Susquehanna 2
3Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Restoration from Clearance Order Results in Degradation of Main Condenser Vacuum and Plant Downpower
A self-revealing NCV of very low safety significance (Green) was identified when PPL incorrectly implemented the clearance order process while returning the common offgas recombiner to service after maintenance. NDAP-QA-0322, "Energy Control Process," Revision 42, requires that "upon completion of the [clearance order] restoration plan, the system should be restored to the design operating condition (e.g. running, automatic standby, etc.)." Additionally, it requires the System Operating Representative (SOR) and Operations Supervision to "ensure restoration of the clearance order prevents introduction of system or plant transients." Contrary to these requirements, on December 12, 2012, when restoring from a clearance order, a manual isolation valve for the common recombiner was incorrectly left in the closed position. This resulted in a degradation of main condenser vacuum when the common recombiner was subsequently placed in service on February 5, 2013, requiring operator action to decrease reactor power to maintain main condenser vacuum within limits. PPL entered the issue into the CAP as CR 1668013.
The performance deficiency is more than minor because it was associated with the Configuration Control attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. Specifically, when PPL operators attempted to place the common recombiner in service on February 5, 2013, the closed manual isolation valve caused a loss of process flow to the recombiner and ultimately a degradation of main condenser vacuum. In responding to the reduction in vacuum, a recirculation pump runback was initiated and thermal power was rapidly reduced by approximately 32 percent. Additionally, the performance deficiency was similar to example 4.b in IMC 0612, Appendix E, "Examples of Minor Issues," which states that a procedural error is more than minor if it caused a reactor trip or other transient. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and determined the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. Consequently, the finding is of very low safety significance (Green). The finding is related to the cross-cutting area of Human Performance, Work Practices in that PPL did not communicate human error prevention techniques such as self and peer checking to ensure work activities are performed safely. Specifically, both the SOR and Operations Supervision reviews were insufficient to ensure the manual steam isolation valve for the common recombiner was restored to the correct position during clearance order removal.

Inspection Report# : 2013002 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: FIN Finding
Inaccurate USwC PI Data Submital
The inspectors identified a Green Finding related to implementation of NDAP-QA-0737, "Reactor Oversight Process (ROP) Performance Indicators," Revision 9, and associated severity level (SL) IV NCV of 10 CFR 50.9(a),

“Completeness and Accuracy of Information” because PPL staff did not accurately report the Unplanned Scrams with Complications (USwC) performance indicator (PI) for the period of October 2012 through December 2012. Specifically, PPL did not report the Unit 2 reactor scram, which occurred on December 16, 2012, in this PI. PPL entered the issue in their CAP as CR 1688235 and corrected the data on March 20, 2013.This scram, when combined with a second complicated scram, which was accurately reported in the same quarter, caused the PI to cross the Green-White threshold. This was discussed in an NRC follow-up assessment letter dated April 1, 2013 (ML13092A011).
The finding was evaluated in accordance with IMC 0612 Appendix B, “Issue Screening,” which states, in part, that a performance deficiency is more than minor if it is related to a performance indicator and caused the performance indicator to exceed a threshold. In this case, when the December 16 scram was re-classified under the USwC PI, the performance indicator crossed the Green-White threshold. The inspectors evaluated the finding using IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power” and determined the finding did not contribute to both the likelihood of a reactor
trip and the likelihood that mitigation equipment or functions would not be available. Consequently, the finding is of very low safety significance (Green). Additionally, the issue was evaluated in the traditional enforcement process because it had the potential to impact the NRC’s ability to perform its regulatory function. The inspectors determined the finding was a Severity Level IV violation using the examples of the NRC Enforcement Policy. Specifically, example 6.9.d.11 states “a 10 CFR Part 50 licensee submits inaccurate or incomplete PI data to the NRC that would have caused a PI to change from green to white” is an example of a SL IV violation. This finding has a cross-cutting aspect in the area of Human Performance, Decision-Making because PPL personnel did not communicate decisions and the basis for decisions to personnel who have a need to know the information in order to perform work safely, in a timely manner. Specifically, PPL did not adequately document the basis for determining the scram, which occurred on December 16, 2012, should be classified under the USwC PI to enable reviewers to adequately challenge the decision to ensure the appropriate classification was made.

