July 23, 2003

Mr. John Skolds
Chairman and CEO
AmerGen Energy Company, LLC
4300 Winfield Road
5th Floor
Warrenville, IL 60555

SUBJECT: THREE MILE ISLAND STATION, UNIT 1 - NRC INSPECTION REPORT 05000289/2003003

Dear Mr. Skolds:

On June 28, 2003, the Nuclear Regulatory Commission (NRC) completed an inspection at your Three Mile Island, Unit 1 (TMI) facility. The enclosed report documents the inspection findings that were discussed July 15, 2003 with Mr. Bruce Williams 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.

The report documents two NRC-identified findings of very low safety significance (Green). Only one of these findings was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it was entered into your corrective action program, the NRC is treating it as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis of your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector at Three Mile Island.

Since the terrorist attacks on September 11, 2001, the NRC has issued five Orders and several threat advisories to licensees of commercial power reactors to strengthen licensee capabilities, improve security force readiness, and enhance controls over access authorization. In addition to applicable baseline inspections, the NRC issued Temporary Instruction (TI) 2515/148, "Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures," and its subsequent revision to audit and inspect licensee implementation of the interim compensatory measures required by order. Phase 1 of TI 2515/148 was completed at all commercial power nuclear power plants during calendar year 2002, and the remaining inspection activities for TMI are scheduled for completion in calendar year 2003. The NRC will continue to monitor overall safeguards and security controls at TMI.

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 Website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

We appreciate your cooperation. Please contact me at 610-337-5225 if you have any questions regarding this letter.

Sincerely,

***/RA/***

Neil S. Perry, Chief
Reactor Projects Branch 7
Division of Reactor Projects

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

Enclosure: NRC Inspection Report 05000289/2003003
w/Attachment: Supplemental Information

cc w/encl:
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Senior Vice President, Nuclear Services
Vice President, Mid-Atlantic Operations Support
Senior Vice President, Mid-Atlantic Regional Operating Group
Vice President, Licensing and Regulatory Affairs
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Plant Manager, TMI Unit 1
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U.S. NUCLEAR REGULATORY COMMISSION

REGION 1

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|---|---|
| Docket No: | 05000289 |
| License No: | DPR-50 |
| Report No: | 050000289/2003003 |
| Licensee: | AmerGen Energy Company, LLC (AmerGen) |
| Facility: | Three Mile Island Station, Unit 1 |
| Location: | PO Box 480<br>Middletown, PA 17057 |
| Dates: | March 30, 2003 - June 28, 2003 |
| Inspectors: | Craig W. Smith, Senior Resident Inspector<br>Jeffrey Herrera, Resident Inspector<br>Joseph M. D'Antonio, Operations Engineer, DRS<br>Jason C. Jang, Senior Health Physicist, DRS<br>Ronald L. Nimitz, Senior Health Physicist, DRS<br>Gregory C. Smith, Senior Physical Security Inspector, DRS |
| Approved by: | Neil S. Perry, Chief<br>Projects Branch 7<br>Division of Reactor Projects |

Enclosure

## SUMMARY OF FINDINGS

IR 05000289/2003003; 03/30/2003 - 06/28/2003; AmerGen Energy Company, LLC; Three Mile Island, Unit 1; Temporary Modifications, Identification and Resolution of Problems.

The report covered a thirteen-week period of inspection by resident inspectors and announced inspections by regional inspectors. One Green non-cited violation (NCV) and one Green finding were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding where AmerGen failed to evaluate the adequacy of, and ensure proper administrative controls were in place for, a temporary inflatable plug installed in a river water pump house floor drain flood barrier. The inflatable plug was later found deflated and unable to function as a flood protection barrier. The temporary plug was needed because the floor drain standpipe, which serves as the permanent flood barrier, was broken off during maintenance activities.

