

May 12, 2004

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Warrenville, IL 60555

SUBJECT: OYSTER CREEK GENERATING STATION - NRC INTEGRATED INSPECTION  
REPORT 05000219/2004002

Dear Mr. Crane:

On March 31, 2004, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Oyster Creek Generating Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on April 26, 2004, with Mr. C. N. Swenson and other members of your staff.

The 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.

Based on the results of this inspection, four green findings were identified as having very low safety significance. Three of these findings were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they are entered into your corrective action program, the NRC is treating these three findings as non-cited violations (NCVs) consistent with Section VI.A of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for 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 NRC Resident Inspector at Oyster Creek.

Since the terrorist attacks on September 11, 2001, the NRC has issued five Orders and several threat advisories to licensee's 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 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 the order. Phase 1 of TI 2515/148 was completed at all commercial nuclear power plants during calendar year 2002, and the remaining inspection activities for Beaver Valley were completed in calendar year 2003. The NRC will continue to monitor overall safeguards and security controls at Oyster Creek.

Mr. Christopher M. Crane

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Sincerely,

*IRA*

Peter W. Eselgroth, Chief  
Projects Branch 7  
Division of Reactor Projects

Docket No. 50-219  
License No. DPR-16

Enclosure: Inspection Report 05000219/2004002  
w/Attachment: Supplemental Information

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**U. S. NUCLEAR REGULATORY COMMISSION**

REGION I

Docket No.: 50-219

License No.: DPR-16

Report No.: 05000219/2004002

Licensee: AmerGen Energy Company, LLC (AmerGen)

Facility: Oyster Creek Generating Station

Location: Forked River, New Jersey

Dates: January 1, 2004 - March 31, 2004

Inspectors: Robert Summers, Senior Resident Inspector  
Thomas Hipschman, Senior Resident Inspector (Acting)  
Jeff Herrera, Resident Inspector  
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Approved By: Peter W. Eselgroth, Chief  
Projects Branch 7  
Division of Reactor Projects

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## SUMMARY OF FINDINGS

IR 05000219/2004-002; 01/01/04-03/31/04; Oyster Creek Generating Station; Operability Evaluations; Access Control to Radiologically Significant Areas; ALARA Planning and Controls; Radiation Monitoring Instrumentation and Protective Equipment.

This report covers a 13-week period of inspection by resident inspectors and announced inspections by a regional senior health physics inspector, a senior operations engineer, a senior reactor inspector, a reactor inspector, and an emergency preparedness inspector. Four green findings, three involving Non-cited violations (NCV), 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 and Barrier Integrity

- Green. The inspector identified a non-cited violation (NCV) for not maintaining the ESW Pump Trouble alarm response procedure as required by Technical Specification (TS) 6.8.1. The operability evaluation of the pump failure to start on January 15, 2004, attributed the failure of the ESW 52B pump to cold weather conditions. Subsequent corrective actions included changing the alarm response procedure to allow operators to restart the ESW pump in cold weather conditions below 15 °F following a start failure without first investigating the cause.

The finding is not subject to traditional enforcement in that the finding did not have any actual safety consequence, the finding did not have the potential for impacting the NRC's ability to perform its regulatory function, and there were no willful aspects. The finding was more than minor, in that it is associated with the equipment performance and procedural quality attributes for the Mitigating Systems cornerstone, and affected the Mitigating System's objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Additionally, this finding was associated with the design control attribute of maintaining the functionality of the containment for the Barrier Integrity cornerstone.

This finding was determined to be of very low safety significance because all four ESW pumps remained operable and the licensee entered the issue into their corrective action program under CAP O2004-0110. (Section 1R15)

## Cornerstone: Occupational Radiation Safety

- Green. On March 18, 2004, the inspector identified that secondary keys for locked High Radiation Areas were not maintained under the administrative control of operations and/or radiation protection supervision on duty to prevent unauthorized use. The keys were accessible to unauthorized personnel. This finding constitutes a non-cited violation (NCV) of Technical Specification 6.13.2.

Not implementing administrative controls for locked High Radiation Area keys is a performance deficiency in that a TS requirement was not met by AmerGen which was reasonably within its ability to foresee and correct, and which should have been prevented. The finding is not subject to traditional enforcement in that the finding did not have any actual safety consequence, the finding did not have the potential for impacting the NRC's ability to perform its regulatory function, and there were no willful aspects. The finding was determined to be more than minor, in that it is associated with one of the Radiation Safety Cornerstone attributes (procedures and exposure control) and did affect the objective of the Cornerstone. The finding was evaluated against criteria specified in NRC Manual Chapter 0609, Appendix C, and determined to be of very low safety significance in that: 1) it did not involve an ALARA finding, 2) it did not involve an overexposure, 3) there was no substantial potential of an overexposure and, 4) the ability to assess dose was not compromised. (Section 2OS1)

- Green. A self-revealing finding having very low safety significance was identified associated with occupational exposure reduction. During the Fall 2002 refueling outage, AmerGen did not effectively manage its radioactive source term and work activities to prevent unnecessary occupational radiation exposure to workers involved with reactor vessel reassembly work, resulting in 12.4 person-rem of collective radiation exposure versus an exposure estimate of 6.5 rem.

Not implementing to the extent practical, controls to achieve occupational doses that are ALARA, and which resulted in unplanned unintended occupational collective dose, is a performance deficiency associated with basic radiological controls that was reasonably within AmerGen's ability to foresee and correct, and which should have been prevented. The finding is more than minor in that the screening criteria (work activity exposure greater than five person-rem and greater than 50% above estimated) specified in NRC Manual Chapter 0612, Appendix E, were exceeded. This finding was determined to be of very low safety significance. Specifically, although AmerGen's three-year rolling average (2000-2002, "inclusive") of 309 person-rem, is above the Appendix C criteria of 240 person-rem for Boiling Water Reactors (BWRs), the additional dose did not exceed 25 person-rem and there was only one occurrence. (Section 2OS2)

- Green. On March 18, 2004, the inspector identified that AmerGen was not functionally testing vital components of self-contained breathing apparatus (SCBAs) in accordance with the manufacturer's recommendations. This finding constitutes a non-cited violation (NCV) of 10 CFR 50.47(b)(10) associated with failure to maintain protective measures for emergency workers.



