

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-289/86-23

Docket No. 50-289

License No. DPR-50 Category C

Licensee: GPU Nuclear Corporation  
P. O. Box 480  
Middletown, Pennsylvania 17057

Facility Name: Three Mile Island, Unit 1

Inspection At: Middletown, PA

Inspection Conducted: December 15-19, 1986

Inspectors: A. Krasopoulos 1/22/87  
A. Krasopoulos, Fire Protection Engineer date

Also participating and contributing to the report were:

R. Hodor, Mechanical Systems Specialist, BNL

K. Parkinson, Electrical Systems Specialist, Sonalyst Inc.

D. Kubicki, Fire Protection Engineer, NRR

Approved by: C. J. Anderson 1/28/87  
C. J. Anderson, Chief date  
Plant Systems Section, DRS

Inspection Summary: Inspection on December 15-19, 1986 (Report No. 50-289 86-23)

Areas Inspected: Special, announced team inspection of the licensee's efforts to comply with the requirements of 10 CFR 50, Appendix R, Sections III.G, J, and O, concerning fire protection features to ensure the ability to achieve and maintain safe shutdown in the event of a fire.

Results: One violation was identified [failure to install emergency lights in the Control Room in accordance with the scheduler guidelines of 10 CFR 50.48 (c)(2)]. Three items remained unresolved at the end of the inspection.

## DETAILS

### 1.0 Persons Contacted

#### 1.1 General Public Utilities Nuclear Corporation (GPUN)

- \*R. Barth, Fire Protection Engineer
- G. Busch, Licensing Engineer
- R. Campell, Control Room Operator
- \*J. Colitz, Plant Engineering Director
- \*D. Distel, PWR Licensing
- \*J. Garrison, MCF
- \*B. Gan, Projects Engineer
- T. Goodlavage, Shift Foreman
- C. Good, Assistant Operator
- \*G. Gurican, Technical Consultant
- E. Hammond, NSCC Staff Director
- \*C. Hartman, Manager, Plant Engineering
- H. Henry, Quality Assurance
- \*H. Hukill, Director, TMI-1
- J. Langenbach, Project Engineering Director
- J. Mancinelli, Manager, EQ/Fire Protection
- \*J. Mateychick, Project Engineer
- \*R. McGoe, Manager, PWR Licensing
- P. Moor, Projects
- T. O'Connor, Nuclear Safety Engineer
- \*S. Otto, Licensing Engineer
- D. Reese, Control Room Operator
- M. Ross, Plant Operations Director
- F. Perry, Support Training Manager
- C. Shurds, Manager, Technical Functions
- \*H. Shipman, Operations Engineer
- \*J. Siegel, Fire Protection Engineer
- C. Smyth, Licensing Manager
- \*R. Toole, Operational and Maintenance Director
- K. Zimmermann, Fire Protection Coordinator

#### 1.2 Gilbert Commonwealth (G.C.)

- \*J. Brenden, Jr., Project Engineering Manager
- J. Mangeno, Fire Protection Engineer
- D. Stevens, Project Mechanical Engineer
- J. Strasser, Fire Protection Engineer
- \*R. Smith, Project Manager
- \*A. Thaik, Electrical Engineer

### 1.3 U.S. Nuclear Regulatory Commission (NRC)

- \*C. Anderson, Chief, Plant Systems Section
- \*R. Conte, Senior Resident Inspector
- \*J. Rogers, Resident Inspector
- \*F. Young, Resident Inspector

\* Denotes those present at the exit meeting.

### 2.0 Purpose

This inspection was to ascertain that the licensee is in conformance with 10 CFR 50, Appendix R, Sections III.G, J, and O, including exemptions approved by the Office of Nuclear Reactor Regulation (NRR).

### 3.0 Background

10 CFR 50.48 and 10 CFR 50, Appendix R became effective on February 17, 1981. Section III.G of Appendix R requires that fire protection be provided to ensure that one train of equipment necessary to achieve and maintain safe shutdown remains available in the event of a fire at any location within a licensed operating facility. For hot shutdown conditions, one train of the systems necessary must be free of fire damage (III.G.1.a). For cold shutdown conditions, repair is allowed using in place procedures and materials available onsite with the provision that cold shutdown be achievable within 72 hours of the initiating event (III.G.1.b). Section III.G.2 lists specific options as follows to provide adequate protection for redundant trains of equipment located outside of the primary containment:

- ° Separation by a fire barrier having a three hour rating (III.G.2.a).
- ° Separation by a horizontal distance of at least 20 feet with no intervening combustibles and with fire detection and automatic fire suppression installed in the fire area (III.G.2.b).
- ° Enclosure of one train in a fire barrier having a one hour rating in addition to having fire detection and automatic suppression installed in the fire area (III.G.2.c).

