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Nuclear LLC

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10 CFR 50.90

LR-N15-0130

U.S. Nuclear Regulatory Commission
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Washington, DC 20555-0001

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

Subject: Pre-Submittal Meeting: License Amendment Request Modifying Chilled Water System Requirements

PSEG Nuclear LLC (PSEG) intends to submit a License Amendment Request (LAR) to modify the Salem Units 1 and 2 Technical Specifications associated with the Chilled Water System. A pre-submittal meeting was requested and has been scheduled for June 24, 2015 (ADAMS Accession No. ML15159A790). Enclosure 1 provides the presentation material for the June 24, 2015 meeting.

There are no regulatory commitments contained in this letter. If you have any questions or require additional information, please contact Mr. Brian Thomas at (856) 339-2022.

Sincerely,

Paul R. Duke, Jr.
Manager - Licensing

Enclosure 1 - Salem Unit 1 and 2 Presentation for June 24, 2015 Pre-Submittal Meeting for License Amendment Request Modifying Chilled Water System Requirements

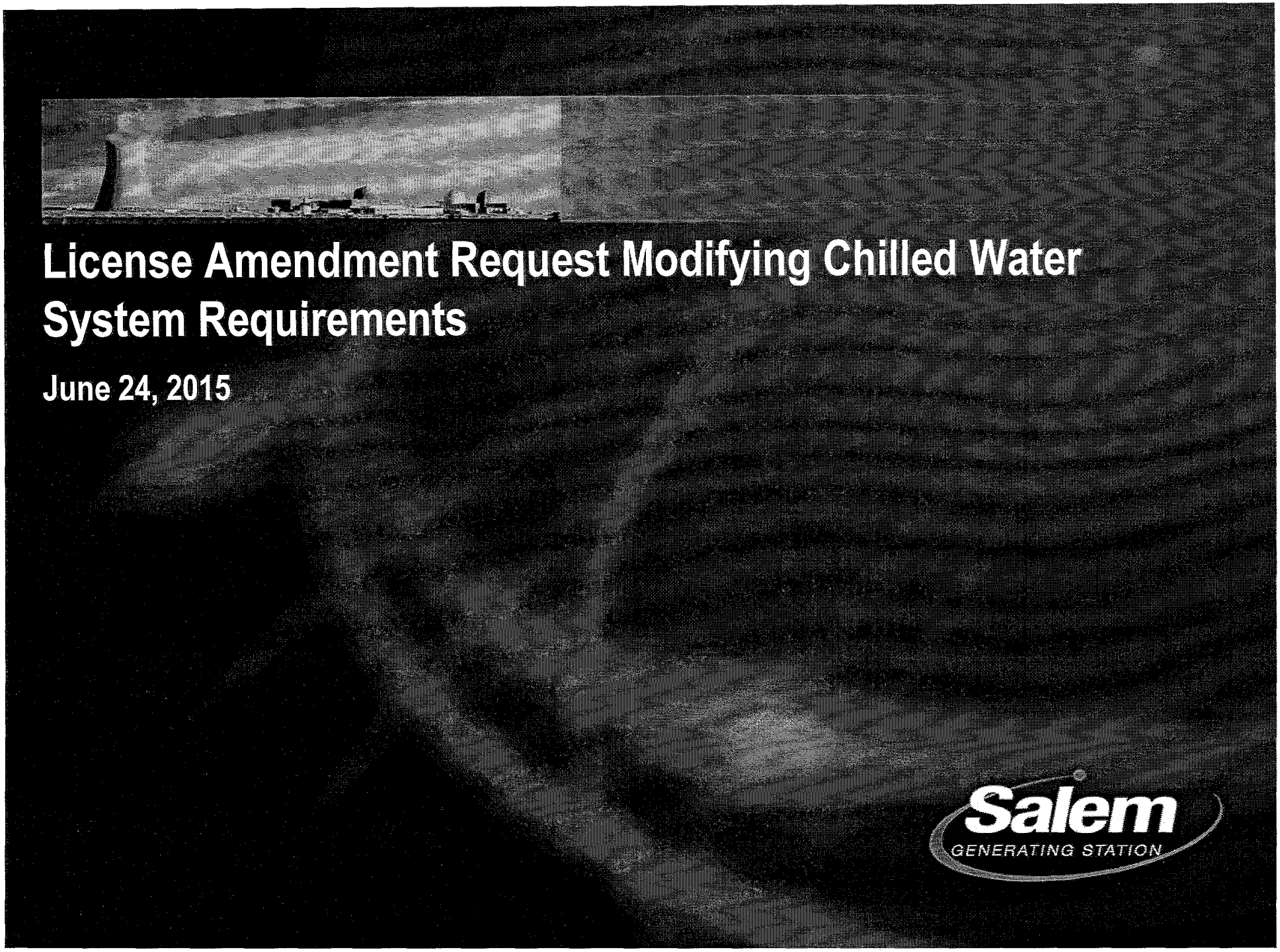
10 CFR 50.90

cc: Mr. D. Dorman, Administrator, Region I, NRC
Ms. C. Parker, Project Manager, NRC, Project Manager, NRC
NRC Senior Resident Inspector, Salem
Mr. P. Mulligan, Chief, NJBNE
Mr. L. Marabella, Corporate Commitment Tracking Coordinator
Mr. T. Cachaza, Salem Commitment Tracking Coordinator

Enclosure 1
LR-N15-0130

Salem Unit 1 and 2

Presentation for June 24, 2015 Pre-Submittal Meeting for
License Amendment Request Modifying Chilled Water System Requirements



License Amendment Request Modifying Chilled Water System Requirements

June 24, 2015

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Agenda

- Overview of Proposed Change
- Background
- System Overview
- Proposed Technical Specification Changes
- Justification
- Summary

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Overview of Proposed Change

- Technical Specification (TS) change needed to support upgrade of Auxiliary Building (AB) Chilled Water (CH) system and to allow maintenance on common CH components