Not conducting complete functional testing of vital components of emergency use self-contained breathing apparatus, in accordance with the manufacturer's recommendations, is a performance deficiency. The issue is more than minor in that it is associated with a failure to meet a regulatory requirement and the failure to maintain onsite respiratory protective equipment, in accordance with regulations. Specifically, the licensee did not conduct a complete maintenance and quality assurance program for its respiratory protection equipment as required by 10 CFR 20.1703. This finding was reasonably within the licensee's ability to foresee and correct and should have been prevented. The finding is not subject to traditional enforcement in that there was no actual safety consequence, did not have the potential to impact the NRC's ability to perform its function, and was not willful. In addition, although the finding did involve a planning standard, the standard was not degraded in that subsequent testing of the devices did not identify non-functional units. (Section 20S3)

B. Licensee-Identified Violations

None.

## REPORT DETAILS

### Summary of Plant Status

Oyster Creek began the integrated inspection period at 100% of Rated Thermal Power (RTP). On January 24, 2004, power was reduced to 50% RTP for rod swap and planned condenser bay maintenance. On January 25, 2004, Oyster Creek returned to 100% RTP and remained at 100% for the remainder of the inspection period.

### 1. REACTOR SAFETY

Cornerstones: Initiating Events/Mitigating Systems/Barrier Integrity

#### 1R01 Adverse Weather Protection (IP 71111.01 - 1 Sample)

##### a. Inspection Scope

The inspectors verified the ability of risk significant systems and equipment important to safety to function in the winter climate. In January of 2004 the ESW pump 52B failed to start during a post-maintenance test.

On February 24, 2004, the inspectors walked down portions of the emergency service water (ESW) system. This system was selected since the 52B ESW pump's failure to run on January 15, 2004 was believed to be cold weather related. The inspectors reviewed plant conditions, Corrective Action Process (CAP) report, O2004-0110, operator logs, past surveillance tests, 50.59 screening report, OC-2004-S-029, alarm response procedure, 2000-RAP-3024.01, calculations, operability determination report, OC-2004-OE-0001, and other relevant documentation. The inspectors conducted numerous interviews with knowledgeable plant personnel. The inspectors compared the licensee's initial corrective actions in response to the 52B ESW pump's failure to run to the current licensing and design basis.

##### b. Findings

No findings of significance were identified.

#### 1R04 Equipment Alignment (IP 71111.04Q - 4 samples)

##### a. Inspection Scope

##### Partial System Walkdown

This inspection activity represented four samples of the following systems:

- Emergency Diesel Generator Fuel Oil System, week of January 26, 2004
- Emergency Diesel Generator Engine and Controls, week of February 16, 2004
- Instrument Air System, week of March 22, 2004
- Control Rod Drive System, week of March 1, 2004

##### b. Findings

Enclosure

No findings of significance were identified.

1R05 Fire Protection (IP71111.05A - 1 Sample, IP 71111.05Q - 11 Samples)

1. Fire Drill Observation

a. Inspection Scope

On March 25, 2004, the inspectors observed an announced fire drill. The inspector reviewed the drill scenario, the Fire Hazard Analysis Report for the area of the drill (A/B Battery Room), and verified that fire fighting techniques employed by the fire brigade were appropriate and in accordance with approved procedures. The inspector also observed the post-drill critique and reviewed Procedure No. 101.2 Rev.51, "Oyster Creek Site Fire Protection Program." Additionally, the inspectors reviewed CAP O2004-0726, which documented drill observations and recommendations for improvements.

b. Findings

No findings of significance were identified.

2. Fire Area Tours

a. Inspection Scope

The inspectors walked down accessible portions of 11 samples listed below due to the potential to impact mitigating systems. Plant walkdowns included observations of combustible material control, fire detection and suppression equipment availability, and compensatory measures. As a part of the inspection, the inspectors had discussions with fire protection personnel, and reviewed procedure 333, "Plant Fire Protection System," and the Oyster Creek Fire Hazards Analysis Report to verify that the fire program was implemented in accordance with all conditions stated in the facility license.

- OB-FZ-6A&B, "A&B" 480V Switchgear Room
- DG-FA-15, No. 1 Emergency Diesel Generator Room
- FS-FA-16, Emergency Diesel Generator Fuel Storage Area
- DG-FA-17, No. 2 Emergency Diesel Generator Room
- TB-FZ-11C, Switchgear room, west end of turbine building on mezzanine level, elev. 23'-6"
- TB-FZ-11D, Basement floor south end, elev. 3'-6"
- FW-FA-18, Firewater pump house
- CW-FA-14, Circulatory water intake area
- Alternate Fire Pump, week of March 8, 2004
- Station Blackout Deluge, week of March, 15, 2004
- 4160 Vital Switchgear Room CO2 System, week of February 2, 2004

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

1. Annual Review (IP 71111.07A - 1 Sample)

a. Inspection Scope

One sample was selected for review by the inspectors. The inspectors reviewed performance testing results to ensure that the Drywell Recirculation Cooler heat exchangers could perform their design functions as intended. The inspectors also reviewed the licensee's inspection, cleaning and performance monitoring records of the drywell cooler heat exchangers which are normally cooled by the service water system. The inspectors reviewed associated system corrective action and preventive maintenance records.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (IP 71111.11Q - 1 Sample)

a. Inspection Scope

The inspectors observed licensed operator simulator training on January 27, 2004, to verify that the licensed operator requalification program adequately evaluated how well operators have mastered training objectives. The inspectors reviewed the critical tasks associated with the simulator exercise, observed the operators' performance during the exercise, and observed the post-exercise critique to assess the licensee's effectiveness in evaluating and correcting any performance deficiencies.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (IP 71111.12Q - 2 Samples)

a. Inspection Scope

Two samples were selected for review by the inspectors. The inspectors reviewed the licensee's implementation of the maintenance rule as described in Oyster Creek procedure, ER-AA-310, "Implementation of the Maintenance Rule." The inspectors verified that the selected systems, structures and/or components (SSCs) were properly classified as (a)(1) or (a)(2) in accordance with 10 CFR 50.65. The inspectors reviewed action requests (ARs), CAPs, (a)(1) corrective action plans and routine preventive maintenance activities. The inspectors also discussed the current system performance, associated issues and concerns, and planned activities to improve performance with the system engineers. In addition, unavailability data was compared with control room log entries to verify accuracy of data and compliance with the (a)(1) goals. AmerGen

trending data was also reviewed. The documents reviewed are listed in the attachment. The two SSCs reviewed during the inspection period were as follows:

- Diesel fire pump
- 24/48V Batteries and Chargers

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation (IP 71111.13 - 5 Samples)

a. Inspection Scope

Five samples of emergent work were selected for review by the inspectors. The inspectors verified that the licensee evaluated the risk associated with the inoperability of the system along with other ongoing maintenance work. The documents associated with the troubleshooting plan, repair, and retest of the system were also reviewed. When appropriate, the inspectors verified compliance with TSs. Risk assessments were reviewed for the following activities:

- 125 VDC "A" ground troubleshooting on January 7, 2004. Troubleshooting work was being performed to find and isolate a ground on the positive side of the 125V "A" DC bus.
- 125 VDC "B" ground troubleshooting on February 3, 2004. The source of the ground was found and isolated to the 'C' EMRV.
- 24 VDC A-2 charger failure on March 9, 2004. At 5:00 a.m., the A-2 charger associated with the 24 VDC "A" bus failed, caused by the failure of a capacitor on the A-2 charger. While troubleshooting and repair options were being considered, the 24 VDC "A" panel remained energized by the A-2 battery.
- Half scram during performance of troubleshooting work on drywell vacuum breaker V-26-7, on February 13, 2004. While licensee technicians were troubleshooting the vacuum breaker limit switch, the EPA-2 breaker tripped and a loss of power to the No. 1 channel of the reactor protection system (RPS) occurred.
- During the week of February 23, 2004, the inspectors reviewed the overall plant risk assessment performed by the licensee to assess its adequacy for the work scheduled. The schedule for the week included scheduled preventive maintenance on the Standby Gas Treatment System No. 1, and emergent work related to equipment performance issues identified during the previous week. These work efforts, which were implemented by the Fix-it Now Team, involved the replacement of a differential pressure switch, DPIS-RV30B, on Core Spray System No. 2, and replacement of a defective main control board indicating lamp

socket for Containment Spray System No. 21. When these activities were being implemented, the overall plant on-line maintenance risk status changed from Green to Yellow. However, the inspectors noted that AmerGen ensured that unavailability time was limited and that appropriate compensatory measures were implemented to manage plant risk.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutions (IP 71111.14 - 1 Sample)

a. Inspection Scope

The inspector observed RPS No. 1 restoration on February 13, 2004, per procedure, 2000-OPS-3024.10e, "Electrical Distribution: Reactor Protection System - Diagnostic and Restoration Actions", following a half-scrum due to the EPA-2 breaker opening during performance of troubleshooting work on drywell vacuum breaker, V-26-7, that caused a loss of power to RPS No. 1.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (IP 71111.15 - 5 Samples)

a. Inspection Scope

The inspectors reviewed five of the operability determinations the licensee had generated that warranted selection on the basis of risk insights. The inspectors assessed the accuracy of the evaluations, the use and control of compensatory measures if needed, and compliance with the TS. The inspector's review included a verification that the operability determinations were made per procedure, LS-AA-105, "Operability Determinations." The technical adequacy of the determinations was reviewed and compared to the TS, UFSAR, and associated design-basis documents. The selected samples are listed below:

- Core Spray System 2 header pressure alarm switch, DPIS-RV30B, failed its periodic surveillance test on February 16, 2004, as described in CAP O2004-0385 and action request, AR2082869.
- Emergency Service Water System - ESW Pump 52 B failure to start during quarterly IST surveillance as described in CAP O2004-0110.
- 125 VDC "B" ground troubleshooting on February 3, 2004. The source of the ground was found and isolated to the 'C' EMRV. Corrective actions were taken per CAP O2004-0311.

- 24 VDC A-2 charger failure on March 9, 2004. At 5:00 a.m., the A-2 charger associated with the 24 VDC "A" bus failed. The failure was found to be caused by the failure of a capacitor on the A-2 charger. While troubleshooting and repair options were being considered, the 24 VDC "A" panel remained energized by the A-2 battery.
- Half scram during performance of troubleshooting work on drywell vacuum breaker V-26-7 on February 13, 2004. While licensee technicians were troubleshooting the vacuum breaker V-26-7 limit switch, the EPA-2 breaker tripped causing a loss of power to the No. 1 RPS and a half scram.

b. Findings

Introduction

A Green NCV was identified for failure to adequately maintain the ESW Pump Trouble alarm response procedure as required by Technical Specification (TS) 6.8.1, due to an erroneous operability evaluation compensatory action.

Description

At 10:45 p.m. on January 15, 2004, the 52B ESW pump failed to start during a quarterly ESW pump operability and inservice test surveillance. An operator stationed at the pump's intake reported that the 52B ESW pump shaft was rotating slowly following the attempt to start the pump. The turbine building operator reported that there was an instantaneous over current trip flag on the pump breaker. The licensee subsequently declared the 52B pump inoperable and entered TS 3.4.C.3

Subsequent review revealed that the 52B pump breaker did experience an over current trip above the instantaneous current set point for the "C" phase. The 52B pump motor and associated Anaconda feeder cabling were tested and determined to be working properly. At 9:00 a.m. on January 16, 2004, the pump was declared operable following a successful restart and acceptable surveillance completion.

