

# Susquehanna 1

## 3Q/2016 Plant Inspection Findings

---

### Initiating Events

**Significance:**  Jul 22, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **Failure to Promptly Identify and Correct a Condition Adverse to Quality on Vital 480 VAC MCCs (40A2.1.c (4))**

The inspectors documented a self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to identify and correct a condition adverse to quality. Specifically, in October and December 2006 and July 2009, Susquehanna did not identify a non-conforming condition with the design and performance requirements of several 480 volt motor control center (MCC) breaker assemblies during receipt inspections. These non-conforming breaker assemblies were installed in vital 480 VAC applications and subsequently led to a phase to ground short and loss of a 480 volt safety-related motor control center on May 12, 2016. Susquehanna entered this issue into their CAP, conducted an apparent cause evaluation, replaced the damaged breaker assembly, and is conducting an extent of cause review for other susceptible breaker assemblies. The finding was more than minor because it was associated with the Design Control attribute of the Initiating Events cornerstone and adversely affected the associated cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, on May 12, 2016, an electrical transient on vital AC bus 2B246 occurred as a result of a phase to ground fault in breaker cubicle 2B24609, which resulted in a loss of bus 2B246 and associated safety related loads. In accordance with IMC 0609.04, "Initial Characterization of Findings," dated June 19, 2012, and Exhibit 1 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 cause both a reactor trip and loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. This finding did not have a cross-cutting aspect because the performance deficiency was a historical issue with the actions taken in 2005, 2006, and 2009, and is not indicative of current licensee performance.

Inspection Report# : [2016008](#) (*pdf*)

**Significance:**  Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **Failure to Correct Fatigue Related Cracking of the 'B' RRP Lower Seal Cavity Vent Line**

A self-revealing finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for Susquehanna's failure to establish measures to assure a condition adverse to quality was corrected. Specifically, vibration induced fatigue cracking on the Unit 1 'B' reactor recirculation pump (RRP) lower seal cavity vent piping was not corrected in December 2014 after a reactor coolant pressure boundary leak had occurred. This resulted in another reactor coolant pressure boundary leakage at the same location with Unit 1 operating in Mode 1, a condition prohibited by technical specifications (TS) LCO 3.4.4. Susquehanna's entered the issue into the corrective action program (CAP) as CR-2015-30901 and replaced and modified the union that included the weld. The finding was more than minor because it was associated with the Equipment Performance 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 shutdown as well as

power operations. The inspectors evaluated the finding in accordance with Exhibit 1 of IMC 0609, Appendix A, “The significance determination process (SDP) for Findings At-Power,” and determined the finding was of very low safety significance (Green) because the leakage would not have exceeded the reactor coolant system (RCS) leak rate for a small loss of coolant accident (LOCA) and it did not affect other systems used to mitigate a LOCA. This finding had a cross-cutting aspect in the area of Human Performance, Work Management, because Susquehanna did not implement a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority, in that Susquehanna did not adequately coordinate the work activities with different groups [H.5]. Specifically, welding engineers were not engaged in the decision making process during the December 2014 repair and consequently the repair was inadequate to ensure the entire crack had been removed.

Inspection Report# : [2016001](#) (pdf)

**Significance:**  Dec 31, 2015

Identified By: Self-Revealing

Item Type: FIN Finding

### **Inadvertent Closure of the ‘B’ Inboard MSIV**

Green. A self-revealing finding of very low safety significance (Green) was identified when Susquehanna did not correctly validate a deficient condition associated with the Unit 1 ‘B’ inboard main steam isolation valve (MSIV) direct current (DC) solenoid valve as an actual valve issue, vice indication-only, through the use of specific acceptance criteria as required by MT-AD-509, “Control of Minor Maintenance Activities.” By incorrectly concluding the issue was indication only, testing was allowed to be performed which inserted a half-isolation by de-energizing the alternating current (AC) solenoid valve on the ‘B’ inboard MSIV. When this maintenance was performed, the ‘B’ inboard MSIV closed unexpectedly, resulting in a reactor scram. The cause of the closure was the failure of the DC solenoid valve on the ‘B’ inboard MSIV. Susquehanna entered the issue into the CAP as CR-2015-30721 and replaced the DC solenoid for the ‘B’ MSIV.

The finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. Specifically, the maintenance activity performed to validate the DC solenoid valve continuity was inadequate and as a result the testing was allowed to be performed which relied on DC solenoid valve continuity to prevent an MSIV closure. The inadvertent closure of the ‘B’ inboard MSIV resulted in a high pressure scram. The inspectors evaluated the finding in accordance with IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” Exhibit 1, for the Initiating Events cornerstone. The inspectors determined the finding was of very low safety significance (Green) because it did not cause the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. Specifically, the condenser was maintained for decay heat removal via the bypass valves through the other three main steam lines following the trip. This finding had a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because Susquehanna did not stop when faced uncertain conditions and instead rationalized unanticipated test results. Specifically, the investigation of the extinguished continuity monitor focused on the possibility that it was an indication-only issue and failed to question the acceptability of the current values obtained during troubleshooting.

Inspection Report# : [2015004](#) (pdf)

---

## **Mitigating Systems**

**Significance:**  Sep 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Risk Management Actions Not Adequately Implemented**

The inspectors identified a Green NCV of 10 CFR 50.65(a)(4) because Susquehanna did not assess and manage the increase in risk from online maintenance activities. From September 11 to 16, 2016, there were multiple affected areas that the fire protection engineer or designee did not walk down to inspect for fire impairments resulting in deficiencies not being corrected prior to releasing work and no fire watch was established for the impairments. Susquehanna removed the combustible materials from the areas or stationed a fire watch, and entered these issues into their CAP as CR-2016-21125, CR 2016-21423, CR-2016-21616, and CR-2016-21741. This finding is more than minor because it adversely impacted the protection against external factors attribute of the Mitigating Systems cornerstone objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, not implementing the required risk management actions (RMAs) for the only available safe shutdown pathway placed the station in a much higher risk condition in the event of an internal fire. The inspectors evaluated the finding in accordance with IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process." Since the performance deficiency was related to maintenance activities affecting structure, system, and components needed for fire mitigation, Appendix K directed the significance to be determined by an internal NRC management review using risk insights. IMC 0609, Appendix F, Attachment 1 "Fire Protection Significance Determination Process Phase 1 Worksheet," was used to develop this risk insight. Based on the nature and quantity of combustible materials in the areas, combined with the relatively short duration of which the fire risk was unmitigated, inspectors determined that it was of very low safety significance (Green). The finding was determined to have a cross-cutting aspect in the area of Human Performance, Avoid Complacency, in that, individuals did not plan for latent issues and inherent risk, even while expecting successful outcomes. Specifically, combustible materials were not appropriately controlled as required by OI-013-002, "Fire Risk Management," Revision 10, because in some cases they were assumed to be exempt from the program requirement or staff did not tour the areas because they assumed there were no combustible materials present based on past experience. [H.12] Inspection Report# : [2016003](#) (*pdf*)

**Significance:**  Jul 22, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Write a Condition Report for Degraded Conditions Which Challenged Operability of Safety Related Equipment (40A2.1.c(1))**

The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for Susquehanna failing to identify and correct conditions adverse to quality in a timely manner. Specifically, between April 16, 2016 and April 22, 2016, condition reports for potential or suspected degraded or non-conforming conditions related to the High Pressure Coolant Injection System (HPCI) and Reactor Core Isolation Cooling System (RCIC) were not written and operability determinations performed. In both cases, the equipment was subsequently declared inoperable due to the conditions. The issues were entered into the CAP and the equipment was taken out of service, repaired, and retested satisfactorily. The inspectors determined that there were two examples of the same performance deficiency and violation. In accordance with NRC Enforcement Manual Section 1.3.4, "Documenting Multiple Examples of a Violation," multiple examples of a single violation are allowed to be documented as a single violation bounded by the characterization of the most significant example. The RCIC example is considered the most significant due to the longer exposure time in a required mode and number of mode changes that occurred during the exposure period. The finding was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the associated cornerstone objective to ensuring the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure to identify and correct degraded conditions associated with a RCIC system lube oil leak which rendered that system inoperable. In accordance with IMC 0609.04, "Initial Characterization of Findings," dated June 19, 2012, the inspectors determined that this finding screened to Green because the safety function was not lost, and the finding did not represent an actual loss of function of at least a single train for greater than its Tech Spec Allowed Outage Time or two separate safety systems out-of-service for greater than its Tech Spec Allowed Outage Time. This

