Susquehanna 1
4Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Improper Stress Intensification Factor Results in Not Identifying ASME Limits for Pipe Stress Being Exceeded
A self-revealing Green NCV of 10 CFR 50 Appendix B, Criteria III, "Design Control," was identified related to a leak on the Unit 1 'A' reactor recirculation pump suction line decontamination flange weld. Specifically, PPL personnel used an incorrect value for stress intensification factor in the vibration analysis in 2004 to support an extended power uprate (EPU). When the correct stress intensification factor was applied, American Society of Mechanical Engineers (ASME) OM-3 code limits for endurance and fatigue stress were exceeded. The weld failure resulted in pressure boundary leakage in excess of TS 3.4.4 limits from approximately June 16 through 19, 2012. PPL staff entered the problem in the PPL corrective action program (CAP) as CR 1589390, repaired and modified the flange line, and revised the calculation.
The inspectors reviewed the performance deficiency using NRC IMC 0612, Appendix B, "Issue Screening," and determined to be more than minor because it affected the Initiating Events cornerstone attribute of design control. The issue adversely affected the associated 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. The finding was evaluated using Section A of IMC 609, Appendix A, Exhibit 1, "Initiating Events Screening Questions." Since the finding result could not have reasonably exceeded the leak rate for a small loss of coolant accident (LOCA) and did not likely affect other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., inter-facing system LOCA), the finding screened to very low safety significance (Green). This finding was determined to not be indicative of current performance because the deficiency occurred in 2004 and procedures and training are in place that would have precluded the issue. Therefore, no cross-cutting aspect is assigned. (Section 4OA2)

Inspection Report# : 2012005 *(pdf)*

Significance: G Sep 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedure for Acts of Nature
The inspectors identified a Green NCV of TS 5.4.1, "Procedures," when PPL did not maintain adequate procedures to respond proactively to acts of nature. Specifically, PPL's adverse weather procedure did not ensure timely risk management activities for imminent adverse weather were completed despite a National Weather Service (NWS) declaration of a high wind watch, high wind advisory, and a tornado watch. PPL entered this item in their Corrective Action Program (CAP) as condition report (CR) 1628452.
The issue was evaluated in accordance with IMC 0612 and determined to be more than minor since it affected the procedure quality attribute of the Initiating Events cornerstone and its objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the inadequate procedure prevented PPL from taking proactive steps to limit the likelihood of high wind or tornado-related missile hazards upsetting plant electrical power systems.
The finding screened to Green in accordance with IMC 0609, Attachment 4, and Appendix A, Exhibit 1, since it did not cause a reactor trip, involve the complete or partial loss of mitigation or support equipment, or impact the frequency of a fire or internal flooding event.
The finding was determined to have a cross-cutting aspect in the area of Problem Identification and Resolution - CAP because PPL did not identify issues completely,

accurately, and in a timely manner commensurate with their safety significance.
Specifically, PPL did not identify that the Off Normal procedure was inadequate both during the 2011 periodic procedural review and during documentation of inspector observations in May 2012 as part of CR 1579977. [P.1(a)] (Section 1R01)
Inspection Report# : 2012004 *(pdf)*

Significance: G Mar 21, 2012
Identified By: Self-Revealing
Item Type: FIN Finding
Inadequate Gain Settings Result in Reactor Scram
A self-revealing finding of very low safety significance was identified when Unit 1 automatically scrammed from 32 percent power on April 22, 2010, due to low reactor water level. PPL entered inadequate gain settings in the feedwater digital ICS for reactor feed pump turbine (RFPT) speed control as part of the ICS design modification, and the test procedure, which was in progress at the time, did not specify exit criteria that would have ended the test prior to an automatic scram. PPL completed corrective actions related to the direct cause by updating the RFPT speed control characterizer block gain settings. This issue was entered in PPL's CAP as condition report (CR) 1257781 (April 2010) and CR 1348940 (January 2011).
The inspectors determined that inadequate procedures to perform post-modification testing on the digital ICS was a performance deficiency because the testing performed did not detect incorrect gain settings prior to a reactor scram. The inspectors screened the performance deficiency in accordance with IMC 0612, Appendix B, "Issue Screening." The performance deficiency was determined to be more than minor because the finding was associated with the Initiating Events cornerstone attribute of Design Control, and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operation. The inspectors evaluated the finding using IMC 0609, Attachment 4, "Initial Screening and Characterization of Findings," and determined the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment would not be available. Consequently, the finding is of very low safety significance (Green).
This finding has a cross-cutting aspect in the area of Human Performance, Work Control, because PPL did not plan and coordinate work activities consistent with nuclear safety. Specifically, PPL did not appropriately consider risk during the design modification and did not have adequate planned contingencies for the testing of the new digital ICS. (H.3(a)) (Section 4OA3.1)

