Susquehanna 2
4Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Multiple Violations of Work Hour Limitations by Licensed Operators
The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR 26.205, "Work Hours," because Susquehanna did not ensure that the working hours of licensed operators were maintained within regulatory limits. Specifically, numerous instances of violations were identified in the operations department in which individuals exceeded the required work hour limits while performing duties subject to work hour controls. In review of the issue, the inspectors identified that Susquehanna inappropriately excluded some works hours performing non-covered work from the total accumulated work hours, which allowed individuals to perform covered work while in excess of the work hour limits without meeting the requirements for applying a waiver. Susquehanna entered the issue into the CAP as CR-2015-15708 and initiated action to evaluate the extent of the matter and communicate the issue with the operations department, reinforce the standards for work hour tracking with station personnel, and ensure work hours are appropriately tracked. The inspectors determined that the finding was more than minor because Susquehanna inadequately implemented the requirements of 10 CFR 26.205 and NDAP-QA-0025 routinely. Therefore, if the performance deficiency were left uncorrected, the continued process of not including all hours accumulated toward work hour limits and allowing workers to exceed work hour limits, had the potential to lead to a more significant safety concern. The finding was also similar to IMC 0612, Appendix E, "Examples of Minor Issues," Example 9.a. In accordance with IMC 0609.04, "Initial Characterization of Findings," dated June 19, 2012, and Exhibits 1 and 2 of IMC 0609, Appendix A, "The SDP for Findings At-Power," dated June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because no transients, loss of function of a mitigating system, or mismanagement of reactivity occurred as a result of licensed operators performing covered work while not in compliance with the work hour limits specified in 10 CFR 26.205. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Identification, because Susquehanna did not identify the issues completely, accurately, and in a timely manner. Specifically, Susquehanna identified violations of work hour limits on multiple occasions but the CRs were not in sufficient detail to ensure they were appropriately prioritized and assigned for resolution. Individuals did not recognize that work performed doing non-covered work was to be counted as hours accumulated towards the work hour limitations and thus discounted the violations as erroneous. [P.1] (Section 4OA2)

Inspection Report# : 2015002 *(pdf)*

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Loss of Main Condenser Vacuum When Transitioning Steam Seals to Auxiliary Steam
A self-revealing finding of very low safety significance (Green) and associated NCV of SSES Unit 2 TS 5.4.1, "Procedures," was identified because Susquehanna incorrectly implemented procedures for operation of the auxiliary steam and main turbine steam sealing systems. Specifically, on April 10, 2015, while Unit 2 was being shut down for a RFO, operators secured main turbine steam seals resulting in degraded main condenser vacuum. The degraded main

condenser vacuum resulted in a main turbine trip, which caused an automatic reactor scram from approximately 37% power. Susquehanna restored main condenser vacuum by reestablishing steam seals, performed off-normal and emergency operating procedures to stabilize the plant post-scram and entered the issue into the corrective action program (CAP) as CR-2015-09890. The finding was more than minor because it was associated with the Human Performance attribute of the Initiating Events cornerstone and affected its objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, not understanding the impact of securing auxiliary steam to the main turbine steam seals resulted in the degradation of main condenser vacuum, automatic trip of the main turbine and associated reactor scram. The inspectors evaluated the finding in accordance with IMC 0609, Appendix A "The SDP for Findings At-Power," Exhibit 1, for the Initiating Events cornerstone, dated June 19, 2012. The inspectors determined the finding was of very low safety significance (Green) because it did not cause a reactor trip and the loss of mitigation equipment. Specifically, though a reactor scram occurred, operators were able to restore main condenser vacuum prior to MSIV closure and the main condenser and reactor feed pumps remained functional during the event. This finding has a cross-cutting aspect in the area of Human Performance, Avoid Complacency, because Susquehanna did not implement appropriate error reduction tools. Specifically, operators did not effectively implement human error prevention tools (e.g. pre-job briefing, stop-think-act-review) in accordance with station processes. [H.12] (Section 4OA3)