  The finding is greater than minor because, in the event of a maximum probable flood, the operability of safety-related equipment in the river water pump house would have been challenged. The finding, which is under the mitigating systems cornerstone, is of very low safety significance because, the nonexistent flood protection barrier would not have resulted in a plant trip or a complete safety system failure. (**FIN 50-289/03-03-02)** (Section 1R23)

- Green. The inspectors identified a non-cited violation of 10 CFR 50.74 for three instances in which the licensee had identified potentially disqualifying medical conditions in regard to licensed operators, but did not report these conditions to the NRC within 30 days because of lack of understanding of the reporting requirement. The violation is of very low safety significance because no license restrictions were found necessary when the conditions were reported and reviewed by the NRC medical review officer. (**NCV 50-289/03-03-01)** (Section 4OA2)

B. Licensee-Identified Findings

None.

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, and Barrier Integrity

### 1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed the TMI design features and AmerGen's implementation of procedures to protect risk significant mitigating systems from adverse weather affects due to high temperatures. The inspectors reviewed implementation of AmerGen administrative procedure OP-AA-108-109, "Seasonal Readiness," for high heat weather conditions. The inspectors reviewed the corrective action program data base to verify if AmerGen was identifying and resolving weather-related equipment problems.

b. Findings

No findings of significance were identified.

### 1R04 Equipment Alignments

a. Inspection Scope

Partial System Walkdowns. The inspectors conducted three partial system walkdowns on the following systems and components:

- "A" decay heat removal train with the "B" train out of service for surveillance testing on April 22, 2003
- "B" decay heat removal train with the "A" train out of service for surveillance testing on April 28, 2003
- nuclear river water system during system realignment for macro-biological chemical treatment on May 20, 2003

The systems were chosen based on their high risk significance. The partial system walkdowns were conducted on the redundant and standby equipment to ensure that trains and equipment relied on to remain operable for accident mitigation was properly aligned and protected. The inspectors verified the systems were aligned in accordance with operating procedures OP-TM-212-000, "Decay Heat Removal System" and 1104-30, "Nuclear River Water." The inspectors verified system parameters were within the required band for current plant conditions as determined by TMI operating logs.

Complete System Walkdown. The inspectors conducted a detailed review of the alignment and condition of the emergency diesel generator mechanical and electrical

systems. The inspectors verified the systems were properly aligned in accordance with the applicable sections of the TMI Updated Final Safety Analysis Report and operating procedures 1107-3, “Diesel Generator” 1107-2A, “Emergency Electrical” and 1104-24M, “Diesel Building Heating and Ventilation System.” The inspectors reviewed data from monthly emergency diesel generator runs conducted in accordance with surveillance test procedure 1303-4.16, “Emergency Power System.” The inspectors reviewed open work requests and corrective action program documents to verify AmerGen was identifying and resolving equipment performance issues and that the identified deficiencies did not significantly affect diesel generator operability.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

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

- emergency diesel generator rooms
- control building east battery charger area
- control building west battery charger area
- control building health physics and lab area
- intake structure trash rake and screen area
- intake structure 1"R” switchgear area
- intake structure 1"T” switchgear area
- intake structure diesel fire pump room

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 TMI Fire Hazard Analysis Report. The plant walkdowns were conducted throughout the inspection period and 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.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed AmerGen’s internal flooding mitigation strategy during this inspection period. The inspectors verified compensatory measures outlined in emergency procedure 1202-32, “Flood,” provided adequate protection against flood

damage for risk significant equipment located in the river water heat exchanger vault area.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors observed AmerGen's spring clam kill performance May 20, 2003, and desilting efforts on the nuclear river water and reactor river water systems. The inspectors assessed the thoroughness of the spring clam kill and desilting efforts against the guidance provided in AmerGen operating procedure 1104-65, "River and Circulating Water System Macrofouling Treatment," and implementing maintenance work order instructions. The inspectors reviewed the corrective system data base for past problems with nuclear service and reactor river water systems to verify that the current cleaning efforts addressed past performance issues.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

Biennial Review. A review was conducted of licensee requalification exam results for the annual operating testing cycle. The inspection assessed whether pass rates were consistent with the guidance of NUREG-1021, Revision 8, "Operator Licensing Examination Standards for Power Reactors" and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)."