Inspection Report# : 2013002 *(pdf)*

Significance: G Feb 01, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to maintain Adequate Feedwater Procedures
Inspectors identified a Green NCV of Technical Specification (TS) 5.4.1,
Procedures, related to the requirement to operate the feedwater system in accordance with procedures and implement the procedure change process. The PPL procedures implementing these requirements state that if an approved document that addresses the circumstances does not exist, then create a procedure or perform the task using another approved method (i.e., troubleshooting plan or work order). Contrary to this requirement, on December 19, 2012, Pennsylvania Power and Light (PPL’s) operators opened the breaker to the ‘A’ Reactor Feed Pump (RFP) discharge isolation valve (3A) valve motor operator (i.e., when the 3A valve failed to open as expected) without establishing or implementing procedural guidance or implementing another process such as a troubleshooting plan or work order. This action resulted in the feedwater control system logic causing closure of other feedwater valves, isolating all normal feedwater flow to the Reactor Pressure Vessel (RPV), and a subsequent automatic reactor shutdown (scram) on low water level. The PPL staff entered this issue into their corrective action program (CAP) as Condition Report (CR) 1668242, and conducted sitewide training on procedural use and adherence standards.
The inspectors identified a performance deficiency because on December 19, 2012, PPL did not implement an approved procedure to open the breaker to the 3A valve motor operator, which resulted in a subsequent unplanned reactor scram. This finding is more

than minor because it is associated with the human performance attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Additionally, this finding was similar to example 4.b of IMC 0612, Appendix E, "Examples of Minor Issues." The finding was evaluated using NRC IMC 0609 Appendix A, "User Guidance for Significance Determination for At-Power Situations," and the Station Standardized Plant Analysis Risk (SPAR) Model for a detailed risk assessment. Based upon the detailed risk assessment, the change in core damage frequency associated with this performance deficiency was in the low E-7 range, or of very low safety significance (Green). The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance, Work Control, because PPL operators did not appropriately plan work activities associated with opening the 3A valve manually by incorporating the need for planned contingencies, compensatory actions and abort criteria consistent with nuclear safety. [H.3(a)] (Section 3)
Inspection Report# : 2013007 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedural Guidance for Maintaining RPV Level During Anticipated Transient Without Scram
The inspectors identified a Green NCV of TS 5.4.1, "Procedures," because PPL's emergency operating procedure step for terminating injection sources during a rapid depressurization required for an anticipated transient without scram (ATWS) was inadequate to ensure that cold unborated water was not injected into the core. Specifically, PPL's emergency operating procedure (EOP) does not terminate injection from the high pressure coolant injection (HPCI) system during the transient and procedural guidance is insufficient to ensure that operators will maintain level in the prescribed ATWS band while injecting with HPCI. In addition to entering the issue into the CAP as CRs 1708885 and 1745775, PPL's immediate corrective actions included issuance of Operations Directive 13-02 which states that HPCI must be controlled, up to and including overriding injection, to ensure that reactor pressure vessel water level is maintained in the prescribed ATWS band during the duration of the rapid depressurization. Planned corrective actions include requiring termination of HPCI injection prior to initiation of a rapid depressurization (Action Request 1719605).
The performance deficiency is more than minor because it was associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the inadequate procedure for terminating injection prior to rapidly depressurizing the reactor during an ATWS could have resulted in operators failing to control level in the prescribed EOP band, potentially resulting in cold unborated water being injected into the core. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of safety function, did not represent actual loss of a safety function of a single train for greater than its Technical Specification (TS) allowed outage time, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. The finding is related to the cross-cutting area of problem identification and resolution (PI&R), in that PPL did not identify a performance issue completely, accurately, and in a timely manner commensurate with the safety significance. Specifically, PPL failed to

identify that guidance in EOP basis document was insufficient to ensure that operators maintained level in the EOP band. [P.1(a)]

