

NOTICE OF VIOLATION

Vermont Yankee Nuclear Power Corporation
Vermont Yankee Nuclear Power Station

Docket No. 50-271
License No. DPR-28
EA 84-7

A special fire protection inspection conducted at the Vermont Yankee site during the period of August 29 - September 2, 1983 identified violations of NRC requirements. In accordance with the "General Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1987), the violations are set forth below:

10 CFR 50.48(b) requires in part that all nuclear power plants licensed to operate prior to January 1, 1979, such as Vermont Yankee Nuclear Power Station, shall satisfy the applicable requirements of Appendix R to Part 50 including, specifically, the requirements of Sections III.G, Fire Protection of Safe Shutdown Capability, III.J, Emergency Lighting, and III.O, Oil Collection System for Reactor Coolant Pump.

10 CFR Part 50, Appendix R, Section III.G.1 requires that fire protection features shall be provided for structures, systems, and components important to safe shutdown. These features shall be capable of limiting fire damage so that one train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station(s) is free of fire damage.

Sections III.G.2 and III.G.3 specify four alternatives that may be implemented outside of primary containment to assure that one redundant train of equipment, cabling and associated circuits necessary to achieve and maintain hot shutdown remains free of fire damage. The alternatives are:

Separation of redundant trains of equipment, cabling and associated circuits by a three-hour rated fire barrier.

Separation of redundant trains of equipment, cabling and associated circuits by a horizontal distance of 20 feet with no intervening combustibles and fire detection and automatic fire suppression systems installed in the area.

Enclosure of redundant trains of equipment, cabling and associated circuits by a one-hour rated fire barrier with fire detection and automatic fire suppression systems installed in the area.

Installation of alternative or dedicated shutdown capability independent of the equipment, cabling and associated circuits under consideration, and installation of fire detection and fixed fire suppression systems in the area under consideration.

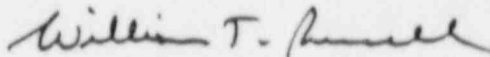
Contrary to the above, as of September 2, 1983, fire protection features were not provided for certain redundant trains of equipment and/or cabling necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control stations such that one train would remain free of fire damage. These equipment and/or cables were located in the reactor building (RB) outside primary containment. None of the alternatives provided by Appendix R, Section III.G.2 or III.G.3 were implemented. Specifically:

- a. For redundant trains of systems necessary for hot shutdown and in the northwest of the RB, elevation 252', although the redundant cable trays, containing control, instrumentation, and some power cables, were separated by more than 20 feet and there was fire detection in the area, an adequate fire suppression system was not installed in that the fire suppression system was placed beneath the lowest level of cable trays which contained cable not qualified as fire resistant by IEEE-383. No alternative or dedicated shutdown capabilities were provided.
- b. For redundant control cables located in cable tray R330SII and conduit 11188JSIIX for the high pressure coolant injection (HPCI) and the reactor core isolation cooling (RCIC) inboard isolation valves V13-15 and V23-15, there was less than 20 feet of separation and there was no fire suppression or fire detection system at elevation 252' of the RB. No alternative or dedicated shutdown capabilities were provided.
- c. Motor control centers 89B and 9D which power RCIC and HPCI inboard isolation valves V13-15 and V23-15 respectively, were separated by greater than 20 feet; however, there were intervening combustibles in the form of open cable trays and there was no automatic fire suppression in the area. No alternative or dedicated shutdown capabilities were provided.
- d. For the reactor vessel level and pressure transmitters located at elevation 280' of the RB, although there was more than 20 feet of separation, there was no automatic fire suppression or detection in the vicinity of the instrument racks. No alternative or dedicated shutdown capabilities were provided.
- e. The redundant power cables to motor control centers 8B and 9B, in the personnel corridor which lead to the northwest corner of the RB, were separated by less than 20 feet and did not have automatic fire suppression or detection in the area. No alternative or dedicated shutdown capabilities were provided.

This is a Severity Level III violation (Supplement I).

Pursuant to the provisions of 10 CFR 2.201, Vermont Yankee Nuclear Power Corporation is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555 with a copy to the Regional Administrator, Region I and a copy to the NRC Resident Inspector within 30 days of the date of the letter transmitting this Notice. This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation if admitted, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Where good cause is shown, consideration will be given to extending the response time. If an adequate reply is not received within the time specified in this Notice, an order may be issued to show cause why the licensee should not be modified, suspended, or revoked or why such other action as may be proper should not be taken. Consideration may be given to extending the response time for good cause shown.

FOR THE NUCLEAR REGULATORY COMMISSION



William T. Russell
Regional Administrator

Dated at King of Prussia, Pennsylvania
this 15th day of June 1987.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
Washington, D.C. 20555

INSPECTION AND ENFORCEMENT MANUAL

DQASIP

TEMPORARY INSTRUCTION 2515/62

INSPECTION OF SAFE SHUTDOWN REQUIREMENTS OF 10CFR50, APPENDIX R
(SECTION III.G) AT NUCLEAR POWER PLANTS LICENSED TO OPERATE
BEFORE JANUARY 1, 1979

2515/62-01 PURPOSE

To ascertain whether required licensees are in conformance with Section III.G of 10CFR50, Appendix R, including exemptions approved by the Office of Nuclear Reactor Regulation (NRR), U.S. Nuclear Regulatory Commission.