Inspection Report# : 2015002 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Control of Transient Combustible Materials
The inspectors identified a Green NCV of the PPL Unit 1 and Unit 2 Facility Operating License Condition 2.C.(6), “Fire Protection Program” (FPP), for PPL not adequately controlling the storage of transient combustibles in accordance with their fire protection program requirements. Specifically, combustible materials in excess of the maximum allowable transient combustible loading were stored without being evaluated by the site fire protection engineer (SFPE) or having compensatory actions identified. PPL immediately instituted a fire watch for the area. The SFPE subsequently evaluated the area and determined that the transient combustibles exceeded the maximum allowable transient combustible loading as determined by the fire protection plan.

Inspectors determined the performance deficiency was more than minor based on affecting the protection against external factors attribute of the initiating events cornerstone and its objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as at power operations. Additionally, it was similar to example 4.k in IMC 0612 Appendix E, “Examples of Minor Issues,” in that transient combustibles were not within the fire hazard analysis limits and there was a credible fire scenario that existed involving the transient combustibles that would impact equipment important to safety, specifically both trains of the control structure heating, ventilation and air conditioning (HVAC), control structure chillers and standby gas treatment.

In accordance with IMC 0609.04, “Initial Characterization of Findings,” and Attachment 1 of IMC 0609, Appendix F, “Fire Protection SDP Phase 1 Worksheet,” the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency did not impact the ability to reach and maintain safe shutdown conditions. Specifically, a postulated fire in the fire zone did not present the possibility of impacting more than one train of safe shutdown equipment. This finding had a cross cutting aspect of Work Management in the Human Performance area because multiple groups were responsible for bringing the transient combustibles into the area and the individuals failed to effectively communicate and coordinate their activities to ensure that transient combustible control processes were appropriately implemented [H.5].

Inspection Report# : 2015001 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
RHR Shutdown Cooling Procedure Not Mainted Consistent with Technical Specification Requirements
Inspectors identified a finding of very low safety significance (Green) and associated NCV of SSES Unit 1 and 2 TS 5.4.1, "Procedures," because Susquehanna did not maintain the procedure for operation of the residual heat removal (RHR) shutdown cooling (SDC) system consistent with the requirements in TS 3.4.8, "RHR Shutdown Cooling- Hot Shutdown." As TS 3.4.8 requires two RHR SDC loops to be operable and, if no reactor recirculation pumps (RRPs) are running, one of the loops to be in-service in Mode 3 below the RHR cut in permissive pressure (98 psig), inspectors determined that OP-1(2)49-002, "RHR Shutdown Cooling," was not maintained appropriately because a change to the procedure precluded operation of the system between 40 psig and the RHR cut in permissive pressure (98 psig). Susquehanna entered the issue into the corrective action program (CAP) as CR-2015-22882 and CR-2015-24137 and revised the procedure to remove the requirement that precluded operation of the SDC system between 40 psig and the RHR cut in permissive pressure.

This finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and adversely affected its objective to ensure the availability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 40 psig procedural limit impacted the availability and capability of RHR to be placed in SDC between 98 psi, the cut-in permissive for the system, and 40 psig. In accordance with Exhibit 2 of 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 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 TS allowed outage time, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. This finding had a cross-cutting aspect in the area of Human Performance, Change Management because Susquehanna did not use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority (H.3). Specifically, implementation of Susquehanna's procedure change process did not ensure that the RHR SDC procedure was maintained consistent with the requirements of plant TSs.

Inspection Report# : 2015003 *(pdf)*

Significance: G Sep 30, 2015
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
'C' EDG Rendered Inoperable by Switch Manipulation during Training Simulation
A self-revealing finding of very low safety significance (Green) and associated NCV of 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures and Drawings," was identified when Susquehanna inadvertently operated the 'C' emergency diesel generator (EDG) mode switch during the performance of a job performance measure (JPM). Specifically, the student performing the JPM operated plant equipment that was contrary to the quality assurance program requirement to only simulate equipment operation. Susquehanna entered the issue into the CAP as CR-2015-19578, the 'C' EDG mode switch was restored to the 'Remote' position, and the operating crew performed a walk-down of the 'C' EDG to confirm proper standby alignment, restoring operability of the EDG.