Inspection Report# : 2012008 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Risk Management Actions
The inspectors identified a Green NCV of 10 CFR 50.65(a)(4) when PPL did not implement risk management actions (RMAs) during maintenance as required by station procedures. The inspectors identified multiple examples of PPL non-compliance with 10 CFR 50.65(a)(4); PPL's implementing procedures NDAP-QA-0340, "Protected Equipment Program;" and NDAP-QA-1902, "Integrated Risk Management." PPL entered the issue in their CAP as CRs 1611044, 1604007, 1601929, 1602495, and 1611876.
The finding was more than minor because it was similar to IMC 0612, Appendix E, examples 7.e and 7.f. Specifically, elevated plant risk required RMAs or additional RMAs that were not implemented as required by plant procedures. The finding also affected the equipment performance attribute of the Mitigating Systems Cornerstone and its objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. In accordance with IMC 0609, Attachment 4, the issues were determined to involve PPL's assessment and management of risk associated with performing maintenance activities and was further assessed under IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management SDP." The issue was evaluated by a Senior Reactor Analyst utilizing flowchart 2, and the finding was determined to be of very low safety significance (Green)

since it did not result in an increase to either the incremental core damage probability (ICDP) or to the incremental large early release probability (ILERP). The finding was determined to have a cross-cutting aspect in the area of Human Performance, Work Control, in that PPL did not plan work activities, consistent with nuclear safety, by incorporating risk insights. Specifically, PPL did not incorporate RMAs into its work activities despite recognition of increased risk. [H.3(a)] (Section 1R13)
Inspection Report# : 2012004 *(pdf)*

Significance: G Sep 10, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Compensatory Actions for Inadequate MOV Grease Analysis Procedures
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," because PPL did not take appropriate action to promptly correct an identified condition adverse to quality associated with PPL's motor-operated valve (MOV) lubrication program. PPL did not adhere to the corrective action timeliness standards specified in its corrective action process procedure NDAP-QA-0702, "Action Request and Condition Report Process," Revision 36. Section 7.56.1 states, in part, that compensatory action will be provided if permanent action will not be performed in a timely fashion. Specifically, while evaluating permanent revisions to the program to address the deficiencies, PPL did not take compensatory actions to address MOV grease analysis procedure and engineer qualification program deficiencies before sixty MOV grease analyses were completed in refueling outage 15. PPL entered this performance deficiency into their CAP under CR 1562326.
The inspectors determined that the performance deficiency was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, failure to implement compensatory actions to analyze grease samples in MOVs affects the reliability of these valves. An MOV lubrication program is an integral part of the station's Generic Letter 89-10 program for safety-related MOVs. PPL uses the results of the MOV grease analysis to determine the need for a valve actuator overhaul. The inspectors screened this issue to Green via Inspection Manual Chapter 0609, Attachment 4 and Appendix A, because the finding does not represent a loss of system and/or function, does not represent an actual loss of function of at least a single train for greater than its technical specification allowed outage time or two separate safety systems out-of-service for greater than its technical specification allowed outage time, and does not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's Maintenance Rule program for greater than 24 hrs. The inspectors determined that this issue had a cross-cutting aspect in the area of human performance, work practices, because PPL personnel did not follow PPL corrective action program procedure requirements regarding compensatory actions [H.4(b)]. (Section 4OA2.1.c(1))

