Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Arkansas Nuclear One	IV	50-313/01-06; 50-368/01-06 (8/20/01) [ML012330501]	7/2/01 – 7/6/01, 7/9/01 – 7/13/01	• R. Nease, Engineering and Maintenance Branch (Lead) • C. E. Johnson, Sr. Reactor Inspector Engineering and Maintenance Branch • R. Mullikin, Sr. Reactor Inspector Engineering and Maintenance Branch • K. Sullivan, Contractor Brookhaven National Laboratory	No findings of significance. Unresolved items (URIs) were identified for the following: • **Post-Fire Safe Shutdown Circuit Analysis** - The acceptability of the licensee's use of manual actions to remotely operate equipment necessary for achieving and maintaining hot shutdown, in lieu of providing protection to the cables associated with that equipment, as a method of complying with Appendix R, Section III.G.2. • **Fire Protection of Safe Shutdown Capability – Fire Protections Systems, Features, and Equipment -** Three conduits located in Fire Zone 98-J containing safe- shutdown cables were wrapped using Hemyc. The acceptability of Hemyc for use as a 1-hour fire barrier is currently being reviewed by the NRC.
Beaver Valley	I	05000334/2001-005 (6/29/01) [ML011800436]	5/21/01 – 6/8/01	• T. Walker, Sr. Reactor Inspector, Division of Reactor Safety • D. Kern, Sr. Resident Inspector, Beaver Valley • L. Scholl, Sr. Reactor Inspector, DRS • M. Maley, Reactor Inspector (in training), NRR	(Green) **Operational Implementation of Safe Shutdown Capability -** The team identified an NCV of Appendix R for failure to have adequate procedures to assure safe shutdown capability. The procedure for shutdown from outside the control room did not provide adequate direction to promptly verify river water (RW) cooling to the protected 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. Unresolved items (URIs) were identified for the following: • **Passive Fire Barriers -** The use of Hemyc wrap and its fire resistance rating. • **Fire Suppression Systems and Equipment –** The ability of the cable tray mezzanine CO_2 system to perform its intended function of suppressing deep-seated fires.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Braidwood	III	50-456/00-06 & 50-457/00-06 (1/8/01) [ML010100073]	6/5/00 – 6/16/00	• G. Hausman, Sr. Reactor Inspector, Electrical Engineering Branch (Lead) • D. Chyu, Reactor Inspector, Electrical Engineering Branch • P. Qualls, Fire Protection Engineer, Plant Systems Branch, NRR • R. Deem, Contractor, Brookhaven National Laboratory • K. Sullivan, Contractor, Brookhaven National Laboratory	(No Color) **Operational Implementation of Safe Shutdown Capability -** The licensee did not provide any objective evidence that the molded case circuit breakers at the 120Vac and 125Vdc voltage levels had been periodically manually exercised, inspected, and tested as required by the Braidwood's FP Report. (No Color) **Operational Implementation of Safe Shutdown Capability -** Analyzed instrumentation for the reactor coolant pump (RCP) seal leak-off temperature indication was not available to the operators outside of the main control room. This temperature indication was necessary for the operators to determine when to trip the RCPs prior to reaching RCP seal temperature limitations. Unresolved items (URIs) were identified for the following: • **Systems Required to Achieve and Maintain Post-Fire Safe Shutdown -** Spurious operation equipment not included on the safe shutdown equipment list. • **Fire Protection of Safe Shutdown Capability -** Reclassifying a fire area as alternative shutdown without a fixed suppression system and without prior NRC approval. • **Post-Fire Safe Shutdown Circuit Analysis -** Potential for fire induced containment isolation signal and loss of charging suction due to fire. Identified as an item related to industry / NRC review of fire-induced circuit failures. • **Alternative Shutdown Capability -** Various safe shutdown issues in fire zone 11.5-0. Lack of protection for control room ventilation, charging pump suction concerns due to VCT-RWST interactions, and loss of CCW to RCP thermal barriers and RCP seal injection. • **Alternative Shutdown Capability -** Various safe shutdown issues in fire zone 11.6-0. Loss of charging suction and PORVs for active RCS depressurization, rendering SI pumps unavailable for use. An NCV was issued due to a licensee identified issue regarding spurious operation of SW valves.
Browns Ferry	II	50-259/2000-08, 50-260/2000-08, 50-296/2000-08 (8/8/00) [ML003740092]	6/26/00 – 6/30/00	• G. Wiseman, Sr. Reactor Inspector (Lead), Region II • E. Brown, Resident Inspector, Brunswick, Region II • P. Fillion, Reactor Inspector, Region II • A. Fresco, Contractor, Brookhaven National Laboratories • R. Schin, Sr. Reactor Inspector, Region II	No findings of significance. Although not a finding, the IR discusses an issue involving RHR pump miniflow valves and potential of dead-heading RHR pumps. Issue was reported to the NRC under 10 CFR 50.72.
