD	*SCWE: N	*HP: N	*PIR: N
-------------------	------------	------	-----	----------	--------	---------

Docket/Status: 05000483 (O)

Open: 2003007

Inadequate Alarm Response Procedure for Smoke in the Control Room Ventilation Supply Duct

The alarm response procedure for responding to smoke in the control room outside supply duct was inadequate because it did not direct operators to isolate outside air makeup upon receipt of the alarm. This alarm does not cause an automatic isolation of the control room, so operators must recognize the condition and take manual action to prevent losing control room habitability. Failure to have a procedure, required by Technical Specification 5.4.1.a and Regulatory Guide 1.33, that provided appropriate response actions for abnormal or alarm conditions was a violation. This issue was entered into the licensee's corrective action program under Callaway Action Request 200306977. This finding is unresolved pending completion of a significance determination. This issue was more than minor because failure to isolate the control room ventilation could lead to unnecessary evacuation, which would result in a plant transient and disabling much of the mitigation equipment that would otherwise be available. This issue is being treated as an unresolved item pending completion of a significance determination.

Initiating Events	05/23/2003	NA	TBD	*SCWE: N	*HP: N	*PIR: N
-------------------	------------	----	-----	----------	--------	---------

Docket/Status: 05000338 (O) , 05000339 (O)

Open: 2003006

Alternate Shutdown Panel Ventilation System Not Independent from Impacts of a Main Control Room Fire

The shared ventilation system between the Main Control Room (MCR) and the Unit 1 and Unit 2 Emergency Switchgear and Relay Rooms (ESGRs) do not have adequate separation, isolation, or barriers to prevent smoke and toxic gases from being transported to the ESGRs during a fire in the MCR. The alternative shutdown capability for an MCR fire is located at the auxiliary shutdown panels in each unit's ESGR, respectively. This finding is unresolved pending completion of a significance determination. The finding is greater than minor because it affects the mitigating systems cornerstone objectives. The finding has potential safety significance greater than very low safety significance because operator inability to safely man the auxiliary shutdown panels could result in failure of the specified alternative shutdown strategy.

Mitigating Systems	05/23/2003	NA	TBD	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	----	-----	----------	--------	---------

Docket/Status: , 05000339 (O)

Open: 2003006

Fire Response Procedure 2-FCA-2 Not Adequate To Assure Safe Shutdown Of Unit 2

The safe shutdown strategy and related fire response procedures may be inadequate to assure a safe shutdown of the Unit 2 reactor for a fire in Emergency Switchgear and Relay Room (ESGR) No. 2. The licensee's fire response procedures may not preclude plant damage and may prescribe operator actions in the Cable Vault and Tunnel that are not independent from the effects of an ESGR No. 2 fire. This finding is unresolved pending completion of a significance determination. The finding is greater than minor because it affects the initiating event and mitigating systems cornerstone objectives. Also, the finding has potential safety significance greater than very low safety significance because in some scenarios, these deficiencies could lead to reactor coolant pump seal package leakage and failure of the specified alternative shutdown strategy.

Mitigating Systems	04/22/2003	WNP	TBD	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-----	----------	--------	---------

Docket/Status: , 05000397 (O)

Open: 2003002

Failure to have adequate alternative shutdown procedures

The inspectors identified a violation of Technical Specification 5.4.1.d (inadequate procedure) because Procedure ABN-CR-EVAC, "Control Room Evacuation and Remote Cooldown," failed to provide adequate post-fire direction to: (1) assure suppression pool temperatures did not increase above residual heat removal pump temperature limits following depressurization; and (2) assure adequate core cooling with one safety relief valve stuck open. This finding is unresolved pending completion of a significance determination. This finding is greater than minor because it impacts the mitigating systems cornerstone and affects the ability of the low pressure coolant injection system to provide adequate core cooling to prevent core damage. This finding was determined to have potential safety significance greater than very low significance because of the lack of credited systems to mitigate the effects of a control room fire.

