# U.S. NUCLEAR REGULATORY COMMISSION REGION I

Report No.	50-289/85-07	
Docket No.	50-289	
License No.	DPR-50	
Licensee:	GPU Nuclear Corporation P. O. Box 480 Middletown, Pennsylvania 17057	
Facility Nam	ne:Three Mile Island Nuclear Station	
Inspection A	t: Middletown, Pennsylvania	
Inspection (	Conducted: February 4-8, 1985	
Inspectors:	P. K. Eapen, Acting Chief Quality Assurance Section	3/13/85- date
	M. Dev, Reactor Engineer	03/13/85 date
	E. Shaub, Reactor Engineer	3/13/85 date
	F. I. Young, Resident Inspector	3/13/85 date
Approved by:	Lee A Settelus to	4/4/85
	Division of Reactor Safety	date

Inspection Summary: Announced inspection conducted February 4-8, 1985 (Inspection No. 50-289/85-07)

Areas Inspected: Licensee's actions to address the concerns identified in NRC Generic Letter 83-28 in the areas of Post-Trip Review, Equipment Classification, Vendor Interfaces, Surveillance and Post Maintenance Testing.

The inspection involved 139 inspector hours by three region-based inspectors and one resident inspector.

Results: No violations were identified.

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## 1. Persons Contacted

## General Public Utility Nuclear Corporation (GPUN)

- \*B. Ballard, Sr., Manager, TMI Quality Assurance (QA) Modifications/Operations
- G. Derek, QA Monitoring Supervisor
- \*R. Harbin, Technical Analyst
- \*C. Hartman, Manager Engineering
- C. Incorvati, Audit Supervisor
- R. Kazebee, Manager Warehouse
- \*S. Otto, Licensing Engineer
- \*H. Shipman, Operations Engineer
- \*D. Shovlin, Manager, Plant Maintenance
- C. Smyth, Licensing Manager
- \*M. Snyder, Preventive Maintenance Manager
- \*R. Szczech, Licensing Engineer
- \*R. Toole, Operations and Maintenance Director
- L. Walter, Shift Technical Advisor

## United States Nuclear Regulatory Commission (NRC)

\*R. Conte, Senior Resident Inspector

## Philippines Atomic Energy Commission

\*E. Racho, Observer

\*Denotes those present at the Exit Meeting on February 7, 1985.

The inspectors also interviewed other site and Corporate personnel during the inspection.

## Follow-up on NRC Generic Letter 83-28, "Generic Implications of Salem ATWS Events"

# 2.1 Background

The reactor trip system, a subsystem of the reactor protection system, is fundamental to the safety of all nuclear power reactors. Analyses to support and justify the fuel designs assume that the reactor trip system is available and will automatically initiate the reactivity control system on demand. The design and regulatory philosophies for assuring high reliability for the reactor trip system are based primarily on system redundancy, periodic testing and quality assurance.

In February, 1983, the Salem Nuclear Generating Station experienced two failures of the reactor trip system to function on demand. Regulatory and industry task forces were established to review and determine the safety significance and generic implications of these events. Based on the findings of these task forces, the NRC issued Generic Letter 83-28 to require specific actions from all licensees to review and improve post trip review, equipment classification and vendor interface, post-maintenance testing and reactor trip system reliability.

The licensee provided his responses to the above Generic Letter in letters dated October 10, 1983, November 8, 1983, February 1, 1984, May 9, 1984, June 7, 1984 and December 13, 1984. This inspection was to review and assess the effectiveness of the licensee's actions in response to Generic Letter 83-28, as detailed below:

## 2.2 Post-Trip Review Program

- 2.2.1 References/Requirements
  - NRC Generic Let' r 83-28, "Generic Implication of Salem ATWS Events"
  - General Public Utility (GPU) Nuclear Corporation letter dated November 8, 1983

#### 2.2.2 Documents Reviewed

- Technical Functions (TF) Engineering Standard ES-005, "STA Duties and Responsibilities," dated November 30, 1982
- TMI -1 Nuclear Station Administrative Procedure (AP)-1034, "Plant Review Group,"
- Technical Functions Procedure EP-029, "Analysis of GPUN Plant Transients," dated November 15, 1984
- TMI-1 Nuclear Station AP-1063, "Reactor Trip Review Process," dated November 28, 1984

#### 2.2.3 Program Review

The licensee's post-trip review process as described in the references listed in Section 2.2.1 were reviewed and noted that GPUN has established a program to:

- -- ensure proper equipment is installed in the plant to obtain required data and/or event sequence information;
- -- train personnel preparing and/or reviewing post-trip documentation;
- -- establish guidelines for preservation of applicable posttrip documentations;

- -- define clearly responsibilities and authorities of plant personnel involved in post-trip reviews; and
- -- assure that safety assessment of a reactor trip is clearly delineated as part of the post-trip review which also includes criteria for determining action required prior to return to power.

