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AUG 27 2014

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

**SUSQUEHANNA STEAM ELECTRIC STATION
THIRD SIX-MONTH STATUS REPORT IN
RESPONSE TO MARCH 12, 2012 COMMISSION
ORDER MODIFYING LICENSES WITH REGARD
TO REQUIREMENTS FOR MITIGATION
STRATEGIES FOR BEYOND-DESIGN-BASIS
EXTERNAL EVENTS (NRC ORDER EA-12-049)
PLA-7204**

**Docket No. 50-387
and No. 50-388**

- References:
1. NRC Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012
 2. NRC Interim Staff Guidance JLD-ISG-2012-01, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," Revision 0, dated August 29, 2012
 3. NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0, dated August 2012
 4. PPL Letter (PLA-6923), "Initial Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated October 29, 2012
 5. PPL Letter (PLA-6981), "Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (NRC Order EA-12-049)," dated February 28, 2013
 6. PPL Letter (PLA-7072), "Request for Implementation Date Relief in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (NRC Order EA-12-049)," dated August 26, 2013
 7. NRC Order EA-13-109, "Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions," dated June 6, 2013
 8. PPL Letter (PLA-7071), "First Six Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated August 26, 2013
 9. PPL Letter (PLA-7134), "Request for Relaxation from NRC Order EA-12-049, 'Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events'" dated February 20, 2014
 10. NRC Letter from J. S. Bowen to T. S. Rausch, "Susquehanna Steam Electric Station, Units 1 and 2 -Interim Staff Evaluation Relating To Overall Integrated Plan In Response To Order EA-12-049 (Mitigation Strategies) (TAC NOS. MF0888 and MF0889)," dated January 24, 2014 (ADAMS # ML13339A764)

Enclosure 2 of the Attachment contains proprietary information. Withhold from public disclosure under 10CFR2.390(d)(1), as other than Safeguards Information, and designated as Security Sensitive Information. When Enclosure 2 of the Attachment is separated, the remainder of the Attachment and this cover letter are decontrolled.

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11. *PPL Letter (PLA-7137), "Second Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (NRC Order EA-12-049)," dated February 28, 2014*
12. *NRC Letter from E. J. Leeds to T. S. Rausch, "Susquehanna Steam Electric Station Units 1 and 2 – Relaxation of Certain Schedule Requirements for Order EA-12-049 'Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design Basis External Events.'" dated April 15, 2014*

The purpose of this letter is to provide PPL Susquehanna, LLC's (PPL) third six-month status report pursuant to Section IV, Condition C.2, of Reference 1, that delineates progress made in implementing the requirements of Reference 1. Enclosure 1 provides an update of milestone accomplishments since the last status report, including any changes to the compliance method, schedule, or need for relief and the basis, if any. Enclosure 2 is a revision of the Mitigation Strategies Overall Integrated Plan that includes several updates. The information provided in Enclosure 2 is considered to contain information concerning physical protection not otherwise designated as Safeguards Information and is designated "Security Sensitive Information" as defined in 10 CFR 2.390 (d)(1). Accordingly, PPL requests that the information provided in Enclosure 2 to the letter be withheld from public disclosure.

On March 12, 2012, the Nuclear Regulatory Commission ("NRC" or "Commission") issued an order (Reference 1) to PPL. Reference 1 was immediately effective and directs PPL to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment cooling, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event. Specific requirements are outlined in Attachment 2 of Reference 1.

Reference 1 required submission of an initial status report 60 days following issuance of the final interim staff guidance (Reference 2) and an overall integrated plan pursuant to Section IV, Condition C. Reference 2 endorses industry guidance document NEI 12-06, Revision 0 (Reference 3) with clarifications and exceptions identified in Reference 2. Reference 4 provided PPL's initial status report regarding Mitigation Strategies. Reference 5 provided PPL's initial Mitigation Strategies Overall Integrated Plan.

Reference 1 requires submission of a status report at six-month intervals following submittal of the Overall Integrated Plan. Reference 3 provides direction regarding the content of the status reports.

The Request for Relaxation contained in Reference 9 supersedes the Request for Relief made in Reference 6. The Request for Relaxation is based on NRC mandated changes to the Hardened Containment Vent System implementation dates that impact the Mitigation Strategy Overall Integrated Plan. Specifically, the change in implementation dates for the Hardened Containment Vent Order (NRC Order EA-12-050) was rescinded and superseded by NRC Order EA-13-109) impacts the Mitigation Strategy Overall

Integrated Plan and implementation timeline. The NRC approved this relaxation in Reference 12.