Brunswick	I	50-325/01-06, 50-324/01-06 (6/11/01) [ML011630421]	5/7/01 – 5/11/01	• M. Thomas, Sr. Reactor Inspector (Lead) • D. Billings, Resident Inspector • E. Brown, Resident Inspector • N. Merriweather, Sr. Reactor Inspector • C. Smith, P.E., Sr. Reactor Inspector • G. Wiseman, Sr. Reactor Inspector	No findings of significance.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Byron	III	50-454/01-12 (DRS), 50-455 / 01-12 (DRS) (1/7/02) [ML0200704070]	11/26/01 – 11/30/01, 12/10/01 – 12/14/01	• K. G. O'Brien, Sr. Reactor Inspector (Lead) • D. M. Chyu, Reactor Inspector • Z. Falevits, Senior Reactor Inspector	No findings of significance.
Calloway	IV	50-483/00-13 (10/30/00) [ML003765072]	8/21/00 – 8/25/00, 9/7/00 – 9/8/00	• R. L. Nease, Sr. Reactor Inspector, Engineering and Maintenance Branch (Lead), • F. Brush, Sr. Resident Inspector, Project Branch, • D. N. Graves, Sr. Project Engineer, Project Branch • A, R. Mullikin, Sr. Reactor Inspector, Engineering and Maintenance Branch, • J. E. Whittemore, Sr. Reactor Inspector, Engineering and Maintenance Branch, • P. Qualls, Fire Protection Engineer, NRR	(Green) **Fire Protection of Safe Shutdown Equipment -** 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. (Green) **Fire Protection of Safe Shutdown Equipment -** In several plant fire areas, 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 BTP CMEB 9.5-1, in that the 20 feet of horizontal space between redundant trains of safe shutdown equipment contained intervening combustibles. The team also found that in 1989, and 1996, the licensee performed engineering evaluations to justify installed configurations in several fire areas which did not meet the BTP separation criteria, 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.
Calvert Cliffs	I	50-317/01-007; 50-318/01-007 (10/10/01) [ML012830478]	8/27/01 – 9/14/01	• L. Scholl, Sr. Reactor Inspector, Division of Reactor Safety (DRS) • N. Merriweather, Sr. Reactor Inspector, DRS, Region II • G. Morris, Reactor Inspector, DRS • K. Young, Reactor Inspector, DRS • L. Cline, Resident Inspector, DRP	(Green) **Alternative Shutdown Capability -** The team identified an NCV of Appendix R, for failure to have adequate procedures to assure safe shutdown capability. The team found that abnormal operating procedures were inadequate in that they contained numerous deficiencies that could challenge to the ability to achieve and maintain safe shutdown. (Green) **Alternative Shutdown Capability -** The team identified an NCV of 10 CFR 50, Appendix B for failure to properly verify the adequacy of engineering calculations and analysis associated with abnormal operating procedures and the UFSAR Chapter 14 loss of feedwater analysis. The team found that the licensee failed to account for steam generator inventory losses due to steam generator blowdown flow. Very Low Safety Significance - Appendix R, Section III.G.3, requires that the alternative shutdown capability be independent of the fire area of concern. The licensee identified a jumper that could result in the loss of the 22 salt water air compressor during a fire in the control room.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Catawba	II	50-413/01-08, 50-414/01-08 (9/28/01) [ML012710409]	8/6/01 – 9/20/01	• M. Thomas, Sr. Reactor Inspector (Lead) • D. Billings, Resident Inspector, Oconee • C. Smith, Sr. Reactor Inspector • G. Wiseman, Sr. Reactor Inspector	No findings of significance. Unresolved items (URIs) were identified for the following: • **Systems Required to Achieve and Maintain Safe Shutdown -** The licensee's analysis in an SSER identified nine plant areas where a fire could damage redundant divisions of normal plant safe shutdown systems and instrumentation. Alternative shutdown was credited as the means to ensure safe shutdown in these areas. The safe shutdown analysis identified 31 fire areas where alternative shutdown was credited as the designated safe shutdown method. The team questioned the difference between the analysis and SSER regarding the number of fire areas which credited alternative shutdown. • **Electrical Raceway Fire Barrier Systems Used to Protect Safe Shutdown Capability -** The acceptability of Hemyc for use as a 1-hour fire barrier is currently being reviewed by the NRC.