For non-inerted primary containment, Section III.G.2 specifies one of the above three protection options, or any of the following:

- ° Separation by a horizontal distance of at least 20 feet with no intervening combustibles or fire hazards (III.G.2.d).
- ° Fire detection and automatic fire suppression installed in the fire area (III.G.2.e).
- ° Separation of redundant trains by a non-combustible radiant energy shield (III.G.2.f).



If the protection required by Section III.G.2 is not provided or the systems of concern are subject to damage from fire suppression activities, Section III.G.3 of the rule requires that an alternate or dedicated shut-down capability be provided which is independent of the area of concern. Any alternate or dedicated system requires NRC review and approval prior to implementation.

For situations in which fire protection does not meet the requirements of Section III.G, however, such protection is deemed to be adequate by the licensee for the specific situation, the rule allows the licensee to request an exemption on a case-by-case basis. Such exemption requests are submitted to the NRC for review and approval and must be justified by the licensee on a technical basis.

#### 4.0 Correspondence

Correspondence between the licensee and the NRC concerning compliance with Sections III.G, J, and O was reviewed by the inspection team in preparation for the site visit. Attachment 1 to this report is a listing of the correspondence reviewed.

#### 5.0 Post Fire Safe Shutdown Capability

##### 5.1 Systems Required For Safe Shutdown

In the event of a fire and loss of off site power, the following systems will be used to achieve safe shutdown for the Three Mile Island Unit 1 reactor.

Shutdown of the reactor and reactivity control will be performed by rod insertion from the control room. Reactor coolant inventory and long term reactivity control will be maintained by the makeup system. Primary system pressure control will be maintained by the pressurizer heaters or, if they are unavailable because of fire damage, by let-down flow and the makeup system. The pressurizer spray will be available for primary depressurization during cold shutdown.

For a fire in any plant area, except the motor driven Emergency Feedwater (EFW) Pump Room and the "Alligator Pit" (fire zones 1B-FZ-3 and 1B-FZ-8), decay heat removal during hot shutdown will be accomplished by the emergency feedwater system, main steam safety valves, and atmospheric dump valves. For a fire in the motor driven Pump Room or the Alligator Pit, the initial decay heat removal will be accomplished by the use of the high pressure injection cooling via the makeup system (Feed and bleed method). Using feed and bleed, the licensee can operate in this mode for about 10 hours, however, once the fire is extinguished and the operators can gain entry into the motor driven EFW Pump Room the EFW steam driven pump can be manually started from this room to provide EFW flow to the steam generators, which is the preferred method of decay heat removal.

Natural circulation of the primary coolant must be relied upon in hot shutdown. Decay heat removal during cold shutdown would be accomplished by the decay heat removal system, decay heat closed cooling water system, and decay heat river water system.

## 5.2 Plant Fire Areas/Fire Zones

TMI-1 is divided into fire areas and fire zones. The fire areas are separated from other plant areas by either rated fire barriers or approved alternatives. The fire zones are subdivisions of fire areas whose boundaries have no fire rating but because of the fire protection provided in the zone, or other mitigating factors such as component separation or lack of intervening combustibles it is logical to postulate that smoke and fire will not propagate through the zone boundary.

On the bases of adequate technical justification, the fire zones described by the licensee are considered fire areas for the purpose of determining compliance with Appendix R. Attachment 3 provides a listing of the fire areas/fire zones for TMI-1.

## 5.3 Areas Where Alternate Safe Shutdown Is Required

The licensee will provide alternate shutdown capability for the Control Room, Relay Room (cable spreading room), and the Engineered Safeguards Actuation Cabinet (ESAS) Room.

With regard to the latter, the licensee did not provide NRC with adequate information to enable the staff to make a determination on the adequacy of the proposed alternative safe shutdown capability for a fire in this area, therefore since this area is still under review by NRR, the team did not inspect this room for compliance with Appendix R. The alternative shutdown for a fire in the Control Room or the Relay Room will be accomplished with actions performed at the Remote Shutdown Transfer Switch Panels (RSTSP A, B, and C), Remote Shutdown Panels A & B, Auxiliary Remote Shutdown Panel (Auxiliary RSP), Diesel Generator B Remote Shutdown Panel and the Remote Shutdown Stations listed in Table 5.3-1. The licensee alternative shutdown capability utilizes the "B" train systems and equipment.