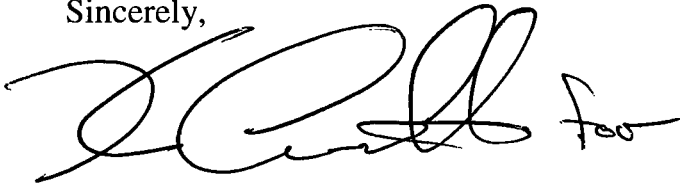
This letter contains no new or revised regulatory commitments.

If you have any questions regarding this report, please contact Mr. John L. Tripoli, Manager – Nuclear Regulatory Affairs, at (570) 542-3100.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: 8/27/14

Sincerely,



T. S. Rausch

Enclosure 1: PPL Susquehanna, LLC's Third Six Month Status Report for the Implementation of NRC Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

Enclosure 2: PPL Susquehanna's Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), (August 2014) Security-Related Information - Withhold from Public Disclosure Under 10 CFR 2.390

Copy: NRC Region I

Mr. J. E. Greives, NRC Sr. Resident Inspector
Ms. Jessica A. Kratchman, NRR/JLD/PMB, NRC
Mr. J. A. Whited, NRC Project Manager
Mr. L. J. Winker, PA DEP/BRP

Enclosure 1 to PLA-7204

**PPL Susquehanna, LLC's Third Six Month
Status Report for the Implementation of NRC
Order EA-12-049, Order Modifying Licenses
with Regard to Requirements for Mitigation
Strategies for Beyond-Design-Basis External
Events**

PPL Susquehanna, LLC's Third Six Month Status Report for the Implementation of NRC Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

1. Introduction

PPL Susquehanna, LLC (PPL) developed an Overall Integrated Plan (Reference 1) documenting the diverse and flexible strategies (FLEX), in response to Reference 2. This Third Six Month Status Report provides an update of milestone accomplishments since submittal of the First Six Month Status Report (Reference 7) related to the Overall Integrated Plan, including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any.

[NOTE: References cited in this enclosure are contained in Section 8.]

2. Milestone Accomplishments

The following milestone(s) have been completed since the development of the Overall Integrated Plan (Reference 1), and are current as of July 31, 2014.

- Open Items 1, 4, 7, 8, 9, 13 and 14 have been completed.
- Numerous milestones have been started and are in progress as listed on the Section 3, Milestone Schedule Status table, for example - Phase 2 Staffing Analysis, construction of the equipment storage building, modification installation, and training.

3. Milestone Schedule Status

The following table provides an update to Attachment 2, Milestone Schedule, of the Overall Integrated Plan. It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed.

The revised milestone target completion dates do not impact the Order implementation date at this time. The Interim Staff Evaluation (ISE) from the NRC (Reference 9) has been received in time to support implementation of the Mitigation Strategies. The Open Item and Confirmatory Items identified in the ISE will be addressed by the Regulatory Audit Process.

| Milestone | Target Completion Date | Activity Status | Revised Target Completion Date |
|---|-------------------------------|------------------------|---------------------------------------|
| Submit 60 Day Status Report | October 2012 | Complete | |
| Submit Overall Integrated Plan | February 2013 | Complete | |
| Expected receipt of draft SER from NRC (or ISE) | September 2013 | Complete | January 2014 |
| Submit 6 Month Updates: | | | |
| Update 1 | August 2013 | Complete | |
| Update 2 | February 2014 | Complete | |
| Update 3 | August 2014 | Complete* | |
| Update 4 | February 2015 | Not Started | |
| Update 5 | August 2015 | Not Started | |
| Update 6 | February 2016 | Not Started | |
| Update 7 | August 2016 | Not Started | |
| FLEX Strategy Evaluation Unit 2 | April 2015 | Started | |
| FLEX Strategy Evaluation Unit 1 | April 2016 | Started | |
| Validation by Walk-throughs or Demonstration(s): | | | |
| Walk-throughs or Demonstrations Unit 2 | April 2015 | Not Started | |
| Walk-throughs or Demonstrations Unit 1 | April 2016 | Not Started | |
| Perform Staffing Analysis | October 2014 | Started | |
| Modifications: | | | |
| Modifications Evaluation | June 2015 | Started | |

