Three Mile Island 1
1Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Deficient Abnormal Operating Procedures for Loss of Vital 120 Volt Electrical Bus, Loss of 4160 Volt Bus, and Loss of NSCCW
The inspectors identified a non-cited violation (NCV) of Technical Specification (TS) 6.8.1, for failure to adequately establish and implement procedures required by Regulatory Guide 1.33, Section 6, “Procedures for Combating Emergencies and Other Significant Events.” Specifically, no procedure existed to combat an emergency caused by a loss of electrical power to a vital bus. Additionally, the procedures to combat emergencies caused by a loss of 4160V AC and a loss of Nuclear Services Closed Cooling Water (NSCCW) were inadequate in that pump trip criteria and detailed guidance to the control room operators were not provided. AmerGen has acknowledged that these problems exist and provided the team an abnormal operating procedure (AOP) implementation schedule showing that new AOPs will be generated to correct these deficiencies in 2006.

This finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and the associated cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. However, this finding was determined to have very low safety significance (Green) using Phase 1 of the NRC significance determination process described in NRC Inspection Manual Chapter (IMC) 0609, Appendix A, since the finding does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available.

The finding has a cross-cutting aspect related to the area of Problem Identification and Resolution in that AmerGen personnel did not identify that some AOPs were inadequate.
Inspection Report# : 2006007*(pdf)*

Significance: G Dec 16, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Hot Work Procedural Requirements
The team identified a non-cited violation (NCV) with multi-examples for failure to document fire prevention activities during hot work as required by the administrative control procedures, and for fire watch personnel not being adequately qualified. Specifically: 1) there were numerous cases where hot workers, fire watch personnel, and associated supervisors failed to document, as required, the hot work, fire watching and inspection activities respectively in accordance with OP-MA-201-004, Fire Prevention for Hot Work, and AP-1038, and Administrative Control - Fire Protection Program; and, 2) there were three cases where the fire watchers were not adequately trained as required by the procedures. The licensee generated three condition reports and entered this issue into their corrective action program.

The finding is more than minor because it is associated with the Initiating Events Cornerstone attribute of protection against external factors and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Under Manual Chapter 0609, Significance Determination Process, Appendix F, Fire Protection, the finding was found to represent a low degradation and as such was of very low safety significance in accordance with the Fire Protection Significance Determination Process. The cause of the finding is related to the cross-cutting element of human performance (attention to detail) because hot work personnel repetitively failed to follow procedural instructions in the documentation of their hot work activities.
Inspection Report# : 2005012*(pdf)*

Mitigating Systems

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Deficient Work Instructions and Maintenance Implementation on Control Building Chiller
The inspectors identified a non-cited violation (NCV) of Technical Specification 6.8.1 in that station personnel did not properly establish and implement work instructions for replacement of the ‘B’ control building chiller (AH-C-4B) expansion joints. Specifically, three control building chiller expansion joints were incorrectly installed. This performance deficiency reduced the reliability and availability of area cooling

for the control room and vital alternating current (AC) and direct current (DC) electrical power supplies for numerous safety-related mitigating systems. The licensee entered this issue into their corrective action program as issue report 457180 and initiated a root cause evaluation.

This violation is more than minor because it affected the reliability and availability of control building cooling which supports control room operation of mitigating equipment and maintains emergency AC and DC room temperatures within required values to support continued availability of power to mitigating equipment including the building spray, high pressure injection, decay heat removal, and emergency feedwater systems. Additionally, if left uncorrected the issue would become a more significant safety concern, because the work instructions and work practices for replacing expansion joints are generic and could degrade reliability of all plant systems which include expansion joints. This finding is of very low significance since the condition did not involve an actual failure of an expansion joint or loss of a system safety function. A contributing cause of this finding is a cross-cutting issue in the area of human performance. Work instructions were not sufficiently complete and accurate to perform the task, the work activity was not properly coordinated to address changes in work scope, work practices demonstrated a lack of knowledge of expansion joint installation, and workers proceeded in the face of uncertainty without involving work planners.
Inspection Report# : 2006003*(pdf)*