Operability Evaluation, OC-2004-OE-0001, evaluated the event and assigned compensatory actions to support continued operability of the ESW system at temperatures less than 15 °F. The 52B ESW pump failure to start was believed to be cold weather related. Additionally, this condition was believed to apply to all the ESW pumps at temperatures of less than 15 °F. The temperature of 15 °F was based partly on the fact that the 52B ESW pump did start successfully earlier in the day when ambient temperature was approximately 14 °F. AmerGen determined the 52B ESW pump start failure was the consequence of a combination of factors, however, compensatory actions implemented to address the non-conforming ESW pumps were primarily based upon cold ambient conditions. A larger than usual inrush current was believed to be the result of the cold ambient temperature at the pump motor (approximately 5 °F) concurrent with the maximum peak inrush current allowed from design. The cold temperature at the ESW pump motor would have caused the effective

resistance to drop resulting in higher inrush current during the pump start. Compensatory actions were based, in part, on the premise that if an ESW pump failed to start at ambient temperatures less than 15 °F, then a second start attempt within 15 minutes, from the control room, would be successful due to the initial inrush current from the first failed attempt increasing the core temperature of the ESW pump's motor windings, raising the motor's effective resistance sufficient to permit a successful subsequent attempt. Accordingly, the second attempt was bounded within 15 minutes to prevent the motor windings from cooling back to ambient temperature. However, the operability determination specifically stated that no operator action outside the control room (such as verifying the over current relay target on the 4KV breaker) was needed prior to the second start attempt. Additionally, the operability determination allowed this compensatory action to be performed with reassurance that if the ESW trouble alarm was due to faulted equipment, then the breaker would trip a second time and any additional damage would be limited to equipment that is already inoperable and beyond minor repair. This compensatory action failed to consider the protective relay strategies designed to not only protect the electrical component, but also the power supply to the component.

The ESW Pump Trouble alarm response procedure (2000-RAP-3024.01) was subsequently updated implementing the compensatory action directed by the operability determination. The change in the alarm response procedure would have unnecessarily challenged safety-related equipment if an ESW pump start failed during normal or emergency conditions. The ESW system is comprised of four 100 % capacity pumps, two pumps per train. The ESW pumps are manually loaded on the safety buses when required. Without the appropriate investigation to prevent further equipment degradation, the operators would have unnecessarily relied upon automatic breaker protection to protect safety-related equipment. The operator manual action to reclose the supply breaker with an indication of a fault without investigation could have led to a more significant condition.



ESW Pump Trouble alarm potential causes are:

1. Emergency Service Water Pump 52 motor overload
2. Bearing low oil level (upper or lower)
3. Bearing high temperature (upper or lower)
4. Breaker permissive switch in the open position

### Analysis

AmerGen did not adequately maintain conservative manual actions in alarm response procedure 2000-RAP-3024.01. This is a performance deficiency because TS 6.8.1 and Regulatory Guide 1.33 require this procedure be maintained. This was within AmerGen's ability to foresee and prevent. Traditional enforcement does not apply for this finding because it did not have any actual safety consequences or the potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements.

This finding is greater than minor since it was associated with attributes and affected the objective of both the Mitigating System and Barrier Integrity cornerstones. This finding was associated with the equipment performance and procedural quality attributes for the Mitigating Systems cornerstone. This finding was associated with the design control attribute of maintaining the functionality of the containment for the Barrier Integrity cornerstone. This finding affected the Mitigating System's objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. This finding affected the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers to protect the public from radionuclide releases caused by accident or events are maintained.

This finding was determined to be of very low safety significance (Green) using Phase 1 and Phase 2 of the SDP for Reactor Inspection Findings for At-Power Situations. A Phase 2 was required since this performance deficiency degraded both the mitigation systems and containment barrier areas of the SDP Phase 1 Screening Worksheet. Additionally, this finding was determined to be of very low safety significance because all four ESW pumps remained operable and all mitigation capabilities described on the SDP Phase 2 worksheet for the applicable core damage sequences were maintained. Exelon entered this issue into their corrective action program as CAP O2004-0110.

### Enforcement

Technical Specification 6.8.1 requires, in part, written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33 as referenced in the Oyster Creek Operational Quality Assurance Program. Regulatory Guide 1.33 includes procedures for abnormal, off-normal, or alarm conditions (i.e. ESW pump trouble alarm). Contrary to these requirements, on January 16 2004, AmerGen removed the manual corrective action from the ESW Pump Trouble Alarm procedure (2000-RAP-3024.01) that would have directed operators to remove potentially faulted equipment from service until an

Enclosure

appropriate investigation was completed. Instead operators would have been directed to place potentially faulted equipment back onto a safety-related bus, unnecessarily challenging automatic protective features from protecting safety-related equipment and could have caused additional pump damage, possibly rendering a degraded pump inoperable. This violation was entered into the AmerGen corrective action program as CAP O2004-0110. This violation of TS 6.8.1 is being treated as a non-cited violation consistent with Section VI.a.1 of the NRC Enforcement Policy. **(NCV 50-219/04-02-01)**

1R16 Operator Work-Arounds (IP 71111.16 - 1 Sample)

a. Inspection Scope

The inspectors reviewed the operator work-around database and a sample of the associated corrective action items to identify conditions that could adversely affect the operability of mitigating systems or impact human reliability in responding to initiating events. The inspector reviewed the licensee's implementation of procedure, OP-AA-102-103, "Operator Work-Around Program." The inspector also reviewed the status of the corrective actions described in CAP O2003-1622 which identified specific problem resolutions relating to the operator work-around program.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (IP 71111.17 - 1 Sample)

a. Inspection Scope

Annual. The inspectors reviewed one permanent plant modification, Engineering Change Request (ECR) Number OC 04-00165, Replacement of the Core Spray System Header Pressure Alarm Switch. This ECR provides for an Item Equivalency Type modification, which was required due to the replacement of the original plant installed device with a new unit. The replacement unit differs from the original unit in the details of the seismic mounting brackets. The ECR provided a determination of the adequacy of the seismic qualification levels for the instrument and reviewed the seismic qualification of the replacement switch. The inspectors verified that the replacement unit was seismically qualified for the application, and that the installed device used the required vendor's supplied brackets and installation instructions. The inspectors verified that the modification has maintained the system availability, reliability, and functional capability of the core spray system.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (IP 71111.19 - 8 Samples)

a. Inspection Scope

Eight samples were selected for review by the inspectors. The inspector reviewed and observed portions of post-maintenance testing associated with the below-listed seven maintenance activities because of their function as mitigating systems and their potential role in increasing plant transient frequency. The inspectors reviewed the post-maintenance test documents to verify that they were in accordance with the licensee's procedures and that the equipment was restored to an operable state. The following post-maintenance test activities were selected for review:

- Standby Gas Treatment System No. 1- On February 23-24, 2004, Standby Gas Treatment System 1 fan EF-1-8 was inspected and lubricated per work orders R203150801, R203306001, R203306003, and R203306004. The licensee performed post-maintenance testing on February 24, 2003, that included using applicable portions of procedure 651.4.001, "Standby Gas Treatment System Test" to demonstrate the proper operation of the fan motor following the preventive maintenance.
- Core Spray System Header Pressure Alarm Switch, DPIS-RV30B - On February 17 and February 24, 2004, post-maintenance testing was conducted as part of repair and replacement of the instrument. These activities were controlled under work order C2007237 and used procedure 610.3.004, "Core Spray Header DP Test and Calibration," to accomplish the required post-maintenance testing.
- Containment Spray System No. 21- On February 18, 2004, the control room panel open indicator for the Containment Spray pump 51B motor breaker failed. Troubleshooting and repair activities were conducted on February 23 in accordance with work order M2082965. Control power fuses were removed to facilitate the repairs. Following the control fuse being replaced, and the circuit re-energized, the attempt to start the pump failed. This was caused by the clips on the fuse holder being sprung open when the fuse was removed and a temporary device was installed. Subsequent tightening of the fuse holder clips provide for a successful start of the pump to ensure its operability. Also, because the indicator socket replacement was performed in an area that was directly adjacent to control wiring for the Emergency Service Water pump 52B, this pump was also started as part of the post-maintenance testing.
- 125 VDC "B" ground troubleshooting on February 3, 2004. The source of the ground was found and isolated to the 'C' EMRV. Corrective actions were taken per CAP O2004-0311.

- Valve V-26-7A, following relay and limit switch replacement per AR A2082612, CAP O2004-0356.
- 24 VDC A-2 charger failure on March 9, 2004. At 5:00 a.m., the A-2 charger associated with the 24 VDC "A" bus failed. The failure was found to be caused by the failure of a capacitor on the A-2 charger. The A-2 charger was restored to service following replacement of the capacitor as described in CAPs O2004-0561 and O2004-0555, and work orders C02002523 and A2084339.
- EPA-2 circuit card replacement following a breaker trip and a loss of power to the "A" RPS channel occurred.
- EDG Battery weekly surveillance - surveillance procedure 636.2.005, "Diesel Generator Weekly Battery Surveillance," Rev. 20. Following EDG battery failure to meet acceptance criteria as described in CAPs O2004-0467 and O2004-0496.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (IP 71111.22 - 7 Samples)

a. Inspection Scope

The inspectors observed and reviewed seven Surveillance Tests (ST) concentrating on verification of the adequacy of the test as required by Technical Specifications to demonstrate operability of the required system or component safety function. The inspector observed pre-test briefings and portions of the ST performance for procedure adherence, and verified that the resulting data associated with the ST met the requirements of the plant TSs and the UFSAR. The inspector also reviewed the results of past tests for the selected STs to verify that degraded or non-conforming conditions were identified and corrected, if needed. The following seven STs were observed:

- 610.3.004, "Core Spray Header DP Test and Calibration," Rev. 25, conducted February 16, 2004. This surveillance tested the Core Spray System 1 and 2 header pressure alarm switches DPIS-RV30A and B. While the "A" switch met the procedure's acceptance criteria, the "B" switch failed the surveillance test. This condition resulted in the plant being in a 7-day limiting condition of operation for the Core Spray System 2 being declared out of service until repair activities could be performed. On February 17, 2004, repair of the "B" switch was completed, and the surveillance procedure was successfully performed.
- 636.2.005, "Diesel Generator Weekly Battery Surveillance," Rev. 20, conducted on February 25, 2004.
- 636.4.013, "Diesel Generator Weekly Load Test," Rev. 13, conducted on March 1, 2004.

- 610.4.002, "Containment Spray Pump Operability Test", Rev. 43, conducted on February 16, 2004.
- 609.3.008, "Isolation condenser shell water level calibration", Rev. 22, conducted on January 6, 2004.
- 609.4.001, "Isolation condenser valve operability and inservice test", Rev. 50, conducted on January 7, 2004.
- 676.4.001, "Drywell equipment and floor drain sump isolation valve operability and IST", Rev. 13 conducted on February 4, 2004, and as documented in condition report A2048066.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (IP 71111.23 - 1 Sample)

a. Inspection Scope

One sample was selected for review by the inspectors. The inspector reviewed the installation of the 'B' 125 VDC ground detection system. The temporary modification was installed to monitor the ground leakage current of the 'B' 125 VDC battery due to a ground on the 'C' EMRV control circuit. (TTE-2004-021).

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (IP 7111406 -1 Sample)

a. Inspection Scope

The inspectors observed a simulator-based training evolution on January 27, 2004, to verify licensed operators adequately performed event classification and notifications; operators were not tested on their ability to make protective action recommendations (PARs) since scenario events did not warrant protective action recommendations be made. The inspectors reviewed the training scenario to identify the classification and notification activities and for expected licensee response. The inspectors observed the training evolution as well as the post-training critique to determine whether the licensee was properly identifying performance deficiencies related to classification and notifications.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (IP 71114.04 - 1 Sample)

a. Inspection Scope

A regional in-office review was conducted of licensee-submitted revisions to the emergency plan, implementing procedures and EALs which were received by the NRC during the period of January - March 2004. A thorough review was conducted of plan aspects related to the risk significant planning standards (RSPS), such as classifications, notifications and protective action recommendations. A cursory review was conducted for non-RSPS portions. These changes were reviewed against 10 CFR 50.47(b) and the requirements of Appendix E and they are subject to future inspections to ensure that the combination of these changes continue to meet NRC regulations. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 4, and the applicable requirements in 10 CFR 50.54(q) were used as reference criteria.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (IP 71121.01 - 2 Samples)

a. Inspection Scope

The inspector reviewed selected activities, and associated documentation, in the below listed areas. The evaluation of AmerGen's performance in these areas was against criteria contained in 10 CFR 20, applicable Technical Specifications, and applicable station procedures.

### Inspection Planning

The inspector reviewed Occupational Exposure Cornerstone performance indicators (PIs) for follow-up, as appropriate.

### Plant Walkdowns and RWP Reviews

The inspector made tours of selected radiologically controlled areas (RCAs) at the station and made independent radiation surveys of ambient conditions to verify that radiological controls and postings were appropriate for existing conditions.

The inspector reviewed and discussed external and internal dose assessments for 2003 to identify unplanned external and internal occupational doses or potential performance indicator occurrences.

