October 25, 2000

Mr. Mark E. Warner
Vice President, TMI Unit 1
AmerGen Energy Company, LLC
Three Mile Island Nuclear Station
PO Box 480
Middletown, Pennsylvania 17057-0480

SUBJECT: NRC'S INTEGRATED THREE MILE ISLAND REPORT 05000289/2000-006

Dear Mr. Warner:

On September 30, 2000, the NRC completed an inspection at your Three Mile Island Unit 1 reactor facility. The enclosed report documents the inspection findings which the resident inspectors discussed with you and other members of your staff on October 5, 2000.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observation of activities, and interviews with personnel. There were no findings identified during this inspection.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

We appreciate your cooperation. Please contact me at (610) 337-5146 if you have any questions regarding this letter.

Sincerely,

/RA/

John F. Rogge, Chief
Projects Branch 7
Division of Reactor Projects

Docket #: 05000289
License #: DPR-50

Enclosure: NRC Inspection Report 05000289/2000-006

cc w/encl:

PECO Energy Company - Correspondence Control Desk
E. Fuhrer, Regulatory Engineering
J. Hutton, Director - Licensing
TMI-Alert (TMIA)
D. Allard, PADER

Distribution w/encl **(VIA EMAIL)**:
Region I Docket Room (with concurrences)
C. Smith, DRP - NRC Resident Inspector
H. Miller, RA
J. Wiggins, DRA
J. Rogge, DRP
N. Perry, DRP
G. Smith, DRS
C. O'Daniell, DRP
J. Shea, OEDO
E. Adensam, PD1, NRR
T. Colburn, NRR

DOCUMENT NAME: C:\TMI2000-006.wpd
After declaring this document "An Official Agency Record" it **will** be released to the Public.
To receive a copy of this document, indicate in the box: "**C**" = Copy without attachment/enclosure "**E**" = Copy with attachment/enclosure "**N**" = No copy

OFFICE	RI/DRP		RI/DRP		/				
NAME	CSmith		JRogge						
DATE	10/19/00		10/24/00		10/ /00		10/ /00		10/ /00

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION 1

Docket #:	05000289
License #:	DPR-50
Report #:	2000-006
Licensee:	AmerGen Energy Company, LLC (AmerGen)
Facility:	Three Mile Island Station, Unit 1
Location:	PO Box 480 Middletown, PA 17057
Dates:	August 13-September 30, 2000
Inspectors:	Craig W. Smith, Acting Senior Resident Inspector Neil S. Perry, Senior Project Engineer Gregory C. Smith, Senior Physical Security Inspector, DRS
Approved by:	John F. Rogge, Chief Projects Branch 7 Division of Reactor Projects

SUMMARY OF FINDINGS

Three Mile Island, Unit 1
NRC Inspection Report 0500289/2000-006

IR 0500289/2000-006, on 08/13/2000-09/30/2000, Amergen Energy Company, LLC, Three Mile Island Unit 1.

The report covers a seven-week period of resident inspection and an in-office review of changes to the licensee's physical security by a regional physical security inspector. The significance of issues is indicated by their color (Green, White, Yellow, Red) and was determined by the Significance Determination Process (SDP) in Inspection Manual Chapter 0609 (see Attachment 1).

- No findings were identified.

Report Details

Summary of Plant Status

AmerGen Energy Company, LLC (AmerGen) operated Three Mile Island, Unit 1 (TMI) at 100 percent power throughout the inspection period.

1. REACTOR SAFETY
(Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity)

1R04 Equipment Alignment

a. Inspection Scope

The inspector conducted two partial system walkdowns during the inspection period:

- During the week of August 14, 2000, the inspector conducted a walkdown of the A train of the decay heat removal system while the B train was out of service for planned maintenance. The inspector verified electrical and mechanical components were properly aligned in accordance with the applicable system operating procedure and design documents.

- During the week of September 11, 2000, the inspector conducted a walkdown of portions of the instrument air system important to safety. The inspector verified electrical and mechanical components were properly aligned in accordance with the applicable system operating procedure and design documents. The inspector verified system operating parameters were appropriate for the current plant conditions.

The inspector sampled the licensee's corrective action program records for both systems to verify the licensee was identifying and evaluating equipment alignment problems at an appropriate threshold.

b. Issues and Findings

There were no findings identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors conducted fire protection inspections for the following plant areas:

- diesel driven fire pump building
- emergency diesel generator building
- intake structure building during maintenance activities
- engineered safeguards actuation system electrical relay rooms

The inspectors conducted plant walkdowns and reviewed the licensee's fire protection program documentation for the inspected areas. The plant walkdowns included

observations of combustible material control, fire detection and suppression system operability and availability, and compensatory measures put in place by the licensee for degraded equipment.

