

May 29, 2002

Mr. Jack Skolds  
President and CNO  
Exelon Nuclear  
Exelon Generation Company, LLC  
4300 Winfield Road  
5<sup>th</sup> Floor  
Warrenville, IL 60555

SUBJECT: THREE MILE ISLAND STATION, UNIT 1 - NRC INSPECTION REPORT  
50-289/02-04

Dear Mr. Skolds:

On May 11, 2002, the NRC completed an inspection at your Three Mile Island Unit 1 facility. The enclosed report documents the inspection findings that were discussed on May 17, 2002, with Mr. George Gellrich and other members of your staff.

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. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

No findings of significance were identified.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories, and although the specific actions are not releasable to the public, they generally include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of your response to these advisories and your ability to respond to terrorist attacks with the capabilities of the current design basis threat (DBT). On February 25, 2002, the NRC issued an Order to all nuclear power plant licensees, requiring them to take certain additional interim compensatory measures to address the generalized high-level threat environment. With the issuance of the Order, we will evaluate AmerGen's compliance with these interim requirements.

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

Mr. J. Skolds

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(ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.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,

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

Docket No: 50-289  
License No: DPR-50

Enclosure: NRC Inspection Report 50-289/02-04  
Attachment: Supplemental Information

cc w/encl:

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Manager, Regulatory Assurance  
Plant Manager  
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U.S. NUCLEAR REGULATORY COMMISSION

REGION 1

Docket No: 50-289

License No: DPR-50

Report No: 50-289/02-04

Licensee: AmerGen Energy Company, LLC (AmerGen)

Facility: Three Mile Island Station, Unit 1

Location: PO Box 480  
Middletown, PA 17057

Dates: March 31 - May 11, 2002

Inspectors: J. Daniel Orr, Senior Resident Inspector  
Craig W. Smith, Resident Inspector

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

## SUMMARY OF FINDINGS

IR 05000289/02-04, on 3/31 - 5/11/2002, AmerGen Energy Company, LLC, Three Mile Island Unit 1, resident inspector report.

The report covered a six-week period of inspection by resident inspectors. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/reactors/operating/oversight.html>.

A. Inspector Identified Findings

- No findings of significance were identified.

B. Licensee Identified Violations

- No violations were identified.

## Report Details

### **Summary of Plant Status**

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

#### **1. REACTOR SAFETY**

Initiating Events/Mitigating Systems/Barrier Integrity [REACTOR - R]

##### 1R01 Adverse Weather Protection

###### a. Inspection Scope

The inspectors reviewed AmerGen's adverse weather procedures for risk-significant systems susceptible to extreme high temperatures and high winds. The inspectors walked-down abnormal procedure 1203-34, "Control Building Ventilation," operating procedure 1104-30, "Nuclear River Water," and emergency procedure 1202-33, "Tornado/High Winds." The inspectors verified that adequate instructions existed in the procedures and that portable equipment referenced in the procedures was readily accessible. The inspectors reviewed the corrective action program data base to determine if AmerGen was identifying and resolving weather related equipment problems.

###### b. Findings

No findings of significance were identified.

##### 1R04 Equipment Alignments

###### a. Inspection Scope

The inspectors conducted a partial system walkdown on the 'B' emergency diesel generator and its associated engineered safeguards electrical distribution system while the 'A' emergency diesel generator (EDG) was out of service for a scheduled inspection and overhaul. The inspectors verified that the 'B' EDG alignment was in accordance with operating procedure 1107-3, "Diesel Generator," and that operating parameters were normal. The diesel generator and engineered safeguards electrical distribution system provide a reliable electric power source to safety related systems during a loss of off-site power event.

###### b. Findings

No findings of significance were identified.