- Changes are being proposed to the "Chilled Water System – Auxiliary Building Subsystem" TS and "Control Room Emergency Air Conditioning System (CREACS)" TS

Overview of Proposed Change

- Proposed changes to Chilled Water TS would result in three LCO configurations each with their own applicability requirements and related Actions and Surveillances

- Justification identifies required operating restrictions and parameters for the two new LCO configurations

Background

- **The Salem AB CH System is classified as Safety Related and supplies cooling to the Control, Electrical Equipment and Relay Rooms, and other safety and non-safety related equipment. The AB CH system has three chillers and two pumps in each unit**

- **The Salem Control Area Ventilation system is a shared system cooled by AB CH. Each Unit provides one train of the two train ventilation system**
    - Both Unit's CH systems are currently necessary to support maintaining both CREACS trains operable even when a Unit is in an outage

Background

- The Salem Chillers currently utilize HCFC-22 (R-22) as their refrigerant. R-22 will be phased out (Title VI of the Clean Air Act)

- In addition to the refrigerant issue, several chiller components are nearing the end of their service life and are requiring increased maintenance

- Replacing the existing chillers with new chiller units in the same location was determined to be best solution

Background

- **The AB CH system was added to TS in 1997 by Amendments 199 and 182 to comply with the requirements of 10 CFR 50.36(c)(2)**
  - Amendments 199 and 182 did not address crosstie operation; this subsequently resulted in maintenance and operational challenges

- **Portions of AB CH piping cannot be taken out of service for maintenance without complete shutdown of the AB CH System; the system is required to be operable in all Modes**

System Overview

- **Chilled Water Major Components**
  - Two Chillers
  - Three Chilled Water Pumps

- **Chilled Water System Loads**
  - Control Room Emergency Air Conditioning Coil
  - Control Area Air Conditioning Coil
  - Emergency Control Air Compressor (ECAC)
  - Penetration Area Cooling Units
  - Unit 2 – Lab Coolers, Count Room Cooler, PASS Room Cooler

Proposed TS Changes

A 3 tier TS 3.7.10 LCO is being proposed :