Inspection Report# : 2012009 *(pdf)*

Significance: G Sep 10, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify and Correct a CAQ Associated with a Safety-Related Battery Maintenance Procedure
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," because PPL did not identify and correct the inadequate weekly testing procedure that resulted in the inoperability of the safety-related 24-volt battery 1D670 that occurred on March 1, 2012. Specifically, because the engineer assigned to perform the Apparent Cause Evaluation (ACE) for the March 1, 2012, failure did not interview the technicians who performed the last weekly surveillance on the battery before the failure, PPL did not identify that the weekly testing procedure did not provide adequate instructions for restoring low battery electrolyte level. PPL entered this performance deficiency into their CAP as CR 1602339.
The inspectors determined that this performance deficiency was more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone and its objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, as evidenced by the
events on March 1, 2012, the use of the inadequate procedure resulted in the inoperability of the 1D670 battery that

supports operation of the safety-related source range and intermediate range instrumentation. The inspectors determined that the inadequate procedure problem was a condition adverse to quality. The inspectors screened this issue to Green via Inspection Manual Chapter 0609, Attachment 4 and Appendix A, because the finding does not represent a loss of system and/or function, does not represent an actual loss of function of at least a single train for greater than its technical specification allowed outage time or two separate safety systems out-of-service for greater than its technical specification allowed outage time, and does not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's Maintenance Rule program for greater than 24 hrs. The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution, corrective action program, because PPL did not appropriately evaluate the unexpected inoperability of a safety-related battery such that a condition adverse to quality, the inadequate maintenance procedure that likely caused the battery inoperability, was identified and corrected [P.1.(c)]. (Section 4OA2.1.c(2))
Inspection Report# : 2012009 *(pdf)*

Significance: G Sep 10, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and Correct a CAQ Associated with Reactor Recirculation Valve Exercising Surveillance Procedure
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," because PPL did not identify an inadequate recirculation valve surveillance procedure when the licensee completed the extent of condition review that was performed as part of the root cause analysis for the Reactor Core Isolation Cooling (RCIC) ramp generator signal converter (RGSC) failure on June 29, 2011. Specifically, PPL did not adhere to the extent of condition determination standards established in PPL procedure NDAP-00-0752, "Cause Analysis." The actions taken to address the extent of condition were not of a depth sufficient to identify the same deficiency that existed in the RCIC flow surveillance procedure in other applicable surveillance procedures. As a result, the inadequate recirculation valve surveillance procedure was not identified. PPL entered this performance deficiency into their CAP as CR 1596633.
The inspectors determined that this performance deficiency was more than minor because it affected the procedural quality attribute of the Mitigating Systems cornerstone and its objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, PPL did not complete an evaluation of the extent of condition for the identified inadequate RCIC surveillance procedure to a depth that would have identified the same deficiency in other similar procedures. As a result, an independent review by inspectors identified a similar condition associated with the reactor recirculation valve exercising procedure. The inspectors determined that this procedure problem was a condition adverse to quality. The inspectors screened this issue to Green via Inspection Manual Chapter 0609, Attachment 4 and Appendix A, because the finding does not represent a loss of system and/or function, does not represent an actual loss of function of at least a single train for greater than its technical specification allowed outage time or two separate safety systems out-of-service for greater than its technical specification allowed
outage time, and does not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's Maintenance Rule program for greater than 24 hrs. The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution, corrective action program, because, although the root cause analysis appropriately bounded and defined the necessary actions to address the extent of condition, the implementation of those actions was insufficient to ensure similar conditions did not exist in other site procedures [P.1.(d)]. (Section 4OA2.1.c(3))

Inspection Report# : 2012009 *(pdf)*

Significance: G Mar 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate MOV Program Implementation
The inspectors identified a Green NCV of 10 CFR Part 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," regarding PPL's safety-related motor operated valve (MOV) program. Specifically, the program lacked a

procedure, qualification, and prescribed acceptance criteria for actuator grease analysis and PPL improperly implemented maintenance instructions for lubricating valve stems. PPL's QA organization conducted a separate investigation and entered this issue in their CAP via CRs 1545581 and 1544737.
This finding was considered more than minor because it was similar to IMC 0612, Appendix E, examples 3.j and 3.k, in that significant programmatic deficiencies existed that could lead to worse errors if uncorrected. The lack of a procedure, repeatable acceptance criteria, qualification, and multiple cycles without stem lubrication could result in untimely actuator overhauls and ultimately MOV degraded performance. Further, the performance deficiency affected the equipment performance attribute of the Mitigating Systems cornerstone and its objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, inadequate MOV program implementation affects MOV reliability. The issue screened to Green via IMC 0609 Attachment 4 since it was not a design or qualification deficiency or loss of safety function and did not screen as potentially risk significant due to external events. The issue was determined to have a cross-cutting aspect in the area of Problem Identification and Resolution. In this case, PPL was aware of the lack of procedural guidance and qualification for MOV grease analysis as well as non-compliance with stem lubrication instructions but had not entered the concerns in its CAP. [P.1(a)] (Section 1R12)