Inspectors determined that the finding was more than minor because it was associated with the Human Performance

attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, improper manipulation of the 'C' EDG mode switch while simulating a task resulted in an inoperable condition since the EDG would not have auto started, if required. In accordance with Exhibit 2 of IMC 0609, Appendix A, "The SDP for Findings At-Power," dated June 19, 2012, 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 TS allowed outage time, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. This finding had a cross-cutting aspect in the area of Human Performance, Avoid Complacency because Susquehanna did not implement appropriate error reduction tools (H.12). Specifically, personnel did not implement appropriate human error prevention tools
(e.g. self-check, stop-think-act-review) in accordance with station processes.

Inspection Report# : 2015003 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Promptly Correct a Condition Adverse to Quality on the 'B' EDG
The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to correct a condition adverse to quality. Specifically, despite identifying a condition adverse to quality on January 31, 2015 associated with vibration induced fretting of the 'B' emergency diesel generator (EDG) fuel oil flowing vent line, implementation of the corrective action program (CAP) did not assure that the condition adverse to quality was promptly corrected, and subsequently during the next monthly surveillance run the EDG was declared inoperable when the through wall leak worsened. To maintain operability of the other EDGs, which exhibited the same vibration induced fretting that rendered the 'B' EDG inoperable, PPL instituted a compensatory action to initiate a fire watch if any of the EDGs were started to ensure that leakage could be promptly identified and mitigated without causing a fire. Additionally, PPL replaced the piping that exhibited signs of fretting.

Inspectors determined that the finding was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to correct the fuel oil tube leak on the 'B' EDG resulted in an unplanned shutdown of the diesel and declaration of inoperability when the leak worsened during subsequent surveillance testing. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 2 of 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 was not a design or qualification deficiency, did not involve an actual loss of safety function, did not represent the actual loss of a safety function of a single train for greater than its TS allowed outage time, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event.

This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Evaluation, because PPL did not thoroughly evaluate the issue of vibration induced fretting of the 'B' EDG fuel oil flowing vent line to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, PPL's assessment of the condition with regard to operability and the potential impact on the other EDGs was inadequate, which prevented PPL from taking adequate corrective actions to maintain operability [P.2].
Inspection Report# : 2015001 *(pdf)*

Significance: G Mar 31, 2015

Identified By: NRC
Item Type: FIN Finding
SBO Diesel Fuel Oil Cloud Point
The inspectors identified a finding of very low safety significance (Green) for not establishing diesel fuel oil specifications to ensure diesel-driven equipment important to safety will function during expected low ambient temperatures. Specifically, PPL did not establish appropriate measures for diesel fuel oil cloud point and the station blackout diesel generator (Blue Max) was potentially rendered non-functional when ambient air temperatures fell below the cloud point temperature of the diesel fuel oil. PPL implemented compensatory actions to monitor diesel fuel oil temperatures in the Blue Max every shift and erected a temporary heated structure to restore and maintain functionality.