| Milestone | Target Completion Date | Activity Status | Revised Target Completion Date |
|--|-------------------------------|---|---------------------------------------|
| Unit 2 Design Engineering - Issue Unit 2 Design Change Documents (for all Phases) | June 2014 | Complete* (except HCVS, see Ref. 11) | |
| Unit 2 Implementation Outage | April 2015 | Not Started | |
| Unit 1 Design Engineering - Issue Unit 1 Design Change Documents (for all Phases) | June 2015 | Complete* (except HCVS, see Ref. 11) | |
| Unit 1 Implementation Outage | April 2016 | Not Started | |
| Storage: | | | |
| Storage Design Engineering | May 2014 | Complete* | |
| Storage Implementation - Equipment storage (reasonable protection) ready for operation with required FLEX equipment available for use | April 2015 | Started | |
| FLEX Equipment: | | | |
| Procure On-Site Equipment | April 2015 | Started | |
| Contract with Vendor for National SAFER Response Center (NSRCs) established | March 2013 | Complete | |
| Develop Strategies with NSRC | April 2015 | Started | |
| Establish offsite staging location [Install Off-Site Delivery Station (if Necessary)] | May 2015 | Started | |

| Milestone | Target Completion Date | Activity Status | Revised Target Completion Date |
|---|-------------------------------|------------------------|---------------------------------------|
| National SAFER Response Centers in service | December 2014 | Started* | January 2015* |
| Procedures: | | | |
| BWROG issue Emergency Procedure and Severe Accident Guidelines (EPGs/SAGs) Rev. 3 | February 2013 | Complete | |
| Procedures Complete Unit 2 FLEX Implementation (including FSGs and maintenance) | April 2015 | Started | |
| Procedures Complete Unit 1 FLEX Implementation (including FSGs and maintenance) | April 2016 | Started | |
| Training: | | | |
| Develop Training Plan | May 2014 | Complete | |
| Training Complete | February 2016 | Started* | |
| | | | |
| Unit 2 FLEX Implementation | April 2015 | Started* | |
| Unit 1 FLEX Implementation | April 2016 | Started* | |
| Full Site FLEX Implementation | April 2016 | Started* | |
| Submit Completion Report | August 2016 | Not Started | |
| * Revised since the six month update submitted February 28, 2014 (Reference 10) | | | |

4. Changes to Compliance Method

NRC Order EA-12-049 requires implementation of Mitigation Strategies to include procedures, guidance, training, and acquisition, staging, or installing of equipment needed for the strategies.

Reference 1 provided PPL's response to the NRC Order EA-12-049. The cover letter identifies that delays in implementing the Hardened Containment Vent System as required by NRC Order EA-12-050 will affect implementation of the Mitigation Strategies NRC Order EA-12-049 actions.

The Reference 1 enclosure describes PPL's Mitigation Strategies that are based on venting the containment using the Hardened Containment Vent System. It also describes that a modification is required to install a Hardened Containment Vent System.

Thus the PPL response to NRC Order EA-12-049 provided in Reference 1 was premised on installation and use of a Hardened Containment Vent System as required by NRC Order EA-12-050.

Upon issuance of NRC Order EA-13-109, the NRC staff changed technical and schedule requirements applicable to the Hardened Containment Vent System and rescinded the requirements of the NRC Order EA-12-050.

As a result, full compliance to the Mitigation Strategies required by NRC Order EA-12-049 and described in Reference 1 for PPL Susquehanna Units 1 and 2 will not be achieved until compliance with NRC Order EA-13-109 is achieved as described in Reference 8. This relaxation was granted in Reference 11.

5. Need for Relief/Relaxation and Basis for the Relief/Relaxation

PPL expects to comply with NRC Order EA-12-049, but needs relaxation of the implementation dates. The specific details have been submitted in a separate document (Reference 8).

NRC Order EA-12-049 requires implementation of Mitigation Strategies to include procedures, guidance, training, and acquisition, staging, or installing of equipment needed for the strategies.

Reference 1 provided PPL's response to the NRC Order EA-12-049. The cover letter identifies that delays in implementing the Hardened Containment Vent System as required by NRC Order EA-12-050 will also affect implementation of the Mitigation Strategies NRC Order EA-12-049 actions.

The Reference 1 enclosure describes the PPL Susquehanna Mitigation Strategies that is based on venting the containment using the Hardened Containment Vent System. It also describes that a modification to install a Hardened Containment Vent System is required.