Inspection Report# : 2012002 *(pdf)*

Significance: SL-IV Nov 08, 2011
Identified By: NRC
Item Type: VIO Violation
Violation of 10CFR55.25, Failure to Notify NRC of a Change in Medical Status and Request a Conditional License
The inspectors identified a SL IV NOV of 10 CFR 55.25, "Incapacitation Because of Disability or Illness," for PPL failing to notify the NRC of a known permanent change in medical status of a licensed operator, and 10 CFR 55.3, "License Requirements," for failing to ensure that an individual license holder, in the capacity of a reactor operator (RO), met the medical prerequisites prior to performing licensed operator duties. Specifically, an RO failed a medical examination in both 2009 and 2011 which identified a disqualifying condition and performed licensed duties without an NRC-approved, amended license. He performed the function of an RO while on watch from April 2009 through August 2011, when the NRC identified this issue. However, the operator did wear corrective lenses while standing watch since April 2009. Upon notification PPL submitted, and the NRC approved, a conditional license to address the disqualifying medical condition. PPL entered this issue into their corrective action program (CAP) as condition report (CR) 1450138.

The inspectors determined that PPL's failure to notify the NRC of a known permanent change in a licensed operator's medical status and request an amended license in order to assume licensed duties was a performance deficiency. This finding was evaluated using the traditional enforcement process because the issue had the potential to impact or impede the regulatory process. Specifically, there was a potential for license termination or the issuance of a conditional license to accommodate for a medical condition. The RO performed licensed duties from April 2009 through August 2011 with a disqualifying condition that required his license to be amended. Using the NRC Enforcement Policy, this violation was characterized at SL IV, in accordance with Section 6.4.

This violation is being cited in the enclosed Notice in accordance with NRC Enforcement Manual Section 3.1.2, because the violation was determined to be repetitive of NRC Enforcement Action (EA) 09-248 dated January 28, 2010, an SLIII Notice of Violation related to a Senior Reactor Operator (SRO) standing watch without meeting a medical qualification requirement. The medical conditions in both the former and current cases were similar; therefore, it was reasonable that an adequate extent of condition review for EA-09-248 should have identified the additional discrepancy.

This significance of the associated performance deficiency was screened against the Reactor Oversight Process (ROP) per the guidance of IMC 0612, Appendix B. No associated ROP finding was identified and no cross-cutting aspect was assigned. (Section 1R11)

Inspection Report# : 2011004 *(pdf)*
Inspection Report# : 2012005 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: FIN Finding
Scenarios for NRC Annual Operating Examinations Did Not Meet Quantitative Standards for Total Malfunctions
The inspectors identified greater finding in that 20% of the NRC annual operating exam simulator scenarios reviewed did not meet the quantitative standard for total malfunctions, 4 to 8 for a single scenario, and 10 to 14 for a scenario set established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Form ES-604-1, "Simulator Scenario Review Checklist." In addition, the licensee's procedures NTP-QA-31.11, "Operator Requalification Exam Preparation and Implementation" and NTP-QA-31.7, "Simulator Scenario Writers Guides," recommend these same quantitative standards. The quantitative guidelines for malfunctions is an important metric because it establishes an objective standard used throughout the nuclear industry to ensure that the simulator portion of the NRC-required annual operating exams are written at an appropriate level of difficulty. As an immediate corrective action, the licensee entered this finding into their corrective action process (CR 1187760).