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Inservice Testing Reference Values Not Reestablished as Required by ASME Code Following Maintenance to Decay Heat, NSCCW, and Emergency Feedwater Pumps
The team identified an NCV of 10 CFR 50.55a.(f)(4)(ii) "Codes and Standards," which requires, in part, that testing of safety-related pumps meet the requirements of the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code requirements following maintenance on the "A" Decay Heat Removal (DH) pump. Specifically, AmerGen did not establish new vibration reference values or reconfirm the previous values following maintenance that can affect the reference values. This finding has been entered into the licensee's corrective action program as IRs 467551, 467056, 472106 and 471745. The planned corrective actions include an evaluation of the "A" DH pump reference values and a review of the methodology and process used to perform reference value evaluations.

This finding is more than minor because it is similar to IMC 0612, Appendix E example 2C and the same issue affected a number of pumps tested that include 2B emergency feedwater pump and the1C NSCCW pump. This issue affected the Mitigating System cornerstone. The issue had very low safety significance (Green) because the "A" DH pump remained operable, there was no loss of safety function, and it was not related to a seismic, flooding, or fire initiating event.
Inspection Report# : 2006007*(pdf)*

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate and Correct Indications of Air in 'A' Decay Heat Removal System
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for a deficient evaluation that resulted in ineffective corrective actions for indications of air in the Decay Heat (DH) system following maintenance. The ineffective corrective actions resulted in unknown quantities of air being forced through the 'A' DH pump casing and into the downstream piping, without an evaluation of the potential consequences to the DH and makeup systems. This finding has been entered into the licensee's corrective action program as IR 475218. Corrective actions include a comprehensive root cause evaluation, ultrasonic testing to verify no air remained in the piping, and actions to add new vent valves to enhance system fill and venting.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating System cornerstone and the objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the risk significance of this finding using NRC IMC 0609, Appendix A, Phase 1. The finding screened to very low safety significance (Green) because the condition did not result in an actual failure of any safety-related system or component, or result in the system being declared inoperable for greater than its allowed technical specification outage time.

This finding is related to the cross-cutting area of Problem Identification and Resolution, because engineers and component maintenance optimization personnel missed several opportunities to properly evaluate and correct this degraded condition due to multiple reoccurrences of DH pump high vibrations and not appropriately applying prior industry operating experience. TMI also did not implement a void monitoring/periodic venting program as recommended by industry operating experience.
Inspection Report# : 2006007*(pdf)*

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Deficient Test Procedure Causes Air Introduction to Emergency Core Cooling Systems
The inspectors identified an NCV of TS 6.8.1.a for deficient surveillance procedures that resulted in the introduction of air into the sodium hydroxide (NAOH) piping to several emergency core cooling systems (ECCS) during in-service testing (IST) activities. This finding has been entered into the licensee's corrective action program (IRs 475218 and 474439). The corrective actions included venting of the initial air void

via a check valve vent port, initiation of a modification to install a high point vent valve to vent the large section of voided pipe, revision of applicable procedures to prevent draining of piping, and ultrasonic testing of multiple sections of pipe in the ECCS piping.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating System cornerstone and the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the risk significance of this finding using NRC IMC 0609, Appendix A, Phase 1. The finding screened to very low safety significance (Green) because the condition did not result in an actual failure of any ECCS systems, and engineers concluded the 3.6 cubic feet of air void identified would not have prevented the ECCS systems from performing their design safety function.

This finding is related to the cross-cutting area of Problem Identification and Resolution, because engineers and operators missed several opportunities to recognize that proper refilling of drained piping was not possible due to the inability to vent based on prior industry operating experience. AmergenI also did not implement a void monitoring/periodic venting program as recommended by industry operating experience.
Inspection Report# : 2006007*(pdf)*

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Deficient Procedural Compliance Resulted in Inadequate Control of Materials Brought into the Reactor Building Containment (Section 1R20)
The inspectors identified a non-cited violation (NCV) of Technical Specification (TS) 6.8.1.a for multiple failures to properly implement procedural requirements and engineering instructions to ensure control of materials brought into the reactor building containment while the plant was at power. The procedural violation resulted in multiple deficient conditions that challenged plant safety, including; the potential for hydrogen generation beyond design due to significant amounts of stored scaffolding, aluminum toe plates, unqualified materials (lead insulation blankets, painted scaffolding, plastic bags) with potential for reactor building sump clogging, and unrestrained stored materials inside containment. The licensee entered these issues into the corrective action program (issue reports 387939, 388006, 388791, 388916, 388407, and 395100), performed a prompt investigation, an extent of condition review, and an operability determination for each of the issues identified.