The "B" channel RSTSP is located on elevation 322 feet of the control building in area CB-FA-2B. The redundant "A" channel RSTSP is installed on elevation 338 feet 6 inches of the control building in area CB-FA-3C. For a fire in the control room, relay room, and ESAS room, the operators will close transfer switches on both of these panels to isolate control circuits and to transfer control of shut-

down equipment to the Remote Shutdown Panel (RSP). Transfer from the "A" RSTSP is provided for convenience only since the "A" diesel generator is not electrically protected and can not be electrically isolated.

The Remote Shutdown Panels located at CB-FA-2C provide the capability to monitor the key process variables listed in Table 5.3-2 and to control the atmospheric dump valves and emergency feedwater pump. Separate panels containing signal conditioning and circuit isolation transfer switches are also provided for the functions at the RSP.

The Auxiliary RSP located at CB-FA-2C contains the control and indication for the secondary plant systems, listed in Table 5.3-2.

The Diesel Generator B Remote Shutdown Panel is installed near the IE-4160V ES switchgear to house the equipment relocated from the control room for diesel generator 1B.

#### REMOTE SHUTDOWN CONTROL STATIONS

TABLE 5.3-1

<u>Equipment</u>	<u>Location</u>	<u>Elevations</u>
4160 V Swgr IE	CB-FA-3b	338
480 V Swgr IS	CB-FA-2b	322
6900 V Swgr - 1A2	Turb Bldg Elev	322
1B2	"	"
1A3	"	"
1B3	"	"
480 V-ESV MCC 1A	AB-FZ-6	305
480 V-ESV MCC 1B	AB-FZ-6a	305
480 V ES MCC 1B	CB-FA-2b	322
York Control Panel for Chiller AH-C4B	Control Bldg Elev	305



REMOTE SHUTDOWN PANEL INSTRUMENTATION  
TABLE 5.3-2

Source Range Instrumentation  
 Reactor Coolant Inlet Temperature  
 Reactor Coolant Outlet Temperature  
 Reactor Coolant Pressure  
 Pressurization Level  
 EFN Flow to OTSG  
 Steam Generator Level  
 Steam Generator Pressure  
 Makeup Tank Level  
 Borated Water Storage Tank (BWST) Level  
 Decay Heat Removal System Inlet Temperature  
 Decay Heat Removal System Outlet Temperature  
 Decay Heat Removal System Flow Temperature  
 Remote Shutdown Panel Instrumentation

REMOTE SHUTDOWN SYSTEM CONTROL AND MONITORING FACILITIES  
TABLE 5.3-3

<u>Component</u>	<u>Control/Instrumentation Facility</u>	<u>Facility Location</u>
Communication System		
M/I System (HEAD SET)	Status Indication	"B" Aux. RSP
Gray System (Page)	Status Indication	"B" Aux. RSP
480V Feeder to Screen House	Control	"B" Aux. RSP
SWGR 1T	Status Indication	"B" Aux. RSP
480V Feeder to 1B ES	Control	"B" Aux. RSP
Screen House MCC	Status Indication	"B" Aux. RSP
Decay Heat Closed	Control	Aux. RSP "B"
Cycle Pump DC-P-1B	Status Indication	Aux. RSP "B"
Intermediate Cooling	Control	Aux. RSP "B"
Pump IC-P-1B	Status Indication	Aux. RSP "B"
Nuclear Services	Control	Aux. RSP "B"
Cooling Pump	Status Indication	Aux. RSP "B"
NS-P-1C		
Nuclear Service	Control	Aux. RSP "B"
River Water Pump	Status Indication	Aux. RSP "B"
NR-P-1C		
RR-P-1B Discharge Valve	Control	Aux. RSP "B"
RR-V-1B	Status Indication	Aux. RSP "B"

#### 5.4 Remaining Plant Areas

All other areas of the plant not required to have an alternate safe shutdown system must comply with the requirements of Section III.G.2 of Appendix R, unless an exemption request is approved by the staff.

#### 6.0 Inspection Methodology

The inspection team examined the licensee's capabilities for separating and protecting equipment, cabling and associated circuits necessary to achieve and maintain hot and cold shutdown conditions. This inspection sampled selected fire areas which the licensee had identified as being in compliance with Section III.G.