Cooper	IV	50-298/01-03 (5/3/01) [ML011240059]	4/2/01 – 4/6/01, 4/9/01 – 4/13/01	• C. E. Johnson, Sr. Reactor Inspector Engineering and Maintenance Branch • C. A. Clark, Reactor Inspector Engineering and Maintenance Branch • R. P. Mullikin, Sr. Reactor Inspector Engineering and Maintenance Branch • W. M. McNeill, Reactor Inspector Engineering and Maintenance Branch • R. Nease, Sr. Reactor Inspector Engineering and Maintenance • F. J. Wyant, Contractor Sandia National Laboratories	(Green) **Fire Protection of Safe Shutdown Capability -** The team identified a noncited violation in Fire Zone 20A (service water pump room) in which equipment required for safe shutdown of the plant following a fire was not separated by 20 feet horizontal distance, and there were intervening combustibles (Rubatex insulation) that were not part of an exemption, nor included in the licensee's engineering evaluation. (Green) **Emergency Lighting -** The team identified a noncited violation in that emergency lighting was not aligned properly to adequately perform safe shutdown operator actions in accordance with Section III.J of Appendix R. (Green) **Other – Ventilation Air Flow Analysis – Detector Licensing Basis -** The team identified a noncited violation in three areas (control room, diesel generator room, and the 1001-foot elevation of the reactor building) in which the licensee failed to install detectors as documented in the safety evaluation report which was not in accordance with 10 CFR 50.48(b). (Green) **Other – Replacement of Sprinkler Heads – NFPA 13 -** The team identified that on October 20, 1985, the licensee implemented a design change that replaced 1/2-inch diameter sprinkler heads with 1/4-inch diameter sprinkler heads. The licensee failed to perform calculations to ensure that the reduction in the diameter of the sprinkler heads did not adversely affect the suppression requirements in these fire areas, as required by the NFPA 13.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Diablo Canyon	IV	50-275/00-03 & 50-323/00-03 (5/19/00) [ML003716464]	4/3/00 - 4/7/00	• R. Nease, Sr. Reactor Inspector, Engineering and Maintenance Branch (Lead), • C. Johnson, Sr. Reactor Inspector, Engineering and Maintenance Branch, • R. Mullikin, Sr. Reactor Inspector Engineering and Maintenance Branch • P. Qualls, Fire Protection Engineer, Plant Systems Branch, NRR, • F. Wyant, Contractor, Sandia National Laboratories, • J. LaChance, Contractor, Sandia National Laboratories	(Green) **Fire Protection of Safe Shutdown Equipment -** 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 Appendix R deviation. Upon further review, the team found that the licensee had previously identified most of these conditions and had taken appropriate compensatory measures.
Fort Calhoun	IV	50-285 (5/9/00) [ML003713192]	1/24/00 – 1/28/00 and 3/10/00	• R. Nease, Sr. Reactor Inspector, Engineering and Maintenance Branch (Lead), • C. Johnson, Sr. Reactor Inspector, Engineering and Maintenance Branch, • R. Mullikin, Sr. Reactor Inspector, Engineering and Maintenance Branch, • P. Madden, Sr. Fire Protection Engineer, Plant Systems Branch, NRR, • F. Wyant, Contractor, Sandia National Laboratories, • J. LaChance, Contractor, Sandia National Laboratories	(Green) **Fire Protection of Safe Shutdown Equipment -** The team identified two NCVs, for failing to maintain in effect all conditions of the NRC-approved fire protection program as described in the USAR and as approved in NRC safety evaluation reports. The licensee does not consider the configuration of either the power or control cables to be outside their design basis; therefore, does not agree that these violations of the Fort Calhoun Station operating license occurred. (1) The licensee failed to maintain 10 feet of horizontal separation between power cables associated with redundant equipment necessary for achieving and maintaining hot shutdown conditions, as described in their exemption request. (2) The licensee failed to meet the requirements of Appendix R, Section III.G.2, to ensure that at least one train of redundant equipment necessary for achieving and maintaining hot shutdown conditions remains free of fire damage. Specifically, the team identified two locations within Fire Area 32, where cable trays containing safe shutdown control cables did not meet the Appendix R separation requirements. (Green) **Post-Fire Safe Shutdown Circuit Analysis - T**he team identified that a fire in Fire Area 34B (upper electrical penetration room) or Fire Area 36B (west switchgear room) could cause the spurious opening of the reactor coolant system head vent valves due to hot shorts. These spurious actuations could open a vent path from the reactor coolant system that exceeds the capacity to makeup to the RCS. The licensee subsequently identified alternative means of makeup that would mitigate the effects of the event and also disagrees that postulating multiple fire-induced circuit failures is required.
Ginna	I	05000244/2000-009 (12/29/00) [ML003782069]	11/13/00 – 11/17/00	• L. Scholl, Sr. Reactor Inspector, DRS (Lead), • R. Fuhrmeister, Sr. Reactor Inspector, DRS, • T. Walker, Sr. Reactor Inspector, DRS, • C. Cahill, Reactor Inspector, DRS, • K. Young, Reactor Inspector, DRS	No findings of significance. (Green) **Licensee Identified Violation -** A non-cited violation was identified during the inspection. A failure to isolate all potentially affected cables within the screen house was identified constitutes a violation of the requirement of Appendix R, Section III.G.3 that requires the alternative shutdown capability be independent of the area of concern. Significant discussion in the inspection report over the qualification of raceway fire barrier material (Hemyc material). Identified as unresolved item under NRC and industry review.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Harris	II	50-400/99-13 (2/3/00) [ML003685341]	11/1/99 – 11/5/99, 11/8/99 – 12/20/99	• G. Wiseman, Sr. Reactor Inspector, Region II (Lead), • G. Hausman, Sr. Reactor Inspector, Region III • M. Thomas, Sr. Reactor Inspector, Region II	No findings of significance. Unresolved items (URIs) were identified for the following: • **Fire Protection of Safe Shutdown Capability -** Fire endurance testing that demonstrated the Thermo-Lag walls which serve as part of the fire area separation barriers between cable spreading rooms A and B and switchgear room B would provide a 1 hour and 48 minutes barrier for a 3-hour fire loading area with no automatic suppression and a fire brigade that had not practiced in the area for over seven years. The licensee performed an evaluation to justify the acceptability of the Thermo-Lag wall in lieu of the fire endurance test results. • **Fire Protection of Safe Shutdown Capability -** Changes that were made to the UFSAR under 10 CFR 50.59 to revise the fire rating of the Thermo-Lag fire barriers in the switchgear room, ACP room, and cable spreading rooms from 3-hour barriers as approved in the SER, without prior NRC approval, that involved a change to the approved fire protection program. The change to the Thermo-Lag barrier fire rating represented a 40% degradation (derating) of the margin of fire resistance from that established in the approved fire protection program. • **Fire Protection of Safe Shutdown Capability -** Appropriate test methodology and acceptance criteria that may not have been used to determine the fire resistive performance of the Hemyc/MT cable wrap fire barrier systems installed to separate safe shutdown functions within the same fire area.
