

Susquehanna 2

4Q/2009 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Violation of T.S. 5.5.6, IST Program

The inspectors identified a NCV of Technical Specification 5.5.6, "Inservice Testing Program," because PPL did not evaluate the cause, effect and generic concerns of safety relief valve (SRV) failures to meet the +/- 3 percent set pressure test acceptance criteria as required by 1998 ASME Operations & Maintenance (OM) Code paragraph I-1330 (c)(3) from 2005 to 2009. Inspectors identified that PPL experienced a SRV set pressure test failure rate of 30 percent over five refuel outages. The causes of these failures were not evaluated for potential effects and generic implications to other SRVs as well as other valve groups. Further, PPL incorrectly interpreted NRC approved relief from certain parts of the ASME operation and maintenance (O&M) code to include evaluation of failures in the lower direction. SRV failures in the lower direction reduce the simmer margin between operating pressures and valve pressure setpoints. Reduced simmer margin and the lack of failure evaluations can result in more significant operational challenges. As an immediate corrective action, the licensee entered this NCV into their corrective action process (CR 1162307).

This finding is greater than minor because it is associated with the equipment performance attribute of the Initiating Event cornerstone; and it negatively impacted the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during power operations. This finding is related to the Problem and Identification Resolution cross-cutting area (Corrective Action Program) because PPL did not thoroughly evaluate the SRV failures such that the causes and extent of condition were addressed. (P.1(c)), (Section 1R12)

Inspection Report# : [2009003](#) (*pdf*)

Significance: SL-IV Jun 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Violation of 10 CFR 50.73(a)(2)(vii), Report Common Cause Failures of Independent Trains

The inspectors identified a non-cited violation of 10 CFR 50.73(a)(2)(vii), because PPL did not submit a Licensee Event Report (LER) for the common cause failure and consequent inoperability of two or more SRVs in 2005, 2008, and 2009. The inspectors determined that SRV failures of set pressure testing per the 1998 ASME O&M Code were attributed to setpoint drift resulting in two or more independent channels (two or more SRVs) to become inoperable. As an immediate corrective action, the licensee entered this NCV into their corrective action process (CR 1161398). This finding was evaluated using the traditional enforcement process because the failure to accurately report events has the potential to impact or impede the regulatory process. The finding was determined to be a Severity Level IV violation based on Supplement I, Example D.4 of the NRC Enforcement Policy. However, because this violation was of very low safety significance, was not repetitive or willful, and was entered into PPL's corrective action program, this violation is being treated as an NCV consistent with the NRC Enforcement Policy. This finding is related to the Problem Identification and Resolution cross-cutting area (Operating Experience (OE)) because PPL did not thoroughly incorporate Information Notice (IN) 2006-24 to include SRV set point drift as a reportable common cause failure method. (P.2(b)), (Section 1R20)

Inspection Report# : [2009003](#) (*pdf*)

Mitigating Systems

Significance: **G** Dec 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Insufficient Fire Drill Oversight to Ensure Fire Brigade Performance Deficiencies are Identified

The inspectors identified a Green Non-Cited Violation for the failure of fire brigade performance deficiencies to be identified and corrected during an unannounced fire drill, as required by programs set forth in Licensee Condition 2.C.3. Specifically, on November 16, 2009, the inspectors observed multiple deficiencies during an unannounced fire brigade drill that should have resulted in drill failure. However, the licensee determined the drill was completed satisfactorily.

The finding was more than minor because unaddressed fire brigade deficiencies may result in degraded performance during a real fire event in the vicinity of safe shutdown equipment. Additionally, the finding adversely affected the mitigating systems cornerstone objective. The inspectors assessed the finding in accordance with IMC 0609, Appendix M," and determined the finding to be a very low safety significance because the other elements of the defense in depth concept for fire events remained effective. This finding was determined to have a cross cutting aspect in the area of Problem Identification and Resolution, Self Assessments, because PPL did not communicate the results of assessments to affected personnel, and take corrective actions to address issues commensurate with their significance [P.3(c)]. Specifically, the single evaluator did not identify all of the drill deficiencies that occurred during the drill.

Inspection Report# : [2009005](#) (*pdf*)

Significance: **G** Dec 31, 2009

Identified By: NRC

Item Type: FIN Finding

Scenarios for NRC Annual Operating Examinations Did Not Meet Quantitative Standards for Total Malfunctions

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

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

Inspection Report# : [2009005](#) (*pdf*)

Significance: **G** Sep 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement and Maintain the Fire Protection Program with Respect to the use and Storage of Combustibles in the Control Structure

The inspectors identified a Green NCV of the Susquehanna, Unit 2 Operating License Condition 2.C.(3), Fire Protection for failure to administratively control combustible loading in an area on the 686' elevation of the control structure. As a result, a normally locked storage area was discovered to contain numerous combustibles without designated detection, suppression, or a pre-fire plan. This issue was placed in PPL's corrective action program (CAP) and immediate corrective actions included the removal of some of the combustible materials and the assignment of

hourly fire watches.