Inspection Report# : 2013004 *(pdf)*

Significance: G Aug 29, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify Operation of Safety-Related 125Vdc Molded Case Circuit Breakers
The team identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," in that PPL failed to verify or check the adequacy of the design of molded case circuit breakers (MCCB). The team reviewed PPL response to NRC Information Notice 93-64, "Periodic Testing and Preventive Maintenance of Molded Case Circuit Breakers" and determined that PPL had not included certain 125Vdc and 120Vac MCCBs in their evaluation. Subsequently the team determined that PPL had not performed any maintenance or testing on these breakers since original construction. The team found that several 125Vdc breakers were credited as one of the two isolation devises required to ensure primary containment electrical penetrations are not damaged during overload or fault conditions on the circuit. The team concluded that PPL did not verify that these safetyrelated 125Vdc MCCBs would perform this safety function. PPL entered the issue into their corrective action program and performed an operability evaluation on the penetrations determining them to be operable but non-conforming because the second isolation device would perform the intended safety function. The team reviewed the evaluation and determined it to be reasonable.
The finding was determined to be more than minor because it was associated with the Barrier Integrity Containment Design Control and Configuration Control attribute and affected the cornerstone's objective. Using the NRC IMC 0609, "Significance Determination Process," Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 3, Section B, the finding was determined to be of very low safety significance (Green). There was no crosscutting aspect assigned to the finding because it was not indicative of current performance. (Section 1R21.2.2.2)
Inspection Report# : 2013010 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Operability Assessment of Synchroscope Switch
Inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when PPL performed an inadequate operability determination for a synchroscope switch failure that rendered offsite power and the four emergency diesel generators (EDGs) inoperable. This resulted in PPL being in violation of Unit 1 TSs 3.8.1, 3.8.2, and 3.0.3, and Unit 2 TSs 3.6.4.1 and 3.8.2. PPL entered the issue in their CAP as CR 1703293, re-evaluated past operability and submitted a licensee event report (LER) for the associated condition prohibited by plant Technical Specifications (TS) on July 8, 2013 (ADAMS Accession No. ML13190A104).
The performance deficiency was determined to be more than minor since it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely affected its objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was evaluated using the SDP of IMC 0609.04. The finding was evaluated under both the Mitigating Systems Exhibit of IMC 0609 Appendix A when Unit 1 was at power and Appendix G for the times when

one or both units were in a shutdown condition. Under IMC 0609, Appendix A, the finding screened to Green since it was not a design or qualification deficiency and was not a potential or actual loss of system or safety function. Under IMC 0609, Appendix G, Attachment 1, Checklists 5 through 7, the inspectors screened the issue to Green since it affected the requirement for operable DGs under TS 3.8.1 and TS 3.8.2. The inspectors determined that a Phase 2 analysis was not warranted since it did not match those criteria listed for further analysis in these checklists. Specifically, since all automatic transfer functions of off-site power and the EDGs remained functional, inspectors determined that none of the functions evaluated under the SDPs were affected. The finding had a cross-cutting aspect in Problem Identification and Resolution (PI&R), corrective action program (CAP), because PPL staff 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 staff did not appropriately evaluate the effect that the synchroscope switch failure had on offsite power and emergency diesel generator operability.

Inspection Report# : 2013003 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Unacceptable Preconditioning of RPS and EOC-RPT Time Response Test
Inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XI, “Test Control,” because PPL staff performed unacceptable preconditioning by performing corrective maintenance prior to recording the as-found time response of the reactor protection system (RPS) and end-of-cycle recirculation pump trip (EOC-RPT) for the turbine control valve (TCV) fast closure function. Specifically, corrective maintenance was performed with the potential to improve the time response of the system without verifying that the as-found condition was within the acceptance criteria assumed in the accident analysis. PPL entered the issue into their CAP as CR 1712564 and verified as-left data was verified to be within acceptance criteria which provided reasonable assurance that the SSC would perform satisfactorily during the subsequent operational period.
Inspectors determined the performance deficiency is more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure to collect as-found data could result in the inability to verify the operability of structures, systems, and components (SSC). Additionally, in this case, the test had exhibited low margin and unreliable performance during its previous surveillance test. The inspectors determined, through a review of IMC 0609, Appendix A, Exhibit 2, that the finding was Green because the finding was not related to a design or qualification deficiency, did not represent a loss of a mitigating system safety function, and did not screen as potentially risk significant due to external initiating events. The finding is related to the cross-cutting area of PI&R, CAP, in that PPL did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity. Specifically, though degraded performance was identified during previous testing, PPL staff did not take timely and effective corrective actions to ensure the required maintenance did not unacceptably precondition the following 24-month surveillance test.