### High Risk Significant, High Dose Rate HRA and VHRA Controls

The inspector reviewed high and very high radiation area posting and controls, as appropriate, discussed the status of applicable procedures, and physically challenged the locked access points to three locked high radiation area access points. The inspector evaluated administrative controls for access to high radiation areas.

### Problem Identification and Resolution

The inspector selectively reviewed corrective action reports in the area of access controls to determine if access control issues were entered into the corrective action program for resolution. The inspector evaluated the corrective action database since the previous inspection to identify repetitive deficiencies or significant individual deficiencies. The review also included evaluation of data to determine if any problems involved undetected performance indicator (PI) occurrences. (Section 4OA2.)

The inspector selectively reviewed personnel whole body counting data for 2003 associated with personnel contaminations and potential intakes of radioactive materials. The inspector also reviewed personnel contamination data.

## b. Findings

### Introduction

On March 18, 2004, the inspector determined that secondary keys for locked High Radiation Areas were not maintained under the administrative control of operations and/or radiation protection supervision on duty to prevent unauthorized entry. The keys were accessible to unauthorized personnel. This is a violation of Technical Specification 6.13.2.

### Description

Enclosure

On March 18, 2004, the inspector identified that AmerGen maintained a secondary set of locked High Radiation Area access keys in a locked key box in the Radiation Protection professional area. The normally issued primary set of locked High Radiation Area keys were kept at the main Radiological Controlled Area access point in locked boxes. The secondary keys provided replacements as necessary. The inspector determined that the secondary keys were not maintained under the administrative control of operations and/or radiation protection supervision on duty to prevent unauthorized entry. The keys were accessible by unauthorized personnel. Specifically, the key that would provide access to the key to open the lock box in the Radiation Protection professional area, where the secondary locked High Radiation Area keys were kept, was left in the door of a key box in the dosimetry issue area. The key could be used to unlock the box in a supervisor's office to access a key to the secondary locked High Radiation area keys. The key was not being directly controlled. The inspector also determined that the secondary locked High Radiation Area keys were not inventoried. The failure to implement administrative control for keys that provide access to areas greater than 1000 millirem/hr (at 30 centimeters), but less than 500 rads in one hour (at 1 meter), is a violation of Technical Specification 6.13.2, which requires that keys to such areas shall be under the administrative control of operations and/or radiation protection supervision on duty to prevent unauthorized entry into such areas.

#### Analysis

Not maintaining administrative controls for locked High Radiation Area keys is a performance deficiency in that a requirement was not met by AmerGen that was reasonably within its ability to foresee and correct, and that should have been prevented.

The finding is not subject to traditional enforcement in that it did not have any actual safety consequence. The finding did not have the potential for impacting the NRC's ability to perform its regulatory function, and there were no willful aspects. The finding was associated with one of the Radiation Safety Cornerstone attributes (procedures and exposure control) and did affect the objective of the Cornerstone. Specifically, AmerGen did not implement Technical Specification required controls to preclude unauthorized entry into locked High Radiation Areas. The finding was evaluated against criteria specified in NRC Manual Chapter 0609, Appendix C, and determined to be of very low safety significance (Green) in that: 1) it did not involve an ALARA finding, 2) it did not involve an overexposure, 3) there was no substantial potential of an overexposure and, 4) the ability to assess dose was not compromised.



## Enforcement

Technical Specification 6.13.2 requires that keys to areas with radiation dose rates in excess of 1000 millirem/hr (at 30 centimeters), but less than 500 rads in one hour (at 1 meter), be maintained under the administrative control of operations and/or radiation protection supervision on duty to prevent unauthorized entry. Contrary to this requirement, AmerGen did not maintain administrative control of a key that would provide access to the secondary High Radiation Area keys at the Radiation Protection professional area and keys were accessible to unauthorized personnel. This is a violation of Technical Specification 6.13.2. Because this finding was of very low safety significance, and AmerGen entered this finding into its corrective action program, this violation is being treated as a Non-Cited Violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. NUREG-1600. **(NCV 50-219/04-02-02)**

The Radiation Protection Manager took control of the keys to the secondary key lock box and a corrective action document was written. An inventory did not identify missing keys. There was no indication the keys were improperly used. (CAP O2004-0752)

### 2OS2 ALARA Planning and Controls (IP 71121.02 - 2 Samples)

#### a. Inspection Scope

The inspector conducted the following activities to determine if AmerGen was implementing operational, engineering, and administrative controls to maintain personnel occupational radiation exposure as low as is reasonably achievable (ALARA). The review was against the criteria contained in 10 CFR 20, applicable industry standards, and station procedures.

#### b. Inspection Planning

The inspector reviewed pertinent information regarding plant collective exposure history, current exposure trends, and ongoing or planned activities in order to assess current performance and exposure challenges. The inspector determined the plant's current 3-year rolling average collective exposure and the site specific trends in collective exposures (using NUREG-0713).

The inspector reviewed previous outage work activity exposure estimates and previous work activity history data. The inspector selected fall 2002 work activities with the highest personnel collective exposures.

### Verification of Dose Estimates and Exposure Tracking

The inspector compared the results achieved (dose and dose rate reductions, person-rem expended) with the estimated occupational doses established in the initial ALARA plans for selected work activities conducted during the fall 2002 outage. In particular, the inspector reviewed those work activities associated with reactor cavity work including

reactor vessel reassembly. The inspector reviewed station ALARA committee meeting minutes relative to this work.

#### Source-Term Reduction and Control

The inspector selectively reviewed AmerGen's evaluations in the area of source term controls. In particular, the inspector reviewed AmerGen's Co-60 source term control efforts.

#### Problem Identification and Resolutions

The inspector reviewed self-assessments, audits, and special reports related to the ALARA program to determine if identified problems were entered into the corrective action program for resolution. The inspector reviewed dose significant post-job (work activity) reviews and post-outage ALARA report critiques of exposure performance to determine if identified problems were properly characterized, prioritized, and resolved in an expeditious manner. (Section 4OA2).