### 1R05 Fire Protection

#### a. Inspection Scope

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

- intermediate building steam driven emergency feedwater pump room
- intermediate building motor driven emergency feedwater pump room
- main control room and adjacent areas
- control tower fifth floor

The rooms and areas were selected based on enclosing equipment important to safety. The inspectors conducted plant walkdowns and verified the areas were as described in the fire hazard analysis report. The plant walkdowns included observations of combustible material control, fire detection and suppression equipment operability, and compensatory measures established for degraded fire protection equipment.

#### b. Findings

No findings of significance were identified.

### 1R11 Licensed Operator Requalification

#### a. Inspection Scope

The inspectors observed a simulator requalification training session on April 24, 2002. The inspectors reviewed the lesson plans, assessed operator performance during the training sessions, and observed the evaluator's critique of the training scenario.

#### b. Findings

No findings of significance were identified.

### 1R12 Maintenance Rule Implementation

#### a. Inspection Scope

The inspectors verified AmerGen's implementation of the maintenance rule for the following equipment performance problems:

- degraded auxiliary condenser vacuum indication
- high pressure injection valve push button maintenance preventable functional failure
- integrated control system functional failures
- 'A' main turbine electro-hydraulic control system pump functional failure

The high pressure injection (HPI) valve push button failure involved a risk significant function of the HPI system, while the other equipment problems listed could have increased the likelihood of an initiating event.

The aspects of maintenance rule implementation inspected included safety significance classification, a(2) performance monitoring or a(1) goal setting and corrective actions, and maintenance preventable functional failure determinations. The inspectors referenced 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Plants," and AmerGen administrative procedure 1082, "NRC Maintenance Rule."

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed AmerGen's planning and risk assessments for two risk significant maintenance activities: desilting and underwater inspection of the river water intake structure and station blackout diesel generator output feeder breaker preventive maintenance and repair. The inspectors reviewed the risk assessment of these planned maintenance activities with respect to 10 CFR 50.65(a)(4). The inspectors referenced AmerGen administrative procedure 1082.1, "TMI Risk Management Program," and NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants."

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions

a. Inspection Scope

The inspectors evaluated the main control room operators' response to an unanticipated reactor coolant system (RCS) letdown isolation. The isolation occurred during process radiation monitor surveillance testing on April 16, 2002. Control room logs and AmerGen's corrective action condition report were reviewed. The inspectors verified that the plant response, a minor reactor coolant system pressure transient from steady state 2155 psig to 2202 psig, was as expected. The inspectors also verified through log review that operators restored RCS letdown in a timely manner using plant procedure, 1104-2, "Makeup and Purification."

Findings

b. No findings of significance were identified.

1R15 Operability Evaluations



a. Inspection Scope

The inspectors reviewed an operability evaluation for a degraded steam trap on the steam supply line to the turbine driven emergency feedwater pump. The inspectors verified that the operability of the turbine driven emergency feedwater pump was properly justified and that no unrecognized increase in plant risk resulted from the degraded steam trap.

b. Findings

No findings of significance were identified.

1R16 Operator Work-Aroundsa. Inspection Scope

The inspectors reviewed identified operator work-arounds. The inspectors reviewed plant operating logs, turnover checklists, out of service equipment lists, active clearances, and interviewed plant operators and system engineers for potential unidentified operator work-arounds. The reviews were performed to determine the cumulative effect of equipment deficiencies on system performance, operator response, or increased likelihood for an initiating event.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testinga. Inspection Scope

The inspectors reviewed post-maintenance tests performed by AmerGen in conjunction with the following work activities on risk significant equipment:

- 'A' emergency diesel generator biennial inspection and overhaul
- turbine driven emergency feedwater pump steam trap internals replacement
- station blackout diesel generator feeder breaker auxiliary contact repair

The inspectors verified that the post-maintenance test procedures and test activities were adequate to verify operability and functional capability prior to the affected systems being returned to service.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testinga. Inspection Scope

The inspectors observed portions of and reviewed the results of the following surveillances:

- river water intake structure underwater inspections
- high and low pressure injection system analog channel tests
- air intake tunnel fire protection system test