Hatch	II	50-321/00-08 & 50-366/00-08 (9/29/00) [ML003755995]	8/21/00 – 8/25/00	• G. Wiseman, Sr. Reactor Inspector (Lead), Region II, • R. Deem, Contractor, Brookhaven National Laboratories, • N. Merriweather, Sr. Reactor Inspector, Region II, • R. Schin, Sr. Reactor Inspector, Region II, • M. Thomas, Sr. Reactor Inspector, Region II	No findings of significance.
Hope Creek	I	05000354/2001-002 (2/26/01) [ML010570155]	1/16/01 - 1/26/01	• T. Walker, Sr. Reactor Inspector, DRS • R. Fuhrmeister, Sr. Reactor Inspector, • L. Cheung, Sr. Reactor inspector, • K. Young, Reactor Inspector	(Green) **Operational Implementation of Safe Shutdown Capability -** Safe Shutdown procedural deficiency. Procedure deficiency associated alignment of shutdown cooling. Procedure did not provide instructions for securing the "a" Recirculation loop from outside of the Control Room. Additional discussion in report over failure to follow procedures when working on EDG fire doors (NCV).

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Indian Point 2	I	05000247/2000-004 (5/17/01) [ML011370564]	4/9/01 – 4/13/01	• R. Fuhrmeister, Sr. Reactor Inspector, DRS • R. Bhatia, Reactor Inspector, DRS • K. Young, Reactor Inspector, DRS • A. Smith, Reactor Inspector, DRS • L. James, Resident Inspector, IP3	(Green) **Electrical Raceway Fire Barrier Systems -** Based on the review of test reports, 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. (Green) **Manual Fire Suppression Equipment -** 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. (Green) **Alternate Safe Shutdown Design -** 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 of the Alternate Safe Shutdown System power supply were not capable of being isolated from central control room circuit wiring, an area for which the system is credited.
Kewaunee	III	50-305/01-02 (3/22/01) [ML010820177]	1/29/01 – 2/16/01	• R. Langstaff, Sr. Reactor Inspector, Mechanical Engineering Branch (Lead) • D. Chyu, Reactor Inspector, Electrical Engineering Branch • G. Hausman, Sr. Reactor Inspector, Electrical Engineering Branch	(Yellow) **Fire Protection of Safe Shutdown Capability -** The inspectors identified that a fire barrier in the auxiliary feedwater pump B room was not rated. The fire barrier was required to have a 3-hour rating for protection of redundant safe shutdown equipment. The failure to have a rated 3-hour barrier was considered an apparent violation of Appendix R, Section III.G.2. Unresolved items (URIs) were identified for the following: • **Fire Protection Systems, Features, and Equipment** - Relay Room Carbon Dioxide System Testing - The relay room CO2 had never been satisfactorily tested to demonstrate its ability to extinguish deep-seated electrical fires. To be considered acceptable, the CO2 system must be capable of producing a CO2 concentration of greater than 50 percent that would be maintained for a substantial period of time (20 minutes). • **Fire Protection Systems, Features, and Equipment** - Diesel Generator Room Heat Detector Placement - The heat detectors in the diesel generator 1B room were installed about 8 to 12 feet below the ceiling level. There were two flame detectors at the room ceiling which provided an alarm function only. There were six heat detectors which would automatically actuate the CO2 system. Three detectors were placed above the 4160 V bus switchgear and the other three were placed approximately above the diesel generator. These heat detectors were required to be installed upon the ceiling in accordance with the code of record.
LaSalle	III	50-373/01-06(DRS), 50-374/01-06(DRS) (7/17/01) [ML011990581]	6/11/01 – 6/22/01	• Doris M. Chyu, Reactor Inspector • George M. Hausman, Sr. Reactor Inspector • Kenneth G. O'Brien, Sr. Reactor Inspector (Lead)	No findings of significance. No Unresolved Items identified.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Limerick	I	50-352/01-14, 50-353/01-14 (1/7/02) [ML020080162 0]	12/10/01 – 12/21/01	• R. Fuhrmeister, Sr. Reactor Inspector, DRS • A. Della Greca, Sr. Reactor Inspector, DRS • K. Young, Reactor Inspector, DRS • S. Kennedy, Reactor Inspector (in training), DRS • F. Salaam, Reactor Inspector (in training), DRP	No findings of significance. An unresolved item (URI) was identified for the following: • **Safe Shutdown Analyses -** Reliance on an assumption of a single spurious actuation of safe shutdown components during any single fire event for some plant areas. This assumption is contrary to NRC staff guidance, as documented in Generic Letter 86-10 and other public records, that multiple spurious actuations must be assumed and evaluated. This issue is the subject of an industry initiative, and remains unresolved pending generic resolution of guidance for evaluating fire induced cable faults.