## 2.2.4 Program Implementation

In assessing the adequacy of the licensee's program implementation, the inspector reviewed the documents listed in Section 2.2.2 and interviewed key plant staff who would be involved in post-trip reviews. Review of licensee's procedures demonstrated that a system for proper post-trip reviews was in place. Delegations of authority and responsibilities are defined in applicable procedures. As defined in AP-1063, Vice President and Director, TMI-1, approval (with Technical Functions Vice President's concurrence) is required before the units may be started after a trip. The required technical review ensures that the cause of the trip is identified. If the cause of trip cannot be determined or unexpected and/or abnormal responses to the trip by systems and equipment are noted, an independent review must be performed prior to restart.

The inspector reviewed the training and qualification of key personnel responsible for post-trip reviews. Onshift review of administrative procedures was the means used for training onshift licensed personnel. Other key individuals who need to be trained are those Responsible Technical Reviewers and Independent Safety Reviewers who participate in post-trip reviews. Training for STA's was provided during STA qualification program.

The inspector reviewed the licensee's data and information gathering capability. The TMI-1 Plant Computer System is the main source of data used to support the trip review program. This system consists of the original Bailey 855 and newly added Mod Comp Classic Computer Systems. Sequence of events can be generated by both computers. In addition, a portion of the system is dedicated to record selected plant parameters on a continuous basis. The system detects and retains variations in selected plant parameters by scanning each parameter at specified intervals and comparing each instantaneous value against its reference value.

# 2.2.5 Findings

Plant administrative procedures place the responsibility for initial post-trip review on the onshift licensed operators and

onshift STA. Discussions with onshift personnel indicated that each individual is fully aware of his responsibilities and each has been trained. However, the post-trip review training for the STAs will not be completed until the Summer of 1985.

Subsequent evaluation requirements are adequately defined in stations procedures. This evaluation, if required, will be performed under the direction of Plant Review Group (PRG) chairman. The individuals responsible for subsequent evaluations were well qualified and knowledgeable in the requirements of post-trip review.

## 2.3 Equipment Classification

- 2.3.1 Reference/Requirements
  - NRC Generic Letter 83-28, "Generic Implications of Salem ATWS Events"
  - General Public Utility (GPU) Response Letters to Reference 1 above dated October 10, 1983, November 8, 1983, February 1, 1984, May 9, 1984, June 7, 1984 and December 13, 1984
  - GPU Nuclear Corporation Operational Quality Assurance Plan (Revision O)

## 2.3.2 Documents and Activities Reviewed

- -- Procedure ES-011 (Revision 5), "Methodology and Content of GPUN Quality Classification List"
- -- Procedure PEP-1 (Revision 0), "Purchase Requisition/ Preparation/Review"
- -- Procedure PEP-3 (Revision 1), "Plant Engineering Evaluation"
- -- Plant Engineering Evaluation Requests

85-022-E	85-008-M
85-003-E	85-015-M
85-001-E	85-006-M
85-002-E	85-020-M
84-038-E	85-009-M
85-006-E	85-025-M
84-016-M	85-026-M
84-157-P	85-028-M
84-156-P	

- -- MNCR-088-84
- -- Corrective Maintenance No. 3000, Replacing Digital Meters in Control Room
- Document Release Form No. 28693, Calibrating Steam Generator Temperature and Level Sensors
- -- WAA25A-30468, Decay Heat and High Pressure Injection Flow Transmitter Replacement

## 2.3.3 Program and Implementation

As stated in licensee's letter dated November 8, 1983, GPUN has established a program for equipment classification at the system level. This program is documented in GPUN Technical Functions Procedure ES-011. All components of a system identified in the GPUN Quality Classification List (QCL) are classified and treated as "Quality" components. All activities, including maintenance, surveillance and modification, affecting the components of a QCL System are classified as "quality items" and conducted using approved quality assurance procedures. Minor auxiliary components of the QCL Systems, such as, structural hardware, nuts, bolts, conduit and junction boxes may be purchased as commercial grade. However, purchase requisitions for such auxiliary components would be identified as "important to safety" and would receive the associated administrative controls.