finding had a cross-cutting aspect in the area of Human Performance, Teamwork, because individuals and work groups did not communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. Specifically, in both examples, individuals were aware of potential degraded conditions but actions were not taken to communicate the activity to other groups, such as the control room operators, to allow for the issues to be evaluated for operability and determine if proposed actions were timely and/or appropriate. [H.4]  
Inspection Report# : [2016008](#) (*pdf*)

**Significance:**  Jul 22, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Implement and Maintain Quality Procedure Results in Control Room Chiller Inoperability (40A2.1.c(2))**

The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for failure to implement and maintain a quality procedure, MT-GE-021, “Chiller Maintenance and Inspection.” This resulted in the safety related 0K112A chiller being operated outside of its design specifications and being declared inoperable. Specifically, on January 9, 2014, a system engineer directed the maintenance personnel to overcharge 0K112A with R-114a refrigerant, which led to higher power consumption by the chiller’s compressor motor, and the failure of the next biennial surveillance test on December 10, 2015 due to excessive compressor motor current. Susquehanna entered the issue into the CAP, conducted testing to establish the proper refrigerant charge, removed the excess refrigerant, and revised the procedure. The finding was determined to be more than minor because it was associated with the Mitigating System cornerstone attribute of Equipment Performance and adversely affected the associated cornerstone objective to ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The refrigerant overcharge condition resulted in the 0K112A chiller being inoperable and unable to fulfil its safety function to cool safety related switchgear and equipment during accident conditions for a period of 23 months. 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 a detailed risk evaluation would be required because the finding involved an actual loss of function of at least a single Train for greater than its Technical Specification allowed outage time of 30 days. A detailed risk assessment was performed by a Region 1 Senior Reactor Analyst (SRA). The SRA determined the finding to be of very low safety significance (Green.) This finding had a cross-cutting aspect in the area of Human Performance, Procedure Adherence because individuals did not follow processes, procedures, and work instructions. Specifically, for many years maintenance and engineering personnel relied upon informal work practices vice referring to the procedure when charging the chillers with refrigerant. [H.8]

Inspection Report# : [2016008](#) (*pdf*)

**Significance:**  Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Promptly Correct a Condition Adverse to Quality with ‘A’ EDG MOC Switch**

A self-revealing 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, on March 23, 2016, the ‘A’ emergency diesel generator (EDG) failed its technical specification (TS) surveillance test in that the emergency switchgear room cooler, 1V222A, started immediately when the EDG loaded onto the emergency bus following a simulated loss of off-site power (LOOP) and simulated Emergency Core Cooling System (ECCS) Initiation, rather than sequencing onto the bus as intended by design. Susquehanna identified the direct cause of the failure was due to a misadjustment of the mechanism-operated cell (MOC) linkage switch (S1) in the ‘A’ EDG output breaker to the 1A 4 kilovolt (kV) bus, which provides the electrical logic to the 1V222A load timer. The repeat failure was entered into the corrective action program (CAP) as CR 2016-08643, the MOC linkage was realigned, and the functions satisfactorily tested. The finding was determined to be 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 capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure to correct the degraded condition rendered the 'A' EDG inoperable for longer than the TS allowed outage time. 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 required a detailed risk assessment because the finding represents an actual loss of function of a single train for greater than the TS allowed outage time. Specifically, the 'A' EDG was inoperable from July 19, 2010 until April 2, 2016, because TS requires functioning of the sequencing timers for the EDG to be operable. In coordination with a Region 1 Senior Risk Analyst, the issue was qualitatively screened as Green (very low safety significance) based on the low initiating event frequency associated with a loss of coolant accident (LOCA) co incident with a LOOP event, and observed successful EDG function during multiple LOOP/LOCA tests over the period in question. This would result in a delta core damage frequency substantially less than E-6. Additionally, it was reasonable to conclude that the 'A' EDG remained available to perform its function given the minimal increased load on the machine as evidenced during the performance of the LOOP-LOCA surveillance testing in 2012, 2014, and 2016. This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Evaluation, because Susquehanna did not thoroughly evaluate the issue to ensure that the resolution addressed the cause and extent of conditions commensurate with their safety significance. Specifically, Susquehanna corrected a suspected condition without appropriate troubleshooting until the third identical failure of the 1V222A load timer. [P.2]