b. Issues and Findings

There were no findings identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspector observed the planned inspection of the A nuclear service river water heat exchanger (NS-C-1A) conducted during the week of September 11, 2000. The inspector verified the scope and frequency of inspection was consistent with licensee commitments made in response to NRC Generic Letter 89-13, "Service Water System Problems Affecting Safety Related Equipment." The inspector observed the extent of fouling in the heat exchanger, reviewed the results of the eddy current inspections of the tubing material, and verified the number of tubes plugged was within the limit for operability of the heat exchanger. The inspector reviewed licensee corrective actions for past issues related to degraded performance of the nuclear service river water heat exchangers.

b. Issues and Findings

There were no findings identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

The inspector observed a simulator requalification training session for an operating crew consisting of licensed reactor and senior reactor operators. The inspector reviewed the lesson plans, assessed operator performance during the training sessions, and observed the evaluator's critique of the training scenario.

b. Issues and Findings

There were no findings identified.

1R12 Maintenance Rule Implementation

.1 Nuclear River Water Pumps

a. Inspection Scope

The inspector reviewed the maintenance and failure history for the nuclear river water pumps. The nuclear river water system performs several risk significant functions including providing the heat sink for cooling the reactor coolant pump seal thermal barrier heat exchangers. Although the licensee has classified the system as Maintenance Rule category a(2), meeting performance goals, two of the three pumps are operating beyond their expected service life. The licensee has developed corrective actions to replace all three nuclear river water pumps with pumps of an improved design.

b. Issues and Findings

There were no findings identified.

.2 Auxiliary Building Ventilation System

a. Inspection Scope

The inspector reviewed the failure and maintenance history of the auxiliary building ventilation system fans (AH-E-14A/B/C/D). The licensee has classified the system as Maintenance Rule category a(2), meeting performance goals. The licensee has no practical means to predict failure of the fan motor bearings and has designated the fan motors as run to failure components. Past experience shows the fan motors have an expected service life in excess of ten years. The licensee has replaced three of the four fans with motors of an improved design that should extend the expected service life. The inspector reviewed the licensee's run to failure determination.

b. Issues and Findings

There were no findings identified.

.3 Nuclear Instrumentation

a. Inspection Scope

The inspector reviewed the TMI excore nuclear instrumentation failure and maintenance history to assess the effectiveness of the licensee's maintenance efforts. The inspector reviewed corrective action program documentation from the last few years and the most recent system health report, and discussed current conditions and planned maintenance with operators and the system engineer. The licensee has classified the system as Maintenance Rule category a(2), meeting performance goals. Since 1998, the system has experienced several component failures, the most significant associated with the power range instruments. For 20 months, one of the four power range detectors was inoperable, and in late 1999, one power range detector experienced drift and stability

problems. Additionally, the power range instruments have reached expected end of service life. AmerGen plans to replace two detectors during the next refueling outage, and a third during the following outage. The fourth detector was replaced during the 1999 refueling outage.

b. Issues and Findings

There were no findings identified.

1R13 Maintenance Risk Assessment

a. Inspection Scope

The inspector reviewed the licensee's planning and risk assessment for two scheduled maintenance activities completed during the inspection period:

- replacement of the C secondary river water pump (SR-P-1C) during the week of September 5, 2000. (Job Order 170306)

- replacement of the D control rod drive motor DC trip breakers on September 29, 2000. (Job Order 187917)

The inspector observed selected maintenance activities, attended pre-job briefs, and verified contingency actions required by the licensee's risk assessment document were in place during the conduct of the maintenance.

b. Issues and Findings

There were no findings identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspector reviewed two operability evaluations completed by the licensee during the inspection period:

- On September 11, 2000, the licensee made a one hour report to the NRC for a condition determined to be potentially outside the design basis of the facility. The licensee identified that in the event of a small break loss of coolant accident involving the core flood line, it may be necessary for control room operators to take action within one minute upon a loss of subcooling margin to secure the rector coolant pumps to prevent exceeding the 10 CFR 50.46 peak cladding temperature limit of 2200 degrees Fahrenheit. The current analysis assumes operator action within two minutes to secure the reactor coolant pumps upon a loss of subcooling margin. The licensee concluded, based on past observations of operator performance during unannounced simulator training scenarios, there was reasonable assurance operators would carry-out the proceduralized actions and immediately trip the reactor coolant pumps in less than one minute upon

loss of subcooling margin and, therefore, determined the emergency core cooling systems continued to remain operable. The inspector reviewed the licensee's written operability evaluation as documented in the corrective action process (CAP 2000-0751).