This finding is more than minor because it affected the reliability objective of the equipment performance attribute under the mitigating systems cornerstone. The finding is also associated with the barrier integrity cornerstone and the respective containment configuration control attribute. The finding is of very low safety significance because no equipment was rendered inoperable, and no actual open pathway in the physical integrity of the reactor containment occurred. The cause of the finding is related to the cross-cutting area of human performance, because station personnel did not comply with engineering instructions and established procedures for control of materials inside containment.
Inspection Report# : 2005009*(pdf)*

Significance: SL-IV Dec 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Report Medical Conditions for Three Licensed Operators
The inspectors identified a Green (Severity Level IV) non-cited violation of 10 CFR 50.74 for failure to report changes in medical conditions per Section 3.2.1 of Exelon administrative procedure OP-AA-105-101, "Administrative Process For NRC License And Medical Requirements," Rev. 8. As a result, potentially disqualifying medical conditions for three operators were not reported to the NRC within the required 30-day time frame. In addition, for one of the operators, the medical condition ultimately required a change on his license. The licensee promptly entered this issue into their corrective action program (issue reports 164042, 189592, and 195798).

This violation is more than minor because it had the potential to impact the NRC's ability to perform its regulatory function, and it was evaluated using the traditional enforcement process. This finding is of very low safety significance because at no time did the individual stand watch without the medical condition being satisfied. In addition, the facility licensee was timely in their reporting of the medical conditions to the NRC when they received the pertinent information. The cause of the finding is related to the cross-cutting area of corrective actions, because it occurred after completion of actions to address a previous NCV for the failure to notify NRC of change in medical status of licensed operators. The cause of the finding is also related to the cross-cutting area of human performance, because multiple station operators did not comply with established procedures for reporting of potentially disqualifying medical conditions.
Inspection Report# : 2005009*(pdf)*

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
No Procedures or Acceptance Criteria to Ensure Visual Inspections of Reactor Building Fan Air Side Emergency Cooling Coils were Performed and Documented
The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." Neither procedures or acceptance criteria were established, nor were visual inspection results documented, to support verification that the reactor building fan emergency cooling coils were sufficiently maintained to perform their intended safety function. Consequently, AmerGen did not fulfill their NRC Generic Letter (GL) 89-13, "Service Water System Problems Affecting Safety-Related Equipment," commitment to perform

visual inspections and trend the material condition of the air side of the cooling coils each refueling outage.

This finding is greater than minor because it affected the reactor safety cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Additionally, if left uncorrected, the finding could become a more significant safety concern in that inspections of the reactor building emergency cooling coils were not performed and trended as committed to in the licensee's NRC GL 89-13 response. The finding was of very low safety significance because the reactor building emergency cooling coils remained capable of performing their safety function. This finding has been entered into the licensee's corrective action program as issue report 371356.

A contributing cause of this finding is related to the cross-cutting area of human performance, because AmerGen did not develop sufficient resources, such as complete and accurate procedures, to ensure the visual heat exchanger inspections were performed and trended. The finding is also cross-cutting in the area of problem identification in that station personnel had completed several periodic reviews and self assessments of the GL 89-13 program, and did not identify that some of the required inspections had not been performed, had no procedures or acceptance criteria, and were not documented.
Inspection Report# : 2005005*(pdf)*

Significance: G Jun 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Deficient Maintenance Procedures Result in Undetected Expansion Joint Degradation and Safety-Related Expansion Joints Exceeding Service Life
The inspectors identified a non-cited violation (NCV) of Technical Specification (TS) 6.8.1.a for deficient maintenance procedures on safety-related system expansion joints, and for not performing engineering evaluations when in-service safety-related expansion joints exceeded their recommended service life. The maintenance procedure and scheduling inadequacies resulted in station personnel being unaware of the age or condition of numerous expansion joints that had exceeded their recommended service life by an unknown period of time.