Inspection Report# : 2013003 *(pdf)*

Significance: G May 22, 2013
Identified By: NRC
Item Type: VIO Violation
Failure to Implement an Effective Licensed Operator Medical Program
(Initial Entry)
The inspectors identified: 1) an apparent violation (AV) of Title 10 of the Code of Federal Regulations (10 CFR) 55.21, “Medical Examination;” Part 55.25 “Incapacitation because of disability or illness;” Part 55.33, “Disposition of

an Initial Application," for the failure of the licensee to restrict operators from performing licensed duties when they had disqualifying medical conditions; and 10 CFR 50.74, "Notification of change in operator or senior operator status," for PPL's failure to notify the NRC within 30 days of changes in licensed operators' medical conditions; and, 2) a related finding of very low safety significance (Green) for PPL's failure to implement effective corrective actions to prevent this recurring AV. Specifically, the inspectors identified that four licensed operators developed disqualifying medical conditions that were not properly evaluated by PPL staff in accordance with ANSI/ANS-3.4-1983, "American National Standard Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants." Additionally, PPL did not restrict the operators from performing licensed duties or obtain NRC approval (by requesting conditioned licenses) to continue to perform licensed duties, which caused the operators to not meet the requirements of 10 CFR 55.33(a)(1). Additionally, the inspectors identified eight instances in which PPL failed to notify the NRC within 30 days of learning of changes in licensed operator medical conditions that involved permanent disabilities/illnesses as required by 10 CFR 50.74. This resulted in the operators performing licensed operator duties without properly restricted licenses. PPL has taken actions to correct these issues by formally notifying the NRC and requesting conditioned licenses, as necessary, training the licensed operators and medical staff in the applicable requirements, and revising related procedures to provide additional guidance and require annual training. PPL entered this issue into their corrective action program. (CR-1709539)

The inspectors reviewed this issue in accordance with NRC IMC 0612, Appendix B, "Issue Screening" for traditional enforcement and as part of the Reactor Oversight process (ROP). Under the ROP, the inspectors also identified a related finding of very low safety significance (Green) involving PPL's failure to prevent this recurring AV.

(Update)
[IR 05000387;388/2013012 combined AVs 2013008-01 and 2013008-02 into a single problem statement and finalized the significance of the violations.]

The first violation [05000387;388/2013008-01] involved multiple occurrences between August 2007 and June 2012, in which PPL: (a) did not restrict licensed reactor operators from performing licensed duties when they had disqualifying medical conditions; and (b) did not properly notify the NRC after learning of changes in licensed reactor operator medical conditions that involved permanent disabilities/illnesses. Specifically, four licensed reactor operators at SSES developed disqualifying medical conditions that were not properly evaluated by PPL staff. PPL did not restrict the operators from performing licensed duties or obtain NRC approval (by requesting conditioned licenses) for the operators to continue to perform licensed duties. Additionally, the NRC identified eight instances in which PPL did not notify the NRC within 30 days of learning of changes in licensed operator medical conditions that involved permanent disabilities/illnesses. This resulted in the operators performing licensed operator duties without their licenses being properly amended to add requirements to accommodate the medical conditions (such as requiring an operator to wear prescribed corrective lenses if (s)he did not meet the minimum vision requirements).

The second violation [05000387;388/2013008-02] involved PPL's submittal of information to the NRC that was not complete and accurate in all material respects. Specifically, between 2010 and 2011, PPL submitted three licensed operator renewal applications and one initial license application, each of which certified the medical fitness of the applicants and that no restricting license conditions were necessary. However, the applicants, in fact, each had medical conditions that did not meet the minimum standards of 10 CFR 55.33(a)(1) and, therefore, required specific license conditions in order to perform licensed activities. Based, in part, on this inaccurate information, the NRC issued the licenses without the required restricting license conditions.

The NRC has concluded that both violations occurred as a result of PPL's failure to: (1) oversee the licensed operator medical examination process; (2) train staff on the applicable NRC requirements; and (3) implement an effective licensed operator medical program that maintained awareness of NRC and industry guidance. Specifically, when PPL's Medical Review Officer (MRO) assumed the position in 2007, he was not provided turnover or training from PPL regarding licensed operator medical requirements. The PPL MRO relied upon exams that were performed by a physician and his staff at a local hospital. Similarly, the physician that performed the exams at the local hospital had

not been trained on, nor had knowledge of, the applicable NRC requirements. Accordingly, these violations have been categorized collectively as a SL III problem to emphasize the importance of providing suitable training, oversight, and focus on licensed operator medical requirements.

