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LaSalle County Station

Pre-Application Meeting
Extended Power Uprate

April 4, 2012

Introductions

- Kenneth Ainger – Project Management Director, EPU
- Kevin Borton – Power Uprate Licensing Manager
- Vikram Shah – Power Uprate Senior Engineering Manager
- Jessica Krejcie – LaSalle Power Uprate Engineer

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Agenda and Meeting Purpose

- Briefly Describe NEI Pre-Submittal Meeting Pilot
- Status of Extended Power Uprate Schedule
- Describe Key Aspects of Technical Evaluations
  - Concurrent P_a Change
  - Alternate Source Term
  - Technical Specification Setpoint Calculations
- Planned Major Modifications
- Update on Steam Dryer Evaluation
- Future Pre-submittal Meetings
- NEI Checklist Critique

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NEI Pilot – Pre-submittal Meetings

Purpose is to enhance License Amendment Request pre-submittal meetings

- Reach a common understanding on the regulatory criteria and standards to be applied during the NRC review of the proposed changes
- Identify potential application issues that can be addressed during the application conceptual phase that will reduce acceptance review time, requests for additional information, and application review time

Process

- Pilot Checklist is used to focus on applicable review criteria, codes, standards, justification required for use of a new analytical method, applicability of a precedent, or feasibility of a desired schedule in order to reach alignment with the NRC
- NRC meeting notice and meeting summary will docket the expectations and outcomes of the alignment in order to greatly reduce the risk and uncertainty associated with future application acceptance and NRC review

LaSalle specific checklist focus – Technical Issues

- Concurrent P_a Change
- Alternate Source Term
- Technical Specification Setpoint Calculations

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Schedule Overview

EPU Projected Power Uprate level of 3988 MWt (increase ~12.5% of current licensed power or 120% of original licensed power)

EPU Implementation Schedule

- **Submit LAR:** Target September 2012
- **LAR Approval:** Target May 2014

- **Unit 2 Implementation:** February 2015 (Outage L2R15)
- **Unit 1 Implementation:** February 2016 (Outage L1R16)

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Concurrent Calculated Peak Containment Internal Accident Pressure (P_a) Change

Kevin Borton

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Concurrent P_a Change

Purpose:

Reach an understanding that a separate P_a current power level change would not be linked to the proposed EPU related P_a change

Background:

- **EPU LAR will include a request to increase P_a**
- **LaSalle identified a current calculated Technical Specification P_a issue that requires a P_a increase**
  - Issue entered in LaSalle Corrective Action Program
    - Operability Evaluation in place to address issue

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Concurrent P_a Change

LIC-109 Guidance

- **Current issue requires P_a value increase**
- **EPU power level requires P_a value increase beyond current issue required increase**
- **Assumptions and methods regarding current power level and EPU power levels are the same**
- **Although the proposed changes are prepared and reviewed the same, the current issue and the EPU LAR are not contingent upon the approval of the other**
  - Multiple LARs can affect the same systems or Technical Specifications (TS) without being linked
  - LIC-109 guidance supports concurrent NRC reviews

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Alternate Source Term (AST) Radiological Analyses

Jessica Krejcie

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AST Radiological Analyses

Purpose

Discuss LaSalle's planned approach for AST analyses

Methodology

- Used Regulatory Guide (RG) 1.183 Rev. 0, Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors, July 2000
- Started with existing approved AST analyses and modified for EPU core source term and power level
  - RADTRAD re-run
  - AST analyses performed for Main Steam Line Break Accident (MSLBA) and Control Rod Drop Accident (CRDA) consistent with RG 1.183 section 1.1.3 guidance
- All regulatory dose limits specified in 10 CFR 50.67 are met with EPU

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AST Radiological Analyses

- Analyses performed using EPU core inventory and AST for
  - LOCA
  - FHA
  - MSLBA
  - CRDA
- Analyses are consistent with previously approved AST analyses with changes as necessary for EPU
  - Core inventory, power level, post-LOCA temperatures
- RG 1.183 Revision 0 criteria met

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AST Radiological Analyses

Draft Results

- All analyses re-performed meet applicable limits with EPU
- No revision to input parameters required to meet regulatory limits with EPU

DRAFT LOCA Radiological Consequences

	TEDE Dose (REM)		
	Receptor Location		
	CR	EAB	LPZ
Calculated Dose CLTP	4.27	2.59	0.27
Calculated Dose EPU	4.70	2.91	0.31
Allowable TEDE Limit	5.0	25.0	25.0

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Technical Specification Setpoint Changes

Vikram Shah

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Technical Specification Setpoint Changes

Purpose:

Obtain an agreement that the LaSalle's methodology and approach to Instrument Setpoint Changes is appropriate

Methodology

- Current - Exelon Setpoint Methodology (NES-EIC-20.04 ≤ Rev 5)
  - Methodology through Rev 4 was reviewed with the Improved Technical Specification Conversion
- EPU – Exelon Setpoint Methodology (NES-EIC-20.04 ≥ Rev 6)