LCO 3.7.10	a.	b.	c.
CONFIGURATION	1. Three OPERABLE chillers and, 2. Two OPERABLE chilled water pumps	1. Two OPERABLE chillers and, 2. Two OPERABLE chilled water pumps	1. Three OPERABLE chillers and, 2. Two OPERABLE chilled water pumps from either Unit 1 or Unit 2 (Units Cross-tied)[2]
APPLICABLITY	1. ALL MODES and during movement of irradiated fuel assemblies	1. ALL MODES and during movement of irradiated fuel assemblies 2. November 1 through April 30 3. The Unit 1 Emergency Control Air Compressors (ECACs) are isolated from the chilled water system 4. Chilled water flow to the third chiller that is not in service is isolated[1] 5. Control Room Emergency Air Conditioning (CREACS) single filtration train alignment (TS 3.7.6.1 ACTION (a)) restrictions: a. Alignment only permitted to Unit 2 b. Unit 2 must be in TS 3.7.10.a c. Non-essential heat loads are isolated from the chilled water system on BOTH Units	1. ALL MODES and during movement of irradiated fuel assemblies 2. November 1 through April 30 3. The Unit 1 and Unit 2 ECACs are isolated from the chilled water system 4. Non-Essential heat loads are isolated from the chilled water system on BOTH Units 5. BOTH CREACS trains are operable per TS 3.7.6.1 (single filtration train alignment is not permitted) 6. Unit chilled water crosstie valves are OPEN 7. Administrative controls are in place for the Unit providing the required components to notify the other Unit if a chiller or pump becomes inoperable

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Proposed TS Changes

Action Statements and Surveillances would support each LCO:

- **Action Statements**
  - Action Statements insert the phrase 'of the required chillers'
  - Existing Action Statements would be modified with Notes applicable to new LCOs (b) and (c) to minimize repeating Action Statements for each of the new LCO configurations.
  - Notes provide clear direction on implementation of the Actions depending on the LCO configuration
  - Notes provide direction on transition from one LCO to another
- **Surveillance Requirements**
  - New Surveillance Requirements are added for the LCO (b) and (c) configurations to verify entry requirements continue to be met once every 24-hours while in the LCO (b) and (c) configurations.
- **TS 3.7.6.1 (U1) and 3.7.6 (U2) also would be revised reflecting the CREACS single filtration train alignment restrictions**

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Justification - Two Chiller Configuration (LCO 3.7.10.b)

- **The supporting calculations assume single failure or a chiller out-of-service:**
  - Restrictions ensure required cooling capability
  - On a loss of a required chiller, a 14 day Action statement is entered until the chiller is restored. This is similar to the existing TS which permits a 14 day AOT to restore a single inoperable chiller
  - One chiller remaining in each unit can support continued operation
  - On loss of a chilled water pump, a 7-day Actions Statement is entered until the pump is restored. This is similar to the existing TS action for a single inoperable chilled water pump.
  - New SR to verify operating restrictions every 24 hours
  - CREACS single train alignment is permitted if the Unit supplying the single train is in LCO 3.7.10.a

Justification – Cross-Tied Configuration (LCO 3.7.10.c)

- **The supporting calculations assume that one of three chillers is unavailable due to either a single failure or a chiller out-of-service**
  - Restrictions ensure required cooling capability
  - The three chillers and two chilled water pumps are provided from one Unit (the other Unit has no operable chillers or chilled water pumps)
  - On loss of a required chiller, a 14 day Action Statement is entered on both units until the chiller is restored. This is similar to the existing TS which permits a 14 day AOT to restore a single inoperable chiller
  - Two chillers can support continued operation of both Units
  - On loss of a chilled water pump, a 7-day Action Statement is entered on both units until the pump is restored. This is similar to the existing TS.
  - New SR to verify operating restrictions every 24 hours
  - CREACS single train alignment is not permitted
  - GDC 5 addressed for Unit Cross-tie

Summary

- **Single failure assumption fundamental to analysis**
- **TS restrictions ensure Chilled Water system can support new LCOs**
  - Seasonal restrictions provide margin
  - Removal of non-essential loads provide additional safety-related cooling capacity
- **LCO Actions consistent with current TS**
- **New surveillance added to verify restrictions during new LCOs**
- **GDC 5 addressed for Unit Cross-tie**
  - The sharing of the AB CH system between Units does not impair its ability to perform its safety function
  - Existing plant design includes cross-tie (no system modification required)
- **Proposed amendment presents no significant hazards consideration under the standards set forth in 10CFR50.92 (c)**
- **Amendment implementation will allow for system upgrade and reduction in system maintenance**