Finally, the stated performance deficiency (PPL's failure to implement adequate corrective actions to prevent this recurrence) was determined to not be indicative of current performance. As a result, the NRC has concluded that a CCA should not be assigned to the Green finding.
Inspection Report# : 2013008 *(pdf)*
Inspection Report# : 2013012 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Combustible Storage in Restricted Areas Without Approval
The inspectors identified a Green NCV of Unit 2 Operating License Condition 2.C.(3), regarding its fire protection program, when PPL stored transient combustibles in restricted areas without evaluations by the site fire protection group. PPL procedure NDAP-QA-0440, “Control of Transient Combustible/Hazardous Materials,” Revision 10, section 6.2.4 states that, for restricted areas, “transient combustibles or hazardous materials shall not be stored in these areas without specific instructions to do so.” It continues that “specific approvals for storage in Restricted Areas must be from the Site Fire Protection Group.” PPL removed transient combustibles from the restricted areas, established hourly fire watches as appropriate, revised procedures, conducted walkdowns for the extent of the condition, and entered the issues in their CAP.
The inspectors evaluated this finding using IMC 0612 Appendix B and determined it to be more than minor based on affecting the Protection against External Factors attribute of the Mitigating Systems cornerstone and its objective to ensure the availability, reliability, and capability of systems that respond to initiating events, in this case fire, to prevent undesirable consequences. Additionally, it was similar to IMC 0612 Appendix E example 4.k in that in all of the observations, transient combustibles were in a combustible free zone required for separation of independent trains and, in one case, the fire loading was not within fire hazard analysis limits. The finding was qualitatively screened in accordance with IMC 0609 Appendix F where the finding was categorized under Fire Prevention and Administrative Controls. The degradation was assigned a Low rating and screened to Green based on the Low degradation rating. The finding was determined to have a cross-cutting aspect in the area of Human Performance, Work Practices, for the need to ensure supervisory and management oversight of work activities such that nuclear safety is supported. Specifically, PPL supervisory and management oversight had not sufficiently coached and reinforced the knowledge of station and procedural standards regarding restricted area requirements.
Inspection Report# : 2013002 *(pdf)*

Significance: N/A Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate 10 CFR 50.59 Screeing of TS Bases Change
The inspectors identified a Severity Level IV (SL-IV) NCV of 10 CFR 50.59, “Changes, Tests, and Experiments,” when PPL made changes that affected Unit 1 and Unit 2 TS 3.8.3 without obtaining a license amendment pursuant to 10 CFR 50.90. Specifically, PPL changed the TS 3.8.3 bases to support raising the American Petroleum Institute (API) gravity of acceptable diesel fuel oil by crediting the fuel oil day tank capacity to meet the onsite fuel requirements. This change altered the intent of TS 3.8.3. PPL entered this item in their CAP as CR 1678266, made urgent changes to surveillance procedures, evaluated the issue, and ultimately agreed with this conclusion.
The inspectors determined that the failure to implement the requirements of 10 CFR 50.59 for changes to the TSBs was a performance deficiency within PPL’s ability to foresee and correct. The inspectors evaluated the finding in accordance with IMC 0612 Appendix B. The inspectors determined that this issue impacted the regulatory function by failing to receive prior NRC approval for changes in licensed activities. Therefore, the violation was compared to

examples in Enforcement Policy section 6. The violation was determined to be more than minor based on similarity to SLIV example 6.1.d.2, a 10 CFR 50.59 violation that resulted in conditions evaluated as having very low safety significance. The inspectors also evaluated the performance deficiency under the ROP and determined that the associated ROP finding was minor since PPL had not accepted fuel oil deliveries with a higher gravity. As such, no cross-cutting aspect was assigned to this finding.

Inspection Report# : 2013002 *(pdf)*

Significance: G Mar 31, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Procedure for Control Room Cooling Fan Train Failure
A self-revealing NCV of 10 CFR 50 Appendix B, Criteria V "Instructions, Procedures, and Drawings," was identified because PPL did not ensure alarm response procedures (ARPs) for control room cooling fan train failures were adequate, which resulted in the subsequent loss of both trains of cooling during clearance order (CO) application for fan repair work. Specifically, the ARP actions were deficient in allowing an abnormal system control switch configuration that led to the inadvertent shutdown of the in-service 'B' train fans during the application of the CO process to perform work on the failed 'A' control room cooling fan train. PPL entered the issue into their CAP to repair the failed damper and also evaluate the extent-of-condition to ensure the adequacy of other applicable ventilation procedures.
The inspectors determined the deficiency was more than minor because it was associated with the Procedure Quality attribute of the Mitigating System Cornerstone. The inadequate procedure resulted in the loss of control room cooling fans, which affects the objective to ensure the availability and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined through a review of IMC 0609 Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," that the finding was of very low safety significance (Green) because the finding was not related to a design or qualification deficiency, did not represent a loss of a credited mitigating system safety function because cooling was restored in a timely manner, and did not screen as potentially risk significant due to external initiating events. The control room operators immediately recognized the loss of cooling and took manual action to restart the 'B' cooling train within 15 minutes to ensure control room temperatures were not adversely affected. The finding did not have a cross-cutting aspect because the inadequate ARP was an historical issue not indicative of current performance. Specifically, the procedures had not been adequately identified and revised in 2003 and this occurred outside of the nominal three-year period for evaluating present performance as defined in IMC 0612, section 03.15. Additionally, PPL has instituted procedure and CAP improvements since that time which would have prevented the performance deficiency.

