



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

March 1, 2012

Mr. Timothy S. Rausch  
Senior Vice President and Chief Nuclear Officer  
PPL Susquehanna, LLC  
769 Salem Boulevard  
Berwick, PA 18603-0467

SUBJECT: ANNUAL ASSESSMENT LETTER FOR SUSQUEHANNA STEAM ELECTRIC  
STATION, UNITS 1 AND 2 (REPORT 05000387/2011001 and 05000388/2011001)

Dear Mr. Rausch:

On February 13, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed its end-of-cycle performance review of Susquehanna Steam Electric Station (Susquehanna) Units 1 and 2. The NRC reviewed the most recent quarterly performance indicators (PIs) in addition to inspection results and enforcement actions from January 1, 2011, through December 31, 2011. This letter informs you of the NRC's assessment of your facility during this period and its plans for future inspections at your facility. This performance review and enclosed inspection plan do not include security information. A separate letter will include the NRC's assessment of your performance in the Security Cornerstone and its security-related inspection plan.

The NRC determined that the performance at Susquehanna Unit 1 during the most recent quarter was within the Degraded Cornerstone Column of the NRC's Reactor Oversight Process (ROP) Action Matrix because of one finding having low to moderate safety significance (i.e., white) and one PI having low to moderate safety significance (i.e., white), both associated with the Initiating Events Cornerstone. The White finding was related to an internal flooding event on July 16, 2010, which required the operators to insert a manual scram and isolate the normal heat sink. The White PI was related to the 1<sup>st</sup> quarter 2011 Unplanned Scrams per 7000 Critical Hours PI. Specifically, Unit 1 crossed the green-to-white PI threshold following unplanned scrams on April 22, May 14, and July 16, 2010, and January 25, 2011. Although the 2<sup>nd</sup> quarter 2011 Unplanned Scrams PI returned to Green from White, Susquehanna Unit 1 will remain in the Degraded Cornerstone Column of the NRC Action Matrix until the associated supplemental inspection is completed satisfactorily.

On September 22, 2011, your staff notified the NRC of your readiness for the supplemental inspection to review the actions taken to address the performance issues (ML113130515). Therefore, in addition to ROP baseline inspections, we performed a Unit 1 supplemental inspection using Inspection Procedure (IP) 95002, "Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area," during the weeks of February 13 and February 27, 2012. The results of the supplemental inspection will be documented via separate correspondence.

The NRC determined the performance at Susquehanna Unit 2 during the most recent quarter was within the Licensee Response Column of the NRC's ROP Action Matrix because all inspection

findings had very low safety significance (i.e., green), and all PIs indicated that your performance was within the nominal, expected range (i.e., green). Therefore, the NRC plans to conduct ROP baseline inspections at Unit 2.

The NRC evaluates cross-cutting themes to determine whether a substantive cross-cutting issue (SCCI) exists in a particular area and to encourage licensees to take appropriate actions before more significant performance issues emerge. Regarding Susquehanna, the NRC sustained an SCCI in the Corrective Action Program (CAP) component of the Problem Identification and Resolution (PI&R) cross-cutting area. Specifically, there were six findings with a PI&R cross-cutting aspect of P.1(c) - Evaluation of Identified Problems - during this assessment period, one of which included the July 16, 2010 flooding event which has been held open since the associated supplemental inspection was not completed at the end of the assessment period. The P.1(c) theme was originally identified in the 2010 Annual Assessment letter (ML110620317), and an SCCI was assigned in the 2011 Mid-Cycle Assessment letter (ML112430469). For the current assessment period, the NRC has determined that the exit criteria defined in the 2011 Mid-Cycle Assessment letter have not been met. Specifically, there has not been a notable reduction in the number of findings with a P.1(c) cross-cutting aspect and PPL has not demonstrated sustainable performance improvement in this area (ML111330523, 112220409, 113120409, and 12045A383). Therefore, the P.1(c) SCCI will remain open until PPL has demonstrated sustainable performance improvement as evidenced by effective implementation of an appropriate corrective action plan that results in a notable reduction in the overall number of inspection findings with the same cross-cutting aspect, as well as no safety significant findings. Because this letter is the second consecutive letter documenting an SCCI with the same cross-cutting aspect, in accordance with NRC Inspection Manual Chapter 0305, section 14.04.c, the NRC requests your staff provide a verbal response discussing your progress and future plans in addressing this SCCI during the 2011 annual public meeting. The NRC will continue to monitor your staff's efforts and progress in addressing this SCCI through the baseline inspection program, the 95002 supplemental inspection, and the July 2012 biennial PI&R inspection.