In light of Salem ATWS Events, the licensee appointed an in-house task force to assess the impact of Salem ATWS events on TMI-1 and Oyster Creek units. The task force made several recommendations to GPUN Senior Management to further improve the quality of activities associated with equipment classification, vendor manual control, post-maintenance testing and post-trip review.

The President of GPU Nuclear Corporation endorsed and issued the task force recommendations for implementation on June 19, 1984. Each recommendation was assigned to a lead organization for implementation. The lead organizations were required to submit to the GPUN President the action plans and schedules for implementing the recommendations within six weeks from June 19, 1984.

The inspectors reviewed the task force report, the task force recommendations and the action plans for implementing the recommendations. The task force reviewed all aspects of the Salem ATWS events and identified potential impacts of these events at both TMI-1 and Oyster Creek units. The task force review and recommendations effectively addressed the concerns identified in Generic Letter 83-28. The task force recommendations, when fully implemented, will further improve the

 licensee's activities in all areas affected by Salem ATWS events.

The inspector reviewed the implementation of the licensee's equipment classification program using the activities identified in Section 2.3.2 above. The Modification, Maintenance and Operations activities at component level were classified and conducted adequately using the guidance in procedure ES-011. When in doubt of classification of a component, the users requested a plant engineering evaluation for the component. The inspector reviewed the plant engineering evaluation requests and noted that these evaluations were conducted adequately by knowledgeable personnel. If the scope of an evaluation request is beyond the capabilities of plant engineering personnel, such requests would be forwarded to the corporate engineering group (Technical Functions) for evaluation.

The licensee has implemented an adequate level of management control for the Safety Related Systems, Structures and Components. The established control provides adequate measures to identify potential failures, malfunctions, deficiencies and nonconformances. In addition, the licensee tracks Licensee Event Reports; NRC Bulletins, Information Notices and Generic Letters; Vendor Bulletins; and INPO Reports to identify potential problems associated with Safety Related structures, systems and components. The licensee's actions to correct deficiencies identified in the above documents were timely and adequate.

GPUN has established and implemented adequate procedures to conduct procurement and modification activities. The licensee's program for indoctrination and training of personnel performing safety related activities is adequately implemented. The personnel interviewed during this inspection were adequately trained and knowledgeable of QA requirements covering their respective areas of responsibility.

## 2.3.4 QA/QC Involvement in Equipment Classification

Routine QA audits (S-TMI-83-17, S-TMI-83-14, O-TMI-84-06, S-TMI-81-22, and S-TMI-84-01) covered equipment classification, vendor manual control and post-maintenance testing areas adequately. The audits assessed each area in detail and provided meaningful recommendations for further improvement. For example, QA audit S-TMI-81-22 identified deficiencies in post-maintenance testing. In response to this finding, the management developed and implemented maintenance procedures which described adequate test requirements and acceptance criteria.

The QA/QC personnel who conducted audits and inspections in equipment classification areas were adequately qualified and

knowledgeable. The audit findings were well received by the audited organizations and the corrective actions to the findings were timely and adequate.

All safety related activities are routinely reviewed and approved by QA. QA audits, inspections and monitoring have not identified any problems resulting from improper classification. Licensee's QA activities in this area are generally performance oriented and these activities enabled the licensee to take preventive rather than corrective measures for potential safety problems.

## 2.3.5 Findings

No violations were identified. The licensee's system level equipment classification program is adequate and functional at component level. However, the licensee has recognized the need for a component level equipment classification list and initiated a corporate level task to establish the same. At the time of this inspection, the licensee formed an organization and appointed a director to lead the equipment classification effort. Specific goals and schedules were being developed at the time of this inspection. The licensee's corporate representatives informed the inspector that the details of Equipment Classification, Vendor Manual Control and Post-Maintenance Testing efforts for TMI would be provided in a future letter to NRC.

This item remains unresolved pending licensee's above proposed submittal of action plans for equipment classification, vendor manual control and post-maintenance testing for NRC review (50-289/85-09-01).

