

PSEG Nuclear LLC  
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FEB 18 2015  
LR-N15-0023

Order EA-12-049

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

Salem Generating Station Units 1 and 2  
Renewed Facility Operating License Nos. DPR-70 and DPR-75  
NRC Docket Nos. 50-272 and 50-311

Subject: PSEG Nuclear LLC's Fourth Six-Month Status Report for the Salem Generating Station 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)

References:

1. NRC Order Number EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012
2. PSEG Letter LR-N13-0034, "PSEG Nuclear LLC's Overall Integrated Plan for the Salem Generating Station 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 February 28, 2013
3. PSEG Letter LR-N13-0175, "PSEG Nuclear LLC's First Six-Month Status Report for the Salem Generating Station 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 25, 2013

4. PSEG Letter LR-N14-0027, "PSEG Nuclear LLC's Second Six-Month Status Report for the Salem Generating Station 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 February 25, 2014
5. PSEG Letter LR-N14-0187, "PSEG Nuclear LLC's Third Six-Month Status Report for the Salem Generating Station 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, 2014
6. NRC letter, "Salem Nuclear Generating Station, Unit No. 1 - Relaxation of the Schedule Requirements for Order EA-12-049 'Order Modifying Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events,'" dated September 15, 2014

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Order EA-12-049 (Reference 1) to PSEG Nuclear LLC (PSEG). NRC Order EA-12-049 was immediately effective and directed PSEG to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event. In accordance with Condition IV.C.1.a of NRC Order EA-12-049, PSEG submitted an Overall Integrated Plan (OIP) for the Salem Generating Station (SGS) Units 1 and 2, on February 28, 2013 (Reference 2). Condition IV.C.2 of NRC Order EA-12-049 requires six-month status reports to delineate the progress made in implementing the requirements of the Order. PSEG previously provided six-month updates for SGS via References 3, 4, and 5. Attachment 1 to this letter provides the fourth six-month status report of progress made in implementing the requirements of NRC Order EA-12-049 at SGS Units 1 and 2, as of January 31, 2015.

Attachment 1 reflects the schedule relaxation granted by the NRC in Reference 6 to allow SGS Unit 1 sufficient time for implementation of plant changes to reduce reactor coolant pump seal leakage.

There are no regulatory commitments contained in this letter.

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If you have any questions or require additional information, please do not hesitate to contact Mr. Brian Thomas at 856-339-2022.

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

Executed on 2-18-15  
(Date)

Sincerely,

  
John F. Perry  
Vice President – Salem

Attachment 1: Salem Generating Station Units 1 and 2 Fourth Six-Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

cc: Mr. William Dean, Director of Office of Nuclear Reactor Regulation  
Mr. Daniel Dorman, Administrator, Region I, NRC  
Ms. Carleen Sanders-Parker, Project Manager, NRC  
NRC Senior Resident Inspector, Salem  
Mr. Patrick Mulligan, Manager IV, NJBNE  
Salem Commitment Tracking Coordinator  
PSEG Commitment Coordinator – Corporate

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**Attachment 1**

**Salem Generating Station Units 1 and 2 Fourth Six-Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events**

## 1 Introduction

PSEG Nuclear LLC (PSEG) developed an Overall Integrated Plan (OIP) (Reference 1) for the Salem Generating Station (SGS) Units 1 and 2, documenting the diverse and flexible coping strategies (FLEX) in response to NRC Order EA-12-049 (Reference 2). In References 3, 4, and 5, PSEG provided the previous six-month status reports associated with implementation of the requirements of NRC Order EA-12-049. This report is the fourth six-month status report, which provides implementation status as of January 31, 2015. This update follows the guidance in Section 13.2 of Nuclear Energy Institute (NEI) Report 12-06 (Reference 6), which states that the six-month status reports should include an update of milestone accomplishments since the previous report, changes to the compliance method, schedule, and the need for relief and the basis for relief, if applicable. Sections 2 and 3 of this status report include milestone accomplishments and milestone schedule status, respectively. Section 4 addresses changes to the method of compliance with NEI 12-06. Section 5 describes the schedule relaxation for SGS Unit 1 associated with reactor coolant pump seal leakage.

