

Susquehanna 2

3Q/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** 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: **TBD** Sep 30, 2009

Identified By: NRC

Item Type: AV Apparent Violation

Violation of 10CFR55.3, Senior Reactor Operators Performing Licensed Duties While Not Qualified Due to Medical Examination Issues

PPL identified two examples of an apparent violation (AV), 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. In the second occasion, a different 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. 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 finding 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)

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: FIN Finding

Ineffective Evaluation and Incorporation of Operating Experience into the Corrective Action Program

Green. A self-revealing finding was identified for failing to properly implement PPL procedure NDAP-QA-0725 regarding the incorporation and evaluation of operating experience (OE) into the corrective action program and control of field work. Specifically, in December 2007 an industry operating experience report regarding the control of field work for nitrogen freeze seals in plant vital areas was entered into Susquehanna's corrective action program. However, the inspectors identified that PPL's review and evaluation of this OE resulted in no corrective actions taken or planned and that the relevant information was not communicated to the affected station groups as required by NDAP-QA-0725, Appendix D. Inspectors determined that the lack of corrective actions and inadequate communication of industry OE were primary contributors to the Susquehanna Unit 2 Alert declaration on October 27, 2008. This emergency declaration was required when the oxygen level in the 2B residual heat removal (RHR) pump room, which is a plant vital area, dropped below the minimum allowable threshold of 19.5 percent, which is the Immediately-Dangerous-to-Life-and- Health (IDLH) limit.

This finding was more than minor because the failure to properly implement NDAP-QA-0725, Appendix D, to evaluate external industry OE, implement corrective actions, and communicate the OE information to those who performed the relevant tasks at Susquehanna resulted in prohibiting access to safety-related equipment in the RHR room, resulted in the declaration of an emergency event (Alert), and increased the Technical Specification (TS) out of service (OOS) time for the 2B RHR pump. This finding affected the equipment performance attribute of the Mitigating Systems cornerstone and was of very low safety significance (Green) because it was not a design or qualification deficiency, there was no loss of safety function, and it was not potentially risk significant due to external events. The finding was not a violation of regulatory requirements but represented a failure to properly implement NDAP-QA-0725, Appendix D, in that external OE was not correctly evaluated and as a result, relevant information was not communicated to the affected work groups. PPL entered this issue into their corrective action program (CR # 1086125) and implemented corrective actions that included procedure revisions, reinforcement of procedure adherence, and training and qualification revisions. The inspectors determined that this finding has a cross-cutting aspect in the area of Problem Identification and Resolution (operating experience component) because PPL did not systematically or effectively evaluate and communicate industry OE to affected internal stakeholders in a timely manner. [IMC 0305 aspect: P.2(a)]. (Section 4OA3)

Significance:  Nov 07, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Establish Adequate Procedures for Operation of the Plant Following Evacuation of the Control Room due to a Fire

• Green. The team identified a Green non-cited violation of Units 1 and 2 Technical Specification 5.4.1, "Procedures" for PPL's failure to establish appropriate procedure directions for operation of the plant from the remote shutdown panel following a control room evacuation due to a fire. PPL's guidance for control room evacuation is provided in Unit 1 (Unit 2) procedure ON-100(200)-009, Control Room Evacuation, Revision 15. However, the team found that these procedures did not contain directions for establishing alternate shutdown cooling from the Remote Shutdown Panel using the train of equipment that had been analyzed to remain free from fire damage in the event of a control room fire. The licensee initiated a condition report and implemented procedure changes to add a section for operation of Residual Heat Removal(RHR)/Low Pressure Coolant Injection(LPCI) in the alternate shutdown cooling mode from the remote shutdown panel.

This finding is more than minor because it is associated with the procedural quality attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent core damage. Specifically, this issue would have required the plant operators to implement emergency operating procedures for maintaining reactor coolant inventory and cooling without the benefit of appropriate procedure guidance. This finding is related to the cross-cutting area of Problem Identification and Resolution (Corrective Action Program) because PPL did not take appropriate corrective actions to

address a safety issue in a timely manner, commensurate with its safety significance and complexity. (P.1(d)), (Section 1R05.01)

Inspection Report# : [2008009](#) (*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 : December 10, 2009