#### 2.4 Vendor Interface

## 2.4.2 References/Requirements

- -- GPUN QA Topical Report
- -- ANSI N45.2.2, Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants
- -- ANSI 18.7-1976, Administrative Controls and Quality Assurance for the Operations Phase of Nuclear Power Plants
- -- Station and Corporate Procedures
  - Warehouse procedure 2240-ADM-6470.01, "Shelf Life"
  - Warehouse procedure 7240-ADM-6480.01, "Preventive Maintenance"
  - Engineering Procedure (EP)-021, "Technical Manuals"

- EP-003, "Vendor Document Review"
- EP-017, "Review of Operating Experience"
- Plant Engineer Procedure (PEP)-1, "Purchase Requisition Preparation and Review"
- AP-1057, "TMI Purchase Requisition Review and Approval" (Draft)

# 2.4.2 Program Review

The vendor interface program described in the references listed in Section 2.4.1 was reviewed and determined that GFUN has established a program to:

- Assure that vendor information is complete, current and controlled.
- -- Evaluate and incorporate vendor information into appropriate documents (i.e., procurement, storage, inspection and test, preventive and corrective maintenance) for safety-related equipment, components and activities.
- Provide engineering evaluation to develop procurement, receipt inspection testing, storage conditions and preventive maintenance action, whenever vendor information is lacking.

## 2.4.3 Procurement Program Implementation

Several safety-related items were chosen at random and the documentation was reviewed. These items were included in the shelflife and/or preventive maintenance (PM) program as applicable. The warehouse shelf-life and preventive maintenance programs were reviewed and discussed with the licensee's representative. The warehouse shelf-life and PM reports were reviewed, items were selected and verified by direct observation that equipment and components were marked and segregated if shelf-life had expired or was unknown, and that preventive maintenance had been performed. Additionally, purchase documentation was reviewed and discussed with the licensee representatives. The technical and quality requirements for each purchase order included provisions for shelf-life and preventive maintenance, as applicable.

In 1981, the licensee recognized a need to control and maintain Vendor Manuals. TMI-1 established an informal program to identify the Vendor Manuals to be maintained at the facility. An effort was also undertaken to incorporate as much vendor information as possible in plant procedures. The inspector reviewed several recently developed maintenance procedures. These procedures adequately incorporated the Vendor Manual information into the body of the procedure. The inspector reviewed five newly developed Vendor Manuals (Nos. 990-707, 990-934, 990-993, and 990-1251) and noted that these Manuals were prepared, maintained and controlled adequately.

# 2.4.4 QA/QC Involvement in Vendor Manual Control

The licensee's QA personnel has undertaken efforts to identify further improvements in the Vendor Manual development activities. For example, during a routine QA monitoring, QA personnel reviewed all maintenance procedures and identified the vendor manuals referenced in their procedures. The referenced vendor manuals were then reviewed by the QA personnel to assure that such reference vendor manuals were maintained and controlled. Upkeep problems were identified in several vendor manuals. These Manuals were identified to the vendor manual control personnel for inclusion in the upgrade program.

The licensee has established measures to upgrade the vendor manual control program by 1987. QA issued a Quality Deficiency Report, MST-023-84, to identify a lack of an interim vendor manual control program. In response to this deficiency report, the licensee reviewed and revised three plant procedures (AP-1001J, AP-1027 and MP-1407-1) to provide specific instructions to use controlled vendor manuals or to obtain approval from plant engineering prior to the use of an uncontrolled vendor manual.

The inspector randomly sampled activities implemented using the revised procedures and noted that these activities were adequately implemented.

# 2.4.5 Findings

No violations were identified. The licensee's interim vendor manual controls are adequate. The licensee's efforts to develop a long-term vendor manual control program will be reviewed in future NRC inspections.

#### 2.5 Surveillance Testing

## 2.5.1 References

- TMI-1 Nuclear Station Surveillance Procedure 1303-4.1, "Reactor Protection System," dated September 18, 1984
- TMI-1 Preventive Maintenance Procedure E-36, "CRD TRIP Breaker Check," dated August 29, 1984

# 2.5.2 Details of Review and Findings

The documents identified in Section 2.5.1 were reviewed and assured that the licensee was performing surveillance testing on RPS silicon-controlled rectifiers (SCR), RPS breaker under voltage (UV) trip coils and shut trip coils. The inspector discussed the technical contents of the above two procedures with the licensee. Reference 1 requires that the licensee perform a surveillance test that checked the independence of both UV and shurt trip coils. The procedures also ensured that the SCR's are de-energized when a reactor trip signal is received. The inspector noted that the procedure adequately addressed the concerns stated in the generic letter.