Inspectors determined the performance deficiency was more than minor because it adversely affected the equipment performance attribute of the mitigating systems cornerstone to ensure the availability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, by not ensuring the cloud point of the diesel fuel oil was below the temperature of the surrounding ambient environment, the Blue Max was potentially non-functional during expected low temperature conditions. In accordance with NRC IMC 0609, Attachment 4, "Initial Characterization of Findings," Table 2, “Cornerstones Affected by Degraded Condition or Programmatic Weakness,” the issue was determined to affect the Mitigating Systems Cornerstone. Per IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings at Power,” Exhibit 2, “Mitigating Systems Screening Questions,” the inspectors conservatively answered YES to question A.4, “Does the finding represent an actual loss of function of one or more non-Tech Spec Trains of equipment designated as high safety-significant in accordance with the licensee’s maintenance rule program for > 24 hours?” and determined that a detailed risk evaluation was needed to assess the safety significance of this finding. The inspectors used Systems Analysis Programs for Hands-On Evaluation (SAPHIRE) Revision 8.1.2, and the Standardized Plant Analysis Risk (SPAR) Model for Susquehanna Unit 1 and 2, Versions 8.23 and 8.21, respectively, to conduct an evaluation of the safety significance of this finding. In consultation with a regional Senior Reactor Analyst (SRA), a bounding analysis was conducted using conservative assumptions to approximate the worst case increased risk associated with the degraded condition of the Emergency Power Supply (EPS) Blue Max Diesel Generator. The calculated delta core damage frequency (CDF) for this condition was low E-8, or very low safety significance (Green). Inspectors noted that the most dominant core damage sequence was a loss of offsite power with coincident failure of all installed EDGs. In accordance with IMC 0609 Appendix A, since the change in core damage frequency was less than 1E-7, no further evaluation of external events or LERF was required. This finding was determined to be Green.

The finding was determined to have a cross-cutting aspect in the area of Problem Identification and Resolution, Evaluation, in that, PPL did not thoroughly evaluate the effects of cold weather on the diesel fuel oil systems for diesel driven equipment to ensure that resolutions address the extent of conditions commensurate with their safety significance. Specifically, PPL did not thoroughly evaluate the effects of cold temperatures on the diesel fuel oil system when performing the functionality assessment for the Blue Max to ensure it maintained availability [P.2].
Inspection Report# : 2015001 *(pdf)*

Barrier Integrity

Significance: G Dec 31, 2015
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Failure to Correct a Condition Adverse to Quality Associated with an Inoperable Primary Containment Isolation Valve

Green. A self-revealing finding of very low safety significance (Green) and associated violations of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” and Technical Specification (TS) 3.6.1.3, “Primary Containment Isolation Valves (PCIVs),” was identified when Susquehanna did not take adequate corrective action to address the inoperability of the reactor recirculation sample line outboard PCIV when it failed during surveillance testing on July 1, 2015. The valve failed its subsequent surveillance test on September 30, 2015 due to the same degraded condition, which rendered the valve inoperable for longer than the allowed outage time specified in TS 3.6.1.3. The repeat failure was entered into the CAP as CR-2015-26590 and restored the valve to an operable condition by replacing its associated solenoid valve.

The finding was determined to be more than minor because it was associated with the structure, system and component (SSC) and Barrier Performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to correct the degraded condition of solenoid valve sticking resulted in a PCIV being rendered inoperable for longer than the TS allowed outage time. Inspector evaluated the finding In accordance with IMC 0609.04, “Initial Characterization of Findings,” dated June 19, 2012, and Exhibit 2 of IMC 0609, Appendix A, “The SDP for Findings At-Power,” dated June 19, 2012, and determined it is of very low safety significance (Green) because the performance deficiency did not result in an actual open pathway in the physical integrity of reactor containment, because the inboard valve remained operable for the duration of the inoperability, and it did not involve the hydrogen recombiners. This finding had a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because Susquehanna did not stop when faced with uncertain conditions and ensure the risks were evaluated and managed before proceeding. Specifically, Susquehanna did not challenge the unanticipated test results and did not ensure that the condition adverse to quality, associated with the faulty solenoid valve, was resolved prior to considering the valve operable.
Inspection Report# : 2015004 *(pdf)*

Significance:  Sep 30, 2015
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Secondary Containment Inoperability due to Improperly Controlled Access to the Reactor Building Roof
A self-revealing finding of very low safety significance (Green) and associated NCV of SSES Unit 1 and 2 TS 5.4.1, “Procedures,” was identified because Susquehanna incorrectly implemented procedures for maintaining secondary containment integrity. Specifically, on
July 27, 2015, maintenance technicians rendered secondary containment for both units inoperable for approximately 44 minutes when a secondary containment boundary door was opened to access the reactor building roof. Susquehanna entered the issue into the CAP as CR-2015-20857 and CR-2015-24442, restored the boundary, and verified the integrity of secondary containment.