## 2 Milestone Accomplishments

The following SGS FLEX milestones have been completed as of January 31, 2015:

- **Submit Integrated Plan:** PSEG submitted the SGS FLEX OIP to the NRC via Reference 1.
- **Develop Strategies:** PSEG has developed SGS Units 1 and 2 FLEX strategies as described in the SGS FLEX OIP and has identified design, analysis, procurement, and programmatic actions necessary to achieve compliance with Order EA-12-049. Changes to the FLEX strategies involving changes to methods of compliance with NEI 12-06 are addressed in Section 4.
- **Perform Staffing Analysis:** PSEG completed an analysis of the staffing needed to implement the SGS FLEX strategies during a beyond-design-basis external event, and transmitted the staffing assessment report to the NRC via Reference 7.
- **Develop Training Plan:** PSEG developed training materials and schedules, and has begun training personnel on the SGS FLEX strategies.
- **Develop Strategies/Contract with Regional Response Center (RRC):** PSEG Nuclear is a member of the Strategic Alliance for FLEX Emergency Response (SAFER) and has a SAFER response plan to coordinate delivery of additional equipment from the National SAFER Response Centers (formerly known as Regional Response Centers).
- **Emergency Preparedness (EP) Communications Improvements:** PSEG has established communications capability to support the SGS FLEX strategies.

### 3 Milestone Schedule Status

The following table provides an update of SGS FLEX OIP milestones. The table provides the milestone activity status and indicates whether the original 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 reflect the compliance schedule relaxation for SGS Unit 1 described in Section 5.

<b>Milestone</b>	<b>Original Target Completion Date</b>	<b>Activity Status</b>	<b>Revised Target Completion Date</b>
<b>Submit Overall Integrated Plan</b>	Feb 2013	Complete	
<b>Six-Month Status Update</b>	Aug 2013	Complete	
	Feb 2014	Complete	
	Aug 2014	Complete	
	Feb 2015	Complete With This Report	
	Aug 2015	Not Started	
	Feb 2016	Not Started	
<b>Develop Strategies</b>	May 2013	Complete	
<b>Modifications</b>			
Develop Modifications – Unit 1	Dec 2013	Started	Jan 2016 See Section 5
Implement Modifications – Unit 1	Oct 2014	Started	May 2016 See Section 5
Develop Modifications – Unit 2	Dec 2013	Started	Jun 2015
Implement Modifications – Unit 2	Oct 2015	Started	Nov 2015
<b>Flex Support Guidelines (FSGs)</b>			
Develop FSGs – Unit 1	Dec 2013	Started	Mar 2015
Validation Walk-throughs or Demonstrations of FLEX Strategies and Procedures – Unit 1	Nov 2014	Started	Sep 2015
Develop FSGs – Unit 2	Dec 2013	Started	Nov 2015
Validation Walk-throughs or Demonstrations of FLEX Strategies and Procedures – Unit 2	Nov 2015	Not Started	
<b>Perform Staffing Analysis (Note 1)</b>	Dec 2013	Complete	Jun 2014
<b>Develop Training Plan</b>	Jun 2014	Complete	

<b>Milestone</b>	<b>Original Target Completion Date</b>	<b>Activity Status</b>	<b>Revised Target Completion Date</b>
<b>Implement Training</b>			
Unit 1 Training	Dec 2014	Started	Apr 2015
Unit 2 Training	Dec 2014	Started	Nov 2015
<b>Develop Strategies/Contract with National SAFER Response Centers (formerly known as Regional Response Centers)</b>	Oct 2013	Complete	Oct 2014
<b>Procure Equipment</b>			
Unit 1 Procurement	Dec 2013	Started	Jan 2016
Unit 2 Procurement	Dec 2013	Started	Jun 2015
<b>Create Maintenance Procedures</b>	May 2014	Started	Mar 2015
<b>Emergency Preparedness (EP) Communications Improvements</b>	Jun 2014	Complete	Nov 2014
<b>Unit 1 Implementation Outage</b>	Oct 2014	Not Started	May 2016 See Section 5
<b>Unit 1 Report to NRC When Full Compliance is Achieved</b>	Feb 2015	Not Started	Jul 2016
<b>Unit 2 Implementation Outage</b>	Oct 2015	Not Started	Nov 2015
<b>Unit 2 Report to NRC When Full Compliance is Achieved</b>	Feb 2016	Not Started	Jan 2016