McGuire	II	50-369/00-09 & 50-370/00-09 (12/15/00) [ML003778709]	10/30/00 – 11/3/00	• G. Wiseman, Sr. Reactor Inspector (Lead), Region II, • E. Brown, Resident Inspector, Brunswick, • F. Jape, Sr. Project Manager, Region II, • N. Merriweather, Sr. Reactor Inspector, Region II, • K. Sullivan, Contractor, Brookhaven National Laboratories, • M. Thomas, Sr. Reactor Inspector, Region II	No findings of significance. Unresolved items (URIs) were identified for the following: • **Systems Required to Achieve and Maintain Post-Fire Safe Shutdown** - Potential loss of AFW in 2 fire areas. • **Systems Required to Achieve and Maintain Post-Fire Safe Shutdown** - Ability to close a pressurizer PORV within a timely manner (labeled as part of the generic industry issue). • **Systems Required to Achieve and Maintain Post-Fire Safe Shutdown -** the potential loss of charging pumps due to failure of the VCT outlet valve(s) (labeled as part of the generic industry issue). • **Fire Protection of Safe Shutdown Capability -** The use of mineral insulated cable instead of Thermo-Lag fire barriers. The cable is undergoing review of its fire resistance rating. • **Fire Protection of Safe Shutdown Capability** - The use of Hemyc wrap and its fire resistance rating.
Millstone – Unit 3	I	50-423/01-012 (12/6/01) [ML013410017]	10/15/01 – 11/2/01	• T. Walker, Sr. Reactor Inspector, Division of Reactor Safety • R. Fuhrmeister, Sr. Reactor Inspector, DRS • L. Cheung, Sr. Reactor Inspector, DRS • R. Bhatia, Reactor Inspector, DRS • G. Smith, Reactor Inspector (in training), DRS	(Green) **Manual Fire Suppression Capability -** 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.
Nine Mile Point - Unit 1	I	50-220/00-09 (1/24/01) [ML010250305]	12/11/00 – 12/15/00	• R. Fuhrmeister, Sr. Reactor Inspector, Division of Reactor Safety, • L. Scholl, Sr. Reactor Inspector, • A. Della Greca, Sr. Reactor inspector, • K. Young, Reactor Inspector, • B. Fuller, Resident Inspector, Division of Reactor Projects	No findings of significance. No unresolved items were identified.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
North Anna	II	50-338/00-07 & 50-339/00-07 (6/30/00) [ML003728585]	4/24/00 – 4/28/00	• G. Wiseman, Sr. Reactor Inspector (Lead), Region II • D. Billings, Resident Inspector, Oconee, Region II, • R. Deem, Contractor, Brookhaven National Laboratories, • P. Fillion, Reactor Inspector, Region II,	(No Color) **Post-Fire Safe Shutdown Circuit Analysis -** 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. (Green) **Alternative Shutdown Capability -** 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. Unresolved items were identified for the following: • **Post-Fire Safe Shutdown Circuit Analysis -** Availability of pressurizer PORVs as a means of active depressurization and post-fire feedwater availability. • **Alternative Shutdown Capability -** Potential risk significance of allowing depressurization of the SGs if the reactor coolant level is not within the level indication of the pressurizer.
Palisades	III	50-255/01-08 (9/11/01) [ML012560096]	7/9/01 – 7/13/01, 7/23/01 – 7/27/01, 8/17/01	• R. Langstaff, Sr. Reactor Inspector Mechanical Engineering Branch • D. Chyu, Reactor Inspector Electrical Engineering Branch • R. Daley, Reactor Inspector Electrical Engineering Branch	(White – Preliminary) – **Fire Protection Systems, Features, and Equipment -** The inspectors identified that smoke detectors in the northwest portion of the cable spreading room were not located and installed in accordance with the applicable NFPA code. (Green) - **Fire Protection Systems, Features, and Equipment -** Placement of smoke detectors for the beam pocket areas in the southern portions of the cable spreading room was not in accordance with the NFPA code. (Green) – **Fire Protection Systems, Features, and Equipment -** Required area wide detection did not exist for the 1-D switchgear room. Specifically, no detectors existed in the high ceiling areas formed by vertical shaft above the cableway and the stairway.