The inspectors reviewed AmerGen's corrective action program for problems identified during previous performances of the tests to determine if problems involving surveillance testing were being identified and resolved at an appropriate threshold.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

On April 19, 2002, equipment operators identified a degraded steam trap on the turbine driven emergency feedwater pump steam supply line. As a compensatory measure, AmerGen installed a temporary modification to measure the level of condensate in the steam supply line when the trap was bypassed. The inspectors verified that the installation of the modification was consistent with the written documentation and that there were no adverse effects on system operability.

b. Findings

No findings of significance were identified.

Emergency Preparedness [EP]

1EP6 Drill Evaluation

a. Inspection Scope

On April 10, 2002, the inspectors observed a simulator scenario that AmerGen credited toward the Drill/Exercise Performance NRC performance indicator. The inspectors evaluated the opportunities for classification and notification of the emergency action levels presented in the simulator scenario. The inspectors verified that AmerGen correctly evaluated the simulator participants' classifications and notifications.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors verified the performance indicator for the initiating events cornerstone. The inspectors reviewed the performance indicator data for unplanned scrams per 7,000 critical hours, scrams with loss of normal heat removal, and unplanned power changes for 7,000 critical hours for the previous four calendar quarters. The inspectors reviewed licensee event reports (LERs), control room logs, and monthly operating reports.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Human Performance Corrective Actions Follow-up

a. Inspection Scope

The inspectors reviewed AmerGen's root cause evaluation and corrective actions in response to an August 2001 degraded main condenser vacuum event. The event was documented in NRC Inspection Report 50-289/2001-006, dated October 17, 2001, and determined to be of very low safety significance. AmerGen's root cause and corrective actions are documented in its corrective action process (reference number CR 00072497). AmerGen determined the root cause for the event to be human performance errors. AmerGen also identified several contributing causes: inadequate pre-job briefing, lack of supervisory oversight, and poor verification practices. The inspectors reviewed AmerGen's corrective actions for each of the identified causes.

b. Findings

No findings of significance were identified.

.2 Maintenance Practices Corrective Actions Follow-up

a. Inspection Scope

The inspectors reviewed AmerGen's corrective actions in response to an NRC identified non-cited violation involving inadequate maintenance practices related to the 'A' nuclear services river water pump. The maintenance problems were documented in NRC Inspection Report 50-289/2001-002, dated May 9, 2001, and were determined to be of very low safety significance. The inspectors determined that AmerGen's corrective actions were appropriate and completed in a timely manner.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

Exit Meeting Summary

On May 17, 2002, the resident inspectors presented the inspection results to members of AmerGen management led by Mr. George Gellrich. AmerGen acknowledged the findings presented. AmerGen did not indicate that any of the information presented at the exit meetings was proprietary.

## ATTACHMENT

**SUPPLEMENTAL INFORMATION**a. Key Points of Contact

M. Bruecks, Site Security Manager  
G. Gellrich, Plant Manager  
L. Clewett, Director, Site Engineering  
D. McDermott, Director, Maintenance  
G. Rumbold, Manager, Regulatory Assurance  
S. Queen, Senior Manager, Plant Engineering  
J. Robertson, Plant Operations Director  
B. Williams, Vice President, TMI Unit I

b. Acronyms

ADAMS	Agencywide Documents and Management System
AmerGen	AmerGen Energy Company, LLC
CAP	Corrective Action Process
CFR	Code of Federal Regulations
DBT	Design Basis Threat
EDG	Emergency Diesel Generator
HPI	High Pressure Injection
IR	Inspection Report
LER	Licensee Event Report
NCV	Non-cited Violation
NRC	Nuclear Regulatory Commission
PARs	Publicly Available Records
psig	Pounds per square inch gauge
RCS	Reactor Coolant System
SDP	Significance Determination Process
TMI	Three Mile Island, Unit 1