The inspector verified that:

- Crew pass rate was greater than 80 percent. (Pass rate was 87.25 percent.)
- Individual pass rate on the walk-through was greater than 80 percent. (Pass rate was 100 percent.)
- More than 80 percent of the individuals passed all portions of the exam. (80.4 percent of the individuals passed all portions of the exam.)

Requalification Activities. The inspectors observed an operating crew training session on the plant reference simulator on June 26, 2003. The session involved several scenarios requiring the operators to diagnose and respond to failures of various secondary plant control modules. A similar training session was provided on all

operating and staff crews to address past performance weaknesses in secondary plant control system failures.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors verified AmerGen's implementation of the maintenance rule for the emergency feedwater system and for an unanticipated trip of the "D" reactor protection system channel on January 1, 2003. The inspectors reviewed AmerGen's performance monitoring plan for the emergency feedwater system and the functional failure evaluation for the reactor protection system channel trip. The emergency feedwater system was a maintenance rule a(1) system. The reactor protection system was a maintenance rule a(2) system.

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 ER-AA-310-1000 series, "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 the following five risk significant activities:

- planned cleaning of the containment air coolers on April 4, 2003
- planned replacement of a single 1"A" station battery cell on April 9, 2003
- planned preventive maintenance on the "D" battery charger on May 13, 2003
- emergent work to replace a failed engineered safeguards actuation system push button on May 22, 2003
- planned helicopter lift to replace roof top air conditioning unit on June 5, 2003

The inspectors reviewed the risk assessment of these planned and emergent 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." In addition to the documents reviewed, the inspectors walked

down the protected equipment and maintenance locations to verify that risk was managed in accordance with AmerGen's risk evaluation documents.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed operability evaluations for the following five degraded equipment issues:

- "A" nuclear river water pump motor operated valve indication anomalies on April 24, 2003
- "B" station battery cell number 89 degraded voltage trend on May 1, 2003
- "C" containment air cooler fan motor current degrading trend on May 14, 2003
- "B" station battery ground on May 23, 2003
- engineered safeguards actuation system push button failures on May 23, 2003

The inspectors verified the degraded conditions were properly characterized, the operability of the affected systems was properly justified, and no unrecognized increase in plant risk resulted from the equipment issues. The inspectors referenced Inspection Manual Part 9900, "Operable/Operability - Ensuring the Functional Capability of a System Component" and AmerGen procedure LS-AA-105, "Operability Determination," to determine acceptability of AmerGen's operability evaluations.

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds

a. Inspection Scope

The inspectors reviewed operator work-arounds identified and documented in accordance with AmerGen administrative procedure OP-AA-102-103, "Operator Work-Around Program." 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 Testing

a. Inspection Scope

The inspectors reviewed post-maintenance tests performed by AmerGen in conjunction with the following six maintenance activities:

- "A" nuclear river water pump motor operated valve preventive maintenance on April 21, 2003
- emergency feedwater flow control valve signal converter replacement on April 25, 2003
- "D" battery charger preventive maintenance on May 16, 2003
- "A" control building chilled water system preventive maintenance on May 21, 2003
- engineered safeguards actuation system failed push button replacement on May 23, 2003
- pressurizer sample line containment isolation valve preventive maintenance on June 25, 2003

The inspectors verified that the post-maintenance test procedures, activities, and results were adequate to verify operability and functional capability as described in NRC Inspection Procedure 71111.19, "Post-Maintenance Testing," prior to the affected systems being returned to service. The inspectors also walked down the maintenance locations and verified that maintenance was properly authorized by senior reactor operators and conducted in accordance with procedures.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed portions and reviewed results of the following five surveillance tests:

- "A" decay heat pump inservice test on April 28, 2003
- "A" decay heat river water inservice test on April 29, 2003
- reactor protection system neutron flux to reactor coolant system flow comparator calibration test on May 13, 2003
- reactor building 4 psig isolation channel calibration test on June 19, 2003
- reactor building 30 psig isolation channel calibration test on June 24, 2003

The inspectors verified that test results were within procedure requirements, technical specification requirements, and in-service testing program requirements as applicable.

b. Findings

No findings of significance were identified.