This finding was more than minor because it affected the mitigating systems cornerstone and affected the reliability of two trains of a nuclear river water mitigating safety system. In all three systems that were reviewed, expansion joints would have continued to degrade if left uncorrected. Additionally, two expansion joints in the condensate system were degraded. The complete failure of these partially collapsed expansion joints would likely result in an initiating event. The finding is of very low safety significance since no equipment was rendered inoperable due to the aged expansion joints.

A contributing cause of this finding is related to the cross-cutting area of human performance, because maintenance and testing procedures were insufficient to provide reasonable assurance that safety related and important-to-safety expansion joints would continue to remain capable of performing their design functions. Specifically, procedures did not address expansion joint service life, incorporate industry experience, or specify vendor recommended inspections be performed to support the continued use beyond the established service life.
Inspection Report# : 2005004*(pdf)*

Significance: G Jun 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Deficient Procedure and Personnel Error While Replacing ‘B' 125/250 Volt Battery Cell
The inspectors identified a non-cited violation of TS 6.8.1.a for deficient maintenance procedures that did not contain sufficient work instruction or acceptance criteria to ensure the safety related ‘B' 125/250 volt battery was properly reassembled following replacement of battery cell #2. Additionally, workers did not properly follow the procedure instructions in that certain steps were performed out of order.

This issue affected the mitigating systems cornerstone and was more than minor because it affected the reliability of the ‘B' train of the 125/250 volt power system to perform its accident mitigation functions in response to initiating events. The deficiency affected the procedure quality and equipment performance attributes of the mitigating system cornerstone. The finding is of very low safety significance because the ‘B' 125/250 volt battery bank was not inoperable for greater than the TS allowed outage time.

A contributing cause of this finding is related to the cross-cutting area of human performance, because operators did not follow procedure 1420-DC-3 steps in the order specified and procedure quality was deficient because it did not provide instruction to perform intercell battery resistance checks or torque the battery rack connection bolts to verify seismic qualification prior to declaring the battery operable. Additionally, procedure usage level was insufficient based upon the potential impact of an error.
Inspection Report# : 2005004*(pdf)*

Significance: G Jun 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Deficient Procedure and Operator Error Degrade Two-Hour Emergency Air Supply to Emergency Feedwater and Main Steam Systems
The inspectors identified a non-cited violation of TS 6.8.1.a in that on March 29, 2005, operators did not properly implement procedural

requirements for recharging the two-hour emergency air system, and mispositioned valve IA-V-1769. The mispositioned valve caused both air banks to partially depressurize and reduced the reliability of the supported mitigating systems (emergency feedwater (EFW) and main steam (MS)) to perform their decay heat removal function. Operators identified and repressurized the air banks, but did not recognize and correct the cause of the degraded condition until the inspectors identified the causes.

The finding was more than minor because the degraded two-hour air system pressure affected the reliability of the EFW and MS systems to perform their accident mitigation functions in response to initiating events. The deficiency affected the configuration control, equipment performance, and human performance attributes of the mitigating system cornerstone. The finding is of very low safety significance because bank air pressure did not drop below the value required for operability and, therefore, the system remained capable of performing its safety function.

A contributing cause of this finding is related to the cross-cutting area of human performance, because operators did not follow procedural instructions to open IA-V-1769 and procedure quality was deficient in that procedure usage category 3 (informational use only) was insufficient to ensure the procedure was properly followed step-by-step for this important safety-related activity. The finding is also cross-cutting in the area of problem resolution in that AmerGen's initial assessment of the event did not determine or correct the actual causes of the degraded air bank pressure.
Inspection Report# : 2005004*(pdf)*

Significance: G Jun 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Deficient Maintenance Procedures and Personnel Error Degrade Safety-Related Emergency Diesel Generator
A self revealing non-cited violation of TS 6.8.1.a was identified for not properly implementing maintenance procedures that affected the performance of the safety-related 'B' emergency diesel generator (EDG). Licensee staff did not properly apply lubricant and torque the exhaust manifold bolts to the EDG turbocharger. This caused an exhaust leak and degraded the EDG during a monthly surveillance run due to loose and missing bolts in an exhaust manifold extension. Maintenance personnel performed an extent-of-condition investigation and documented the occurrence in their corrective action program.