### b. Findings

#### Introduction

A self-revealing finding having very low safety significance associated with occupational radiation exposure reduction was identified. During the Fall 2002 refueling outage, conduct of reactor vessel reassembly activities resulted in 12.4 person-rem of collective radiation exposure versus an exposure estimate of 6.5 rem. Thus this work activity was 90% above AmerGen's pre-outage estimate.

#### Description

During the fall 2002 refueling outage, AmerGen did not effectively manage its radioactive source term and work activities to prevent unnecessary occupational radiation exposure to workers involved with reactor vessel reassembly work activities (RWP No. 020407). Specifically, AmerGen ran reactor coolant re-circulation pumps prior to complete drain down of the water filled reactor cavity and reinstallation of the reactor vessel head, resulting in the generation of a crud burst and introduction of significant quantities of crud (silt) into the reactor cavity water. According to AmerGen's post-job ALARA review (02-057), the crud was dispersed throughout reactor cavity water, causing a significant loss of underwater visibility and resulted in an additional 5.9 person-rem of occupational exposure to personnel involved in reactor vessel reassembly activities, which included cleaning up the crud and installing the vessel head. The ALARA reviews indicated the re-circulation pumps were started without the cleanup system being in service. In addition, portions of the crud (a silt like material) were pumped into the reactor equipment pit, a situation expected to result in additional radiation exposure during its cleanup.

### Analysis

AmerGen did not effectively manage its radioactive source term and work activities to prevent unnecessary occupational radiation exposure to workers involved with reactor vessel reassembly work (RWP No. 020407). Not implementing, to the extent practical, controls to achieve occupational doses that are ALARA, and that resulted in unplanned unintended occupational collective dose, is a performance deficiency associated with basic radiological controls that was reasonably within AmerGen's ability to foresee and correct, and which should have been prevented.

The finding is more than minor in that the screening criteria (work activity exposure greater than five person-rem and greater than 50% above estimated) specified in NRC Manual Chapter 0612, Appendix E, were exceeded. Specifically, AmerGen did not effectively schedule reactor coolant re-circulation pump run activities to preclude introduction of crud (estimated at 30 curies of radioactivity) into the reactor cavity water during drain down of the cavity to reinstall the reactor vessel head and AmerGen did not utilize fluid clean-up methods to decontaminate the water prior to continuing work resulting in elevated radiation dose rates. The introduction of significant quantities of radioactive crud (silt) into cavity areas, cleaning efforts to remove the crud, and residual contamination, resulted in an additional 5.9 person-rem of occupational exposure for this work activity. This finding was evaluated against criteria specified in NRC Manual Chapter 0609, Appendix C, and determined to be of very low safety significance (Green). Specifically, although AmerGen's three-year rolling average (2000-2002) of 309 person-rem, is above the Appendix C criteria of 240 person-rem for Boiling Water Reactors (BWRs), the additional dose did not exceed 25 person-rem and there was only one occurrence.

### Enforcement

The ALARA rule contained in 10 CFR 20.1101(b) Statements of Consideration indicates that compliance with the ALARA requirement will be judged on whether the licensee has incorporated measures to track and, if necessary, to reduce exposures and not whether exposures and doses represent an absolute minimum or whether the licensee has used all possible methods to reduce exposures. Further, and consistent with NRC Manual Chapter 0612, Appendix B, since AmerGen does have a defined program to track and reduce occupational exposure, and this finding is considered an isolated example and not an ALARA program breakdown, it is not considered a violation of 10 CFR 20.1101(b). **(FIN 50-219/04-02-03)**

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (IP 71121.03 - 1 Sample)

a. Inspection Scope

The inspector reviewed selected activities, and associated documentation, in the below listed areas. The evaluation of AmerGen's performance in these areas was against criteria contained in 10 CFR 20, applicable Technical Specifications, and applicable station procedures.

Self-Contained Breathing Apparatus

The inspector reviewed the functional testing of self-contained breathing apparatus (SCBA) to ensure equipment was being maintained in an operable condition. The components of two selected SCBA units, ready for use and stored in the Control Room (Kits BU-11 and MRF-3) were checked against approved component lists published by the SCBA manufacturer and the National Institute for Occupational Safety and Health (NIOSH). The inspector reviewed periodic testing of the two SCBA units' components (i.e., hydro testing of tank, maintenance and testing of regulators, low pressure alarms) and reviewed conformance of the SCBAs with published certification lists.

Problem Identification and Resolution

The inspector reviewed audits and self-assessments in the area of protective equipment to determine if identified issues in this area were entered into the corrective action program. The inspector reviewed condition reports and action requests to evaluate AmerGen's threshold for identifying, evaluating, and resolving problems in this area. (See Section 4OA2)

b. Findings

Introduction

On March 18, 2004, the inspector identified that AmerGen was not functionally testing self-contained breathing apparatus (SCBAs) in accordance with the manufacturer's recommendations. This is a violation of 10 CFR50.47(b)(10) associated with failure to maintain protective measures for emergency workers.

Description

On March 18, 2004, the inspector reviewed functional testing of two self-contained breathing apparatus (BU-11, MF-3) maintained in the control room for emergency response purposes relative to criteria contained in AmerGen procedure RP-OC-825, Rev. 0, and the manufacturer's functional testing criteria. The inspector identified that the licensee did not conduct complete functional testing of the vital components of its emergency respiratory protection equipment in accordance with the manufacturer's recommendations. Further, the procedure did not describe the specified testing.

Enclosure

Specifically, the licensee did not conduct the cylinder low pressure alarm duration test specified in the functional testing criteria of the manufacturer's recommendations to ensure workers would be continuously alerted that their breathing air supply was diminishing. AmerGen did verify that the low pressure alarm was actuated at about 1175 psig, but did not verify that the alarm remained actuated at a low pressure of 200 psig. The manufacturer's functional test manual for this step specifically states that if the system does not function properly, the apparatus must be removed from service. This finding applied to all onsite SCBA's tested under AmerGen's program. This is a violation of 10 CFR 50.47(b)(10).