1R23 Temporary Modifications

a. Inspection Scope

During plant tours and baseline inspections, the inspectors routinely evaluated plant equipment for evidence of temporary modifications that were not properly evaluated or categorized.

b. Findings

Introduction. The inspectors identified a finding of very low safety significance (Green) involving an undocumented temporary modification to a floor drain flood barrier in the river water pump house.

Description. On March 22, 2003, while conducting maintenance to replace the "C" secondary river water pump, maintenance technicians broke off a floor drain standpipe while using it as a brace to support disassembly of the pump shaft coupling. The floor drain standpipe acts as barrier to protect safety-related equipment in the river water pump house from flooding greater than the 308-foot elevation. Without the standpipe in place, the open floor drain becomes a path for flood water to enter the river water pump room and challenge the operability of several safety-related motor operated valves in the event the flood level reaches the 309-foot maximum probable flood elevation. The design basis flood protection function of the floor drain standpipes is described in the TMI Updated Final Safety Analysis Report, Section 2.6.5, "Design of Hydraulic Facilities."

The maintenance technicians immediately notified the control room of the broken standpipe and took actions to install a temporary inflatable plug in the floor drain opening. However, there was no evaluation made of the adequacy of the temporary plug to function as a flood barrier and there were no administrative controls to ensure the temporary plug remained in place and functional until the standpipe could be permanently repaired. On April 30, 2003, while observing an unrelated surveillance activity in the river water pump room, the inspectors found the temporary inflatable plug had deflated, and no longer functioning as a flood barrier. The inspectors notified the control room supervisor, who directed an expandable, hard rubber plug installed in the floor drain opening. However, once again, there was no evaluation documenting the adequacy of the temporary expandable plug as a flood barrier and no administrative controls to ensure the temporary plug would remain installed until the permanent repairs could be completed. On May 8, 2003, engineering issued a temporary modification, and associated 10 CFR 50.59 screening, documenting the use of the temporary floor drain plug as a flood barrier and appropriate administrative controls to ensure the plug remained in place until the standpipe could be restored to its original design.

Analysis. The inspectors found AmerGen failed to adequately control the use of a temporary floor drain plug used to function as a flood protection barrier. The inspectors found the plug deflated and no longer capable of functioning as a flood barrier. The

finding is greater than minor because, in the event of a maximum probable flood, the operability of safety-related equipment in the river water pump house would have been challenged. The finding, which is under the mitigating systems cornerstone, was of very low safety significance because, the nonexistent flood protection barrier would not have resulted in a plant trip or a complete safety system failure. This finding is in AmerGen's corrective action program as Condition Report (CR) 157693.

Enforcement. No violation of regulatory requirements occurred. The inspectors determined the finding did not represent a noncompliance because the affected floor drain flood barrier was non-safety-related plant equipment. (**FIN 50-289/03-03-02)**

## 2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control To Radiologically Significant Areas

a. Inspection Scope

The inspector conducted the following activities and reviewed the following documents to determine the effectiveness of access controls to radiologically significant areas:

- The inspector toured the waste handling and packaging facility including associated outdoor storage areas. The inspector reviewed radiological controls including controls for radioactive and contaminated materials, posting, barricading, and labeling. The inspector reviewed the material conditions of outdoor containers and observed licensee personnel conduct surveys for contamination on selected containers.