The NRC also identified an SCCI in the Resources component of the Human Performance cross-cutting area. Specifically, PPL had four findings with a Human Performance cross-cutting aspect of H.2(c) - Documentation, Procedures, and Component Labeling, which included a green finding in each of the four quarters of the assessment period. This was originally identified as a cross cutting theme in the 2011 Mid-Cycle Assessment letter. For the current assessment period, the NRC has a concern with your progress in addressing and substantially mitigating this issue given that a reasonable duration of time has passed, findings with the same cross-cutting aspect continue to be identified as demonstrated by six consecutive quarters with an H.2(c) finding, and the delayed completion of a root cause analysis which resulted in limited implementation of corrective actions by the end of the assessment period. The PI&R H.2(c) SCCI will remain open until PPL has demonstrated sustainable performance improvement as evidenced by effective implementation of an appropriate corrective action plan that results in a notable reduction in the overall number of inspection findings with the same cross-cutting aspect, as well as no safety significant findings. The NRC will monitor your staff's efforts and progress in addressing this SCCI through the baseline inspection program, the 95002 supplemental inspection, and the July 2012 biennial PI&R inspection.

The NRC also identified a cross-cutting theme in the Work Practices component of the Human Performance cross-cutting area. Specifically, PPL had five findings with a Human Performance cross-cutting aspect of H.4(a) - human error prevention techniques, which included two green findings and a greater-than-green finding issued in the 1st quarter (ML110871605 and

ML111180742), and one green finding in each of the 3<sup>rd</sup> and 4<sup>th</sup> quarters of the assessment period (ML113120409 and ML12045A383). The NRC determined that an H.4(a) SCCI does not exist because the NRC does not, at this time, have a concern with your staff's scope of effort and progress in addressing the cross-cutting theme. Specifically, PPL recognized the H.4(a) theme in the 3<sup>rd</sup> quarter 2011 and conducted analyses, including a root cause investigation, which were completed near the end of the assessment period. Thus, the NRC concluded that more time is necessary for PPL to demonstrate the effectiveness of their corrective actions regarding human error prevention techniques in order for the NRC to evaluate the effectiveness and sustainability of these activities. The NRC will continue to monitor your staff's efforts and progress in addressing the theme until the theme criteria are no longer met.

The enclosed inspection plan lists the inspections scheduled through June 30, 2013. Routine inspections performed by resident inspectors are not included in the inspection plan. The inspections listed during the last nine months of the inspection plan are tentative and may be revised at the end-of-cycle performance review. The NRC provides the inspection plan to allow for the resolution of any scheduling conflicts and personnel availability issues. In addition to the inspections discussed above, we plan to conduct Temporary Instruction (TI) TI-182, "Review of the Implementation of the Industry Initiative to Control Degradation of Underground Piping and Tanks." In addition, we will be conducting an infrequently performed inspection using IP 92723, "Follow-Up Inspection for Three or More Severity Level IV Traditional Enforcement Violations in the Same Area in a 12-Month Period," to follow up on three traditional enforcement violations in the area of impeding the regulatory process that occurred between the 4<sup>th</sup> quarter 2010 and the 3<sup>rd</sup> quarter 2011 (ML110400284 and ML113120409). The NRC will schedule and conduct IP 92723 when your staff has notified us of your readiness for this inspection. The NRC will contact you as soon as possible to discuss changes to the inspection plan should circumstances warrant any changes.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Please contact Mr. Paul G. Krohn at (610) 337-5120 with any questions you have regarding this letter.

Sincerely,

**/RA/**

William M. Dean  
Regional Administrator

Docket Nos. 50-387; 50-388  
License Nos. NPF-14, NPF-22

Enclosure:  
Inspection Plan

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(ML113120409 and ML12045A383). The NRC determined that an H.4(a) SCCI does not exist because the NRC does not, at this time, have a concern with your staff's scope of effort and progress in addressing the cross-cutting theme. Specifically, PPL recognized the H.4(a) theme in the 3<sup>rd</sup> quarter 2011 and conducted analyses, including a root cause investigation, which were completed near the end of the assessment period. Thus, the NRC concluded that more time is necessary for PPL to demonstrate the effectiveness of their corrective actions regarding human error prevention techniques in order for the NRC to evaluate the effectiveness and sustainability of these activities. The NRC will continue to monitor your staff's efforts and progress in addressing the theme until the theme criteria are no longer met.

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**SUNSI REVIEW COMPLETE: AAR (Reviewer's Initials) ML12061A021**

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Susquehanna  
 Inspection / Activity Plan  
 01/01/2012 - 06/30/2013