Thus the PPL NRC Order EA-12-049 response provided in Reference 1 was premised on installation and use of a Hardened Containment Vent System as required by NRC Order EA-12-050.

Upon issuance of NRC Order EA-13-109, the NRC staff changed technical and schedule requirements applicable to the Hardened Containment Vent System and rescinded the requirements of the NRC Order EA-12-050.

As a result, full compliance to the Mitigation Strategies required by NRC Order EA-12-049 and described in Reference 1 for PPL Susquehanna Units 1 and 2 will not be achieved until compliance with NRC Order EA-13-109 is achieved.

Relaxation of the NRC Order EA-12-049 IV.A.2 requirements is required and has been requested (Reference 8). This relaxation was granted in Reference 11.

6. Open Items from Overall Integrated Plan and Draft Safety Evaluation

The following tables provide a summary and status as of July 31, 2014 of the open items documented in the Overall Integrated Plan and ISE. The Open Item and Confirmatory Items identified in the ISE will be addressed by the Regulatory Audit Process.

| Overall Integrated Plan Open Item | Status |
|--|---------------|
| 1. Phase 3 Shutdown Cooling Capability | Complete* |
| 2. EOP changes required to support Mitigation Strategies. | Started |
| 3. Develop SSES "Response Plan" for use of the National SAFER Response Centers (NSRC). | Started |
| 4. FLEX Equipment Storage | Complete* |
| 5. Review GEH Report NEDC 33771P, GEH Evaluation of FLEX Implementation Guidelines and identify exceptions to the report as required in Attachment 1B. | Complete |
| 6. Determine appropriate use of RCIC or FLEX pump mitigation strategy if ELAP occurs when operating in Mode 4 and when transitioning to mode 3. | Complete |
| 7. Evaluate the impact of RCIC pump seal failures. EC-050-1034, Rev. 0 approved 12/13/2013 | Complete* |

| Overall Integrated Plan Open Item | Status |
|---|-----------|
| 8. Evaluate potential RCIC pump modifications. | Complete* |
| 9. Establish method of venting the Refuel Floor. EC-012-6122, Rev 0 approved on 4/29/2014. | Complete* |
| 10. Evaluate means to assure continued long term gas supply for ADS/SRVs. | Started |
| 11. Evaluate means to transfer diesel fuel oil from storage tanks to the diesel fueled equipment. | Started |
| 12. Evaluate the effects of injecting Spray Pond water (UHS) to the RPV over a long period of time of 72 hours or longer. | Complete |
| 13. The calculation EC-030-1006, Rev 14, Control Structure Temperature Response to a Station Blackout or Fire Induced Loss Of Control Structure HVAC was performed. However, final review and approval of the calculation EC-030-1006, Rev 14, have not been performed. The calculation has now been reviewed and approved. | Complete* |
| 14. The calculation EC-SBOR-0504, Rev 6, Reactor Building Heatup Analysis During Station Blackout was performed. However, final review and approval of the calculation EC-SBOR-0504, Rev 6 have not been performed. Revision 7 of this calculation was approved on 3/20/2014. Appendix O was added to identify and evaluate mitigating measures that could be implemented to enhance Switchgear and Load Center Room cooling, as needed, for time > 72 hours. | Complete* |

| Overall Integrated Plan Open Item | Status |
|---|---------|
| 15. Fuel consumption and refuel intervals will be determined during the procurement process for the 4160VAC generators. | Started |
| * Revised since the six month update submitted February 28, 2014 (Reference 10) | |

7. Potential Draft Safety Evaluation Impacts

None - PPL has received the ISE and will be closing the Open Item and Confirmatory Items via the audit process.

8. References

The following references support the updates to the Overall Integrated Plan described in this enclosure:

1. PPL Letter (PLA-6981), "Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (NRC Order EA-12-049)," dated February 28, 2013.
2. NRC Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012.
3. NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0, dated August, 2012.
4. NRC Interim Staff Guidance JLD-ISG-2012-01, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External events," Revision 0, dated August 29, 2012.
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11. NRC Letter from E. J. Leeds to T. S. Rausch, “Susquehanna Steam Electric Station Units 1 and 2 – Relaxation of Certain Schedule Requirements for Order EA-12-049 ‘Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design Basis External Events,’” dated April 15, 2014.