- The inspector toured the Unit 1 facility including the Auxiliary Building and the Spent Fuel Storage Building. The inspector made radiological survey measurements to evaluate ambient radiological conditions and adequacy of access controls including posting and barricading. Radiological hot spots were surveyed to identify potential unposted High Radiation Areas. The inspector selectively challenged locked High Radiation Area access points to determine if access controls were sufficient to preclude unauthorized entry.

- The inspector conducted a High Radiation Area access key inventory and verified conformance with in-place administrative controls for auditing and issuing keys.

- The inspector reviewed radiological controls, provided on January 25, 2003, for access to the Unit 1 reactor containment at 100 percent reactor power to conduct work activities (leak control). The inspector reviewed applicable radiation work permits; electronic dosimeter setting; radiological survey data; personnel monitoring, including neutron doses; airborne radioactivity monitoring, including calculation of submersion dose; and occupational dose assessment, as appropriate. Also, reviewed was High Radiation Area Access Controls.

- The inspector observed ongoing work at the Unit 1 Miscellaneous Waste Evaporator (a posted High Radiation Area), on May 20, 2003.

- The inspector discussed personnel occupational doses for 2002 and 2003 to evaluate maximum doses received including potential unplanned occupational doses. The inspector reviewed the dose assessments for adequacy, causes, and corrective actions, as appropriate.

- The inspector verified use of National Voluntary Laboratory Accreditation Program certified dosimetry for personnel monitoring.

- The inspector reviewed a selection of self-assessments and licensee identified findings to determine if findings were properly entered into the corrective action program, the findings were evaluated, and corrective actions were initiated, as appropriate. (See Section 4OA2.3)

The review in the above areas was against applicable licensee procedures, 10 CFR 20, and applicableTechnical Specifications.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls

a. Inspection Scope

The inspector selectively reviewed the adequacy and the effectiveness of the program to reduce occupational radiation exposure to as low as is reasonably achievable (ALARA). The following matters were reviewed:

- TMI Unit 1 plant collective exposure history, current exposure trends, and rolling average collective exposures for 2002 and 2003.

- Projected collective doses for 2003, including dose goals for the 2003 refueling outage, including collective radiation dose estimates for replacement of the Unit 1 reactor vessel head.

- TMI Station 2003-2005 Exposure Reduction Plan including source term control strategy and implementation of source term reduction initiatives.

- Self-assessments and licensee identified findings to determine if findings were properly entered into the corrective action program. (See Section 4OA2).

The evaluation of licensee performance in this area was against criteria contained in applicable procedures, 10 CFR 20, and applicable Technical Specifications.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

The inspector selectively reviewed the calibration and checking of the following process and area radiation monitoring instrumentation:

- RM-G-22 and 23, High range Containment Monitors
- RM-G-18, Reactor Coolant Sample Line Monitor
- RM-G-19, Reactor Coolant Pump Seal Monitor
- RM-G-2, Primary Chem Lab Area Monitor

During plant tours, the inspector visually inspected in-field radiological controls instrumentation (e.g., air samplers, survey meters) to ascertain if the instrumentation was within calibration and had been operability checked, as appropriate.

The reviews in this area were against regulatory requirements contained in Technical Specifications and applicable procedures.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS1 Radiological Environmental Monitoring Program

a. Inspection Scope

The inspector reviewed the following documents to evaluate the effectiveness of the licensee's Radiological Environmental Monitoring Program (REMP) at TMI. The requirements of the REMP are specified in the Technical Specifications/Offsite Dose Calculation Manual (TS/ODCM).