Mitigating Systems	04/22/2003	WNP	TBD	*SCWE: N	*HP: N	*PIR: Y
--------------------	------------	-----	-----	----------	--------	---------

Docket/Status: , 05000397 (O)

Open: 2003002

Inadequate corrective actions to address water hammer concern

The inspectors identified a violation of License Condition 2.C(14) for the failure to take appropriate corrective measures to address a condition adverse to

quality affecting the low pressure coolant injection system. During a control room fire, the system has been vulnerable to a water hammer since at least 1997 due to a leaking check valve in Train B of the residual heat removal system. The licensee took over five years to identify the condition and failed to specify appropriate corrective measures to promptly fix the condition. This finding is unresolved pending completion of a significance determination. This finding is greater than minor because it impacts the mitigating systems cornerstone and affects the ability of the low pressure coolant injection system to provide adequate core cooling to prevent core damage. This finding was determined to have potential safety significance greater than very low significance because of the lack of credited systems to mitigate the effects of a control room fire

Mitigating Systems	02/14/2003	SUR	TBD	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-----	----------	--------	---------

Docket/Status: 05000280 (O)

Open: 2003007

Fire Response Procedures 1-FCA-4.00 And 0-FCA-14.00 Not Adequate To Assure Safe Shutdown Of Unit 1

The safe shutdown strategy and related fire response procedures may be inadequate to assure a safe shutdown of the Unit 1 reactor for a fire in Emergency Switchgear and Relay Room (ESGR) Number 1. The licensee's fire response procedures may not preclude plant damage, may fail to prevent potential spurious operations and may require the operator to enter the affected fire area to perform directed actions. This finding is unresolved pending completion of a significance determination. The finding is greater than minor because it was associated with the ability to achieve a safe shutdown of the Unit 1 reactor following a fire in ESGR No. 1 and affects the initiating event and mitigating systems cornerstone objectives. Also, the finding has potential safety significance greater than very low, safety significance because RCP seal package failure could cause a seal loss-of-coolant accident and failure of the specified alternative shutdown strategy.

Mitigating Systems	02/14/2003	SUR	TBD	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-----	----------	--------	---------

Docket/Status: 05000280 (O)

Open: 2003007

Fire Response Procedures 1-FCA-3.00 And 0-FCA-14.00 Not Adequate To Assure Safe Shutdown Of Unit 1

The safe shutdown strategy and related fire response procedures may be inadequate to assure a safe shutdown of the Unit 1 reactor for a fire in the Unit 1 cable vault and cable tunnel. The licensee's fire response procedures may not preclude plant damage, may fail to prevent potential spurious operations and may require the operator to enter the affected fire area to perform directed actions. This finding is unresolved pending completion of a significance determination. The finding is greater than minor because it was associated with the ability to achieve a safe shutdown of the Unit 1 reactor following a fire in the Unit 1 cable vault and cable tunnel and affects the initiating event and mitigating systems cornerstone objectives. Also, the finding has potential safety significance greater than very low, safety significance because RCP seal package failure could cause a seal loss-of-coolant accident and failure of the specified alternative shutdown strategy.

Mitigating Systems	11/28/2001	SUM	TBD	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	-----	-----	----------	--------	---------

Docket/Status: 05000395 (O)

Open: 2001009

Decision of When to Enter Fire Emergency Procedure FEP-4.0 and Evacuate the Main Control Room Due to a Fire

A finding was identified, in that, the lack of operator training combined with licensee management's expectations regarding when to enter fire emergency procedure (FEP)-4.0, Control Room Evacuation Due to Fire, could result in the operators taking actions during a fire in the main control room (MCR) that would not be consistent with the licensee's safe shutdown analysis, fire hazards analysis, or procedure FEP-4.0. The operator training program neither addressed nor had job performance measures (JPM)/simulator scenarios for MCR operator actions and evacuation due to a fire in accordance with procedure FEP-4.0. This finding was determined to have a credible impact on safety because it affected the ability of the operators to perform actions (within the times required by the licensee's safe shutdown analysis and fire hazards analysis) necessary to achieve and maintain post-fire safe shutdown conditions. Licensee management's philosophy and expectations contributed to the operators' performance and slow response in deciding whether to enter procedure FEP-4.0 and evacuate the MCR during two simulator scenarios observed by the team.