Inspection Report# : [2016002](#) (pdf)

**Significance:** G Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **Failure of B EDG to Reach Rated Frequency within 10 Seconds**

A self-revealing finding of very low safety significance (Green) and associated NCV of TS 5.4.1.a, "Procedures," was identified when Susquehanna failed to implement procedures for loading EDGs promptly following extended unloaded operation. Specifically, Susquehanna did not load the 'B' EDG promptly following over 6 hours of unloaded operation which resulted in the slow starting time during the subsequent surveillance test due to insufficient fuel delivery caused by clogged fuel injectors. The failure was entered into the CAP as CR-2016-13220 and the EDG was run loaded for an extended period to ensure any unburned fuel had been removed from the machine. The finding was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the failure to load the 'B' EDG following extended operation unloaded resulted in the slow starting time of the EDG during subsequent surveillance testing due to clogged fuel injectors. The inspectors evaluated the finding in accordance with Exhibit 2 of IMC 0609, Appendix A, "The SDP for Findings At-Power," dated June 19, 2012 and determined that it was of very low safety significance (Green) because it did not affect the design or qualification of the EDG, did not represent a loss of system function, and did not represent a loss of a single train for greater than its TS allowed outage time. The finding is related to the cross-cutting area of Human Performance, Consistent Process, because Susquehanna did not use a consistent, systematic approach to make decisions which incorporated risk insights. Specifically, Susquehanna did not appropriately coordinate the loaded run of the 'B' EDG with maintenance on the 'C' EDG to ensure 'B' EDG availability was not unnecessarily challenged. [H.13]

Inspection Report# : [2016002](#) (pdf)

---

## **Barrier Integrity**

**Significance:** G Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Promptly Identify a Condition Adverse to Quality Associated with Primary Containment Isolation Valves**

A self-revealing Green finding and associated violation of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” and TS 3.6.1.3, “Primary Containment Isolation Valves (PCIVs),” was identified when Susquehanna did not promptly identify a condition adverse to quality. Despite observing abnormal behavior during local leak rate testing following replacement in May 2014, Susquehanna did not take any action to ensure that certain Reactor Water Cleanup (RWCU) system PCIVs passed their subsequent testing. Consequently, these valves failed their in-service and local leak rate test in March 2016 when they failed to close upon securing system flow. The failure was caused by an internal interference between the check valve hinge and body. Following the failures in March 2016, Susquehanna repaired the valves and successfully performed local leak rate testing, restoring operability of the PCIVs. The repeat failure was entered into the CAP as CRs 2016-06960 and 2016-09940. 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 identify a condition adverse to quality during post-maintenance testing resulted in two PCIVs being rendered inoperable for longer than the TS allowed outage time. 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 involve the hydrogen recombiners and did not result in an actual open pathway in the physical integrity of reactor containment. Specifically, the redundant valve for each penetration remained operable during the period in which these two valves were inoperable. This finding had a cross-cutting aspect in the area of Human Performance, Conservative Bias, because Susquehanna did not use decision making practices that emphasized prudent choices over those that are simply allowable. Specifically, Susquehanna decided to accept elevated seat leakage for two new PCIVs, assuming that they could be declassified as PCIVs. [H.14]