This finding was more than minor because it was associated with the Human Performance attribute of the Mitigation Systems cornerstone and affected the objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the finding affected the level of difficulty of simulator operating exams which potentially impacted PPL's ability to appropriately evaluate licensed operators. A review of the possible cross-cutting aspects was performed and no cross-cutting aspect was identified that would be considered a contributor to the cause of the finding.
Inspection Report# : 2009005 *(pdf)*

Barrier Integrity

Significance: G Sep 30, 2012
Identified By: NRC
Item Type: FIN Finding
Inadequate Troubleshooting Results in Loss of Secondary Containment and Protected Equipment
A self-revealing Green finding against PPL procedure NDAP-QA-0510, "Troubleshooting Plant Equipment," was identified when inadequate troubleshooting caused repeated inoperability of secondary containment, an associated unplanned Unit 2 entry into a 4-hour limiting condition for operation (LCO) action statement, and a loss of the '1C' fuel pool cooling (FPC) pump during equipment restoration. The FPC pump had been designated as protected equipment as a risk management action. The failure to perform adequate troubleshooting activities to identify and correct equipment problems prior to restoration was a performance deficiency that was within PPL's ability to foresee and prevent. PPL entered this issue into their CAP as CR 1628250.
The inspectors determined that the finding was more than minor because it was associated with the configuration control attribute of the Barrier Integrity cornerstone and adversely affected its objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the event resulted in the inoperability of secondary containment and loss of a FPC pump. The finding was evaluated in accordance with IMC 0609, Attachment 4, and Appendix A - Exhibit 3, and was determined to be of very low safety significance (Green) because the finding did not only represent a degradation of the radiological barrier function provided for the standby gas treatment system and it did not: a) cause the spent fuel pool to exceed a maximum temperature limit; b) cause mechanical fuel damage and detectable release of radio-nuclides; c) result in the loss of spent fuel pool water inventory; or d) affect spent fuel shutdown margin. This finding is related to the cross-cutting area of Human Performance – Decision-Making because PPL did not make safety-significant or risk-significant decisions using a systematic process, especially when faced with uncertain or unexpected plant conditions, to ensure safety is maintained. Specifically, PPL failed to restore equipment in a systematic manner, given the intermittent nature of heater faults, to preclude a repeated loss of protected equipment and secondary containment. [H.1(a)] (Section 1R12)
Inspection Report# : 2012004 *(pdf)*

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct Secondary Containment Bypass Leakage Condition Adverse to Quality
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for PPL's failure to prevent recurrence of a significant condition adverse to quality (SCAQ) when secondary containment bypass leakage (SCBL) was in excess of its TS allowed value for two consecutive tests. In this case, the SCAQ, as defined by PPL procedure NDAP-QA-0702, “Action Request (AR) and Condition Report (CR) Process,” was the same condition as reported in LER 05000387/2010-001 and actions taken in 2010 to prevent recurrence were inadequate because they did not fully consider all the penetrations that account for SCBL. PPL subsequently entered the issue into the CAP as CR 1582747.
The finding was determined to be more than minor because it was associated with the structures, systems and components (SSCs) and barrier performance attribute of the Barrier Integrity cornerstone and affected its objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. The inspectors assessed the finding to be of very low safety significance (Green) because it did not represent a degradation of the barrier function of the control room, did not represent an actual open pathway in the physical integrity of reactor containment, and did not involve an actual reduction in function of hydrogen igniters in containment. This finding has a cross-cutting aspect in the area of Human Performance, Decision Making, because PPL did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action. Specifically, the decisions to not rework valve HV151F016B or perform work on valve 141818A when leakage was at a value that potentially challenged the SCBL limit was not based on conservative assumptions. [H.1(b)] (Section 1R12)

Inspection Report# : 2012003 *(pdf)*

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct Outboard MSIV LLRT failure Condition Adverse to Quality
An NRC-identified Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for PPL's failure to correct excessive seat leakage associated with the Unit 1 ‘D’ outboard MSIV, HV141F028D, such that the leakage was in excess of the Technical Specification (TS) allowed value for two consecutive tests. Specifically, work instructions to perform maintenance and post-maintenance testing on the valve following a local leak rate test (LLRT) failure in 2010 were inadequate to ensure the CAQ was corrected. PPL subsequently entered the issue into the CAP as CRs 1554813 and 1590506.
The finding was determined to be more than minor because it was associated with the SSCs and barrier performance attribute of the Barrier Integrity cornerstone and affected its objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. The inspectors assessed the finding to be of very low safety significance (Green) because it did not represent a degradation of the barrier function of the control room, did not represent an actual open pathway in the physical integrity of reactor containment, and did not involve the actual reduction in function of hydrogen igniters in containment. This finding has a cross-cutting aspect in the area of Human Performance, Resources, because PPL did not ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, the instructions used to perform maintenance and testing on the MSIVs were inadequate to ensure that excessive seat leakage was corrected. [H.2(c)] (Section 1R12)