# 2.6 Post-Maintenance Testing

# 2.6.1 References/Requirements

- -- GPUN QA Topical Report
- -- NRC Generic Letter 83-28, "Generic Implication of Salem ATWS Event"
- -- GPUN Corporation letter dated November 8, 1983, "Required Actions Based on Generic Implications of Salem ATWS Event"
- -- ANSI 18.7-1976, "Administrative Controls and Quality Assurance for the Operations Phase of Nuclear Power Plants"
- -- Station Procedures
  - Administrative Procedure (AP)-1026, "Corrective Maintenance," May 1984
  - AP-1027, "Preventive Maintenance," August 1984
  - AP-1041, "Inservice Testing System List and Retest Requirements," August 1984
  - AP-1407-1, "General Corrective Maintenance," January 1985

## 2.6.2 Program Review

The references in Section 2.6.1 were reviewed and it was determined that the licensee was implementing a post-maintenance and modification testing program which included the following:

- Written procedures for initiating requests for postmaintenance testing;
- -- Criteria and responsibilities for review and approval of post-maintenance testing;
- -- Criteria and responsibilities for performing inspection of post-maintenance testing;
- -- Methods for performing functional testing following maintenance and prior to returning to service; and
- -- Requirements for adequate documentation of the above reviews, approvals, inspections, and tests.

# 2.6.3 Implementation Review

The licensee's post-maintenance testing program was reviewed and discussed with licensee personnel and verified that the program was adequately implemented. The following job tickets, preventive maintenance actions and the associated procedures were reviewed. These documents indicated that the classification was proper and that adequate post maintenance testing was performed. In addition, a random sample of 25 work orders classified as not important to safety was examined to ensure proper classification and post-maintenance testing.

## Corrective Maintenance

 CF 614	Total Flow Meter Replacement
 CF 536	Penetration Pressure Regulating Valve
 CF 369	Penetration Pressure Relief Valve
 CF 569	Fire Service
 CF 088	Reactor Coolant Vent Valve Repair, RC-V-51
 CE 658	Building Spray Valve Repair
 CE 182	Reactor Coolant Valve Repair
 CD 989	ESAS Relay Repair
 CE 959	Decay Heat Valve Repair, DH-V-001
 CE 871	Service Water Valve Repair, SW-V-03B
 CE 475	Radiation Monitoring
 CF 449	Battery Repair
 CF 344	NS Gauge Repair and Calibration
 CF 308	ESAS Relay Repair
 CF 161	Fire System Detector

## Preventive Maintenance

 MM0-15	Emergency Feedwater Pump
 MM0-130	Decay Heat Pump
 MTX-203/1	Pressure Transmitter Calibration, RL 14A-DPT-1
 MTX-91	Engineered Safeguards System Calibrations

 E-13 Limitorque Valves, Emergency Feedwater, EF-V 1A and 1B
E-41 Lubricate Electric Motors, DH-P-1A&B
E-36 CRD Trip Breaker Tests, DC Breakers

The inspector discussed the licensee's method for controlling post-maintenance testing during extended outages with operations and maintenance planning/scheduling personnel. The licensee utilizes a heat up sequencing flow chart that identifies the surveillances as well as deferred post-maintenance testing required prior to and during plant heat up. The inspector selected several corrective maintenance actions that required deferred testing and verified that these actions were included in the heat up flow chart. In addition, during plant operation and outages, the licensee utilizes "Regulatory Retest Tags" to identify components for which surveillance testing cannot be completed due to maintenance or plant condition. The inspector reviewed the Regulatory Retest Log and verified that the tags were utilized to identify components that required further testing when the component was released for service. The heat up sequencing flow chart is currently used on an informal basis. However, the licensee is developing an administrative procedure to delineate the requirement and utilization of this flow chart.

Quality Assurance auditing, monitoring and quality control activities were reviewed to determine the level of QA coverage in the maintenance and post-maintenance testing areas. The inspector discussed QA audits and monitoring with licensee representatives and verified adequate QA/QC involvement and timely corrective action by reviewing QA audits, monitoring reports and QC verification for maintenance and post-maintenance testing.

## 2.6.4 Findings

No violations were identified.

The licensee utilizes AP-1041, "Inservice Testing System List and Retest Requirements," to control post-maintenance testing of pumps and valves included in the Inservice Testing Program. However, there is no guidance provided for post-maintenance testing of other equipment classified as safety related/important to safety. The licensee's Salem ATWS Task Force identified this problem and the plant staff is developing a program to strengthen the post-maintenance functional/operability testing program.

