

# Susquehanna 1

## 4Q/2013 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:**  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Procedural Guidance for Responding to an Internal Flooding Event in ECCS Rooms**

The inspectors identified a Green NCV of Technical Specifications (TS) 5.4.1, "Procedures," because PPL's procedures EO-000-104, "Secondary Containment Control" and ON-169-002, "Flooding in the Reactor Building" were inadequate in that actions directed in the procedures could complicate an internal flooding event and may adversely affect aspects of PPL's flood design. Specifically, the procedures directed operators to enter a flooded room to assess the extent and source of the flooding; an action which could render multiple trains of emergency core cooling system (ECCS) inoperable due to communicating two watertight rooms. In addition to entering the issue into the CAP as Condition Reports (CRs)-2013-02099 and 2013-06417, PPL issued Operations Directive 13-07 which provided guidance to ensure that operators sent to investigate a room flooded alarm will do so in a manner that will not affect redundant trains.

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 capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the procedure to respond to a room flooded alarm was insufficient to ensure operator response would not potentially render multiple trains of ECCS inoperable. The finding was evaluated in accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibits 2 and 4 of IMC 0609, Appendix A, "The SDP for Findings At-Power." Since opening the watertight door with excessive flooding could bypass the flood protection feature and potentially degrade two or more trains of a multi-train system or function, a detailed risk assessment was performed. The condition was modeled using the Susquehanna standardized plant analysis risk (SPAR) model version 8.19 along with SAPHIRE version 8.09. As a bounding analysis, the condition was assumed to exist for greater than one year and the flooding was assumed to require a reactor shutdown which results in a plant transient with failure of high pressure coolant injection (HPCI) and core spray (CS) due to flood impacts. The flooding initiating event frequency was estimated to be about 1 in 10,000 years. The resulting change in core damage frequency was substantially less than 1E-7. The dominant sequences included a transient with a loss of all direct current (DC) power and a transient with failures to depressurize and reactor core isolation cooling (RCIC) failures. Since the change in core damage frequency was sufficiently low no further evaluation for large early release was required. The finding is related to the cross-cutting area of PI&R, Self and Independent Assessments, in that PPL did not conduct assessments to identify areas for improvement. In particular, the self-assessments were not of sufficient depth, comprehensive, appropriately objective, or self-critical. Specifically, despite PPL's process requiring periodic verification that event driven procedures are technically and functionally correct, the periodic review completed in April 2013 failed to identify that actions specified in the procedure could invalidate the flood design. [P.3(a)]. (Section 1R06)

Inspection Report# : [2013005](#) (*pdf*)

**Significance:**  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:**  Sep 30, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Assess and Manage Risk of Maintenance Activities**

The inspectors identified a Green NCV of 10 CFR 50.65(a)(4) because PPL did not adequately assess the risk of performing maintenance in accordance with station procedures. Specifically, PPL did not specify appropriate risk management actions (RMAs) while performing a standby liquid control (SLC) system flow surveillance in conjunction with having the 'E' emergency diesel generator (EDG) unavailable. PPL's immediate corrective actions included entering the issue into their CAP as condition reports (CRs) 1721928 and 1781929, communicating the issue to applicable station personnel, and revising the risk assessment for use in future performance of the maintenance activities.

The performance deficiency is more than minor because it affected the Human Performance attribute of the Mitigating Systems cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The item is similar to example 7.e. in NRC IMC 0612 Appendix E, "Examples of Minor Issues." This example states, in part, that failure to perform an adequate risk assessment when required by 10 CFR 50.65 (a)(4) is not minor if the overall elevated plant risk would require, under plant procedures,

RMA or additional RMAs. In this case, the SLC flow surveillance was required to be screened as high operational risk due to the short duration limiting condition of operation (LCO) entry and medium or high operational risk due to changing risk to Yellow when performed in conjunction with the 'E' EDG unavailability.

Both of these categories required additional RMAs in accordance with station procedures. In accordance with IMC 0609.04, "Initial Characterization of Findings," and IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency was associated with RMAs only and the incremental core damage probability was  $< 1E-6$  and the incremental large early release probability was  $< 1E-7$ . This finding was determined to have a cross-cutting aspect in the area of Human Performance, Work Control in that PPL failed to appropriately plan work activities by not incorporating risk insights. Specifically, PPL did not appropriately assess the risk of performing maintenance activities by including required risk manage actions as specified in station procedures. [H.3(a)].