This finding is more than minor because it affects the mitigating systems cornerstone objective of ensuring reliability of systems that respond to initiating events and is associated with the equipment performance reliability attribute. The finding is of very low safety significance since the missing bolt did not cause the EDG to become inoperable.

A contributing cause of this finding is a cross-cutting issue in the area of human performance, because maintenance personnel did not follow work instructions to apply lubricant and torque the turbocharger exhaust manifold bolts, document final torque values, or document lubrication used in completed work orders. A second contributing cause affected the cross-cutting area of problem resolution, because the initial engineering evaluation was too narrowly focused. Engineers did not use technical calculations or modeling to support conclusions regarding the quantity of leaking exhaust and its associated impact on diesel loading capability and room design temperature until challenged by the inspectors.
Inspection Report# : 2005004*(pdf)*

Barrier Integrity

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Inservice Test Failure Not Identified and Evaluated for Containment Isolation Check Valve
The inspectors identified an NCV of 10 CFR 50.55a.(f)(4)(ii) "Codes and Standards" which requires, in part, that testing of safety-related check valves meet the requirements of the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code. Specifically, AmerGen did not comply with IST requirements for a binding containment isolation check valve that was identified on November 6, 2005. IST program personnel did not declare the check valve inoperable, the cause of the failure was not analyzed, and other check valves in the sample group that may also be affected by this failure mechanism were not examined or tested during the same refueling outage to determine the condition of internal components and their ability to function, as required by the current TMI ASME IST Program. (ASME OM Code-2001, ISTC-5224, Corrective Action).

This issue is more than minor because it affected the Barrier Integrity containment barrier performance attribute and the associated cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors evaluated the risk significance of this finding using NRC IMC 0609, Appendix A, Attachment 1. The finding screened to very low safety significance (Green).

The cause of the finding is related to the cross-cutting area of human performance, because engineering personnel did not evaluate the performance of a containment isolation check valve against IST program requirements properly and declare the observed condition as an

IST/Code failure.
Inspection Report# : 2006007*(pdf)*

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Equipment Qualification Not Maintained on Four Containment Isolation Valves due to Deficient Procedures or Instructions
The inspectors identified a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because station procedures did not contain controls to verify and/or maintain the required environmental qualification (EQ) configuration associated with motor-operated valve (MOV) actuator T-drains. As a result, four safety-related containment isolation MOV valve actuators did not have T-drains as required by TI-103, "TMI-1 Environmental Qualification Report," Rev. 5. This finding has been entered into the licensee's corrective action program (issue reports 238918, 267293, 273768, 391720, 391707, and 271819).

The inspectors determined this issue was more than minor because it affected the barrier integrity cornerstone objective and the containment barrier performance attribute. Specifically, the lack of T-drains may allow moisture to enter the motor housing due to a high temperature and pressure steam environment associated with a Loss of Coolant Accident. The moisture and subsequent condensation could electrically short out the motor, which would reduce containment isolation reliability. In addition, if left uncorrected, this issue could become a more significant safety concern in that without procedures to maintain the required EQ configuration, additional MOV actuators could be installed with no T-drains or in an incorrect orientation and thus lead to a failure of the valve to perform its design function. This finding is of very low safety significance because the specific component qualification deficiency did not result in a loss of safety function, and the degraded condition did not cause an actual open pathway in the primary containment. Therefore, system or component operability was not effected. The cause of the finding is related to the cross-cutting area of human performance, because AmerGen did not develop appropriate measures to ensure that required MOV T-drains were properly installed, maintained, and inspected.
Inspection Report# : 2005009*(pdf)*