2515/62-02 BACKGROUND

Effective February 17, 1981, the Nuclear Regulatory Commission amended its regulations by adding Section 50.48 and Appendix R to 10 CFR 50 to require certain provisions for fire protection in operating nuclear power plants. This action was taken to resolve certain contested generic issues in fire protection safety evaluation reports (SERs) and to require all applicable licensees to upgrade their plants to a level of protection equivalent to the technical requirements of III.G.

2515/62-03 GENERAL INFORMATION

- 031 It is recommended that a team be assigned to perform this inspection. The following is a suggested minimum team makeup:
- a. Team Leader - leads discussion with licensee at entrance and exit interview. Should be a region-based inspector. Also participates in inspection effort.
 - *b. Safe Shutdown Specialist - inspects the safe shutdown systems, equipment, and circuits.
 - *c. Fire Protection Specialist - inspects fire protection of the safe shutdown systems, equipment, and circuits.

*Regions may use inspectors who have the necessary expertise, request assistance from NRR, or use IE contractors who have the necessary expertise.

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032 This is a technically complex inspection. Because there are many variations in the technical details by which a facility can meet safe shutdown criteria, a site-specific inspection plan must be prepared. See Appendix 1 for detailed guidance on the preparation of inspection plans.

2515/62-04 SPECIFIC INSPECTION REQUIREMENTS

041 Section III.G.2, Safe Shutdown Capability

- a. Review the systems and equipment used to meet the safe shutdown requirements. Systems included should fulfill the following requirements:
 1. The reactivity control function shall be capable of achieving and maintaining cold shutdown reactivity conditions.
 2. The reactor coolant makeup function shall be capable of maintaining the level above the top of the core for BWRs and within the level indication of the pressurizer for PWRs.
 3. The reactor heat removal function shall be capable of achieving and maintaining decay heat removal.
 4. The process monitoring function shall be capable of providing direct readings of the process variables necessary to perform and control the functions in Items a1, a2, and a3 above. (See memo referenced in Appendix 1, Section A.1.k to this temporary instruction.)
- b. Verify, on a sample basis, that plant fire areas (bounded by 3-hour-rated walls or equivalent approved by NRR) that contain components from both redundant trains of safe shutdown equipment meet one of the following:
 1. requirements of III.G.2; or
 2. an exemption to III.G.2 approved by NRR; or
 3. an approved alternative or dedicated shutdown capability meeting the requirements of III.G.3 and III.L as described in the Safety Evaluation Report (SER) issued by NRR or licensee documents referenced therein.*

*See Section 042 (below) for inspection requirements if alternative or dedicated shutdown is required.

- c. Verify, on a sample basis, that modifications necessary to ensure safe shutdown are in conformance with the information described in the exemptions approved by NRR, or other licensee documents.
- d. Verify that redundant trains of cables (safety-related, nonsafety-related, and associated circuits) and equipment in selected fire areas have been identified and analyzed by the licensee to show that they would not prevent safe shutdown operation because of hot shorts, open circuits, or short to ground. Verify that they have required separation or barriers as required by III.G.2. of Appendix R, or are protected as described in Enclosure 2, Attachment 2, Section B of NRR letter to licensees issued on various days during 1982. (See Appendix 2 of this temporary instruction for exact date.)
- e. Verify, on a sample basis, that installation and testing of necessary fire detectors and automatic fire suppression systems as required by III.G.2 are as described in the exemptions approved by NRR or other licensee documents.

042 Sections III.G.3 and L, Alternative and Dedicated Shutdown Capability^{*},^{**}

- a. Review the systems and equipment used to meet the alternative or dedicated shutdown requirements. Verify they meet the following functional requirements:
 1. The reactivity control function shall be capable of achieving, monitoring, and maintaining cold shutdown reactivity conditions.
 2. The reactor coolant makeup function shall be capable of maintaining the reactor coolant level above the top of the core for BWRs or be within the level indication in the pressurizer for PWRs.

*If modifications are necessary to provide alternative or dedicated shutdown capability, those modifications are required by 10CFR50.48(c)(5) to be reviewed and approved by NRC. A Safety Evaluation Report documenting the results of the review and approval will be issued. This SER and referenced licensee documents will form the technical basis for this inspection.

**If modifications are not necessary because alternative or dedicated shutdown had been previously approved, then the documentation supporting the previous approval should be reviewed. Appendix R, Section III.L should be used as guidance for the review. Any discrepancies between III.L and the installation should be reported to NRR for resolution.