Unit Number	Planned Dates Start	Planned Dates End	Inspection Activity	Title	No. of Staff on Site
			<b>1/9EXAM - SUSQUEHANNA INITIAL OL EXAM</b>		<b>5</b>
1	01/16/2012	01/20/2012	U01842	FY12-SUSQ INITIAL OPERATOR LICENSING EXAM	
			<b>PI&amp;R - PI&amp;R SAMPLE - SOURCE TRANSFER FOLLOW-UP</b>		<b>2</b>
1,2	01/16/2012	01/20/2012	IP 71152	Problem Identification and Resolution	
			<b>95002 - SUPPLEMENTAL INSPECTION</b>		<b>4</b>
1	02/13/2012	02/17/2012	IP 95002	Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Perfor	
1	02/27/2012	03/02/2012	IP 95002	Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Perfor	
			<b>71124 - OCC RAD SAFETY</b>		<b>1</b>
1,2	02/20/2012	02/24/2012	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1,2	02/20/2012	02/24/2012	IP 71124.02	Occupational ALARA Planning and Controls	
1,2	02/20/2012	02/24/2012	IP 71124.03	In-Plant Airborne Radioactivity Control and Mitigation	
			<b>7111107T - TRIENNIAL HEAT SINK</b>		<b>1</b>
1,2	03/05/2012	03/09/2012	IP 7111107T	Heat Sink Performance	
			<b>7111108G - U1 INSERVICE INSPECTION</b>		<b>1</b>
1	04/02/2012	04/06/2012	IP 7111108G	Inservice Inspection Activities - BWR	
			<b>71124 - OCC RAD SAFETY</b>		<b>1</b>
1	04/02/2012	04/06/2012	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1	04/02/2012	04/06/2012	IP 71124.02	Occupational ALARA Planning and Controls	
			<b>92723 - FOLLOW-UP INSPECTION FOR =3 SLIV</b>		<b>1</b>
1,2	04/01/2012	06/30/2012	IP 92723	Follow Up Inspection for Three or More Severity Level IV Traditional Enforcement Violations in the S	
			<b>TI 182 - DEGRADATION OF UNDERGROUND PIPING</b>		<b>1</b>
1,2	06/04/2012	06/08/2012	IP 2515/182	Review of the Implementation of the Industry Initiative to Control Degradation of Underground Piping	
			<b>71152B - PI&amp;R</b>		<b>7</b>
1,2	07/09/2012	07/13/2012	IP 71152B	Problem Identification and Resolution	
1,2	07/23/2012	07/27/2012	IP 71152B	Problem Identification and Resolution	
			<b>60855 - ISFSI CAMPAIGN LOADING INSPECTION</b>		<b>1</b>
1,2	06/01/2012	09/30/2012	IP 60855	Operation Of An ISFSI	
			<b>71124.05 - RAD INSTRUMENTS INSPECTION</b>		<b>2</b>
1,2	06/18/2012	06/22/2012	IP 71124.05	Radiation Monitoring Instrumentation	
			<b>71124 - RAD SAFETY &amp; ISFSI</b>		<b>1</b>
1,2	08/20/2012	08/24/2012	IP 60855	Operation Of An ISFSI	
1,2	08/20/2012	08/24/2012	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1,2	08/20/2012	08/24/2012	IP 71124.02	Occupational ALARA Planning and Controls	
1,2	08/20/2012	08/24/2012	IP 71124.04	Occupational Dose Assessment	

This report does not include INPO and OUTAGE activities.  
 This report shows only on-site and announced inspection procedures.

Susquehanna  
 Inspection / Activity Plan  
 01/01/2012 - 06/30/2013

Unit Number	Planned Dates Start	Planned Dates End	Inspection Activity	Title	No. of Staff on Site
			<b>71124.08 - RADWASTE</b>		1
1,2	10/15/2012	10/19/2012	IP 71124.08	Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation	
			<b>EP EX - EP EXERCISE EVALUATION</b>		5
1,2	10/22/2012	10/26/2012	IP 7111401	Exercise Evaluation	
1,2	10/22/2012	10/26/2012	IP 7111404	Emergency Action Level and Emergency Plan Changes	
			<b>71124.06 - RETS INSPECTION</b>		1
1,2	11/05/2012	11/09/2012	IP 71124.06	Radioactive Gaseous and Liquid Effluent Treatment	
1,2	11/05/2012	11/09/2012	IP 71151-PR01	RETS/ODCM Radiological Effluent	
			<b>MODS - PERMANENT PLANT MODIFICATIONS</b>		3
1,2	11/26/2012	11/30/2012	IP 7111117T	Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications	
1,2	12/10/2012	12/14/2012	IP 7111117T	Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications	
			<b>4/22 EXM - SUSQ INITIAL EXAM</b>		5
1	03/25/2013	03/29/2013	U01868	FY13-SUSQ INITIAL OPERATOR LICENSING EXAM	
1	04/22/2013	05/03/2013	U01868	FY13-SUSQ INITIAL OPERATOR LICENSING EXAM	
			<b>7111108G - U2 INSERVICE INSPECTION</b>		1
2	04/22/2013	04/26/2013	IP 7111108G	Inservice Inspection Activities - BWR	
			<b>71124 - RADIATION SAFETY INSPECTION</b>		1
1,2	04/22/2013	04/26/2013	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1,2	04/22/2013	04/26/2013	IP 71124.02	Occupational ALARA Planning and Controls	
1,2	04/22/2013	04/26/2013	IP 71124.03	In-Plant Airborne Radioactivity Control and Mitigation	
1,2	04/22/2013	04/26/2013	IP 71124.04	Occupational Dose Assessment	
			<b>71124 - RADIATION SAFETY INSPECTION</b>		1
1,2	06/17/2013	06/21/2013	IP 71124.07	Radiological Environmental Monitoring Program	
1,2	06/17/2013	06/21/2013	IP 71151	Performance Indicator Verification	

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