- 2001/2002 Annual REMP Reports and projected doses to the public
- Offsite Dose Calculation Manual (ODCM, Revision 23, March 19, 2002) and technical justifications for ODCM changes, including sampling locations
- 10-year Trending Analysis for the REMP (1992-2002)
- 2002 Sampling Deviation Report Log
- the most recent calibration results of the meteorological monitoring instruments for wind direction, wind speed, and temperature
- review of the 2002 meteorological monitoring data recovery statistics
- the most recent calibration results for all REMP air samplers
- implementation of the interlaboratory and intralaboratory comparisons
- implementation of the environmental thermoluminescent dosimeters (TLDs) program

- Focus Area Assessment for REMP (Assessment Period, April 25-May 8, 2003)
- 2001 NQA Audit for the REMP/ODCM and Meteorological Monitoring Program implementations and corrective actions
- 2003 Nuclear Oversight Surveillance (NQA-TMI-03-1Q) in the areas of REMP, ODCM, and Meteorology
- Land Use Census procedure and the 2002 results
- associated REMP procedures, including vendor's analytical procedures

The inspector toured and observed the following activities to evaluate the effectiveness of the licensee's REMP:

- observation for the operability of meteorological monitoring instruments at the tower
- observation for air iodine/particulate and water sampling techniques
- walk-down for determining whether all air samplers, milk farms, and 25 percent TLDs were located as described in the ODCM (including control and indicator stations) and for determining the equipment material condition

b. Findings

No findings of significance were identified.

2PS3 Radioactive Material Control Program

a. Inspection Scope

The inspector reviewed the following documents to ensure that the licensee met the requirements specified in the licensee's program for the unrestricted release of material from the Radiologically Controlled Area (RCA). The review was against criteria contained in 10 CFR 20, NRC Circular 81-07, NRC Information Notice 85-92, NUREG/CR-5569, Health Position Data Base (Positions 221 and 250), and the licensee's procedures.

- the most recent calibration results for the radiation monitoring instrumentation (Small Article Monitors, SAM-9 and SAM-11)
- licensee's criteria for the survey and release of potentially contaminated material using a gamma spectroscopy (calibration efficiency for bulk sample analyses)
- methods used for control, survey, and release from the RCA
- associated procedures and records to verify for the lower limits of detection for bulk sample analyses

b. Findings

No findings of significance were identified.

## 3. SAFEGUARDS

Cornerstone: Physical Protection

3PP4 Security Plan Changes

1. Revisions 42, 43 and 44

a. Inspection Scope

An in-office review was conducted of changes to the licensee's Physical Security Plan identified as Revisions 42, 43 and 44, Contingency Plan identified as Revisions 13 and 14, and the licensee's Training & Qualification Plan identified as Revision 19. These documents were submitted to the NRC on January 2, 2001, June 11, 2001, and May 17, 2002, respectively, in accordance with the provisions of 10 CFR 50.54(p). The review was conducted to confirm that the changes were made in accordance with 10 CFR 50.54(p), and did not decrease the effectiveness of the above listed plans. The NRC recognizes that some requirements contained in these program plans may have been superceded by the February 2002 Interim Compensatory Measures Order.

b. Findings

No findings of significance were identified.

2. Revision 45

a. Inspection Scope

An in-office review was conducted of changes to the licensee's Physical Security Plan, identified as Revision 45. This document was submitted to the NRC on February 21, 2003, in accordance with the provisions of 10 CFR 50.54(p). The review was conducted to confirm that the changes were made in accordance with 10 CFR 50.54(p), and did not decrease the effectiveness of the Security Plan. The NRC recognizes that some requirements contained in this Plan may have been superceded by the February 2002 Interim Compensatory Measures Order.

b. Findings

No findings of significance were identified.

## 4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

1. Initiating Events, Mitigating Systems, and Barrier Integrity

The inspectors referenced NEI 99-02, Revision 2, "Regulatory Assessment Performance Indicator Guideline," and reviewed data submitted by AmerGen for the unplanned scrams, scrams with loss of normal heat removal, unplanned power changes, emergency diesel generator unavailability, reactor coolant system activity, and reactor coolant system leakage performance indicators. The inspectors reviewed operating logs, maintenance rule records, chemistry data, licensee event reports, and the

corrective action program database to verify the accuracy and completeness of the reported data. Records were reviewed for the last three calendar quarters of 2002 and the first calendar quarter of 2003.

2. Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspector reviewed implementation of the Occupational Exposure Control Effectiveness Performance Indicator Program. The inspector selectively reviewed corrective action program records for occurrences involving high radiation areas, very high radiation areas, and unplanned personnel exposures for the past two quarters against the applicable criteria specified in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 2, to verify that occurrences, that met the NEI criteria, were recognized and identified as occurrences.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

The inspectors devoted 10 to 15 percent of their inspection time in each baseline inspection procedure assessing AmerGen's problem identification and resolution appropriate to each inspection area.

1. Licensed Operator Medical Records

a. Inspection Scope

The inspector reviewed the results of a licensee audit of medical records which had identified several instances of failure to report potentially disqualifying conditions to the NRC, and corrective actions resulting from that audit. The inspector performed an independent audit of 10 operator medical records, and reviewed the records identified in the licensee audit to determine how long the reported conditions had existed.

b. Findings

Introduction. A non-cited violation (NCV) was identified for three instances of failure to report changes in medical status of licensed operators within 30 days as required by 10 CFR 50.74.

Description. As a result of facility internal audits, four licensed operators were found to have medical conditions involving either hypertension, asthma, diabetes, or cancer, which are potentially disqualifying medical conditions and which had not been reported to the NRC. The inspector identified that for three of these four operators, the conditions were not reported to the NRC within the required 30-day time frame. The time from when the facility was aware of these conditions until the reporting requirement

was recognized and the reports made to the NRC ranged from four months to eight years. The latter individual had his license renewed twice in that time. In all cases, these conditions were adequately controlled by medical treatment, and none of these conditions resulted in license restrictions after review by the NRC medical review officer.

Corrective actions for the facility internal audit results are addressed in CR 143977 and CR 147624, and include training for medical personnel and licensed operators on conditions requiring report to the NRC, and an additional checklist added to each medical file.

Analysis. The inspector determined that AmerGen's failure to report these conditions within 30 days is a performance deficiency because AmerGen is expected to meet the requirements of 10 CFR 50.74(c). This finding is subject to traditional enforcement because it is a failure to notify the NRC of potentially disqualifying conditions related to licensed operator medicals, which has the potential to impact the NRC's ability to perform the regulatory function of issuing operator licenses. The finding is more than minor because of the multiple examples in untimely reporting due to a misunderstanding of reporting requirements. For all the conditions commensurate with treatment, the operators were medically fit to stand watch. Accordingly, the issue is of very low regulatory concern.

Enforcement. 10 CFR 50.74, "Notification of Change in Operator or Senior Operator Status," requires, in part, that the licensee shall notify the NRC within 30 days in regard to the following concerning a licensed operator or senior operator: permanent disability or illness as described in 10 CFR 55.25.

In adhering to 10 CFR 55.25, the licensee uses ANS-3.4-1983 (endorsed by Regulatory Guide 1.134, Rev. 3), which lists potentially disqualifying medical conditions. Contrary to the above, for three operators for whom the facility reported conditions involving hypertension, asthma, diabetes, or skin cancer in 2002/2003, these notifications were not made within the required 30 days. The duration of time the facility was aware of these conditions prior to recognizing the requirement of reporting them to the NRC and the required reports, ranged from four months to eight years.

This violation is of very low regulatory significance because these conditions were all adequately controlled by medical treatment, and no additional license conditions or restrictions resulted from the NRC medical officer's review of the reported medical conditions.

The facility corrective action document addressing this condition is CR 159084.