Palo Verde	IV	50-528/2000-05, 50-529 / 2000-05, & 50-530 / 2000-05 (7/14/00) [ML003732680]	6/12/00 – 6/16/00	• R. P. Mullikin, Sr. Reactor Inspector, Engineering and Maintenance Branch (Lead), • C. A. Clark, Reactor Inspector, Engineering and Maintenance Branch, • P. A. Goldberg, Reactor Inspector, Engineering and Maintenance Branch, • W. M. McNeill, Reactor Inspector, Engineering and Maintenance Branch, • T. Wheeler, Contractor, Sandia National Laboratories, • F. Wyant, Contractor, Sandia National Laboratories	No findings of significance. No unresolved items (URIs) were identified.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Peach Bottom	I	50-277/00-03 (7/21/00) [ML003734477]	4/24/00 – 4/28/00	• R. Fuhrmeister, Sr. Reactor Inspector, Division of Reactor Safety (DRS), • K. Young, Reactor Inspector, DRS, • C. Cahill, Reactor Inspector, DRS, • G. Morris, Reactor Inspector, DRS, • K. Sullivan, Contract Engineering Support	(Green) **Post-Fire Safe Shutdown Circuit Analysis -** 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 that would have prevented achieving safe shutdown conditions in the post-fire operating environment. The issue of multiple spurious actuations of equipment in a post-fire environment is in contention between the NRC and the nuclear industry. (No color) **Post-Fire Safe Shutdown Circuit Analysis -** PECO adopted a licensing position that mechanical damage to alternative shutdown equipment resulting from fire-induced cable faults, as described in IN 92-18, was outside the licensing and design bases. As a result, PECO did not evaluate the control circuits of the alternative shutdown equipment to determine if it was susceptible to this problem. This issue is being treated as an apparent violation of the operating license conditions. 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. Unresolved items were identified for the following: • **Post-Fire Safe Shutdown Circuit Analysis –** The Multiple High Impedance Faults (MHIF) methodology approved in an SER was not in agreement with the method used at the station.
Perry	III	50-440/00-10 (12/12/00) [ML003776915]	10/23/00 – 11/2/00	• Z. Falevits, Sr. Reactor Inspector, Electrical Engineering Branch (Lead), • D. Chyu, Reactor Inspector, Electrical Engineering Branch, • R. Langstaff, Reactor Inspector, Mechanical Engineering Branch, • T. Wheeler, Contractor, Sandia National Laboratories, • F. Wyant Contractor, Sandia National Laboratories	(No Color) **Systems Required to Achieve and Maintain Post-Fire Safe Shutdown -** The team identified that the post-fire safe shutdown procedure (non-alternative shutdown procedure), did not include potential fire impacts upon selected RHR valves in certain fire zones, despite the fact that such potential impacts were identified in the safe shutdown capability report (SSCR). Failure to update the procedure, 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. (Green) **Identification and Resolution of Problems -** The team determined that the licensee failed to promptly address extended inoperability of the control room subfloor CO_2 system. This was a violation of the facilities license condition. The CO_2 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.
Pilgrim	I	05000293/2000-004 (9/20/00) [ML003752837]	8/14/00 – 8/18/00	• R. Fuhrmeister, Sr. Reactor Inspector • Division of Reactor Safety (DRS) • L. Scholl, Sr. Reactor Inspector, DRS • T. Walker, Sr. Reactor Inspector, DRS • C. Cahill, Reactor Inspector, DRS • L. James, Reactor Inspector, DRS • K. Sullivan, Contract Engineering Support	(Green) **Post-Fire Safe Shutdown Emergency Lighting and Operational Implementation of Alternative Shutdown Capability -** 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. (Green) **Identification and Resolution of Problems -** 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.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Point Beach	III	50-266/01-12; 50-301/01-12 (11/13/01) [ML013180129]	9/10/01 – 9/28/01	• R. Langstaff, Sr. Reactor Inspector, Mechanical Engineering Branch (Lead) • D. Chyu, Reactor Inspector • R. Daley, Reactor Inspector	(No color) **Emergency Lighting -** 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 operator actions. (Green) **Fire Protection Systems, Features, and Equipment -** The inspectors identified that the automatic halon 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. (No Color) **Alternative Shutdown Capability -** 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 Appendix R, Section III.L.3. (No Color) **Human Performance** The inspectors identified a numbers of issues which, collectively, indicated that human performance weaknesses existed in the fire protection engineering area.