3. The reactor heat removal function shall be capable of achieving and maintaining decay heat removal.
 4. The process monitoring functions shall provide direct reading of the process variables necessary to perform and control the functions in Items a1, a2, and a3 above. (See memo referred to in Appendix 1, Section A.1.k of this temporary instruction.)
- b. Verify that modifications necessary to assure alternative or dedicated shutdown capability are in conformance with information discussed in the SER and supporting documents.
 - c. Examine the alternative or dedicated shutdown equipment and verify that it is separated from the fire area of concern by Section III.G.2 separation requirements and that electrical isolation capability is provided as described in the SER and supporting documents.
 - d. Review the licensee's testing program for ensuring alternative or dedicated shutdown capability and verify that it includes, as a minimum, provisions for ensuring that equipment operates from the local control station but cannot be operated from the control room when the transfer or isolation switch is placed in the "local" position and that equipment operates from the control room but cannot be operated from the local control station when the transfer or isolation switch is in the "remote" position.
 - e. Verify that the licensee's training program for licensed and nonlicensed personnel has been expanded to include alternative safe shutdown capability training for all required individuals in the event of a fire.
 - f. Verify that personnel required to achieve and maintain the plant in hot shutdown, following a fire using the alternative shutdown systems, can be provided from normal, onsite staff, exclusive of the five-person fire brigade.
 - g. Verify that procedures for use of the alternative shutdown system exist. Verify the operators can perform the procedures in a time consistent with shutdown requirements.

2515/62-05 REPORTING REQUIREMENTS

The results of this inspection will be documented in a standard inspection report. A copy of the final report shall be forwarded to the Office of Inspection and Enforcement, Division of Quality Assurance, Safeguards, and Inspection Programs, and to the Office of Nuclear Reactor Regulation, Division of Licensing.

2515/62-06 STATISTICAL DATA REPORTING

For module tracking system input, record actual inspection effort against Module No. 25562B. Credit for routine program inspections may be taken detailed in Appendix 3 of this temporary instruction.

2515/62-07 EXPIRATION

This temporary instruction will remain in effect for one year from the date of issue.

END

APPENDIX 1
INSPECTION PLAN PREPARATION

A. Document Review

Because the inspection of the safe shutdown requirements of Appendix R (10CFR50, Section III.G) is a complex undertaking, it is important that the personnel selected to perform the inspection be prepared before they arrive at the site.

1. Following is a list of documents that inspection personnel should obtain and review before the inspection:
 - a. NRR letter, dated November 24, 1980, from D. G. Eisenhut to all power reactor licensees with plants licensed before January 1, 1979. This letter details the SER open items that were applicable to each operating plant.
 - b. NRR Generic Letter No. 81-12, dated February 20, 1981, from D. G. Eisenhut to all power reactor licensees with plants licensed before January 1, 1979. This letter requests certain information to be included in licensee submittals in response to 10CFR50.48 and Appendix R requirements.
 - c. NRR letters to licensees, that provided clarification of the requirements of Generic Letter 81-12. These letters were issued on various days during 1982. (See Appendix 2 to this temporary instruction for exact date.)
 - d. Licensee responses to NRR letters of A.1.a, b, and c and exemption requests.
 - e. Fire Hazard Analysis and related documents prepared by the licensee before January 1, 1979.
 - f. NRR Fire Protection Safety Evaluation Report and supplements, and licensee documents referenced therein that provide the NRR review and approval of the Fire Hazards Analysis of A.1.e.*
 - g. NRR Fire Protection Safety Evaluation Report and licensee documents referenced therein that provide the NRR review and approval of modifications required to satisfy the alternative or dedicated shutdown requirement of Section III.G.3 of Appendix R.*
 - h. Exemptions granted or denied by NRR.*
 - i. Licensee's reassessment of the plant to III.G requirements that identifies redundant safe shutdown systems and components, defines the fire areas (bound by 3-hour-rated walls

*The dates of these items may be obtained from the NRR project manager.

or equivalent) and locates the safe shutdown equipment and cables by fire area (part of this may include Item A.1.e by reference).

- j. NRR memorandum from Mattson to Vollmer dated July 2, 1982, "Position Statement on Allowable Repairs for Alternative Shutdown and on the Appendix R Requirement for Time Required to Achieve Cold Shutdown." Copies were sent to the Regional Division Directors by J. M. Taylor on August 17, 1982.
- k. Memorandum from L. S. Rubenstein to Roger J. Mattson dated January 7, 1983, "Statement of Staff Position Regarding Source Range Flux, Reactor Coolant Temperature, and Steam Generator Pressure Indication to Meet Appendix R Alternative Shutdown Capability."

2. From the documentation develop the following information:

- a. Equipment required for hot shutdown.
- b. Additional equipment required for cold shutdown.
- c. Areas of the plant where alternative shutdown capability has been provided.
- d. Areas of the plant that contain components or cable runs (control, power or instrumentation) from both redundant trains of equipment required for hot and cold shutdown.