The finding was more than minor because it was associated with the external factors attribute (fire) of the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, PPL did not ensure that plant procedures controlled the use and storage of combustible materials and that a combustible loading analysis was maintained for a locked storage area fire zone in the control structure. The inspectors assessed this finding in accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process", and determined the finding to be of very low safety significance (Green) because the fire barrier between the safety-related equipment in the lower relay room and this storage area was being properly maintained and found in good physical condition. The finding was determined to have a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because PPL did not implement a CAP with a low threshold for identifying issues [P.1(a)]. Specifically, PPL had reasonable opportunities to identify the combustible loading issue on multiple occasions during access of the storage room. (Section 1R05)

Inspection Report# : [2009004](#) (pdf)

Significance: SL-III Sep 30, 2009

Identified By: NRC

Item Type: VIO Violation

Senior Reactor Operators Medical Qualification Issue- Vision Test

In August 2009 two violations were identified involving PPL Susquehanna, LLC (PPL) failing to ensure that individual license holders, on shift in the capacity of senior reactor operators (SROs), met the medical prerequisites required for holding a license prior to performing the duties of a licensed operator as required by 10 CFR 55.3. In one occasion in August 2009, an SRO failed a medical examination which identified a disqualifying condition, in that, the examination identified that the SRO's vision did not meet the health requirements stated in ANSI/ANS 3.4-1983, Section 5.4.5, "Eyes." However, he performed the function of an SRO during three watches with a license that was not appropriately conditioned to require that corrective lenses be worn. Since this error invalidated the licensee basis for the operator, in that the operator stood duty as an SRO with an actual disqualifying condition. This was determined to be a SLIII Violation . Upon discovery, PPL removed both individuals from watchstanding duties pending follow-up medical evaluations and, in the case involving the SRO whose failed medical examination resulted in a disqualifying condition, PPL requested a conditional NRC license to address the disqualifying medical condition. Both issues have been entered into PPL's corrective action program.

Each example was evaluated independently using the traditional enforcement process because the failure to determine an operator's medical condition and general health has the potential to impact or impede the regulatory process. Specifically, medical certification and conditional licensing are used by the NRC to ensure health conditions will not adversely affect operator duties or performance. The SL III violation was determined to have a cross-cutting aspect in the area of Problem Identification and Resolution, Operating Experience, because PPL did not systematically collect, evaluate, and communicate relevant external operating experience [P.2(a)]. Specifically, PPL failed to evaluate NRC Information Notice 2004-20 for medical examination issue applicability in accordance with their operating experience review program as evidenced by the 2008 SL-IV NCV (NRC IR 50-387 & 50-388 2008302-01), for an initial licensed operator application submitted to the NRC with a disqualifying medical condition, as well as these two events in July and August of 2009. (Section 1R11.2) This IN specifically mentions the responsibilities of licensee's (including licensed operators) to report changes which could impact physical qualification such as changes in vision.

Inspection Report# : [2009004](#) (pdf)

Significance: SL-IV Sep 30, 2009

Identified By: NRC

Item Type: VIO Violation

Operator Medical Qualifications Issue - Missed Physical Examination

In August 2009 two violations were identified involving PPL Susquehanna, LLC (PPL) failing to ensure that individual license holders, on shift in the capacity of senior reactor operators (SROs), met the medical prerequisites required for holding a license prior to performing the duties of a licensed operator as required by 10 CFR 55.3. In the second occasion, an SRO performed licensed operator duties 52 times between April 1, 2009, and July 22, 2009, after the deadline for his biennial medical examination had passed. The medical examination may have identified an issue with the SRO's medical condition and general health that would have disqualified him from being authorized by a license. Since no actual disqualifying condition was identified , the basis for the operators licensee was still valid

therefore this violation was determined to be a SL IV violation. Upon discovery, PPL removed both individuals from watchstanding duties pending follow-up medical evaluations. Both issues have been entered into PPL's corrective action program.

Each example was evaluated independently using the traditional enforcement process because the failure to determine an operator's medical condition and general health has the potential to impact or impede the regulatory process. Specifically, medical certification and conditional licensing are used by the NRC to ensure health conditions will not adversely affect operator duties or performance.

The SL IV violation was not determined to have a cross cutting issue based on the basis provided in PPL written response to the AV.

Inspection Report# : [2009004](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance:  Sep 30, 2009

Identified By: NRC

Item Type: FIN Finding

Failure to Maintain Occupational Radiation Exposure As Low As Reasonably Achievable during the Unit 2 Refueling Outage

A self-revealing, Green finding was identified that involved inadequate work planning relative to the in-vessel visual inspection/ inservice inspection (IVVI/ISI) of the reactor vessel that resulted in additional unplanned collective exposure contrary to as-low-as-is-reasonably-achievable (ALARA) controls. Specifically, the utilization of inexperienced workers to perform the various tasks involved in the IVVI/ISI activity resulted in the additional collective exposure to perform this routine task. This finding was entered into PPL's Correction Action Program for resolution.

This finding is more than minor because it resulted in unplanned, unintended collective exposure that was greater than 50 percent above the intended collective exposure and greater than 5 person-rem. Additionally, the performance deficiency adversely affected the radiation protection cornerstone objective. The inspectors assessed the finding in accordance with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," and determined that the finding was of very low safety significance (Green) because the finding was due to ALARA work control planning and the 3-year rolling average collective exposure at Susquehanna was less than 240 person-rem (107 person-rem for 2005-2007). This finding was determined to have a cross cutting aspect in the area of Human Performance, Resources, because PPL did not utilize sufficiently qualified personnel to assure occupational radiation safety requirements were met [H.2(b)]. Specifically, PPL's use of inexperienced contract workers resulted in additional collective exposure that could have been avoided. (Section 2OS2)

Inspection Report# : [2009004](#) (*pdf*)

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : March 01, 2010