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Deficient AH-F-3B Functional Failure Assessment and Deficient Maintenance Rule Performance Monitoring and Goal Setting
The inspectors identified a non-cited violation of 10 CFR 50.65(a)(2)/(a)(1) in that the licensee's demonstration of effective control of performance or condition of the control building and machine shop heating and ventilation system had become invalid, and although the licensee had a reasonable number of opportunities, the licensee did not place the system in (a)(1) status in a reasonable amount of time. Consequently, the licensee did not establish goals and monitor the performance or condition of the Control Building & Machine Shop Heating & Ventilation System as required by 10 CFR 50.65(a)(1) when the demonstration of effective control of performance or condition of the system through appropriate preventive maintenance as allowed by 10 CFR 50.65(a)(2) became invalid. The demonstration of effective control of performance or condition in (a)(2) status became invalid as a result of multiple maintenance preventable functional failures within a 3-year period, the most recent of which was a failure on June 28, 2005, that the licensee did not correctly recognize as a maintenance preventable functional failure.

This finding is more than minor because it affects the Barrier Integrity Cornerstone and its design attribute of maintaining the functionality of the control room envelope. Additionally, if left uncorrected it could impact the licensee's ability to properly trend performance and establish goals to provide reasonable assurance that structures, systems, and components (SSCs) within the scope of the Maintenance Rule remain capable of fulfilling their intended functions. This finding was determined to be of very low safety significance because the incorrect functional failure assessment did not, by itself, result in an actual degradation of the radiological barrier function provided for the control room. The licensee has entered the issue into their corrective action program as issue report 349025.

A contributing cause of this finding is a cross-cutting issue in the area of human performance, because maintenance personnel did not properly perform procedure 1400-F-1, to achieve the required AH-F-3B filter gasket compression. The inspectors determined this was also a cross-cutting issue in the area of problem resolution, because the maintenance rule functional failure review was too narrowly focused. It did not address why the bypassed filters' gaskets did not show signs of compression, did not address criteria for post event inspection of the failed filters, and did not consider potential procedural compliance aspects. As a result, corrective actions identified to prevent recurrence were too narrowly focused.
Inspection Report# : 2005005*(pdf)*

Emergency Preparedness

Significance: W May 18, 2005
Identified By: NRC
Item Type: VIO Violation
Emergency Response Organization Qualifications Expired Due to Untimely Training

An apparent violation associated with EP planning standard 10 CFR 50.47(b)(15) was identified. This apparent violation, which has low to moderate safety significance, occurred because AmerGen did not conduct annual required radiological response classroom retraining for approximately 50 percent of the ERO as specified in the TMI Annex Emergency Plan (E-Plan).

The finding is more than minor because it is associated with the EP cornerstone attribute of ERO readiness (training). It affects the cornerstone objective of ensuring the capability to implement measures to protect the health and safety of the public during an emergency. The ERO, including several key responders, had not received the training necessary to maintain familiarity with their specific emergency response duties. As a consequence, for an approximate five month period (June-November 2004), those individuals would not have been considered available to respond to a radiological emergency. This resulted in some key ERO positions not being filled by qualified ERO members in accordance with AmerGen's TMI E-Plan requirements. (1EP3)

Using Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process, Section 4.15 and Sheet 1," this finding was determined to be of low to moderate safety significance because it was considered to be a loss of an EP planning standard function because several key responders were not trained as required.

(Following exerpt from Inspection Report 2005-004:)
(A contributing cause of) this finding is related to the cross-cutting area of human performance, because the TMI emergency preparedness department staff did not follow applicable requirements, specified in the TMI Annex Emergency Plan, when scheduling ERO training. Additionally, AmerGen corporate emergency preparedness supervision was deficient, because they did not ensure required ERO training periodicity was properly understood and implemented.
Inspection Report# : 2005004*(pdf)*
Inspection Report# : 2005006*(pdf)*
Inspection Report# : 2006010*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G Jun 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Conduct Radiological Evaluation to Support Waste Transfer
The inspectors identified a non-cited violation of 10 CFR 20.1501 associated with failure to evaluate the adequacy of a change to the procedure for collecting samples of radioactive spent resin for analysis to support transfer of radioactive material to a waste processor for ultimate disposal. Specifically, in December 1998, AmerGen reduced the tank recycle requirements, prior to sample collection, from three tank volumes to 15 minutes, and did not evaluate the effect of this change on the representativeness of the sample. Consequently, the spent resin tank sample procedure instruction was not evaluated to ensure a representative sample, and therefore AmerGen could not validate that the total radionuclide activity was accurately determined and provided to the waste processor prior to the shipment in accordance with 10CFR20, Appendix G.