3. The licensee should be asked to provide the following information, if it is not available in the regional office:

- a. Emergency operating procedures or equivalent that are used to achieve and maintain the plant in hot shutdown following a fire.
- b. Emergency operating procedures or equivalent that are used to cool down the plant following a fire.
- c. Results of tests run (if any) to verify the ability to maintain the plant in hot shutdown following a fire with an assumed loss of offsite power (e.g., natural circulation test while using the atmospheric steam dumps).
- d. Any documents identified in A.1 that were prepared by the licensee.

B. Hot Shutdown Capability

1. System/Equipment/Instrumentation

- a. From the list of systems, equipment, and instrumentation required to achieve and maintain hot shutdown, select a

sample for indepth review. For example, in a PWR the following could be selected:

- (1) reactivity control - boration capability,
- (2) reactor coolant makeup - charging pump,
- (3) reactor pressure control - pressurizer heaters,
- (4) decay heat removal - auxiliary feedwater pump,
- (5) process monitoring instrumentation - reactor temperature and steam generator level (see A.1.k for complete list),
- (6) support - onsite AC power and its distribution system.

The six areas identified above generally define the areas of concern following a fire. Selecting one or two components from each area should be an adequate sample size. Enclosure 1 to NRR Generic Letter No. 81-12 provides additional information on PWR and BWR equipment required for hot shutdown.

b. For the systems, equipment, and instrumentation selected in B.1.a, perform the following:

- (1) Using the licensee's cable routing drawings or analysis, identify the areas of the plant traversed by the cables of the redundant trains of hot shutdown equipment. The cables should include:
 - (a) power (normal and emergency),
 - (b) control,
 - (c) instrumentation,
 - (d) associated circuits of concern (see document referred to in A.1.c, Enclosure 2, Attachment 2, Sections A and B).
- (2) Identify the areas of the plant that contain the equipment of the redundant trains required for hot shutdown.
- (3) Where modifications have been required to meet the requirements of III.G.2, review the modification packages for adequacy of licensee review and approval, including 10CFR50.59 aspects.
- (4) Inspect the areas of the plant and verify that the selected equipment and cables of the redundant trains meet the separation requirements of Section III.G.2 of Appendix R; i.e., separated by a 3-hour fire barrier,

or separated by a horizontal distance of 20 feet with no intervening combustibles with fire detection and automatic fire suppression in the area or enclosure of the cables and equipment in a 1-hour fire barrier with fire detection and automatic fire suppression in the area or an exemption has been approved by NPR.

2. Alternative or Dedicated Hot Shutdown Capability*

- a. From the licensee's analysis, identify the fire areas for which alternative shutdown has been provided or a dedicated shutdown system has been provided.
- b. From that analysis select a sample of the areas and/or equipment for indepth review as follows:
 - (1) Select a maximum of three areas of the plant where alternative shutdown has been provided, or
 - (2) If a dedicated shutdown system is installed select a sample of those systems (see B.1.a for an example of equipment and instrumentation).
- c. For the areas and/or equipment selected in B.2.b, perform the following:
 - (1) Using the licensee's cable routing drawings or cable analysis, identify the protective measures isolating the cables that could affect the alternative shutdown capability for that area. These cables should include:
 - (a) power (normal and emergency),
 - (b) control,
 - (c) instrumentation,
 - (d) associated circuits of concern (see document referred to in A.1.c, Enclosure 2, Attachment 2, Sections A and B).
 - (2) Identify the location of the equipment necessary to provide alternative or dedicated shutdown capability.

*If the separation criteria of III.G.2 cannot be met for system, equipment, or instrumentation required for hot shutdown, then alternative or dedicated shutdown provisions must be provided.

- (3) Verify that the areas for which alternative or dedicated shutdown has been provided are protected by fire detection and a fixed fire suppression system.
 - (4) Where modifications have been required, review the modification packages for adequate licensee review and approval, including 10CFR50.59 review.
 - (5) Inspect the areas of the plant to verify that the commitments of the SER have been met for the equipment and cables selected above.
3. Procedure for Hot Shutdown*
- a. Review the procedure that the licensee uses for bringing the plant to hot shutdown in the event of a fire in the:
 - (1) cable spreading room,
 - (2) control room,
 - (3) other selected critical areas.
 - b. Determine the feasibility of performing the procedure in case of fire by a walkthrough of specific sections of the procedure.
 - c. Pay particular attention to modifications (if any) that must be made in order to achieve or maintain the plant in hot shutdown. If modifications (e.g., lifting leads, pulling fuses) are necessary, NRR should be contacted for resolution.
4. Staffing
- a. Determine if there are enough qualified personnel available on shift to perform the operations necessary to maintain the plant in hot shutdown and staff the five-person fire brigade.
 - b. Verify that communications capability between the various control stations is adequate for shutting down and maintaining the hot shutdown condition.

*Procedures for bringing the plant to hot shutdown in the event of a fire should consider both the use of only onsite power and the use of offsite power. Credit taken for the failed position of some equipment on loss of offsite power must be addressed when offsite power is not lost. Additionally, some "associated circuits of concern" may require procedures to detect and correct spurious operations of these circuits. Those procedures should also be included in the review.