Prairie Island	III	50-282/01-05; 50-306/01-05 (7/16/01) [ML011970394]	4/23/01 – 5/11/01	• R. Langstaff, Sr. Reactor Inspector, Mechanical Engineering Branch • D. Chyu, Reactor Inspector • Z. Falevits, Sr. Reactor Inspector • K. O'Brien, Sr. Reactor Inspector	No findings of significance. Unresolved items (URIs) were identified for the following: • **Fire Protection Systems, Features and Equipment –** The inspectors determined that the CO2 system in the Relay and Cable Spreading Room did not meet the requirements of Section III.G.3 of Appendix R because the system had not been satisfactorily demonstrated to be able suppress a deep seated fire in accordance with NFPA 12. • **Fire Protection Systems, Features, and Equipment –** The inspectors identified that inaccurate information had been provided to the NRC in a 1976 submittal. The inaccurate information was related to satisfactory testing of the CO2 system in the Relay and Cable Spreading Room.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Quad Cities	III	50-254/00-16 &50-265/00-16 (1/26/01) [ML010290089]	12/4/00 – 12/15/00	• R. Langstaff, Sr. Reactor Inspector, Mechanical Engineering Branch • D. Chyu, Reactor Inspector, Electrical Engineering Branch • G. Hausman, Sr. Reactor Inspector, Electrical Engineering Branch • P. Qualls, Fire Protection Engineer, Plant Systems Branch, NRR • R. Daley, Reactor Inspector, Electrical Engineering Branch • P. Lain, Fire Protection Engineer, Plant Systems Branch, NRR	(Green) **Fire Protection of Safe Shutdown Capability -** 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. The failure to seal the cabinets, a fire protection feature, involved very low risk because a fire protection defense-in-depth element was not affected. (Green) **Fire Protection of Safe Shutdown Capability -** 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. The failure to install fire stops, a fire protection feature, involved very low risk (Green) because a fire protection defense-in-depth element was not affected. (No Color) **Human Performance -** The inspectors identified a number of technical errors in a post-fire safe shutdown procedure. The procedure errors were considered a Non-Cited Violation. 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. Numerous safe shutdown related unresolved items from 1998 timeframe were closed out.
River Bend	IV	50-458/01-01 (6/12/01) [ML011660382]	5/14/01 – 5/18/01	• R. P. Mullikin, Sr. Reactor Inspector Engineering and Maintenance Branch • M. F. Runyan, Sr. Reactor Inspector Engineering and Maintenance Branch • P. A. Goldberg, Reactor Inspector Engineering and Maintenance Branch • J. D. Hanna, Resident Inspector Division of Reactor Projects • J. L. Taylor, Reactor Inspector Engineering and Maintenance Branch • F. J. Wyant, Contractor Sandia National Laboratories	No findings of significance. No unresolved items (URIs) were identified.
Robinson	II	50-261/01-08 (12/13/01)	11/26/01 – 11/30/01	• R. Schin, Senior Reactor Inspector (Lead Inspector) • E. Brown, Resident Inspector, Brunswick • A. Hutto, Resident Inspector, H. B. Robinson • N. Merriweather, Sr. Reactor Inspector • S. Walker, Reactor Inspector	No findings of significance.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Salem	I	05000272 / 1999010 & 05000311 / 1999010 (2/14/00) [ML003683723]	11/15/99 – 12/9/99	• R. L. Fuhrmeister, Sr. Reactor Engineer, Engineering Programs Branch, • C. G. Cahill, Reactor Engineer, Engineering Support Branch, • K. A. Young, Reactor Engineer, Engineering Support Branch	(White) **Fixed Fire Suppression Systems -** The team identified that the CO_2 concentration tests for the Units 1 and 2 4160Vac switchgear rooms did not reach or maintain the required CO_2 concentration of 50%. The CO_2 system also did not meet its design requirements, as stated in the FSAR, which requires the CO_2 tanks to contain a sufficient supply of CO_2 for two full discharges into the largest protected area. Additionally, the 4160Vac switchgear rooms contain degraded raceway fire barrier systems. (Green) **Fixed Fire Suppression Systems -** The team identified that the carbon dioxide concentration tests for the Units 1 and 2 electrical penetration areas did not reach or maintain the required CO_2 concentration of 50%. The rooms are protected by a smoke and thermal detection system and an automatically actuated CO_2 suppression system. The CO_2 storage tank is of sufficient size to allow for a second complete discharge of CO_2 for the room. (Green) **Previously Identified Licensee Event Report -** The licensee identified a condition in which they failed to ensure that one train of equipment necessary to achieve hot shutdown from the emergency control station is free of fire damage. The failure is a violation of the requirement of Section III.G.1.a of Appendix R and is being treated as a non-cited violation. (Green) **Previously Identified Licensee Event Report -** The licensee identified a condition in which a fire could damage cables such that the power operated relief valve would open and the associated block valve could not be closed. The inspectors determined that the charging pumps and the safety injection pumps would be available to mitigate the effects of this potential failure.
San Onofre	IV	50-361/01-15; 50-362/01-15 (11/13/01) [ML013240092]	10/1/01 – 10/5/01	• R. L. Nease, Senior Reactor Inspector, Engineering and Maintenance Branch (Lead) • R. P. Mullikin, Senior Reactor Inspector, Engineering and Maintenance Branch • W. C. Sifre, Project Engineer, Project Branch C • J. L. Taylor, Reactor Inspector, Engineering and Maintenance Branch • E. L. Horace, Student Engineer, Technical Support Staff • J. L. LaChance, Contractor, Sandia National Laboratories	No findings of significance. No Unresolved Items were identified.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Turkey Point	II	50-250/01-02 & 50-251/01-02 (3/6/01) [ML010660277]	2/5/01 – 2/9/01	• R. Schin, Sr. Reactor Inspector (Lead), Region II, • D. Billings, Resident Inspector, Region II, • E. Brown, Resident Inspector, Region II, • R. Deem, Contractor, Brookhaven National Laboratories, • P. Fillion, Reactor Inspector, Region II, • G. Wiseman, Sr. Reactor Inspector, Region II	No findings of significance. No Unresolved Items were identified.