The finding is greater than minor in that it affected the public radiation safety cornerstone objective. Specifically, the issue involved an occurrence in the radioactive material transportation program that was contrary to NRC or Department of Transportation regulations. Using the Public Radiation Safety SDP flow chart, this finding is of very low safety significance, because it involved a radioactive material control issue, it did involve transportation, no radiation limit was exceeded, it did not involve a breach of packaging, it did not involve a Certificate of Compliance finding, it did not involve a low-level burial ground issue, and it did not involve a failure to make an emergency notification issue. AmerGen reviewed previous shipments and concluded that, due to the generally low radioactivity of the shipments made, there was no likelihood that a shipment was improperly packaged for shipment or would have been misclassified per 10 CFR 61. Consequently, no actual safety consequence was identified.

A contributing cause of this finding is related to the cross-cutting area of problem identification in that AmerGen did not identify this problem during routine self-assessments and audits of its radioactive waste transportation and disposal program.
Inspection Report# : 2005004*(pdf)*

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Mar 31, 2006
Identified By: NRC
Item Type: FIN Finding
Overall Biennial PI&R Team Assessment Summary
Identification and Resolution of Problems:

The team concluded that overall, problems were properly identified, evaluated and corrected; however, during the middle of the two year inspection period, AmerGen identified some substantial challenges to their implementation of the corrective action program as a result of issues identified by external organizations. Later in the period, improvements were made in the corrective action program, particularly with the quality of the evaluation products. The team attributed the improvements to a station wide effort to improve the corrective action program standards which were driven by the station ownership and management review committees. Nonetheless, problem identification was inconsistent throughout the period and some of the AmerGen staff were not aligned with current expectations to identify problems and initiate Issue Reports (IRs), and in a few cases, did not initiate IRs for known deficiencies that resulted in these issues not being evaluated and corrected. Further, many of the more significant issues continue to be identified by external organizations, including the NRC. For example, NRC findings related to Abnormal Operating procedures, surveillance test acceptance criteria, and surveillance test results represented issues that Engineering and Operations had the opportunity to identify. The AmerGen staff also did not effectively use industry operating experience, resulting in additional NRC findings. A large number of NRC identified lower level issues were concentrated in some single owner engineering program areas such as in-service testing, that may be indicative of isolated issues with problem identification standards.

At the time of the inspection, the station ownership and management review committees were effective in the initial review and prioritization of IRs. Nonetheless, throughout the period there has been a station wide problem related to procedure usage and procedure adequacy that station management has been slow to recognize and address. AmerGen staff has not effectively used the corrective action program to address these procedure problem areas. While many IRs have been initiated related to procedure usage and adequacy, no root cause evaluations have been performed, and the evaluation tools such as common cause and apparent cause evaluations have not been effectively used to identify and resolve underlying issues. While Amergen is investing a significant effort to improve the problems with procedure use and adequacy, without a clear understanding of the underlying causes their efforts may not be efficient, or effective, or achieve the desired result. Further, while the corrective actions for identified deficiencies were typically effective, and completed in a timely manner, AmerGen continues to be challenged in the area of procedure adequacy and adherence, as evidenced by a recent audit which identified a number of maintenance program deficiencies that are related to processes not being followed. The continued problems related to procedure usage and adequacy indicate corrective actions to date have not been fully effective for this station wide issue.

Some evaluation products were not thorough and as a result AmerGen did not identify problems or address the cause of some issues. NRC-identified issues and trends were not evaluated in aggregate to determine the cause of the cross-cutting aspects. Further, some of the individual IRs for NRC findings did not identify and correct the underlying causes of issues. Some of the lower level evaluation products, particularly early in the period, did not appropriately evaluate the cause of events and deficiencies, resulting in missed opportunities to identify broader issues.
Inspection Report# : 2006007*(pdf)*

Last modified : May 25, 2006