5. Training

- a. Verify that the licensee's training program includes instruction, on a periodic basis, in the use of the procedure for hot shutdown following a fire.
- b. Interview a sample of operators with regard to: (1) the adequacy of training; and (2) the usefulness and feasibility of performing the procedure.

C. Cold Shutdown Capability

1. Systems/Equipment/Instrumentation

- a. From the list of additional systems, equipment, and instrumentation required to cool the plant from hot shutdown to cold shutdown, select a sample for indepth review. For example, for PWR the following could be selected:

- (1) reactor coolant system pressure reduction - auxiliary spray line valve controls,
- (2) decay heat removal - RHR pump,
- (3) support - onsite power.

The above three items represent equipment, in addition to the equipment required for hot shutdown, necessary for cold shutdown. Selecting one or two components from each area should provide an adequate sample size. Enclosure 1 to NRR Generic Letter No. 81-12 provides additional information on PWR and BWR equipment required for cold shutdown.

- b. For the systems, equipment, and instrumentation selected in C.1.a perform the following:
 - (1) For postulated fire damage determine the feasibility of repair and cooldown within 72 hours.
 - (2) Determine that any material required to repair the damaged area is available, on site, so that the 72-hour limitation can be met.
 - (3) Review the licensee's procedure for effecting repairs to the damaged area.
 - (4) Review the modification packages for adequacy of licensee review and approval, including 10CFR50.59 aspects.
 - (5) Inspect the areas of the plant containing the equipment, systems, and instrumentation required to cool down the plant.

2. Procedure for Cooldown

- a. Review the procedure that the licensee uses for bringing the plant to cold shutdown conditions in the event of a fire in the:
 - (1) cable spreading room,
 - (2) control room,
- b. Determine the feasibility of performing the procedure in case of fire by a walkthrough of specific sections of the procedure.
- c. Pay particular attention to modifications (if any) or repairs that must be made in order to cool the plant to cold shutdown conditions.
- d. If modifications are necessary, verify that a determination in accordance with 10CFR50.59 was made.

3. Training

- a. Verify that the licensee's training program includes instructions, on a periodic basis, for the use of the cooldown procedure following a fire.
- b. Interview a sample of operators in regard to:
 - (1) the adequacy of training,
 - (2) the usefulness and feasibility of performing the procedure.

APPENDIX 2
DATE OF LETTER TO LICENSEES PROVIDING CLARIFICATION OF REQUIREMENTS OF
GENERIC LETTER 81-12 AND DATE OF LICENSEES' RESPONSE

<u>Plant</u>	<u>Dt. of Letter</u>	<u>Dt. of Response</u>
Arkansas 1/2	05/10/82	07/01/82
Beaver Valley 1	05/04/82	06/30/82
Big Rock Point 1	04/30/82	07/09/82
Brcwns Ferry 1/2/3	05/05/82	06/30/82
Brunswick 1/2	05/04/82	06/30/82
Calvert Cliffs 1/2	05/10/82	07/01/82
Cook 1/2	To Be Issued	03/31/83 (Committed)
Cooper	05/04/82	06/28/82
Crystal River 3	05/04/82	06/30/82
Davis-Besse 1	No Letter	NA
Dresden 1	05/18/82	18 mths before return to serv.
Dresden 2/3	04/30/82	07/01/82
Duane Arnold	04/20/82	06/22/82
Farley 1/2	05/04/82	07/01/82
FitzPatrick	05/10/82	07/13/82
Fort Calhoun 1	04/08/82	05/25/82
Fort St. Vrain	No Letter	NA
Ginna	05/07/82	07/23/82
Haddam Neck	05/10/82	07/16/82
Hatch 1/2	05/03/82	07/01/82
Humboldt Bay	No Letter	NA
Indian Point 2	08/10/82	01/10/83 (Committed)
Indian Point 3	05/05/82	07/01/82
Kewaunee	No Letter	NA
LaCrosse	05/10/82	09/28/82
Maine Yankee	05/19/82	11/24/82
Millstone 1/2	05/10/82	07/16/82
Monticello	05/04/82	06/30/82
Nine Mile Point 1	04/26/82	10/01/82 & 12/03/82
North Anna 1/2	04/21/82	06/22/82
Oconee 1/2/3	No Letter	NA
Oyster Creek	04/30/82	06/30/82
Palisades	04/07/82	07/01/82
Peach Bottom 2/3	05/04/82	06/28/82
Pilgrim 1	05/04/82	06/25/82
Point Beach 1/2	05/04/82	06/30/82
Prairie Island 1/2	04/28/82	06/30/82
Quad Cities 1/2	04/28/82	07/01/82
Rancho Seco 1	No Letter	NA
Robinson 2	05/10/82	07/30/82