Inspection Report# : [2016002](#) (*pdf*)

**Significance:** G Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Loss of Safety Function of SBGT and CREOASS due to Concurrently Performing Maintenance on Redundant Trains**

Green. An NRC-identified finding of very low safety significance (Green) and associated violations of TS 5.4.1, “Procedures,” TS 5.5.11, “Safety Function Determination,” and TS 3.7.3, “Control Room Emergency Outside Air Supply System” was identified when Susquehanna performed maintenance on redundant trains of the standby gas treatment (SBGT) system and control room emergency outside air supply system (CREOASS) concurrently. When performing these actions, operators did not apply NDAP-QA-0312, “Control of LCOs, technical requirement for operations (TROs) and Safety Function Determination Program,” correctly which resulted in the unrecognized loss of safety function of SBGT and CREOASS. Susquehanna entered the issue into the CAP as CR-2015-26475 and restored one of the subsystems to service, restoring the safety function.

This finding is more than minor because it is 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 and Control Room Ventilation) protect the public from radionuclide releases caused by accidents or events. Specifically, allowing work to be performed on redundant trains of SBGT and CREOASS concurrently, while not applying plant TSs correctly, resulted in a loss of safety function of both systems. In accordance with IMC 0609.04, “Initial Characterization of Findings,” and Exhibit

3 of IMC 0609, Appendix A, "The SDP for Findings At-Power," both dated June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency was only associated with 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 Susquehanna did not recognize and plan for the possibility of mistakes, latent problems, or inherent risk, even while expecting successful outcomes. Specifically, Susquehanna did not perform a thorough review of the planned activities every time work was performed to ensure compliance with plant TSs, rather than relying on past successes and assumed conditions.

Inspection Report# : [2015004](#) (pdf)

## Emergency Preparedness

**Significance:**  Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Failure to Critique an Incorrect PAR Notification**

An NRC-identified finding of very low safety significance (Green) and associated NCV of 10 CFR 50.54(q) (2), "Emergency Plans" was identified when Susquehanna failed to identify that an incorrect notification of wind direction was made to the senior state official (SSO) during a full-scale drill. This failure was entered into the CAP as CRs 2016-14303 and 2016-14128, ERO personnel involved in the incorrect communication and the drill controllers that failed to identify the deficiency were remediated, and lessons learned communicated to other emergency response organization personnel. The finding was more than minor because it is associated with the emergency response organization (ERO) Performance attribute of the Emergency Preparedness Cornerstone and affected the cornerstone 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 failure of Susquehanna personnel to effectively identify an exercise weakness associated with a risk significant planning standard (RSPS) caused a missed opportunity to identify and correct a drill-related performance deficiency. The inspectors assessed the issue using the Emergency Preparedness SDP, Appendix B to IMC 0609, dated September 23, 2014. Susquehanna's failure to critique the inaccurate notification met the NRC's definition of a weakness in a full-scale drill. However, because four previous notifications had accurately reported the wind direction and the miscommunication was inconsistent with the correct protective actions recommendation (PAR) that was communicated simultaneously, in consultation with a senior emergency preparedness inspector, inspectors determined the communication would likely have been corrected prior to the offsite response organizations (OROs) acting on the incorrect information, did not result in an incorrect PAR, and therefore determined that that the failure to critique the drill weakness only constituted a degradation of the planning standard (PS) function. Therefore the finding is characterized as having very low safety significance (Green). The finding is related to the cross-cutting area of Problem Identification and Resolution, Identification, in that Susquehanna did not identify a RSPS issue completely, accurately, and in a timely manner commensurate with the safety significance. Specifically, during the full-scale drill, Susquehanna failed to recognize and critique that a RSPS was not met and did not place this issue into the CAP until prompted by inspectors. [P.1]

Inspection Report# : [2016002](#) (pdf)