The finding was more than minor because it was associated with the Human Performance (Routine OPS/Maintenance Performance) attribute of the Barrier Integrity cornerstone, and affected the cornerstone objective of providing reasonable assurance that physical design barriers (Secondary Containment) protect the public from radionuclide releases caused by accidents or events. Specifically, opening the secondary containment barrier did not maintain reasonable assurance that the secondary containment would be capable of performing its safety function in the event of a reactor accident. The inspectors evaluated the finding in accordance with IMC 0609, Appendix A, "The SDP for Findings At-Power," Exhibit 3, for the Barrier Integrity cornerstone, dated June 19, 2012. The inspectors determined the finding was of very low safety significance (Green) because only represented a degradation of the radiological barrier function of secondary containment provided by the standby gas treatment (SBGT) system. This finding had a cross-cutting aspect in the area of Human Performance, Teamwork because Susquehanna did not effectively communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety was maintained (H.4). Specifically, when

the work plan was changed to accessing the reactor building roof through secondary containment, the change was not effectively communicated to operations department personnel to ensure the secondary containment impairment was appropriately controlled.

Inspection Report# : 2015003 *(pdf)*

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Assess a Non-Conforming Condition for its Impact on Component Operability
The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when Susquehanna staff did not assess component operability following identification of a potentially non-conforming condition. Specifically, Susquehanna did not assess for operability a potential non-conforming condition associated with inadequate testing of the primary containment airlock inboard equalizing valve which was identified during the review of industry operating experience. Susquehanna's corrective actions to restore compliance included entering this issue in their CAP as CR-2015-15187, performing a prompt operability determination of the Unit 1 primary containment airlock inboard equalizing valve, including completion of the requirements in SR 3.0.3 for a missed surveillance, and performing testing on the Unit 2 valve which adequately demonstrated that the PCIV was operable prior to entering into a mode of TS applicability. The inspectors determined that the finding was more than minor because it was associated with the SSC and Barrier performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that the physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. Specifically, inadequate actions to evaluate the impact of the condition adverse to quality on the operability of the Unit 1 PCIV resulted in a reasonable doubt of operability of the barrier. In accordance with IMC 0609.04, "Initial Characterization of Findings," dated June 19, 2012, and Exhibit 2 of IMC 0609, Appendix A, "The SDP for Findings At-Power," dated June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency did not represent an actual open pathway in the physical integrity of reactor containment and heat removal components or involve the actual reduction in function of hydrogen igniters in containment. This finding has a cross-cutting aspect in the area of Human Performance, Avoid Complacency, because Susquehanna did not perform a thorough review of the work and planned activity but rather relied on past successes and assumed conditions. Specifically, the control room staff did not assess the condition for operability believing that it was similar to previous CRs documenting a review of operating experience. [H.12] (Section 1R15)

Inspection Report# : 2015002 *(pdf)*

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Incorrect Implementation of the Ventilation Filter Testing Program
The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control," because Susquehanna did not ensure representative samples were obtained from Engineered Safety Feature (ESF) filter ventilation systems and did not establish written test procedures. Specifically, subsequent to refilling charcoal test canisters for the activated charcoal absorber of both trains of the SBGT System, new charcoal was added to the activated charcoal absorber which was not exposed to the same service conditions as the bulk of the absorber section as required by TS 5.5.7, "Ventilation Filter Testing Program," and written test procedures were not established for this activity. As corrective action for the identified issue, Susquehanna replaced the charcoal in the 'A' and 'B' trains of SBGT and the 'A' and 'B' trains of CREOASS activated charcoal