Inspection Report# : 2012003 *(pdf)*

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Improperly Performed Maintenance Impacts Secondary Containment

A self-revealing Green NCV of TS 5.4.1, “Procedures,” was identified regarding PPL’s conduct of maintenance during a Unit 1 refueling outage which impacted the operating unit, Unit 2. Specifically, improperly performed maintenance on a Unit 1 main stop valve (MSV) and outboard main steam isolation valve (MSIV) affected safety-related equipment to include the standby gas treatment system (SGTS) and Unit 2 secondary containment in an unplanned manner.
PPL entered this issue in their CAP via CRs 1558764, 1558718, and 1560235 and performed a root cause analysis (RCA) on this.
Improperly performed MSIV and MSV maintenance was a performance deficiency within PPL’s ability to foresee and correct. This finding was considered more than minor because it was similar to IMC 0612, Appendix E, Examples 3.j and 3.k, in that a physical plant condition and subsequent engineering calculation resulted in a condition where there was reasonable doubt on the operability of a system or component, in this case secondary containment. Further, the performance deficiency affected the procedure quality and SSC and barrier performance attributes of the Barrier Integrity cornerstone and its objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. In this case, lack of coordination resulted in a loss of reasonable assurance that secondary containment was operable. The issue screened to Green via IMC 0609, Attachment 4, since it did not represent a degradation of the barrier function of the control room, did not represent an actual open pathway in the physical integrity of reactor containment, and did not involve the actual reduction in function of hydrogen igniters in containment. The issue was determined to have a cross-cutting aspect in the area of Human Performance to plan and coordinate work activities, consistent with nuclear safety. In this case, the MSV and MSIV work activities were not coordinated amongst various departments to address the operational impact of sequence changes on plant configuration. [H.3(b)] (Section 1R15)

Inspection Report# : 2012003 *(pdf)*

Emergency Preparedness

Significance: G Dec 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure of Full-Scale Drill Critique to Identify an RSPS Weakness
. Inspectors identified a Green NCV associated with emergency preparedness planning standard 10 CFR 50.47(b)(14) and the requirements of Section lV.F.2.g of
10 CFR 50, Appendix E. Specifically, PPL personnel did not identify an Emergency Response Organization (ERO) performance weakness associated with an untimely notification of an emergency declaration during their critique following the full-scale emergency preparedness (EP) drill. In the case of ERO performance, simulator equipment issues prevented the ability of drill controllers to satisfactorily evaluate performance of the ERO and PPL staff did not identify that all off-site response organizations (OROs)
were not notified within fifteen minutes. The critique deficiency was entered into PPL’s CAP as CR 1648380.
The finding is more than minor because it is associated with the ERO attribute of the Emergency Preparedness cornerstone and affected the cornerstone objective to ensure that PPL staff are capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The inspectors assessed the issue, related to the failure to make a timely notification to the OROs, using NRC IMC 0609 Appendix B, “Emergency Preparedness Significance Determination Process.” PPL's drill critique not identifying the untimely notification met the NRC's definition of a weakness in a full-scale drill. However, because of the unique nature of the equipment failures associated with the notification of the first ORO, inspectors determined that the failure to critique the drill weakness only constituted a degradation of the planning standard (PS) function. Therefore the finding is characterized as very low safety significance (Green). The finding is related to the cross-cutting area of PI&R, CAP, in that PPL staff did not identify a risk significant planning standard (RSPS) performance issue completely, accurately, and in a timely manner commensurate with the safety significance. Specifically, during the critique of the full-scale drill conducted on October 14, 2012, PPL staff did not recognize and critique that an RSPS was not met and did not place this issue into the CAP until prompted by inspectors. [P.1(a)] (Section 1EP6)
Inspection Report# : 2012005 *(pdf)*