The following functional requirements were reviewed for achieving and maintaining hot and cold shutdown:

- ° Reactivity control
- ° Primary coolant makeup
- ° Decay heat removal
- ° Support systems
- ° Process monitoring

The inspection team examined the licensee's capability to achieve and maintain hot shutdown and the capability to bring the plant to cold shutdown conditions in the event of a fire in various areas of the plant. The examination included a review of selected drawings, safe shutdown procedures and other documents. Drawings were reviewed to verify electrical independence from the fire areas of concern. Procedures were reviewed for general content and feasibility.

Also inspected were fire detection and suppression systems and the degree of physical separation between redundant trains of Safe Shutdown Systems (SSSs). The team review included an evaluation of the susceptibility of the SSSs for damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems.

The inspection team examined the licensee's fire protection features provided to maintain one train of equipment needed for safe shutdown free of fire damage. Included in the scope of this effort were fire area boundaries, including walls, floors and ceilings, and fire protection of openings such as fire doors, fire dampers, and penetration seals.

The inspection team also examined the licensee's compliance with Section III.J, Emergency Lighting, and Section III.O, Oil Collection System for Reactor Coolant Pump.



## 7.0 Inspection of Protection Provided to Safe Shutdown Systems

### 7.1 Protection in Various Fire Areas

The team reviewed the protection provided to safe shutdown components in all plant areas for compliance with Appendix R, Section III.G 1, 2, and 3 with the exception of systems not yet installed and issues awaiting resolution by NRR. The team did not identify any unacceptable conditions.

### 7.2 Safe Shutdown Procedures

#### 7.2.1 Procedure Review

The team reviewed Procedure 1202-37, revision 26, (draft), titled "Cooldown From Outside the Control Room."

The scope of this review was to ascertain that the shutdown could be attained in a safe and orderly manner, to determine the level of difficulty involved in operating equipment, and to verify that there was no dependence on repairs for achieving hot shutdown. For review purposes, a repair may include installing electrical or pneumatic jumpers, wires or fuses to perform an action required for hot shutdown. For cold shutdown, repairs are allowed using in place procedures and materials available onsite with the provision that cold shutdown be achievable within 72 hours. The team did not identify any unacceptable conditions.

#### 7.2.2 Procedure Walk-Through

The team walk-through selected portions of Procedure 1202-37 "Cooldown from outside the Control Room" to determine by simulation that shutdown from outside the Control Room could be attained in an orderly and timely fashion. The procedure walk-through involved 5 operators with 3 inspection team members observing. Because the procedure is still in draft form some of the secondary steps were performed out of sequence so that the entire team could participate and observe the more significant portions of the procedure. The procedure was followed through from the start until simulated stable hot shutdown conditions were achieved and cooldown was started. The team paid particular attention to the feasibility of each manual action, ease of access, communication and sequence of operation. The team observed that the procedure in its draft form relies on many manual actions involving the use of many keys, opening and closing breakers and relays and repositioning valves.

The licensee stated that the procedure will be "stream-lined" especially in the area of using the number of keys required to operate various equipment.

The team indicated to the licensee that the procedure will be reviewed again in its final form when the operators are trained in it. The licensee also stated that they plan to perform a controlled plant cooldown from outside the Control Room during restart.

The cooldown will be initiated after normal reactor temperature is reached during restart. The licensee will use the safe shutdown components installed outside the Control Room for compliance with Appendix R to decrease the average Reactor Coolant Temperature by approximately 20°F to 30°F. The above are collectively categorized as an Unresolved Item pending a review of the finalized procedure and tests, by NRC. (50-289/86-23-01)

The team did not identify any other deficiencies.

### 7.3 Protection for Associated Circuits

Appendix R, Section III.G, requires that protection be provided for associated circuits that could prevent operation or cause maloperation of redundant trains of systems necessary for safe shutdown. The circuits of concern are generally associated with safe shutdown circuits in one of three ways:

- ° Common bus concern
- ° Spurious signals concern
- ° Common enclosure concern

The associated circuits were evaluated by the team for common bus, spurious signals, and common enclosure concerns. Power, control, and instrumentation circuits were examined for potential problems.

#### 7.3.1 Common Bus Concern

The common bus concern is found in circuits, either safety related or non-safety related, where there is a common power source with shutdown equipment and the power source is not electrically protected from the circuit of concern.

The team examined, on a sampling basis, 4160V, 480V, 250V DC and 125V DC bus protective relay coordination. The team also examined, on a sampling basis, the protection for

specific instrumentation, controls, and power circuits, including the coordination of fuses and circuit breakers. The licensee has been performing relay settings at approximately 18 and 48 month intervals.

No unacceptable conditions were identified.