<u>Plant</u>	<u>Dt. of Letter</u>	<u>Dt. of Response</u>
Salem 1/2	04/20/82	06/16/82
San Onofre 1	05/10/82	06/30/82
St. Lucie 1	05/10/82	06/10/82
Surry 1/2	04/12/82	06/18/82
Three Mile Island 1	05/10/82	07/01/82
Trojan	No Letter	NA
Turkey Point 3/4	05/10/82	07/01/82
Vermont Yankee	05/10/82	None Required
Yankee Rowe	04/28/82	08/31/82
Zion 1/2	04/06/82	07/02/82

APPENDIX 3
ROUTINE PROGRAM CREDIT ASSOCIATED WITH PERFORMING TI 2515/62

Following is a list of inspection procedures for which credit may be taken. Credit taken should be based on what the licensee had to do to the facility to bring it into compliance with Appendix R. For example, if modifications were required to meet the separation requirements of Section III.G.2 of Appendix R (with NRR approval not required), credit for 37700 and 72701 may be taken. However, if modifications were required to provide alternative or dedicated shutdown capability (with NRR approval), credit for 37701 and 72701 may be taken. Because of the variations that can be taken by the licensees in complying with Appendix R, Section III.G, the inspection teams, along with regional management, should decide the applicability of reducing each inspection procedure listed below:

<u>Procedure No.</u>	<u>Credit</u>	<u>Frequency</u>	<u>Program</u>	<u>Title</u>
37700	100%	A	Basic	Design Changes and Modifications
37701	100%	WR	Supp.	Facility Modifications
41700	30%*	A	Basic	Training
42700	50%	A	Supp.	Plant Procedures
64703	0%**	3-yr.	Supp.	Fire Protection Prevention Program
64704	100%	A	Basic	Fire Protection/Prevention Implementation
72701	100%	WR	Basic	Startup Testing New/Modified

*If nonlicensed individuals are required to be trained to meet Appendix R backfit requirements by the licensee commitments or SER, then credit for up to 30 percent of this procedure can be entered in 766 data.

**No credit should be taken for this procedure after performing the TI since this is strictly a program review.

Draft - Plant Inspection Procedure

Special Inspection - Licensee conformance with items III. G, J, L and O of 10 CFR 50, Appendix R, Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979

A. OBJECTIVE:

To ascertain whether required licensee's are in conformance with items III. G, J, L and O of 10 CFR 50, Appendix R

B. BACKGROUND INFORMATION

Effective February 17, 1981, the Nuclear Regulatory Commission amended its regulations to require certain provisions for fire protection in operating nuclear power plants. This action was identified as appendix R to 10 CFR 50, and was taken to upgrade fire protection at those nuclear power plants licensed to operate prior to January 1, 1979. The purpose of this action was to require resolution of certain contested generic issues in fire protection safety evaluation reports (SER's) and to require the licensees to upgrade their plant to meet the requirements of III.G, J, L, and O of 10 CFR 50 Appendix R.

C. INSPECTION REQUIREMENTS

Specific inspection requirements for items III. G, J, L and O of Appendix R to 10 CFR 50 are described in Enclosure 1. It should be noted that this effort is classified as a special inspection with possible participants made up of the following types of individuals:

1. Consultants - Fire Protection Consultant, Safe Shutdown Consultant
2. NRR Representative
3. Regional Based Inspectors - Related Region

D. Reporting Requirements

Results of this special effort will be discussed in a brief report that will be forwarded to J. Stone, Division of Reactor Programs Office of Inspection and Enforcement. The report will identify those items that are in conformance with the requirements of 10CFR 50, Appendix R. However, the report will include sufficient information to clearly identify those items that are not in conformance with information described in the SER and Supporting Documents of Appendix R to 10 CFR 50. This latter action is necessary to obtain resolution of the problem and permit followup by region based inspectors.

E. EXPIRATION

This TI will remain in effect until the special inspection effort is completed at all nuclear power facilities that were operating prior to January 1, 1979. Followup inspection effort will be performed as part of the normal inspection program and will be reported in related inspection reports.

F. IE HEADQUARTERS CONTACT

Questions regarding this TI should be addressed to J.C. Stone (492-9656).

G. 766 DATA INPUT

For module tracking system input, record actual inspection effort against module No. 255XXB

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ENCLOSURE 1
10 CFR 50, APPENDIX R, INSPECTION REQUIREMENTS

ITEM III.G. SAFE SHUTDOWN CAPABILITY *1. Verify that the SER and supporting documents contain safe shutdown equipment that meet the requirements of 10 CFR 50.61*

