



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

September 1, 2011

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

SUBJECT: MID-CYCLE LETTER FOR SUSQUEHANNA STEAM ELECTRIC  
STATION, UNITS 1 AND 2 (REPORT 05000387/2011006 and 05000388/2011006)

Dear Mr. Rausch:

On August 9, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed its mid-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 July 1, 2010, through June 30, 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 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 performance indicator (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 threshold following the 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.

Therefore, in addition to ROP baseline inspections, we plan to schedule and perform a supplemental inspection for Unit 1 using Inspection Procedure (IP) 95002, "Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area," when your staff has notified us of your readiness for this inspection as discussed in the 2010 Annual Assessment letter dated March 4, 2011.

The NRC determined the performance at Susquehanna Unit 2 during the most recent quarter was within the Licensee Response Column of the NRC's Reactor Oversight Process (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 identified an SCCI in the Corrective Action Program (CAP) component of the Problem Identification and Resolution (PI&R) cross-cutting area. Specifically, there were five findings with a PI&R cross-cutting aspect of P.1(c) - Evaluation of Identified Problems - during this assessment period, one of which was the White finding related to the July 16, 2010, internal flooding event. The same theme was identified in the 2010 Annual Assessment letter, however, an SCCI was not assigned at that time since a reasonable duration had not passed to evaluate the effectiveness of PPL's corrective actions. 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 since passed, findings with the same cross-cutting aspect continue to be identified, and implementation of some corrective actions has been delayed. The PI&R 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 no safety significant findings and a notable reduction in the overall number of inspection findings with the same cross-cutting aspect.

The NRC also identified a cross-cutting theme 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. The NRC determined that an SCCI associated with H.2(c) does not exist because the NRC does not, at this time, have a concern with your staffs scope of effort and progress in addressing the cross-cutting theme. Specifically, PPL recognized the H.2(c) potential theme in the first and second quarters of 2011 and had ongoing analyses, including a root cause investigation, at the end of this assessment period. Notwithstanding, the NRC will continue to closely monitor your staffs progress in addressing the H.2(c) theme.

The enclosed inspection plan lists the inspections scheduled through December 31, 2012. 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. In addition to the inspections discussed above, the NRC plans to conduct NRC IP 60855, "ISFSI Campaign Loading Inspection," and Temporary Instruction (TI) TI-177, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems (NRC Generic Letter 2008-01)." The NRC provides the inspection plan to allow for the resolution of any scheduling conflicts and personnel availability issues. The NRC will contact you as soon as possible to discuss changes to the inspection plan should circumstances warrant any changes.

In the days following the Fukushima Daiichi nuclear accident in Japan, the Commission directed the staff to establish a senior-level agency task force to conduct a methodical and systematic review of the NRC's processes and regulations to determine whether the agency should make additional improvements to its regulatory system. The NRC has since completed Temporary Instruction (TI) 183, "Follow-up to Fukushima Daiichi Nuclear Station Fuel Damage Event," and

TI-184, "Availability and Readiness Inspection of Severe Accident Management Guidelines (SAMGs)," at your facility. Results of these inspections can be found here: <http://www.nrc.gov/japan/japan-activities.html>. Additionally, on May 11, 2011, the agency issued NRC Bulletin 2011-01, "Mitigating Strategies," to confirm compliance with Order EA-02-026, subsequently imposed license conditions, and 10 CFR 50.54(hh)(2), and to determine the status of licensee mitigating strategies programs. On July 12, 2011, the NRC's Task Force made its recommendations to the Commission in its report, "Recommendations for Enhancing Reactor Safety in the 21st Century: The Near-Term Task Force Review of Insights from the Fukushima Daiichi Accident." The NRC is currently reviewing the Task Force's recommendations to determine what additional actions may be warranted.

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,

A handwritten signature in black ink, appearing to read "W. M. Dean for".

William M. Dean  
Regional Administrator

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

Enclosure:  
Inspection Plan

cc w/encl: Distribution via ListServ

TI-184, "Availability and Readiness Inspection of Severe Accident Management Guidelines (SAMGs)," at your facility. Results of these inspections can be found here: <http://www.nrc.gov/japan/japan-activities.html>. Additionally, on May 11, 2011, the agency issued NRC Bulletin 2011-01, "Mitigating Strategies," to confirm compliance with Order EA-02-026, subsequently imposed license conditions, and 10 CFR 50.54(hh)(2), and to determine the status of licensee mitigating strategies programs. On July 12, 2011, the NRC's Task Force made its recommendations to the Commission in its report, "Recommendations for Enhancing Reactor Safety in the 21st Century: The Near-Term Task Force Review of Insights from the Fukushima Daiichi Accident." The NRC is currently reviewing the Task Force's recommendations to determine what additional actions may be warranted.