absorber beds and test canisters between January and February 2015 and initiated condition reports CR-2014-39116 and CR-2015-01443. The inspectors determined that the finding was more than minor because it was associated with the Procedure Quality Attribute of the Barrier Integrity Cornerstone and it adversely affected the cornerstone objective to provide reasonable assurance that physical barriers protect the public from radionuclide releases caused by accidents or events. Specifically, since 2001, work instructions did not prevent the contamination of test canisters with charcoal that was not representative of the in-service conditions of the adsorber bed and the introduction of new charcoal into the test canisters likely provided better results during periodic surveillance testing which were not representative of actual conditions. In accordance with IMC 0609.04, "Initial Characterization of Findings," dated June 19, 2012, and Exhibit 3 of IMC 0609, Appendix A, "The SDP for Findings At-Power," dated June 19, 2012, the inspectors determined that the finding was of very low safety significance (Green) because it only represented a degradation of the radiological barrier function provided for the control room and SBGT system. This finding has a cross-cutting aspect in the area of Human Performance, Documentation, because the activities for sampling the activated charcoal beds were not governed by comprehensive, high-quality programs, processes, and procedures nor were the design documentation, procedures, and work packages complete, thorough and accurate. [H.7] (Section 2RS6)

Inspection Report# : 2015002 *(pdf)*

Significance: G Mar 31, 2015
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Human Performance Errors Result in Losses of Safety Function
A self-revealing finding of very low safety significant (Green) and associated NCV of TS 5.4.1, "Procedures," was identified for three separate examples of failing to implement work instructions or procedures that resulted in equipment inoperability and associated losses of safety function. Specifically, on June 12, 2014, operators placed the control switch for the 'A' chilled water pump in the stop position contrary to step 5.1.43 of SO-030-B03, an action which rendered both control structure ventilation subsystems inoperable. Additionally, contrary to NDAP-QA-0502 personnel did not ensure the impacts and effects of work were understood when applying a clearance order on June 13, 2014, which rendered both control structure ventilation subsystems inoperable when the clearance was applied. Finally, On November 5, 2014, an operator accessed an airlock without obeying the posted requirement to not access the airlock with the red light was lit contrary to Step 4.3.1 of NDAP-QA-0321 which rendered secondary containment inoperable when both airlock doors were opened simultaneously. PPL entered each of the issues into the CAP as CR-2014-19672, CR-2014-19699 and CR-2014-34399, respectively, and took action to restore the associated systems to an operable configuration.

Inspectors determined that the finding was more than minor because it was associated with the Human Performance attribute (Routine OPS/Maintenance Performance) of the Barrier Integrity cornerstone and affected the cornerstone objective of providing reasonable assurance that physical design barriers (Control Room Environment and Secondary Containment) protect the public from radionuclide releases caused by accidents or events. For the first two examples, the failure to adequately implement procedures for operation and maintenance of the control structure chillers resulted in the simultaneous inoperability of both chillers and associated loss of safety function of control room emergency outside air supply system (CREOASS) and control room floor cooling. For the third example, opening two reactor building airlock doors simultaneously did not maintain reasonable assurance that the secondary containment would be capable of performing its safety function in the event of a reactor accident. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 2 of 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 impacted the radiological barrier function of the control room and secondary containment.

This finding had a cross-cutting aspect in the area of Human Performance, Avoid Complacency because PPL did not

implement appropriate error reduction tools. Specifically, on three separate occasions, personnel did not implement appropriate human error prevention tools (e.g. self-check, peer-check) in accordance with station processes [H.12].