Conformance with NRC Guidance

- Consistent with RG 1.105 Rev 3
- Current Basis (NES-EIC-20.04 Rev 5 or earlier)
- New Technical Specification Setpoints – TSTF-493 Rev 4 Option A Implemented in NES-EIC-20.04 Rev 6

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Technical Specification Setpoint Changes

Comparison of CLTP to Proposed EPU Technical Specification (TS) Setpoint Changes

	CLTP Value		EPU Value	
	TS AV	NTSP	TS AV	NTSP
APRM Flow Biased STP Upscale Scram - TLO	≤ 0.61W + 68.2 & ≤ 115.5 %	0.61W + 62.6 & 113.5 %	≤ 0.55W + 63.5 & ≤ 118.0 %	0.55W + 57.4 & 113.3 %
APRM Flow Biased STP Upscale Scram - SLO	≤ 0.54W + 55.9 & ≤ 112.3 %	0.54W + 50.5 & 108.1 %	≤ 0.48W + 49.6 & ≤ 112.3 %	0.48W + 43.6 & 107.6 %
APRM Flow Biased STP Upscale Rod Block - TLO	≤ 0.61W + 56.9	0.61W + 51.3	≤ 0.55W + 52.2	0.55W + 46.6
APRM Flow Biased STP Upscale Rod Block - TLO	≤ 0.54W + 44.7	0.54W + 39.2	≤ 0.48W + 39.5	0.48W + 39.1
APRM Neutron Flux-High, Setdown Scram	≤ 20.0 %	15.0 %	≤ 22.6 %	17.8 %
APRM Neutron Flux-High, Setdown Rod Block	≤ 14.0 %	12.0 %	≤ 16.6 %	12.3 %
Main Steam Line Flow - High Primary Containment Isolation	≤ 128 psid	125 psid	≤ 197.3 psid	188.8 psid
Turbine Trip Scrams Permissive	≥ 25% RTP	104.1 psig	≥ 23% RTP	TBD
Rod Worth Minimizer Low Power Setpoint	≤ 10% RTP	14.2 % RTP	≤ 10% RTP	14.4 % RTP

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Planned Major Modifications

Vikram Shah

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Planned Major Modifications

- High Pressure Turbine Upgrade
- Main Generator Upgrade
- Condensate Pump Upgrade
- Reactor Water Level Control System Upgrade
- Addition of runback logic on trip of Condensate Pump
- Main Steam and Feedwater flow induced vibration monitoring
- Several balance-of-plant setpoint and scaling changes
- Addition of three Safety Relief Valves
- Boron 10 Enrichment
- Condensate Polisher System Upgrade
- Replacement of Main Steam Line Flow Switches
- Isophase Bus Duct Upgrade
- Steam Dryer Replacement

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Update on Steam Dryer Evaluation

Kenneth Ainger

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Update on Steam Dryer Evaluation

Purpose:

Provide update on steam dryer replacement decision and schedule

The Exelon Licensing Approach will be provided during the Peach Bottom Pre-submittal Meeting on April 5

Decision:

Analyzed current steam dryers:

- Evaluated necessary modifications
- Decided to proceed with replacement dryer

Proceeding with Westinghouse Replacement Steam Dryers (RSD)

RSD Schedule:

RSD driving EPU submittal date

Installation sequence is:

- LaSalle County Unit 2: February 2015 (Outage L2R15)
- LaSalle County Unit 1: February 2016 (Outage L1R16)

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Future EPU Meeting Topics and Schedule

- Follow-up EPU Meetings
  - Proposed Topics
    - Human Factors
    - Technical Specifications
    - Ultimate Heat Sink
- Next meeting target July 2012

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Meeting Summary

- Pilot Alignment and Outcome
  - Discussion
  - Checklist Mark-up
- Critique

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Acronym List

- ACM – Acoustic Circuit Model
- APRM – Average Power Range Monitor
- AST – Alternate Source Term
- AV – Allowable Value
- CLTP – Current Licensed Thermal Power
- CR – Control Room
- CRDA – Control Rod Drop Accident
- DBA – Design Basis Accident
- ECCS – Emergency Core Cooling System
- EAB – Exclusion Area Boundary
- EPU – Extended Power Uprate
- FHA – Fuel handling Accident
- LAR – License Amendment Request
- LOCA – Loss-of-coolant Accident
- LPZ – Low Population Zone
- MSLBA – Main Steam Line Break Accident
- MWt – Mega Watts thermal
- NEI – Nuclear Energy Institute
- NTSP – Nominal Trip Setpoint
- P_a – The calculated peak containment internal pressure related to the design basis accident
- PUR – Power Uprate
- RG – Regulatory Guide
- SLO – Single Loop Operation
- STP – Simulated Thermal Power
- TEDE – Total Effective Dose Equivalent
- TLO – Two Loop Operation
- TS – Technical Specification
- TSTF – Technical Specification Task Force

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