#### 7.3.2 Spurious Signals Concern

The spurious signals concern is made up of 2 items.

- ° False motor, control, and instrument indications can occur such as those encountered during 1975 Brown's Ferry fire. These could be caused by fire initiated grounds, short or open circuits.
- ° Spurious operation of safety related or non-safety related components can occur that would adversely affect shutdown capability (e.g., RHR/RCS isolation valves).

The team examined, on a sampling basis, the following areas to ascertain that no spurious signal concerns exist:

- ° Current transformer secondaries
- ° High/low pressure interfaces
- ° General fire instigated spurious signals

No unacceptable conditions were identified.

#### 7.3.3 Common Enclosure Concern

The common enclosure concern is found when redundant circuits are routed together in a raceway or enclosure and they are not electrically protected or when fire can destroy both circuits due to inadequate fire barrier penetrations.

The common enclosure concern is currently being discussed with NRR and has not been resolved as yet. The team leader emphasized to the licensee the importance of resolving this concern prior to restart. The licensee indicated that an analysis similar to analyses previously accepted by NRC will be proposed in the discussion with NRR to resolve this issue.

No other unacceptable conditions were identified.



#### 7.4 General Fire Protection Features

The team examined the general fire protection features in the plant provided to maintain one train of safe shutdown equipment free of fire damage. Included in the scope of this effort were fire area boundaries, including walls, floors, and ceilings, and fire protection of openings such as fire doors, fire dampers, and penetration seals, fire protection systems, and other fire protection features.

No unacceptable conditions were identified, however, the team observed that since the ~~SSW~~ cabinet in the Control Room is being upgraded to safety related, a detection system within the cabinet is required to satisfy the commitment made by the licensee to provide detection in all safety related cabinets in the Control Room.

The licensee agreed with the team's observation. The licensee also agreed to maintain the screen house fire door closed, to increase the level of protection in the area. The door was previously held open by a fusible link.

#### 8.0 Emergency Lighting

10 CFR 50, Appendix R, Section III.J, requires that emergency lighting units with at least an 8 hour battery power supply shall be provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto, unless an exemption from this requirement was approved.

The emergency light installation is a modification that usually does not require plant shutdown. However, the installation of emergency lights in some plant areas may depend on NRC approval of the safe shutdown modifications for the particular area. 10 CFR 50.48 (c)(2) requires that those fire protection modifications that do not require prior NRC approval or plant shutdown shall be implemented within nine months after the effective date of 10 CFR 50.48 and Appendix R. By letters dated May 10, 1982 and March 9, 1983, Eisenhut (NRC) to Hukill (GPU), the licensee was informed that the effective date of the rule for TMI-1 was July 1, 1982.

The team examined the plant emergency lighting system to ascertain the licensee's compliance with the above requirements.

The team identified the following conditions: The licensee in the Main Control Room area does not have any emergency lights. Instead of emergency lighting in the Control Room, the licensee opted to use the Diesel Generators as a dedicated power source for the Control Room lighting. A recent review of this system by the licensee identified that a fire in either of two areas CB-FA-1 and FH-FZ-5 may render this system inoperable because the power supply to the Control Room lighting from both diesels is run through these two areas.

The team observed that the licensee does not meet the scheduler requirements of 10 CFR 50.48 (c)(2) because they did not install emergency lights in the Control Room as required by 10 CFR 50, Appendix R, Section III.J and the proposed alternative means of emergency lighting could not be relied upon for a fire in fire areas CB-FA-1 and FH-FZ-5 (control building patio). This is a violation. (86-23-02) Additionally, a number of other areas used for hot shutdown operations were not provided with emergency lights. These areas are the P and S Bus Room, the IE 4160 Switchgear Room, the ESAS Room, the Valve Alley, the Mini Valve Alley and the IB&S Valve MCC area in Auxiliary Building EL.305. During the inspection it could not be ascertained whether the lighting for these areas is dependent on NRC approval of modifications in the area or was an oversight by the licensee. This is an Unresolved Item pending a review of the licensee's rationale for not placing emergency lights in these areas (86-23-03)

#### 9.0 Oil Collection System for Reactor Coolant Pump

10 CFR 50, Appendix R, Section III.O, requires that the reactor coolant pump shall be equipped with an oil collection system if the containment is not inerted during normal operation. The oil collection system shall be so designed, engineered, and installed that failure will not lead to fire during normal or design basis accident conditions and that there is reasonable assurance that the system will withstand the Safe Shutdown Earthquake.