Significance: G Mar 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Instrumentation to Implement EALs for Unplanned Radiological Effluent Release
The inspectors identified a Green NCV of 10 CFR Part 50.54 q and 50.47(b)(4) because PPL did not have adequate instrumentation to assess and determine if an abnormal radiological effluent release was in progress such that the EAL classification process would declare an Alert accurately and in a timely manner. Specifically, the maximum range for the liquid radwaste discharge radiation monitor was inadequate to ensure the meter was onscale when the threshold value of 200 times the alarm setpoint established by the discharge permit was reached.
The finding was more than minor because it is associated with the Emergency Preparedness (EP) cornerstone attribute of Facilities and Equipment, and affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, the effective range for the liquid radwaste discharge monitor was insufficient to ensure a timely and accurate EAL classification could be made. Using IMC 0609, Appendix B, Section 5.4, the finding is of very low safety significance because the finding was determined to be an example of an ineffective EAL, such that an Alert would be declared in a degraded manner. This finding is related to the cross-cutting area of Pl&R - CAP because PPL did not thoroughly evaluate problems such that the resolutions address the causes and extent of conditions, to include properly classifying, prioritizing and evaluating for operability. Specifically, PPL failed to appropriately evaluate the extent of condition from similar NCVs issued in November 2008 and 2010 regarding inadequate instrumentation to support EAL declarations. [P.1(c)] (Section 1EP6)

Inspection Report# : 2012002 *(pdf)*

Occupational Radiation Safety

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to follow radiation protection procedures
The inspector identified a non-cited violation (NCV) of Technical Specification (TS) 5.4.1.a, which requires that written procedures be implemented covering the activities in the applicable procedures recommended by Regulatory Guide 1.33, including procedures for as low as reasonably achievable (ALARA) program. Specifically, the Station ALARA Committee (SAC) did not review the scaffold work prior to the Refueling and Inspection Outage (RIO) 17 for unit 1. Procedure NDAP-QA-1191, ALARA Program, Appendix A, provides specific criteria for tasks that must be reviewed by the SAC. One of these criteria is to review job specific Radiation Work Permits (RWP) evolutions where the initial dose estimate is greater than 5 person-rem. All of the actions were not completed prior to the start of the refueling outage. Specifically, the SAC did not review the scaffold work inside the drywell even though it was estimated to be 7 person-rem. The performance deficiency could lead to additional unexpected personnel exposure without additional evaluation by and approval of the SAC. The licensee subsequently entered the issue into the corrective action program as condition report (AR) (1555458).

The finding is more than minor because it is associated with the Radiation Safety –Occupational Radiation Safety cornerstone attribute of program and process and affected the cornerstone objective of protecting worker health and safety from exposure to radiation. Specifically, the licensee did not take the appropriate actions defined in the procedure to evaluate the activity and challenge the actions to reduce dose for the task. Using the Inspection Manual Chapter (IMC) 0609, Appendix C, Occupational Radiation Safety Significance Determination Process, the inspector determined that the finding was of very low safety significance (Green) because Susquehanna's three year rolling average is less than 240 person-rem and it did not involve: (1) an overexposure, (2) a substantial potential for overexposure, or (3) an impaired ability to assess dose. This finding was caused by inadequate procedure compliance that resulted in a lack of planning and review of a risk significant task. Consequently, the cause of this deficiency had a cross-cutting aspect in the area of Work Controls (H.3(a)). Specifically, the licensee failed to appropriately plan the scaffold work activity by incorporating risk insights or radiological safety and the need for planned contingencies,

compensatory actions, and abort criteria. (Section 2RS02)
Inspection Report# : 2012003 *(pdf)*