V.C. Summer	II	50-395/01-09 (11/28/01) [ML013330427]	10/15/01 – 10/19/01	• M. Thomas, Senior Reactor Inspector (Lead) • R. Aiello, Sr. Operator Licensing Examiner • C. Smith, P.E., Senior Reactor Inspector • S. Walker, Reactor Inspector • G. Wiseman, Senior Reactor Inspector • C. Fong, Co-op Student, RII	(TBD) **Operational Implementation of Alternative Shutdown Capability** - A finding was identified, in that, the lack of operator training combined with licensee management's expectations regarding when to enter fire the control room evacuation due to fire procedure, could result in the operators taking actions during a fire in the main control room that would not be consistent with the safe shutdown analysis, fire hazards analysis, or procedure. (Green) **Emergency Lighting -** A non-cited violation of the FP license condition was identified for failure to install battery pack emergency lighting units, in accordance with the approved FP program in 13 areas (access and egress routes included) where manual operator actions were required to support post-fire safe shutdown.
Vermont Yankee	I	05000271/2001-003 (7/27/01) [ML012080293]	6/25/01 – 6/29/01, 7/9/01 – 7/13/01	• R. Fuhrmeister, Sr. Reactor Inspector • J. Williams, Sr. Operations Engineer • R. Bhatia, Reactor Inspector • K. Young, Reactor Inspector	No findings of significance. An unresolved items (URI) was identified for the following: • **Electrical Raceway Fire Barrier System -** The use of Hemyc wrap and its fire resistance rating.
Vogtle	II	50-424/01-04, 50-425/01-04 (7/27/01) [ML012110404]	6/25/01 – 6/29/01	• E. Brown, Resident Inspector, Brunswick (Lead) • D. Billings, Resident Inspector, Oconee • P. Fillion, Reactor Inspector, Region II • G. Wiseman, Sr. Reactor Inspector, Region II	No findings of significance. No Unresolved Items identified.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
Waterford	IV	50-382/00-07 (11/29/00) [ML003773900]	9/25/00 – 9/29/00, 10/26/00	• R. P. Mullikin, Sr. Reactor Inspector, Engineering and Maintenance Branch (Lead), • D. G. Acker, Resident Inspector, Project Branch E, • P. A. Goldberg, Reactor Inspector, Engineering and Maintenance Branch, • D. P. Loveless, Sr. Project Engineer, Project Branch C, • R. L. Nease, Sr. Reactor Inspector, Engineering and Maintenance Branch	(Green) **Fire Protection of Safe Shutdown Equipment -** It was determined in a plant fire area 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. (Green) **Fire Protection of Safe Shutdown Equipment -** The licensee failed to ensure through testing or evaluation that the configurations of several penetration seals were 3-hour fire rated. These penetration seals separated fire areas containing equipment required for safe shutdown. The licensee subsequently performed a Generic Letter 86-10 evaluation which qualified these penetration seals. (Green) **Emergency Lighting -** 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. Unresolved Items (URIs) were identified for the following: • **Fire Protection of Safe Shutdown Capability -** The qualification of Hemyc wrap as a rated fire barrier. • **Alternative Shutdown Capability -** Electrical independence of circuitry from alternative shutdown areas following control transfer (referred to NRC and industry initiatives on circuit failures.)
Watts Barr	II	05000390-00-08 & 05000391-00-08 (1/8/01) [ML010090120]	12/4/00 - 12/8/00	• M. Thomas, Sr. Reactor Inspector, Region II (Lead), • F. Jape, Sr. Project Manager, Region II, • N. Merriweather, Sr. Reactor Inspector, Region II, • G. Wiseman, Sr. Reactor Inspector, Region II, • F. Wyant, Contractor, Sandia National Laboratory, • S. Walker, Reactor Inspector (Trainee), Region II	No findings of significance.

Plant	Region	Inspection Report / Date	Inspection Dates	Inspectors	Findings/URIs/Other
WNP-2 (Columbia)	IV	50-397/00-07 (6/16/00) [ML003724101]	5/1/00 – 5/5/00	• C. E. Johnson, Sr. Reactor Inspector, Engineering and Maintenance Branch (Lead), • R. Mullikin, Sr. Reactor Inspector, Engineering and Maintenance Branch, • P. Qualls, Fire Protection Engineer, Plant Systems Branch, NRR, • F. Wyant, Contractor, Sandia National Laboratories, • T. Wheeler, Contractor, Sandia National Laboratories	(Green) **Fire Protection of Safe Shutdown Capability -** The team identified several fire areas without detectors installed, as required by the NFPA 72E. Section 4-4.6 states, in part, "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 several areas that did not meet the Code requirement. The approved FP program is committed to the 1974 NFPA 72E. (Green) **Fire Protection of Safe Shutdown Capability -** The team identified one small opening in a 1-hour Darmatt fire barrier where a Whittaker cable penetrated. The opening was in the shape of an isosceles triangle with the base measuring about 0.5 inches and the height measuring about 0.375 inches. This fire area 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.