Inspection Report# : [2013004](#) (*pdf*)

**Significance:**  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 devices 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:**  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 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:** N/A Mar 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate 10 CFR 50.59 Screening 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:** 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*)

## Barrier Integrity

**Significance:**  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

### **Missed Technical Specification Surveillance for Secondary Containment Drawdown Testing**

The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control," because PPL did not ensure all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service was identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Specifically, PPL's procedure used to implement the requirements of TS Surveillance Requirements (SR) 3.6.4.1.4 and 3.6.4.1.5 did not ensure that secondary containment integrity was tested in all required configurations. PPL's immediate corrective actions included entering the issue into their CAP as CR-2013-03891 and applied a status control tag to the railroad access bay door-101 as an administrative control until corrective actions can be completed and the configuration tested satisfactorily.

The finding is more than minor because it is associated with the procedure quality attribute of the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the inadequate surveillance procedure resulted in missed surveillances for SRs 3.6.4.1.4 and 3.6.4.1.5. Additionally, it was similar to example 3.d in IMC 0612

Appendix E, "Examples of Minor Issues," in that the failure to implement the TS SR as required is not minor if the surveillance had not been conducted. In this case, the surveillance requirement had not been completed for all configurations of secondary containment. In accordance with IMC 0609.04, "Initial Characterization of Findings," and IMC 0609, Appendix A, "The SDP for Findings At-Power," the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency only represented a degradation of the radiological barrier function provided for the Standby Gas Treatment system. This finding was determined to have a cross-cutting aspect in the area of Human Performance Resources area because the licensee failed to ensure that personnel, equipment, procedures, and other resources are available and adequate to assure nuclear safety. Specifically, those necessary for: complete, accurate and up-to-date design documentation, procedures, and work packages, and correct labeling of components [H.2(c)]. (Section 1R22)

Inspection Report# : [2013005](#) (*pdf*)

## Emergency Preparedness

**Significance:** G Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Instrumentation to Implement EALs for Fission Product Barrier Degradation**

The inspectors identified a Green NCV of 10 CFR 50.54, "Conditions of Licenses," paragraph (q), because PPL did not maintain the Emergency Plan to adequately meet the standards of 50.47(b). Specifically, PPL did not have temperature indication installed in some areas of the reactor building that are required to support assessment and determination of entry conditions into the fission product barrier emergency action levels (EALs). PPL entered this issue into their CAP as CR 1727229.

The inspectors determined that the failure to have temperature indication installed in certain areas of the reactor building was a performance deficiency that was within PPL's ability to foresee and correct. The performance deficiency is more than minor because it is associated with the Facilities and Equipment attribute of the Emergency Preparedness cornerstone, and adversely 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 lack of installed temperature instrumentation and the reliance on local temperature indications were 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 (Green) because the finding was determined to be an example of an ineffective EAL initiating condition, such that a Site Area Emergency would be declared in a degraded manner. The cause of this finding has a cross-cutting aspect in the area of Human Performance Resources because PPL did not ensure that facilities and equipment were adequate and available, including emergency facilities and equipment. Specifically, PPL did not provide temperature instrumentation to operators to ensure a timely and accurate declaration of an emergency for an un-isolable reactor coolant leak in the reactor building. [H.2.d]. (Section 1EP6)

Inspection Report# : [2013005](#) (*pdf*)

**Significance:** G Sep 30, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate and untimely Actions to Address a Failed Instrument Necessary for Diagnosis of Emergency Conditions**

The inspectors identified a finding of very low safety significance (Green), and an associated NCV of 10 CFR 50.54

(q) for failing to follow and maintain an emergency plan that meets the requirements of emergency planning standard 10 CFR 50.47(b)(4). Specifically, the licensee failed to take timely corrective actions to restore a degraded room flooded alarm in accordance with station procedures. The alarm was out-of-service from December 21, 2012 until September 23, 2013 without adequate compensatory measures in place. PPL's immediate corrective actions included entering the issue into their CAP as

CR 1745962, changing the priority of the work order (WO) and listing it as a priority item on their Daily Leadership Alignment Package. PPL replaced the detector on September 23, 2013.

The performance deficiency is more than minor because it was associated with the facilities and equipment attribute of the Emergency Preparedness cornerstone and affected the objective to ensure that the 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 performance deficiency would have resulted in untimely declaration of an Alert OA5 and Notice of Unusual Event (NOUE) OU5. In accordance with NRC IMC 0609, Appendix B, "Emergency Preparedness SDP," the inspectors determined that this finding is of very low safety significance (Green) because it did not result in the loss or degradation of a risk significant planning standard. Specifically, one Alert and one NOUE EAL initiating condition would have been rendered ineffective such that a flooding event would have been declared in a degraded manner. 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 in a timely manner. Specifically, when the detector failed on December 21, 2012, adequate compensatory measures were not specified and the WO was not scheduled for completion for 12 months. [P.1(d)].

Inspection Report# : [2013004](#) (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 Procedural 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*)

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## **Public Radiation Safety**

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## **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.

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## Miscellaneous

Last modified : February 24, 2014