### Analysis

The failure to conduct complete functional testing of vital components of emergency use self-contained breathing apparatus, in accordance with the manufacturer's recommendations, is a performance deficiency. The issue is more than minor in that it is associated with not meeting an Emergency Planning regulatory requirement involving failure to maintain onsite respiratory protective equipment. Using NRC Manual Chapter 0609, Appendix B, this is an example of a 10 CFR50.47(b)(10) finding of very low safety significance (Green). Specifically, the licensee did not conduct a complete maintenance and quality assurance program for its respiratory protection equipment as required by 10 CFR20.1703. This finding was reasonably within the licensee's ability to foresee and correct and should have been prevented. The finding is not subject to traditional enforcement in that there was no actual safety consequence, the finding did not have the potential to impact the NRC's ability to perform its function, and there were no willful aspects of this issue. In addition, although the finding did involve a planning standard, the standard was not degraded in that subsequent testing of the devices did not identify non-functional units.

### Enforcement

10 CFR 50.47(b)(10) requires that the licensee provide for the protection of emergency workers through a range of protective actions. As part of these measures, AmerGen has provided self-contained breathing apparatus for emergency workers. Notwithstanding, the complete functional test and quality assurance program was not implemented for these emergency devices in accordance with the manufacturer's recommendations and regulations. This is a violation of 10 CFR 50.47(b)(10). Because this finding was of very low safety significance and AmerGen entered this finding into its corrective action program, this violation is being treated as a Non-Cited Violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. NUREG-1600. **(NCV 50-219/04-02-04)**

AmerGen subsequently completed 100% testing of all devices in use. The functional testing of the devices did not identify any nonfunctional units. AmerGen placed this issue into its corrective action program (CAP O2004-0683).

#### 4. OTHER ACTIVITIES (OA)

##### 4OA1 Performance Indicator (PI) Verification (IP 71151)

###### a. Inspection Scope

- Unplanned Scrams per 7,000 Critical Hours
- Unplanned Power Changes per 7,000 Critical Hours

###### b. Findings

No findings of significance were identified.

##### 4OA2 Problem Identification and Resolution (IP 71152)

As required by Inspection Procedure 71152, "Identification and Resolution of Problems", and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. This review was accomplished by attending daily screening meetings and accessing the licensee's computerized database.

Occupational Radiation Safety (71121.01, 71121.02, 71121.03)

###### a. Inspection Scope

The inspector reviewed assignment and condition reports (ARs/CRs) to determine if identified problems were entered into the corrective action program for resolution and to evaluate AmerGen's threshold for entering issues into the program. The review included a check of possible repetitive issues, such as radiation worker or radiation protection technician errors. (CAPs O2003-0010, O2003-0204, O2003-2517, O2003-2515, O2003-2573, O2003-2613, O2004-0042, O2004-0300, and O2004-0318). Also reviewed were recent audits and assessments, as appropriate, including monthly CAP reviews.

The review was against the criteria contained in 10 CFR 20, Technical Specifications, and station procedures.

###### b. Findings

No findings of significance were identified.

4OA5 Other Activities

a. Inspection Scope (2515/154)

Temporary Instruction 2515/154, "Spent Fuel Material Control and Accounting at Nuclear Power Plants". Phase I and Phase II of the inspection was completed during this inspection period. Appropriate documentation was provided to NRC management as required.

b. Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

Exit Meeting Summary

On April 1, 2004, the radiation safety inspection findings were presented to Mr. C. N. Swenson and other members of licensee management by telephone. On April 26, 2004, the resident inspectors presented other inspection results to Mr. C. N. Swenson and other members of licensee management. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

**SUPPLEMENTAL INFORMATION****KEY POINTS OF CONTACT**Licensee

P. Bloss, BOP Systems Manager  
 M. Godknecht, Maintenance Rule Coordinator  
 E. Harkness, Vice President, Projects  
 S. Hutchins, Electrical Systems Manager  
 J. Magee, Director, Engineering  
 M. Massaro, Plant Manager  
 D. McMillan, Director, Training  
 L. Newton, Manager, Chemistry & Rad Protection  
 J. O'Rourke, Assistant Engineering Director  
 D. Slear, Manager, Regulatory Assurance  
 B. Stewart, Senior Licensing Engineer  
 C. Swenson, Vice President  
 C. Wilson, Director, Operations

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**Opened and Closed

05000219/2004002-01	NCV	AmerGen did not appropriately maintain alarm response procedure, 2000-RAP-3024.01, for the ESW pump per TS 6.8.1. (Section 1R15)
05000219/2004002-02	NCV	AmerGen did not implement controls for High Radiation Area keys in accordance with Technical Specification 6.13. (Section 2OS1)
05000219/2004002-04	NCV	AmerGen did not maintain protective measures for emergency workers in accordance with 10 CFR 50.47(b)(10). (Section 2OS3)

Opened

05000219/2004002-03	FIN	AmerGen did not implement source term control to minimize occupational exposures during reactor vessel re-assembly work. (Section 2OS2)
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**LIST OF DOCUMENTS REVIEWED**  
(not previously referenced)

Section 2OS1:

- Procedure RP-AA-460, Rev. 2, Controls for High and Very High Radiation Areas
- Procedure RP-OC-460-1002, Rev. 0, Radiation Protection Controlled Keys
- Procedure RP-OC-460-1001, Rev. 0, Additional High Radiation Exposure Controls

Section 2OS2:

- Procedure RP-OC-825, Rev. 0, Inspection and Maintenance of Respiratory Protection Equipment

Section 2OS3:

- Procedure RP-OC-4411, Rev. 0, Issue and Control of Respiratory Protective Equipment

**LIST OF ACRONYMS**

ADAMS	Agencywide Documents Access and Management System
ALARA	As Low As Is Reasonably Achievable
AmerGen	AmerGen Energy Company, LLC
AR	Action Request
CAP	Corrective Action Process
CFR	Code of Federal Regulations
EAL	Emergency Action Level
ECR	Engineering Change Request
EDG	Emergency Diesel Generator
EMRV	Electromatic Relief Valves
ESW	Emergency Service Water
HRA	High Radiation Area
IMC	Inspection Manual Chapter
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
OS	Occupational Safety
PARs	Protective Action Recommendations
PI	Performance Indicator
PI&R	Problem Identification & Resolution
PSIG	Pounds per Square Inch Gauge
RCA	Radiologically Controlled Area
RPS	Reactor protection System
RSPS	Risk Significant Planning Standards
RWP	Radiation Work Permit
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process

SSC	Systems, Structures and/or Components
ST	Surveillance Test
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
VHRA	Very High Radiation Area