Inspection Report# : 2015001 *(pdf)*

Emergency Preparedness

Significance: G Dec 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Dose Assessment Capabilities in the Technical Support Center
Green. The inspectors identified a finding of very low safety significance (Green) and a NCV of 10 CFR 50, Appendix E, Section IV.B.1. Specifically, Susquehanna emergency plan implementing procedures did not provide the guidance for the dose assessment staff in the Technical Support Center (TSC) to determine the magnitude of, and continually assess the impact of, the release of radioactive materials. The TSC staff was procedurally limited to performing forward and back dose calculations, but not blowout panel calculations. Blowout panel release calculations were only to be performed by the Emergency Operations Facility (EOF) staff. Susquehanna entered this issue into their corrective action program as CR-2015-04701, which led to the revision of the applicable procedures to allow the TSC dose assessment staff to perform the full scope of dose calculations available to the EOF staff.

The inspectors determined that the failure to have the same scope of dose assessment capabilities available to the full emergency response organization (ERO) was a performance deficiency that was within Susquehanna's ability to foresee and correct. The performance deficiency is more than minor because it is associated with the ERO Readiness and ERO Performance attributes 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. Using IMC 0609, Appendix B, Section 5.9, the finding is of very low safety significance (Green) because the finding was determined to not be an example of the overall dose projection process being incapable of providing technically adequate estimates of radioactive material releases; the deficiency was limited to the TSC staff which in fact had the capability of performing dose projections and was only limited by the lack of procedural guidance. The cause of this finding has a cross-cutting aspect in the area of Documentation, because Susquehanna did not ensure that their organization creates and maintains complete, accurate and up-to-date documentation. Specifically, Susquehanna did not provide emergency plan implementing procedures to enable the TSC dose assessment staff to perform dose projections for all required radioactive material releases.
Inspection Report# : 2015004 *(pdf)*

Significance: W Mar 18, 2015
Identified By: NRC
Item Type: VIO Violation
Failure to Maintain a Standard EAL Scheme
White: The inspectors identified an apparent violation of Title 10 of the Code of Federal Regulations (10 CFR) 50.54 (q)(2), which has been determined to be of low to moderate safety significance (White). Specifically, 10 CFR 50.54(q) (2) requires a licensee to follow and maintain an emergency plan which meets the requirements of 10 CFR 50.47(b), and 10 CFR Part 50, Appendix E. Contrary to this requirement, as of June 20, 2012, PPL Susquehanna (PPL) failed to establish an effective Susquehanna Steam Electric Station (Susquehanna) Emergency Plan to ensure that a timely event declaration would be made for an unisolable primary system leak outside of primary containment. Specifically,

PPL's interpretation of the 15-minute assessment and classification period degraded their ability to make timely Alert or Site Area Emergency declarations in certain cases. This potential delay in declaration of an Alert or Site Area Emergency could have impacted the ability of off-site response organizations to implement timely actions to protect the public during a radiological emergency.

The inspectors determined the incorrect interpretation of the 15-minute assessment and declaration period was a performance deficiency that was within PPL's ability to foresee and correct and should have been prevented. Using IMC 0612, Appendix B, "Issue Screening," the performance deficiency was determined to be more than minor because it was associated with the ERO performance attribute of the emergency preparedness (EP) Cornerstone and affected the cornerstone objective to ensure that the licensee was capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, the finding could impact the declaration timeliness of an emergency associated with a degraded fission product barrier. The inspectors utilized IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," to determine the significance of the finding. The finding is associated with the emergency classification planning standard and is considered a risk significant planning standard (RSPS) function. This finding impacts the following required RSPS function: 10 CFR 50.47(b)(4), "Emergency Classification System." The inspectors utilized the SDP to compare the finding with the examples in Section 5.4, "10 CFR 50.47(b)(4), Emergency Classification System," to evaluate the significance of this finding. Using Table 5.4-1, "Significance Examples §50.47 (b)(4)," the inspectors determined that the finding matched an example of a degraded RSPS function, which would be assessed as White. Specifically, the example states that the finding would be assessed as White if the emergency action level (EAL) classification process is not capable of classifying a general emergency or a Site Area Emergency within 15-minutes or declaring the emergency promptly once the appropriate classification level is determined. The inspectors determined that the cross-cutting aspect that contributed most to the root cause is P.5, "Operating Experience: The organization systematically and effectively collects, evaluates, and implements relevant internal and external operating experience in a timely manner." Specifically, PPL did not perform a thorough review of operating experience during and after implementing the new EP rule to ensure all Susquehanna EAL thresholds were being evaluated in accordance with the NRC's emergency declaration timeliness requirement in the regulation. (Section 4OA2)