- On September 14, 2000, the licensee identified that visual inspections of fire detection devices in the reactor building had not been conducted within the required periodicity as specified in the licensee's fire protection program. On September 15, 2000, the licensee's Plant Review Group met and determined the reactor building fire detection system to be inoperable and informed the shift manager to commence compensatory actions to monitor reactor building air temperatures hourly until the required visual inspections were performed. The required visual inspections were completed on September 24, 2000, and the compensatory actions were suspended. The inspector reviewed the licensee's operability evaluation as documented in CAP 2000-0766.

b. Issues and Findings

There were no findings identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspector reviewed post-maintenance tests performed by the licensee in conjunction with the following maintenance activities:

- replacement of the A secondary river water pump (SR-P-1A) during the week of August 7, 2000 (Job Order 186217)

- replacement of the C secondary river water pump (SR-P-1C) during the week of September 5, 2000 (Job Order 170306)

- replacement of the D control rod drive mechanism DC trip breakers on September 29, 2000 (Job Order 187917)

The inspector witnessed testing activities and reviewed test data to verify the components were returned to service capable of performing their design functions.

b. Issues and Findings

There were no findings identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspector reviewed the following surveillance testing activities:

- inservice testing of B decay heat removal system pumps and valves on August 17, 2000 (Surveillance Procedure 1300-3B)

- inservice testing of the A and B make-up system pumps and valves on August 30, 2000 (Surveillance Procedure 1300-3H)

The inspector witnessed the surveillance testing activities and reviewed the test data to verify the test performance met Technical Specification and procedural requirements. The inspector sampled the licensee's corrective action program for problems identified during past performance of the surveillances to verify the licensee was identifying and resolving problems at an appropriate threshold.

b. Issues and Findings

There were no findings identified.

3. SAFEGUARDS

3PP4 Security Plan Changes

a. Inspection Scope

An in-office review was conducted of changes to the Physical Security, Contingency, and Training and Qualification Plans, identified as Revisions 40 and 41, 11 and 12, and 17 and 18, respectively, submitted to the NRC on January 20 and April 6, 2000, in accordance with the provisions of 10 CFR 50.54(p). Based on a limited review of the changes, as described in the plan revision, no NRC approval of these changes are required in accordance with 50.54(p). These changes will be subject to future inspection to confirm that the changes, as implemented, have not decreased the overall effectiveness of the security plan.

b. Issues and Findings

There were no findings identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

.1 Safety System Unavailability

a. Inspection Scope

The inspector reviewed data submitted by the licensee for calculating safety system unavailability for the emergency feedwater system and emergency AC power system. The inspector reviewed data submitted to the NRC covering the reporting periods from January 1, 2000 through June 30, 2000. The inspector reviewed the control room log book entries, maintenance records, corrective action system documentation, and licensee's maintenance rule unavailability data base. The inspector noted some minor deficiencies in the data submitted for both the emergency feedwater system and emergency AC power system hours of unavailability. The deficiencies did not change the safety system unavailability performance indicator color designation of GREEN for either system.

b. Issues and Findings

There were no findings identified.

4OA3 Event Follow-up

.1 (Closed) LER 2000-002-00: Discovery of a Condition Outside the Fire Hazard Analysis Design Basis for the Alternate Shutdown Facility in Achieving COLD SHUTDOWN in the Event of a Fire which Forces Evacuation of the Control Room. This LER was a minor issue and was closed.

.2 (Closed) LER 2000-003-00: Discovery of a Condition Outside the Updated FSAR (UFSAR) Design Basis for the Control Building Envelope Due to Closed Volume Dampers. This LER was a minor issue and was closed.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 5, 2000, the resident inspectors presented the inspection results to Mr. Warner and other members of licensee management. The licensee acknowledged the findings presented.

PARTIAL LIST OF PERSONS CONTACTED

Licensee
M. Warner, Vice President, TMI Unit 1
R. Fraile, Plant Manager
D. Atherholt, Director - Operations
O. Limpias, Director - Site Engineering
G. Skillman, Director - Plant Engineering
J. Telfer, Director - Radiation Health & Safety
D. Ethridge, Director - Maintenance
E. Fuhrer, Manager - Regulatory Licensing
A. Miller, Regulatory Licensing

ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

2000-002-00	LER	Discovery of a Condition Outside the Fire Hazard Analysis Design Basis for the Alternate Shutdown Facility in Achieving COLD SHUTDOWN in the Event of a Fire which Forces Evacuation of the Control Room
2000-003-00	LER	Discovery of a Condition Outside the Updated FSAR Design Basis for the Control Building Envelope Due to Closed Volume Dampers

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents and Management System
AmerGen	AmerGen Energy Company, LLC
CAP	Corrective Action Process
CFR	Code of Federal Regulations
DRS	Division of Reactor Safety
IR	Inspection Report
LER	Licensee Event Report
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
PDR	Public Document Room
SDP	Significance Determination Process
TMI	Three Mile Island, Unit 1
UFSAR	Updated Final Safety Analysis Report

ATTACHMENT 1

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
• Initiating Events	• Occupational	• Physical Protection
• Mitigating Systems	• Public	
• Barrier Integrity		
• Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.