## 2.7 Conclusions

Except for the unresolved item identified in Section 2.3.5, the inspectors found the licensee's actions to be adequate to address the concerns of NRC Generic Letter 83-28.

# 3. Control Rod Drive Mechanism (CRDM) Circuit Breaker Shunt Trip Modification

The inspector reviewed the above modification, which was implemented as a result of the NRC Generic Letter 83-28. This modification added new undervoltage sensing relays which act in parallel with the existing undervoltage (UV) trip devices to sense the reactor protection system (RPS) logic reactor trip command. Each new relay is designed to operate its associated CRDM circuit breaker's shunt trip mechanism to trip the breaker upon a signal from the RPS. The new shunt trip facility serves as a backup to the UV trip device which was designed to trip the breaker upon receiving the RPS trip signal.

## 3.1 Reference Documents

- NRC Generic Letter 83-28, Required Actions Based on Generic Modification of Salem ATWS Events
- SDD 622A Divisions I and II, Revision O, TMI-1 CRDM Circuit Breaker Automatic Actuation of Shunt Trip
- SE No. 412408-001, Revision 0, TMI-1 Nuclear Station, Safety Evaluation - CRDM Circuit Breaker Auto Shunt Trip
- 10 CFR 50.49 Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants
- IEEE Standard 279-1971, Criteria for Protection Systems for Nuclear Power Generating Stations
- IEEE Standard 323-1974, IEEE Standard for Qualifying Class IE Equipment for Nuclear Power Generating Stations

## 3.2 Documents Reviewed

The inspector reviewed the following documents:

- TMI-1, BA No. 412408, CRDM Breaker Shunt Trip Modification Installation Specification;
- Design Change Package/FCN Nos. C020337 and C020339;
- E008, Revision 0, Block Diagram, CRDM Breaker Modification;
- E009, Revision 0, AC Primary Trip Breaker Unit 10 (11), CRDM Breaker Modification;
- E010, Revision 0, DC Breaker CB1 and CB2 (CB3 and CB4), CRDM Breaker Modification;

- E011, Revision O, Conduit Layout, Relay Room Elev. 338'-6", CRDM Breaker Modification;
- E026, Revision 0, Connection Diagram AC Breaker Unit 10 (11), CRDM Breaker Modification;
- E027, Revision 0, Connection Diagram (Field Wiring) AC Primary Trip Breaker Unit 10 (11), CRDM Breaker Modification;
- E028, Revision 0, DC Breakers CB1, CB2, CB3 and CB4, CRDM Breaker Modification; and
- E029, Revision 0, DC Breakers CB1, CB2, CB3 and CB4, CRDM Breaker Modification (Construction Drawing).

## 3.3 Details

The inspector reviewed documents and activities identified in Section 3.2 against the requirements of the references in Section 3.1. The inspector also toured the relay room to inspect CRDM circuit breaker shunt trip modification.

A review of the design documents and the hardware for the shunt modification with cognizant licensee personnel indicated that the modified system has the following features:

- The new components being added to the system are Class IE designated and installed as such;
- The new U/V sensing relay type Brown Bovery Model ITE-21H-211R, is seismically qualified per IEEE Std. 501-1978 and meets the TMI-1 seismic response spectra;
- The equipment is located in a tornado/hurricane protected area;
- Based on its location and elevation, the new components added per this modification would not be affected by flood or waterlogging;
- All the new components are located in a controlled mild environment;
- The new components are located in the relay room which houses Class IE equipment and are not subject to internally generated missiles;
- The new components per this modification are located outside High Energy Line Break areas; and
- Addition of the new components and circuits per this modification are designed to meet the single failure criteria for the CRDM trip channel.

## 3.4 Findings

No violations were identified as a result of this inspection.

The shunt trip modification was conducted in accordance with the regulatory requirements and the licensee's established procedures for design change activities.

The CRDM circuit breakers shunt trip modification has been completed. The associated breakers were being reworked at an off-site vendor shop at the time of this inspection. The functional test procedure and the equipment maintenance procedure were being developed by the licensee. The functional tests for this modification will be reviewed in a future NRC inspection.

# 4. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations or deviations. An resolved item disclosed during the inspection is discussed in paragraph 2.3.5.

# 5. Exit Interview

The inspector met with licensee representatives on February 8, 1985 at the site to discuss the findings of the inspection. (See paragraph 1 of this report for the attendees at the meeting.) The licensee representatives acknowledged the inspection findings.

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