1. Verify that modifications necessary to assure safe shutdown are in conformance with the information described in the safety evaluation report (SER) and supporting documents. *Approved with alterations*
2. Examine related cable trays and equipment in safety and nonsafety circuits that could prevent safe shutdown operation or cause maloperation due to hot shorts, open circuits, or shorts to ground and verify that they have proper separation requirements and/or application of insulation or shielding material as described in the SER and supporting documents. *at lot 1*
3. Verify that installation and testing of necessary fire detectors and automatic fire suppression systems are as described in the SER and supporting documents. *See 10 CFR 50.61*
4. Review the licensee's testing program for demonstrating the adequacy of the various combinations of equipment associated with the safe shutdown capability:
 - a. Discuss basis (criteria) for test with licensee representatives and assure that testing performed included the worst case scenario.
 - b. Verify that approved safe shutdown procedures have been prepared for the various combinations of equipment and circuits.
 - c. Review the qualifications of personnel responsible for performing the testing, reviewing test results and preparing safe shutdown procedures and verify that they meet the qualification requirements described in the licensee's management controls program.
 - d. If possible, witness an ongoing test of safe shutdown capability.
 - e. Review the test report and discuss identified problem areas with licensee personnel.
 - f. Assure that necessary changes were made to equipment, test procedures, and safe shutdown procedures and that retesting was completed.
5. Verify that licensee's training program for licensed and nonlicensed personnel has been expanded to include safe shutdown capability training for all required individuals.

1124 III. J. EMERGENCY LIGHTING

1. Verify that emergency lighting units have been installed in all areas identified in the SAR and supporting documents.
2. Review test records that demonstrate the emergency lighting units provide sufficient lighting to permit operation of the safe shutdown equipment and access and egress thereto.
3. Review testing documents or vendor literature to assure that the emergency units meet the 8-hour battery life requirement.
4. Verify that the licensee has developed administrative controls and procedures to assure proper surveillance of the units.

1124 III. L. ALTERNATIVE AND DEDICATED SHUTDOWN CAPABILITY

1. Verify that modifications necessary to assure alternative and dedicated shutdown capability are in conformance with information discussed in the SER and supporting documents.
2. Examine the alternative and dedicated shutdown equipment, systems and cable to verify that separation barriers and/or insulation *the* have been provided for those systems and components as described in the SER and supporting documents. *by Section III G-2 separation requirements and that*
3. Review the licensee's testing program for assuring alternative and dedicated shutdown capability and verify that it includes provisions for assuring that:
 - a. The reactivity control function shall be capable of achieving and maintaining cold shutdown reactivity conditions. *of monitoring*
 - b. The reactor coolant makeup function shall be capable of maintaining the reactor coolant level above the top of the core for BWR's and be within the level indication in the pressurizer for PWR's.
 - c. The reactor heat removal function shall be capable of achieving and maintaining decay heat removal.
 - d. The process monitoring functions provide direct reading of the process variables necessary to perform and control the functions in Item 3.a., b. and c. above.
 - e. The supporting functions are capable of providing the process cooling, lubrication, etc., necessary for operation of safe shutdown equipment.
 - f. The program includes provisions for verifying that alternative and dedicated shutdown capability can be achieved using available off site power and during periods when offsite power is not available for 72 hours.

4. Review the results of the licensee's testing program for demonstrating the adequacy of alternative and dedicated shutdown capability and verify that the criteria identified in Item 3 above were accomplished. In addition, review apparent problem items with cognizant licensee personnel. Assure that necessary changes were made to systems or equipment, testing procedures, safe shutdown procedures and that retesting was completed.
5. Review the qualifications of personnel involved in the installation, testing, etc. activities and verify that they meet the minimum qualification requirements delineated in licensee administrative controls.
6. Verify that the licensee's administrative controls program includes provisions for assuring that materials and procedures for the repair of damaged systems or equipment necessary to achieve and maintain cold shutdown conditions will be readily available onsite for prompt repair.
7. Verify that approved procedures for alternative and dedicated shutdown are available for use by operating personnel.

8. Verify that the licensee's training programs for licensed and nonlicensed personnel have been revised to include training for alternative and dedicated shutdown activities.

9. *Review licensee methodology for identifying associated circuits and design modifications.*

III. 0. OIL COLLECTION SYSTEM FOR REACTOR COOLANT PUMP

1. Verify that the collection system has been installed as described in the SAR and supporting documents. This includes verification that drain lines have been connected to all identified leakage points.
2. Review test records that demonstrate leak tightness of installed system.
3. Review test records that demonstrate the operability of the flame arrestor.
4. Review drawings of as-built system and assure that drain lines have been connected to all identified leakage points.

To assure that no associated circuits will jeopardize safe shutdown capability.

ENCLOSURE 2

D.C. COOK FACILITY

Item III. G - Inspection of safe shutdown capability - Specific activity to be conducted at D.C. Cook site