Because this failure to meet reporting requirements is of very low safety significance and has been entered into the corrective action program, this violation is being treated as an NCV, Severity Level IV (Supplement I, Operations), consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 50-289/03-03-01)**

2. Licensed Operator Biennial Requalification Examination

a. Inspection Scope

A review was conducted of the evaluation and corrective actions taken for CR 146995, which addressed a high failure rate for the first week of the 2003 biennial requalification examination. This review involved grading of the examinations, comparison with exams from 2001, and changes made to subsequent 2003 examinations based on the facility analysis of what went wrong in week one. In particular, the inspector verified the following:

- subsequent 2003 exams were not reduced in difficulty to improve pass rate
- post exam changes to the week one exam did not result in inappropriate grading
- retake examinations were comparable in difficulty to the exam failed
- training on taking the new style of exams did not cue personnel to actual exam content

b. Findings

The 2003 exams consisted of fewer, but longer questions. There were no obvious differences in difficulty level to account for the exam failures Facility corrective actions addressed the “psychometrics” of the exam questions in order to reduce the time it took to answer individual questions and better focus the questions. These corrective actions were successful in reducing the failure rate on the written from 5/12 in week one to 2/39 of the remaining operators in subsequent weeks.

No findings of significance were identified.

3. Occupational Radiation Safety Corrective Action Review

a. Inspection Scope

The inspector reviewed the actions on various licensee self-identified issues, documented in the corrective action program, to determine if self-identified issues were being identified, prioritized, and corrective actions were being established and implemented (AR 133828, 140905, 141086, 140814, 143311, 136326, and 137890). The inspector also reviewed various audits and assessments including: nuclear oversight assessment reports (NOSA-TMI-02-4Q, NOSA-TMI-1Q), focused self-assessments (AR 144459, 132706), and radiological health and safety score cards (4th quarter 2002, 1st quarter 2003).

b. Findings

No findings of significance were identified.

4. REMP Corrective Action Review

a. Inspection Scope

The inspector reviewed the selected following 2002-2003 Condition Reports (CRs) to evaluate the effectiveness of the licensee's problem identification and resolution processes in the areas of the REMP:

- Routine REMP (CR-159915, CR-113498, CR-113361, and CR-118393)
- Meteorological Monitoring Program (CR-159820, CR-153113, CR-140801, and CR-12899)
- Radioactive Material Control Program (CR-149666, CR-146896, CR-151275, CR-150283, CR-149332, and CR-148105)

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On July 15, 2003, the resident inspectors presented the inspection results to Mr. Bruce Williams and other members of his staff who acknowledged the findings. The regional specialist inspection results were previously presented to members of AmerGen management. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

## KEY POINTS OF CONTACT

Licensee Personnel
K. Bartes, Plant Operations Director
G. Chick, Director, Maintenance
L. Clewett, Director, Site Engineering
G. Gellrich, Plant Manager
D. Merchant, Director, Radiation Health and Safety
M. Paul, Manager, Training
G. Rombold, Manager, Regulatory Assurance
B. Williams, Vice President, TMI Unit I

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

| | | |
|---|---|---|
| 03-03-01 | NCV | Failure to Report Changes in Medical Status of Licensed Operators as Required by 10 CFR 50.74. |
| 03-03-02 | FIN | Failure to Document a Temporary Modification to a Floor Drain Flood Barrier in the River Water Pump House |

## LIST OF ACRONYMS

| | |
|---|---|
| ADAMS | Agencywide Documents and Management System |
| ALARA | As Low As is Reasonably Achievable |
| AmerGen | AmerGen Energy Company, LLC |
| AR | Action Report |
| CFR | Code of Federal Regulations |
| CR | Condition Report |
| DRP | Division of Reactor Projects |
| IMC | Inspection Manual Chapter |
| IR | Inspection Report |
| NCV | Non-Cited Violation |
| NRC | Nuclear Regulatory Commission |
| ODCM | Offsite Dose Calculation Manual |
| RCA | Radiologically Controlled Area |
| REMP | Radiological Environmental Monitoring Program |
| SDP | Significance Determination Process |
| TLDs | Thermoluminescent Dosimeters |
| TMI | Three Mile Island, Unit 1 |
| TS | Technical Specifications |