Inspection Report# : 2013002 *(pdf)*

Significance: G Feb 01, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Establish and Implement Written Procedures for Operating Plant Equipment
A self-revealing Green NCV of TS 5.4.1, "Procedures," was identified involving the failure to incorporate the results of a Failure Modes and Effects Analysis (FMEA) completed in January 2010 into applicable operating procedures. The FMEA identified a vulnerability involving operator response to a loss of power to the RFP discharge isolation valves 3A (B, C) during the transfer from Discharge Pressure Mode (DPM) to Flow Control Mode (FCM). Specifically, PPL's FW operating procedures were not maintained to ensure operators could adequately recover RPV water level control when challenged with a system failure such as the condition that resulted in the Unit 2 scram

on December 19, 2012. The PPL staff entered this issue into the CAP as AR-OPG-1654037, CR 1666244, and CR 1666253.
The finding was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems Cornerstone and adversely impacted the objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was evaluated using NRC IMC 0609, Attachment 0609.04, "Initial Characterization of Findings," and Appendix A, "User Guidance for Significance Determination for At-Power Situations," and screened as very low safety significance (Green) per Exhibit 2. The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance, Resources, because PPL staff did not ensure that procedures were complete, accurate and up-to-date to assure nuclear safety. Specifically, PPL's engineering modification procedures and checklists did not ensure that known single point design vulnerabilities were adequately addressed in FW procedures to ensure operators could adequately recover reactor water level prior to the Unit 2 reactor scram on December 19, 2012. [H.2(c)] (Section 3)
Inspection Report# : 2013007 *(pdf)*

Significance: G Feb 01, 2013
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Implement the Corrective Action Process
A self-revealing finding (FIN) of very low safety significance (Green) was identified for PPL staff's failure to follow their CAP procedure, NDAP-QA-0702, "Action Request and Condition Report Process," in response to an identified issue with the FW system. Specifically, on August, 23, 2011, PPL's staff did not initiate an action request (AR) or condition report (CR) after determining that ICS digital FW valve control needed to be placed in Manual Valve Control mode prior to de-energizing the 3A motor operated valve (MOV) in order to prevent a loss of all FW flow. This issue went unaddressed and subsequently on December 19, 2012, Unit 2 scrammed on low RPV water level when operators, while attempting to open the stuck 3A valve, opened the 3A valve power supply breaker with the 'A' RFP FW valve controls in automatic causing a loss of all normal FW. The PPL staff entered this issue into the CAP as CR 1653480.
The finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems Cornerstone and adversely impacted the objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was evaluated using NRC IMC 0609, Attachment 0609.04, "Initial Characterization of Findings," and Appendix A, "User Guidance for Significance Determination for At-Power Situations," and screened as very low safety significance (Green) per Exhibit 2. The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, CAP, because PPL's staff did not implement the CAP with a low threshold for identifying issues completely, accurately, and in a timely manner commensurate with their safety significance. Specifically, PPL's staff did not identify non-conforming issues for FW valve control, design and operation that eventually led to a loss of normal FW and scram of Unit 2 on December 19, 2012. [P.1(a)] (Section 5)
Inspection Report# : 2013007 *(pdf)*