- A. Obtain a listing of all safety related and nonsafety related systems, subsystems, components, control circuits and related equipment that licensee has designated for safe shutdown capability.
- B. Using full size, as-built, facility drawings, have licensee representative identify the location of equipment discussed in "A" above including the specific location of redundant features ~~any necessary fire barriers, etc.~~
AND REDUNDANT SHUTDOWN TRAIN (INCLUDING ASSOCIATED CIRCUIT) SEPARATION
- C. Review as-built cable routing drawings and have licensee representative identify the specific routing of cable through cable trays for the safety related and nonsafety related equipment used for safe shutdown capability.
- D. Have a licensee representative describe the audit program, etc., that was used to assure that the cables were routed as identified on the drawings for all safety related and nonsafety related equipment required for safe shutdown capability. The discussion should include a description of any special testing techniques that may have been used to verify the routing.
- E. During a walk through inspection of the control room, cable spreading room and selected fire zone areas which include cable penetration areas, verify:
REDUNDANT SYSTEMS AND
 1. Safe shutdown components identified in Item "A" above meet separation criteria. OF IIG-2 OF APPENDIX R or verify appropriate electrical isolation as depicted by "C"
 2. Installed separations barriers, suppression devices, insulation material, etc., conform to applicable fire protection codes.
 3. Installed safe shutdown components are as described on drawings.
- F. Review the licensee's approved procedures for achieving safe shutdown conditions.
- G. Review the licensee's testing procedures and test results which were used to demonstrate that the installed safe shutdown equipment has the capability to achieve safe shutdown conditions.
- H. Review the licensee's administrative controls program for assuring that materials and procedures for the repair of damaged systems or equipment necessary to achieve and maintain cold shutdown conditions as described in Appendix R, Item L.5.
- I. Verify that the licensee's training program for licensed and nonlicensed personnel has been revised to include training for safe shutdown activities. Review training records to assure that program has been implemented.

PROPOSED INSPECTION TEAM
and
ESTIMATED MAN HOURS

SPECIAL FIRE PROTECTION INSPECTION TEAM

- A. Team makeup
1. Safe shutdown consultant
 2. NRR Fire protection specialist
 3. IE specialist - Related regional office
 4. Part-time participation by IE Headquarters representative
- B. Estimated Inspection Time Each Facility
1. Preparing time - 2 weeks
This involves reviewing the related safety analysis report (SAR) and supporting documents that were submitted by licensees in response to NRR requests and the NRR issued safety evaluation report (SER).

Preparation time may decrease after the team members become more familiar with the installed equipment and related requirements.
 2. Inspection Time - 1 week including travel time
 3. Documentation Time - 2-3 days

FIRE PROTECTION ACTIVITIES COVERED IN
ROUTINE INSPECTION MODULES

- 35751 - Identifies the specific FP criteria that must be included in licensee QA program.
- 37700 - Requires verification that appropriate fire protection controls were implemented for design change modifications involving welding, cutting, etc.
- 37701 - Requires inspection of NRC approved modifications
- 37702 - Requires verification that procedures and responsibilities for design control include provisions for fire protection/prevention requirements delineated in R.G. 1.120
- 54701 - Verifies that licensee has an effective housekeeping/cleanliness program
- 61700 - Includes provisions for the periodic verification that the licensee is completing the surveillance testing of fire protection components discussed in Facility T S
- 62700 - Includes requirements for the inspector to review maintenance procedures to assure that FP requirements identified in R.G. 1.120 are covered
- 62701 - Includes requirements for the inspector to review procedures for scheduled maintenance activity to assure that applicable requirements of RG1.120 are included.
- 64703 - includes provisions for the periodic review of the licensee's FP program for confirmation with RC 1.120
- 64704 - Requires inspector to conduct a facility tour to observe the licensee's implementation of FP practices
- 71707 - Requires the resident inspector to conduct weekly facility tours during long term shutdowns to assure the effectiveness of FP practices
- 71709 - Requires the resident inspector to include the observation of FP practices during the biweekly tour of ongoing activities.

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(301) 972-0197

February 1, 1988

FREEDOM OF INFORMATION
ACT REQUEST

FOIA-88-92
Rec'd 2-11-88

Mr. Donnie H. Grimsley
Division Director
Office of Administration,
Rules and Records
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: FOIA

Dear Mr. Grimsley:

I wish to obtain several documents pertaining to 10CFR50 Appendix R inspections and enforcement. Accordingly, the following materials are requested under the Freedom of Information Act:

1. Copies of all Headquarters and Regional inspection modules used to verify nuclear utility compliance with fire protection requirements specified in 10CFR50, Appendix R, including drafts and revisions of those inspection modules.
2. Internal correspondence between or among regional offices, and between regional offices and the NRC Headquarters, concerning use of Appendix R inspection modules.
3. Commission papers and transcripts of Commission meetings regarding Appendix R inspection modules and/or inspection results.
4. Commission papers and transcripts of Commission meetings referring to determination of enforcement actions and civil penalties resulting from fire protection inspections, including "closed" hearings such as that which occurred on or about June 8, 1987.
5. Notices of violation resulting from Appendix R inspections for Vermont Yankee, Ft. Calhoun, Davis Besse, Fort St. Vrain, Salem, and Pilgrim.

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2PP.

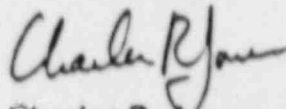
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6. The Differing Professional Opinion (DPO) signed by several NRC fire protection personnel concerning Appendix R guidance and all NRC memoranda, files, and notes pertaining to the review and disposition of the DPO.

I understand that it may be necessary for me to pay for the staff research and materials involved with responding to this request. I appreciate your assistance.

Sincerely,



Charles R. Jones

CRJ/II