Inspection Report# : 2015503 *(pdf)*
Inspection Report# : 2015504 *(pdf)*

Significance: G Jun 21, 2014
Identified By: NRC
Item Type: VIO Violation
Failure to take Action to Restore Degraded Emergency Actio nLevel Scheme
The inspectors identified a Green cited violation of 10 CFR 50.54(q)(2) for PPL's failure to follow and maintain an emergency plan that meets the requirements of the planning standards in 10 CFR 50.47(b), in that, since October 2003, PPL did not follow and maintain a standard emergency classification and action level scheme. Specifically, PPL did not take timely corrective actions to provide an adequate means to measure temperature in nine out of 21 areas, where reactor building temperatures are considered for the fission product barrier degradation emergency action levels (EALs). As a result, this deficiency adversely affected PPL's ability to classify an emergency such that a Site Area Emergency would be declared in a degraded manner. The violation is being cited because PPL has failed to restore compliance or demonstrate objective evidence of plans to restore compliance at the first opportunity in a reasonable period of time following discussion in a formal exit meeting on January 24, 2014 and documented in NRC Inspection Report 05000387;388/2013005 on February 14, 2014.
The finding 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 continuing lack of installed temperature instrumentation or any other compensatory

measures and the reliance on personnel dispatched to take temperature readings were insufficient to ensure a timely and accurate EAL classification could be made. Using IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process", 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 inspectors determined that this finding had a problem identification and resolution cross-cutting aspect related to Resolution because PPL did not take corrective actions in a timely manner nor did they take appropriate interim corrective actions to mitigate the issues while more fundamental causes are being assessed. Specifically, PPL had no corrective actions planned or taken to address the degraded EALs until NRC approval of their new EAL scheme, currently scheduled to be implemented no earlier than December 2015.

Inspection Report# : 2014009 *(pdf)*

Occupational Radiation Safety

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Entry into a High Radiation Area without Radiological Briefing
A self-revealing finding of very low safety significance (Green) and associated NCV of SSES Unit 2 TS 5.7.1 was identified because Susquehanna did not comply with a radiological posting barrier and other protective measures for HRA entry. Specifically, on October 10, 2014, two workers entered the turbine building roof, a posted HRA, but the workers were not on the proper RWP and were not briefed on the radiological conditions prior to entry. Upon receiving a dose rate alarm, the workers exited the HRA and reported the issue to radiation protection personnel. Susquehanna entered the issue into the CAP as condition report CR-2014-31911. The inspectors determined that Susquehanna's inadequate adherence to a high radiation area (HRA) posting, which requires a HRA RWP and a radiological briefing prior to entry, was a performance deficiency that was within Susquehanna's ability to foresee and correct and should have been prevented. The inspectors determined that the finding was more than minor because it adversely affected the human performance attribute of the Occupational Radiation Safety cornerstone objective. Specifically, the individual violated the RWP and briefing requirements designed to protect the worker from unnecessary radiation exposure. The issue was also similar to example 6.h in IMC 0612, Appendix E. Using IMC 0609, Appendix C, "Occupational Radiation Safety SDP," dated August 19, 2008, the finding was determined to be of very low safety significance (Green) because it did not involve: (1) as low as is reasonably achievable (ALARA) occupational collective exposure planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. This finding has a cross-cutting aspect of Human Performance, Challenge the Unknown, because the workers did not stop when faced with uncertain conditions. Specifically, the workers did not use a questioning attitude during the pre-job brief or when they encountered the HRA posting on the access to the turbine building roof. [H.11] (Section 2RS1)

Inspection Report# : 2015002 *(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

Last modified : March 01, 2016