Significance: G Dec 31, 2012

Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Demonstrate Effective Preventive Maintenance Under 50.65(a)(2)
Inspectors identified a Green NCV of 10 CFR 50.65(a)(2) for PPL staff not demonstrating that the performance of the Unit 2 125 volt direct-current (VDC) system was being effectively controlled through appropriate preventive maintenance. Specifically, PPL did not properly classify a functional failure of the Unit 2 125 VDC system on November 23, 2011 as maintenance preventable until prompted by questions from the inspectors. Consequently, PPL staff declared the functional failure as maintenance preventable, determined a maintenance rule performance criteria was exceeded and moved the Unit 2 125 VDC system from a(2) to (a)(1) status in order to establish goals and monitoring as required by 10 CFR 50.65. PPL staff entered this issue in their CAP as CRs 1496655 and 1643158. This finding was more than minor because it was associated with the Equipment Performance attribute of the Mitigating System 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. Additionally, this finding was similar to example 7.d of IMC 0612, Appendix E. Using Section A of Exhibit 2 of NRC IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," inspectors determined this finding was of very low safety significance (Green) because the finding did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with PPL's maintenance rule program for greater than 24 hours. The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution (PI&R), CAP, because PPL staff did not thoroughly evaluate the Unit 2 125 VDC system functional failure such that the resolution addressed the cause to include proper classification. The inspectors determined that PPL staff not thoroughly evaluating the maintenance preventable aspects of a functional failure was due to the CAP process evaluation not fully addressing the cause such that appropriate classification under the maintenance rule could be made [P.1(c)] (Section 1R12).

Inspection Report# : 2012005 *(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, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Procedure Failed to Verify Design Requirements for RHR Suction Piping
The inspectors identified a green, self-revealing, non-cited NCV of 10 CFR 50 Appendix B, Criterion 5, “Instructions, Procedures, and Drawings,” which states, in part, that procedures shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The inspectors determined that PPL’s residual heat removal (RHR) shutdown cooling procedure failed to ensure that water properties

(pressure and temperature) in the suction piping was controlled to ensure water hammer event would not happen when establishing a low pressure injection standby lineup. As a result, a water hammer occurred in the piping which caused the suction relief valve to fail open. PPL's immediate corrective actions included entering the issue into their CAP as CRs 1746612 and 1754913, replacing the relief valve, walking down the piping and associated supports and communicating to operations personnel to declare RHR inoperable when aligned to shutdown cooling (SDC) while reactor coolant temperature is above 200 degrees Fahrenheit.
This finding is more than minor because it is associated with the procedure quality attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the water hammer event resulted in a stuck open relief valve on the RHR suction piping whose leak rate exceeded the assumed leakage from engineered safeguard systems in PPL's post-event control room dose calculations. Because conditions for RHR system operation had been established, the team assessed this finding in accordance with the NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Appendix G, "Shutdown Operations Significance Determination Process," using Attachment 1, Checklist 5. The finding did not require a quantitative assessment because none of the checksheet guidelines requiring a phase 2 analysis were affected. Therefore, the finding was determined to be of very low safety significance (Green). The finding had a cross cutting aspect in the problem identification and resolution area associated with operating experience because PPL did not implement and institutionalize operating experience through changes to station processes, procedures, equipment, and training programs. Specifically, PPL's review of IN 2010-11 did not ensure the transition of RHR from SDC to LPCI standby was completed successfully by incorporating adequate steps into the operating procedure. [P.2(b)].

Inspection Report# : 2013004 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedure to Control and Monitor Reactor Coolant System Heatup Rate
Inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because PPL did not adequately incorporate the acceptance criteria for heatup rate specified in the plant TSs, as amplified in its basis, into the surveillance test implementing procedure for monitoring adherence to pressure and temperature requirements during plant heatup and cooldown. Based on this procedure inadequacy, operators exceeded the TS limit during a plant startup on May 28, 2013. PPL entered the issue into their CAP as CR 1709058 and revised plant procedures to appropriately incorporate the acceptance criteria.
This performance deficiency is more than minor because it was associated with the human performance and procedure quality attribute of the Barrier Integrity cornerstone and affected the objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system (RCS), and containment) protect the public from radionuclide releases caused by accidents or events. Using IMC 0609, "Significance Determination Process," Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," the inspectors determined that this issue required a detailed risk evaluation. In consultation with a Region I Senior Reactor Analyst, the inspectors completed a qualitative risk assessment and determined this issue is of very low safety significance (Green). Specifically, there was no impact on the integrity of the reactor vessel due to the short duration temperature gradient imposed by exceeding the TS heatup rate. Consistent with PPL's evaluation, the observed heatup rate minimally exceeded the specified limit during plant startup and remained within the acceptable bounds of the current plant pressure and temperature analysis. The finding is related to the cross-cutting area of PI&R, Corrective Actions, in that PPL did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity. Specifically, PPL did not take effective corrective actions to correct an inadequate procedure for monitoring adherence to pressure/temperature (P/T) limits after it was identified by inspectors.
Inspection Report# : 2013003 *(pdf)*

Significance: G Sep 30, 2012
Identified By: Self-Revealing
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)*

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)*

Occupational Radiation Safety

Significance: N/A Sep 30, 2013
Identified By: NRC
Item Type: VIO Violation
Contract Employee Willfully Failed to Follow SSES Procedure Pertaining to Personnel Contamination Monitoring
Susquehanna Steam Electric Station Technical Specification 5.4.1.a requires that written procedures be established, implemented, and maintained covering the activities recommended in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978. Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978, Item 7.e recommends the establishment of written Radiation Protection procedures for personnel monitoring activities. PPL Susquehanna, LLC implementing procedure, NDAP-QA-0627, “Radiation Protection Program” requires personnel who receive a second alarm on any monitor to stay in the area and contact Health Physics.