Significance: G Mar 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Noncompliance with Radiological Barrier
A self-revealing, Green NCV of Technical Specification (TS) 5.7.1 was identified when a worker did not comply with a radiological barrier and protective measures for high radiation area (HRA) entry. Specifically, the worker entered a HRA but was not on the proper radiation work permit (RWP) and had not been briefed for HRA entrance. Upon identification, PPL conducted a Susquehanna Error Prevention Team Assessment (SEPTA), entered this issue into their CAP as Condition Report (CR) 1546827, and issued both an Effluents department clock reset and a Radiological Safety Note to station personnel.
The finding was determined to be more than minor based on similarity to IMC 0612, Appendix E, Example 6.h, which describes an improper entry into an HRA. Specifically, the individual was not authorized entry into a HRA. It was also more than minor based on association with the human performance attribute of the Occupational Radiation Safety cornerstone and its objective to ensure the adequate protection of worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. The finding was evaluated in accordance with IMC 0609, Appendix C, where it was determined to be Green since PPL's three year average collective dose is less than 240 person-rem/unit. The inspectors determined that this issue had a cross-cutting aspect in Human Performance - Work Practices. Human error prevention techniques, such as pre-job briefings and self-checking are expected to be used commensurate with the risk of the assigned task, such that work activities are performed safely. Personnel also do not proceed in the face of uncertainty or unexpected circumstances. In this case, the worker did not adhere to the pre-job briefings associated with the assigned RWP that prohibited HRA entry and the worker's health physics (HP) briefing that did the same. Further, the individual proceeded in the face of uncertainty by breaching the HRA boundary. [H.4(a)] (Section 4OA2.1)

Inspection Report# : 2012002 *(pdf)*

Significance: G Mar 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Radiation Protection Procedures
The inspectors identified a Green NCV of TS 5.4.1.a, which requires that written procedures be implemented covering the activities in the applicable procedures recommended by Regulatory Guide (RG) 1.33, including procedures for RWPs. On December 5, 2011, a work crew identified that dose rates exceeded the "Alert" levels specified on their RWPs used to transfer an 1100 Curie Cesium 137 source from a shipping cask to a calibration irradiator. Procedure NDAP-QA-0626, "Radiological Controlled Area (RCA) Access and RWP System," Appendix X, provides specific actions that the radiation protection technician providing job coverage must take when "Alert" levels are exceeded. All of the actions were not completed prior to restarting the work on December 5, 2011. Specifically, higher levels of supervision were not notified, the RWP was not changed, and no additional actions or precautions were documented in the RWP remarks log as required by NDAP-QA-0626, Appendix X. PPL subsequently entered the issue into their CAP as CR 1521467.
The finding is more than minor because it is associated with the Radiation Safety - Occupational Radiation Safety cornerstone attribute of program and process and affected the cornerstone objective of protecting worker health and safety from exposure to radiation. Specifically, PPL did not take the appropriate actions defined in the procedure to evaluate actions to prevent recurrence prior to restarting work when RWP alert levels had been exceeded. Using the IMC 0609, Appendix C, "Occupational Radiation Safety SDP," the inspector determined that the finding was of very low safety significance (Green) because it did not involve: (1) an as low as is reasonably achievable (ALARA) planning and controls deficiency, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. This finding was caused by inadequate procedure compliance. Consequently, the cause of this deficiency had a cross-cutting aspect in the area of Human Performance. Specifically, PPL did not follow procedures. [H.4(b)] (Section 4OA2)

Inspection Report# : 2012002 *(pdf)*

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Dec 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Report Common-Cause Inoperability of Independent Trains
. Inspectors identified a SL IV NCV of 10 CFR 50.73 (a)(2)(vii) for PPL's failure to submit a licensee event report (LER) of a common cause inoperability of two independent trains of reactor protection system (RPS) electrical power monitoring associated with several Unit 1 RPS breakers on May 8, 2012. PPL staff entered the issue into the CAP as CR 1663785 and took action to issue the required LER.
This finding was evaluated using the traditional enforcement process because the failure to accurately report events has the potential to impact or impede the regulatory process. The finding was determined to be a Severity Level IV violation based on example 6.9.d.9 of the NRC Enforcement Policy. This example states that a licensee failing to make a report required by 10 CFR 50.72 or 10 CFR 50.73 is an example of a Severity Level IV violation. Because this violation involves the traditional enforcement process and does not have an underlying technical violation that would be considered more-than-minor, inspectors did not assign a cross-cutting aspect to this violation in accordance with IMC 0612, Appendix B. (Section 1R12)

Inspection Report# : 2012005 *(pdf)*

Last modified : February 28, 2013