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Sincerely,

**/RA by David C. Lew Acting For/**

William M. Dean  
Regional Administrator

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

Enclosure: Inspection Plan

cc w/encl: Distribution via ListServ

Distribution w/encl: (via e-mail)

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**SUNSI REVIEW COMPLETE: AAR (Reviewer's Initials) ML112430469**

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DATE	0815/11	08/15/11	08/31 /11	08 /31/11	08/31 /11

See Prior Concurrence\*

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**Susquehanna**  
**Inspection / Activity Plan**  
 07/01/2011 - 12/31/2012

Unit Number	Planned Dates		Inspection Activity	Title	No. of Staff on Site
	Start	End			
			<b>1/9EXAM - SUSQUEHANNA INITIAL OL EXAM</b>		<b>5</b>
1	11/14/2011	11/18/2011	U01842	FY12-SUSQ INITIAL OPERATOR LICENSING EXAM	
1	12/12/2011	12/16/2011	U01842	FY12-SUSQ INITIAL OPERATOR LICENSING EXAM	
1	01/16/2012	01/20/2012	U01842	FY12-SUSQ INITIAL OPERATOR LICENSING EXAM	
			<b>TI-177 - MANAGING GAS ACCUMULATION IN ECCS</b>		<b>3</b>
1,2	08/29/2011	09/02/2011	IP 2515/177	Managing Gas Accumulation In Emergency Core Cooling, Decay Heat Removal & Containment Spray System	
			<b>711111B - SUSQ REQUAL INSP W/ P/F RESULTS</b>		<b>2</b>
1,2	11/28/2011	12/02/2011	IP 7111111B	Licensed Operator Requalification Program	
			<b>EP PROGR - EP PROGRAM INSPECTION</b>		<b>1</b>
1,2	10/10/2011	10/14/2011	IP 7111402	Alert and Notification System Testing	
1,2	10/10/2011	10/14/2011	IP 7111403	Emergency Preparedness Organization Staffing and Augmentation System	
1,2	10/10/2011	10/14/2011	IP 7111404	Emergency Action Level and Emergency Plan Changes	
1,2	10/10/2011	10/14/2011	IP 7111405	Correction of Emergency Preparedness Weaknesses and Deficiencies	
1,2	10/10/2011	10/14/2011	IP 71151-EP01	Drill/Exercise Performance	
1,2	10/10/2011	10/14/2011	IP 71151-EP02	ERO Drill Participation	
1,2	10/10/2011	10/14/2011	IP 71151-EP03	Alert & Notification System	
			<b>71124 - HP</b>		<b>1</b>
1,2	10/17/2011	10/21/2011	IP 60855.1	Operation of an Independent Spent Fuel Storage Installation at Operating Plants	
1,2	10/17/2011	10/21/2011	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1,2	10/17/2011	10/21/2011	IP 71124.02	Occupational ALARA Planning and Controls	
1,2	10/17/2011	10/21/2011	IP 71124.03	In-Plant Airborne Radioactivity Control and Mitigation	
			<b>71152B - PI&amp;R</b>		<b>4</b>
1,2	01/30/2012	02/03/2012	IP 71152B	Problem Identification and Resolution	
1,2	02/13/2012	02/17/2012	IP 71152B	Problem Identification and Resolution	
			<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 - 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	

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

**Susquehanna**  
**Inspection / Activity Plan**

07/01/2011 - 12/31/2012

Unit Number	Planned Dates Start End	Inspection Activity	Title	No. of Staff on Site
		<b>71124 - OCC RAD SAFETY</b>		<b>1</b>
1	04/02/2012 04/06/2012	IP 71124.02	Occupational ALARA Planning and Controls	
		<b>60855 - ISFSI CAMPAING LOADING INSPECTION</b>		<b>1</b>
1,2	06/01/2012 09/30/2012	IP 60855	Operation Of An ISFSI	
		<b>71124 - RAD SAFETY &amp; ISFSI</b>		<b>1</b>
1,2	08/20/2012 08/24/2012	IP 60855.1	Operation of an Independent Spent Fuel Storage Installation at Operating Plants	
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	
		<b>EP EX - EP EXERCISE EVALUATION</b>		<b>5</b>
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>MODS - PERMANENT PLANT MODIFICATIONS</b>		<b>3</b>
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>71124.08 - RADWASTE</b>		<b>1</b>
1,2	11/26/2012 11/30/2012	IP 71124.08	Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation	
1,2	11/26/2012 11/30/2012	IP 71151-OR01	Occupational Exposure Control Effectiveness	
1,2	11/26/2012 11/30/2012	IP 71151-PR01	RETS/ODCM Radiological Effluent	

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