**Significance:**  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*)

## Occupational Radiation Safety

**Significance:**  Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Entry into a High Radiation Area without Radiological Briefing**

A Green self-revealing NCV of TS 5.7.1, High Radiation Area Controls, was identified when a worker did not comply with a radiological posting barrier and other access control requirements for high radiation area (HRA) entry. Specifically, on December 26, 2015, a security officer entered into a posted HRA without proper authorization. This was entered into the CAP as CR-2015-33947, the HRA barrier was moved further out, and a shield rack was placed in front of the condenser bay door to reduce radiation dose rates. The finding was determined to be more than minor based on similarity to example 6.h in IMC 0612, Appendix E, and it is associated with Human Performance attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective to ensure adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Specifically, the individual violated the HRA posting, radiation work permit (RWP) and briefing requirements designed to protect the worker from unnecessary radiation exposure. 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. The finding is related to the cross-cutting area of Problem Identification and Resolution, Resolution, in that the organization did not ensure that corrective actions to address the cause of repetitive electronic dosimeter alarms in this area of the plant and had not been sufficiently evaluated and had not enhanced radiological controls to prevent this issue from recurring. [P.3]

Inspection Report# : [2016002](#) (*pdf*)

**Significance:** G Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Entry into a Locked High Radiation Area without Radiological Briefing**

A Green self-revealing NCV of TS 5.7.2, High Radiation Area Controls, was identified when workers entered the wrong reactor unit condenser bay (Unit 2) that was posted and controlled as a locked high radiation area (LHRA). Specifically, on May 3, 2016, four Susquehanna staff were briefed to enter the Unit 1 condenser bay to check for steam leaks during start up, however the staff entered the Unit 2 condenser bay during full power operations in error and received electronic dosimeter alarms. This was entered into the CAP as CR-2016-11944, the use of master keys for routine entry into LHRA was discontinued, and a radiation safety stand down was conducted. The finding was determined to be more than minor based on a similar example 6.h in IMC 0612, Appendix E, and it is associated with Human Performance attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective to ensure adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Specifically, Susquehanna staff violated the RWP and briefing requirements designed to protect workers from unnecessary radiation exposure. 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) ALARA occupational collective exposure planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. The finding was self-revealing because Susquehanna was made aware of the situation as a result of an electronic dose rate alarm. The finding is related to the cross-cutting area of Human Performance, Teamwork because the workers did not conduct peer checking and recognize and communicate that they were in the wrong reactor unit for the work they were conducting. Specifically, four Susquehanna staff were briefed to enter the Unit 1 condenser bay to check for steam leaks during start up, however the staff entered the Unit 2 condenser bay. [H.4]

Inspection Report# : [2016002](#) (*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.

### **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.

---

## 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.

---

## 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:**  Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Failure to Report Loss of Safety Function as Required by 10 CFR 50.73(a)(2)(v)**

Inspectors identified a Severity Level IV NCV of 10 CFR Part 50.73 (a)(2)(v) when Susquehanna did not submit a licensee event report (LER) within 60 days of identifying that both trains of the control room emergency outside air supply system (CREOASS) were rendered inoperable during surveillance testing, a condition that could have prevented fulfillment of a safety function. Susquehanna entered the issue into the CAP as CR-2016-03713 and reported the condition on May 5, 2016 in LER 50-388(387)/2015-015. Since the issue had the potential to affect the NRC's ability to perform its regulatory function, the inspectors evaluated this performance deficiency in accordance with the traditional enforcement process. Using example 6.9.d.9 from the NRC Enforcement Policy, the inspectors determined that it was a Severity Level IV violation. The significance of the associated performance deficiency was also screened against the reactor oversight process (ROP) per the guidance of IMC 0612, Appendix B, "Issue Screening." Because this violation involves the traditional enforcement process and does not have an associated finding under the ROP, inspectors did not assign a cross-cutting aspect to this violation.

Inspection Report# : [2016001](#) (*pdf*)

Last modified : December 08, 2016