Such collection systems shall be capable of collecting lube oil from all potential pressurized and unpressurized leakage sites in the reactor coolant pump lube oil systems. Leakage shall be collected and drained to a vented closed container that can hold the entire lube oil system inventory. A flame arrester is required in the vent if the flash point characteristics of the oil present the hazard of fire flashback. Leakage points to be protected shall include lift pump and piping, overflow lines, lube oil cooler, oil fill and drain lines and plugs, flanged connections on oil lines, and lube oil reservoirs where such features exist on the reactor coolant pumps. The drain line shall be large enough to accommodate the largest potential oil leak.

The team inspected the Reactor Coolant Pump (RCP-1A) and observed that some copper tubing installed for instrumentation purposes did not appear to be supported seismically. A rupture of this tubing could cause a loss of the entire lube oil inventory contained in the RCP (approximately 120 gallons). The licensee is reviewing the engineering records for this system to ascertain whether this tubing has been seismically analyzed and will withstand a safe shutdown earthquake. This is an Unresolved Item pending a review of the engineering records to be provided by the licensee. (86-23-04)

## 10.0 Quality Assurance

During the course of the inspection, the team reviewed several drawings, the fire hazard analysis, fire protection modification packages, procedures, and other fire protection documents. The scope of review included verification of their technical adequacy, appropriate reviews, design and procurement controls, and other Quality Assurance requirements for the licensee's fire protection program.

The team did not identify any unacceptable conditions.

## 11.0 Unresolved Items

Unresolved items are matters for which more information is required in order to ascertain whether they are acceptable, violations, or deviations. Unresolved Items are discussed in Sections 7.2, 8.0, and 9.0 of this report.

## 12.0 Conclusions

The findings of this inspection are summarized in Attachment 2. One violation was identified and three items remained unresolved. In addition, the licensee committed to make the changes described in Section 7.4 to be consistent with their commitments.

## 13.0 Exit Interview

The inspection team met with the licensee representatives, denoted in Paragraph 1, at the conclusion of the inspection on December 19, 1986. The team leader summarized the scope and findings of the inspection at that time.

The team leader and the licensee discussed the contents of this inspection report to ascertain that it did not contain any proprietary information. The licensee agreed that the inspection report may be placed in the Public Document Room without prior licensee review for proprietary information (10 CFR 2.790).

At no time during this inspection was written material provided to the licensee by the team.



# ATTACHMENT 1

## LIST OF CORRESPONDENCE

### FROM GPUN TO NRC

<u>Date of letter</u>	<u>Letter Subject/Description</u>
November 20, 1986	10 CFR 50, Appendix R, Clarification of Compliance
November 19, 1986	Exemption Request from Appendix R, Section III.J
November 19, 1986	10 CFR 50, Appendix R, Emergency Lighting
October 22, 1986	Clarification of Compliance Multiple High Impedance Faults
August 19, 1986	Exemption Request from Appendix R, Section III.J
July 22, 1986	Clarification of Compliance, Remote Shutdown System, SDD
May 17, 1986	Exemption Request to 10 CFR 50, Appendix R.
December 6, 1985	TMI-1 Fire Brigade Training
November 7, 1985	Fire Hazard Analysis Report, Safe Shutdown Evaluation, Revision 7
February 11, 1985	Appendix R, Sample Exemption Request, Rockbestos
January 7, 1984	Fire Protection Program Plan
November 30, 1983	Fire Proof Cable Development and Test Program
July 1, 1982	Fire Protection

### FROM NRC TO GPUN

June 4, 1984	SE of Exemption Request
March 15, 1984	Fire Proof Cable Test Program
March 9, 1983	Schedular Exemption Request for 10 CFR 50.48
May 17, 1982	Schedular Exemption Request for 10 CFR 50.48

## ATTACHMENT 2

### Summary of Inspection Findings

<u>Item No.</u>	<u>For Details Description</u>	<u>Refer to Section</u>
1. <u>Violations</u>		
86-23-02	Failure to install emergency lights in the Control Room following the scheduler guidelines of 10 CFR 50.48 (c)(2).	8.0
2. <u>Unresolved Items</u>		
86-23-01	NRC to review the finalized procedure to cooldown from outside the Control Room and observe the cooldown from outside the Control Room test during restart.	7.2.2
86-23-03	Licensee to verify that lack of emergency lights in the areas described in the report was dependent on NRC approval of modifications for the area.	8.0
86-23-04	Licensee to verify that the instrumentation tubing on the reactor coolant pump will not fail during a seismic event.	9.0