Section 3 Table Note

- 1) The SGS Phase 2 (FLEX) staffing assessment report was transmitted to the NRC via Reference 7, as required by the 10 CFR 50.54(f) information request dated March 12, 2012 (Reference 8).

#### **4 Changes to Compliance Method**

PSEG identified changes to the method of compliance with NEI 12-06 in the August 2014 status report (Reference 5). Additional details of changes to the original FLEX strategies have been communicated as part of the mitigation strategies audit process. There are no additional changes to the compliance method for this reporting period.

#### **5 Need for Relief/Relaxation and Basis for the Relief/Relaxation**

The original schedule requirement for SGS Unit 1 implementation of NRC Order EA-12-049 was prior to startup from the 23<sup>rd</sup> refueling outage (S1R23) in fall 2014. PSEG requested schedule relaxation via Reference 9 to defer full compliance with NRC Order EA-12-049 by one refueling outage, i.e., prior to startup from S1R24 in spring 2016. The NRC granted the schedule relaxation via Reference 10 to enable PSEG to address recalculated reactor coolant pump seal leakage rates that exceed the Westinghouse generic values assumed in the SGS FLEX OIP. PSEG is developing plant changes to reduce RCP seal leakage rates to values that are compatible with the assumptions of the SGS mitigation strategies. Implementation of these changes is scheduled for the SGS Unit 2 fall 2015 outage and the SGS Unit 1 spring 2016 outage. PSEG is proceeding with completion of other design, equipment procurement and programmatic changes to support the ability to implement the SGS mitigation strategies.

#### **6 Open Items from Overall Integrated Plan and Draft Safety Evaluation**

Resolution of items identified in the NRC's interim staff evaluation for SGS (Reference 11) is being addressed as part of the mitigation strategies audit process.

#### **7 Potential Draft Safety Evaluation Impacts**

Impacts to the NRC Safety Evaluation of SGS compliance with Order EA-12-049 are being addressed as part of the mitigation strategies audit process.

#### **8 References**

1. PSEG letter LR-N13-0034, "PSEG Nuclear LLC's Overall Integrated Plan for the Salem Generating Station 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 February 28, 2013
2. NRC Order Number EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012

3. PSEG Letter LR-N13-0175, "PSEG Nuclear LLC's First Six-Month Status Report for the Salem Generating Station 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 25, 2013
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6. Nuclear Energy Institute (NEI) Report NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0, dated August 2012
7. PSEG letter LR-N14-0141, "Salem Generating Station's Response to March 12, 2012, Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, Enclosure 5, Recommendation 9.3, Emergency Preparedness – Staffing, Requested Information Items 1, 2, and 6 - Phase 2 Staffing Assessment," dated June 16, 2014
8. US Nuclear Regulatory Commission (NRC) letter, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," dated March 12, 2012
9. PSEG letter LR-N14-0173, "PSEG Nuclear LLC's 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' – Salem Generating Station Unit 1," dated July 31, 2014
10. NRC letter, "Salem Nuclear Generating Station, Unit No. 1 - Relaxation of the Schedule Requirements for Order EA-12-049 'Order Modifying Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events,'" dated September 15, 2014
11. NRC letter, "Salem Nuclear Generating Station, Unit Nos. 1 and 2 – Interim Staff Evaluation and Audit Report Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) (TAC Nos. MF0868 and MF0869), dated January 24, 2014