Mitigating Systems	04/13/2001	INPT	Green	*SCWE: N	*HP: N	*PIR: N
--------------------	------------	------	-------	----------	--------	---------

Docket/Status: , 05000247 (O)

Open: 2000004

Adequacy of Hemyc Cable Wrap Fire Barrier Qualification Test and Evaluation

Based on the review of test reports CTP-1026 and CTP-1077, the team determined that the results of the engineering test alone were inconclusive for qualifying the fire barrier system as a one hour rated fire barrier. The team noted that ConEd had only credited the Hemyc fire barrier on the 23 ABFP for 30 minutes, however, due to identified test discrepancies, the 30 minute rating was also inconclusive. This issue is unresolved pending further NRC review to determine whether the qualification tests of the Hemyc fire barrier wrap systems are acceptable.

Violation

Mitigating Systems	12/12/2001	HAR	White	*SCWE: N	*HP: N	*PIR: Y
Docket/Status: 05000400 (C)						
Open: <u>2000009</u> Discussed: <u>2002008</u> , <u>2002010</u>						
FAILURE TO MAINTAIN THE FIRE AREA SEPARATION BARRIER BETWEEN THE B TRAIN SWITCHGEAR ROOM/AUXILIARY CONTROL PANEL ROOM AND THE A TRAIN CABLE SPREADING ROOM AS A 3-HOUR RATED BARRIER						
<p>White. A violation of the Fire Protection Program required by 10 CFR 50.48 and License Condition 2.F was identified, in that the Thermo-Lag fire barrier assembly which serves as the fire area separation barrier between Fire Area 1-A-SWGR-B [B train switchgear room/auxiliary control panel room] and Fire Area 1-A-CSR-A [A train cable spreading room] had an indeterminate fire resistance rating instead of the required three hours. This degraded condition increased plant risk because, if a severe fire occurred in Fire Area 1-A-SWGR-B and breached the Thermo-Lag fire barrier, both trains of post-fire safe shutdown capability could be damaged or lost due to the same fire. [In an April 16, 2002, Final Significance Determination Letter with an enclosed Notice of Violation (NOV) (ADAMS No. ML021060517), the licensee was informed that the risk characterization of this finding was White and that a Severity Level III violation was being cited. The letter also informed the licensee that the subject non-compliance and a non-compliance involving an inappropriate change to the Fire Protection Program, AV 50-400/00-09-02, were being cited as one violation. The enclosed NOV (EA 00-022, EA 01-310) indicated that the licensee had failed to implement and maintain the NRC approved Fire Protection Program safe shutdown separation requirements for the fire area separation barrier between the B train switchgear room and the A train cable spreading room. The NOV also indicated that the licensee had made changes to the approved Fire Protection Program, without prior Commission approval, which adversely affected the ability to achieve and maintain safe shutdown in the event of a fire.][A 95002 Supplemental Inspection conducted on July 8 -12, 2002, and documented in NRC Inspection Report 50-400/02-10, concluded that problem identification, root cause and extent of condition were acceptable. The violation from the April 16, 2002 NOV was left open as corrective actions were being assessed in an overlapping 95001 Supplemental Inspection, NRC Inspection Report 50-400/02-08][The 95001 Supplemental Inspection concluded also that the licensee's problem identification, root cause and extent of condition evaluation were adequate, and identified that the licensee's corrective actions were ongoing. As part of the corrective actions, the licensee intended to use local manual operator actions in lieu of one of the methods identified in NRC Position C.5.b.(2) of Branch Technical Position (BTP) CMEB 9.5-1][In the 95001 Report, items 50-400/00-09-01 and 50-400/00-09-02 were closed and consolidated into Violation 50-400/02-08-01, Failure To Implement and Maintain NRC Approved Fire Protection Program Safe Shutdown System Separation Requirements.][By letter dated October 4, 2002, the NRC evaluated the risk significance of the Thermo-Lag fire barrier taking into consideration the corrective actions which had been accomplished. The corrective actions included separating the auxiliary control panel room, containing the Thermo-Lag fire barrier in question, from the B train switchgear room. This created two separate fire areas, and reduced the ignition frequency of fires capable of challenging the Thermo-Lag fire barrier by an order of magnitude. This separation translated into a corresponding reduction in the core damage frequency and reduced the risk significance of the degraded Thermo-Lag fire barrier. Violation 50-400/02-08-01 was reviewed in IR 50-400/02-11 and the manual operator actions were not adequate and the violation remains open pending further NRC review of the corrective actions.]</p>						