Contrary to the above, when attempting to exit the Susquehanna Steam Electric Station Protected Area (PA) on October 11, 2011, a contract employee who received a second alarm on a radiation portal monitor willfully, with careless disregard, did not stay in the area and contact Health Physics. Instead, the individual (through a co-worker) contacted Security, used a different portal monitor, and then exited the PA after the second monitor did not alarm. This is a Severity Level IV violation.
Inspection Report# : 2013013 *(pdf)*

Significance: N/A Sep 30, 2013
Identified By: NRC
Item Type: VIO Violation
Contract Employee Deliberately Moved a High Radiation Area Posting
Specifically, on March 30, 2012, a contract carpenter was assigned, along with some other carpenters, to erect a scaffold in the isolation phase bus area of the SSES Turbine Building. An area near the job location was roped off and a posting on a stanchion indicated that a HRA existed in the overhead. After an RP technician who had accompanied the workers to conduct a radiation survey left, the contract carpenter moved the stanchion and roping out of the way to make room for the scaffold. When there was still not enough room to build the scaffold, the materials were dismantled and eventually removed from the area.

SSES TS 5.4.1, in part, requires that written procedures shall be implemented covering the procedures recommended in RG 1.33, Rev 2, App A, February 1978. RG 1.33, Rev 2, App A, recommends the establishment of radiation protection procedures for access control to radiation areas and for contamination control. PPL implementing procedure NDAP-QA-0626, “Radiologically Controlled Area Access and Radiation Work Permit System” states that individuals are not allowed to move radiological postings, barricades, and barriers and to contact HP if there is a need to have any of these items moved or modified. Contrary to the above, on March 30, 2012, a contract carpenter did not contact the SSES HP department and, instead, moved an HRA posting on his own.

Inspection Report# : 2013013 *(pdf)*

Significance: N/A Sep 30, 2013
Identified By: NRC
Item Type: VIO Violation
Violation of Procedureal Requirements for RCA Egress
On April 6, 2011, a contract insulator, after receiving an initial contamination alarm from his hardhat when using a personal contamination monitor (PCM) prior to exiting the radiologically controlled area (RCA), appropriately made a second monitoring attempt, but deliberately leaned his head out of the PCM to avoid receiving a second alarm. The insulator then exited the RCA although he hadn't been appropriately monitored for radioactive contamination. Additionally, on April 7, 2011, a contract electrician willfully used an inoperable portal monitor (PM) while exiting the RCA. Specifically, after receiving no alarms from a PCM, the electrician appropriately entered a PM, but noticed that the volume seemed lower than normal and that no lights were on when he exited. The electrician testified to OI that he believed the monitor had worked properly and, therefore exited the RCA. However, as identified by PPL, the PM was, in fact, inoperable, although it was not labeled as being out of service. The NRC determined that the electrician should have assessed why the volume was low and the lights were out before exiting the RCA, and that he should not have assumed the monitor was working.

SSES TS 5.4.1, in part, requires that written procedures shall be implemented covering the procedures recommended in RG 1.33, Rev 2, App A, February 1978. RG 1.33, Rev 2, App A, recommends the establishment of radiation protection procedures for access control to radiation areas and for contamination control. Contrary to the above, on April 6 and April 7, 2011, contract employees left the SSES RCA without successfully passing through both a PCM and a PM.

Inspection Report# : 2013013 *(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 Actuation of the Reactor Protection System

The inspectors identified a SL IV NCV of 10 CFR 50.72(b)(3)(iv)(A) and (B) when PPL operators did not report a valid actuation of the Unit 2 RPS on November 9, 2012 within eight hours of occurrence as required. The concern was entered into PPL's CAP as CR 1643096 and an Emergency Notification System (ENS) report was submitted restoring compliance.
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 4OA3)

Inspection Report# : 2012005 *(pdf)*

Last modified : December 03, 2013