



Pre-Application Meeting for Prairie Island Nuclear Generating Plant (PINGP) Extended Power Uprate (EPU)



**NRC Headquarters
Rockville, MD**

April 15, 2010

Introductions

- Ken Albrecht – General Manager Major Projects - Nuclear
- Scott McCall – Manager, Prairie Island EPU Project
- Lynne Gunderson – Projects Licensing Manager

Agenda

- Objectives
- Background
- Project Overview
- License Amendment Request (LAR)
- Non-linked LAR Interfaces
- Summary and Conclusions

Objectives

- Discuss EPU Project Status
- Discuss EPU Submittal
- Discuss EPU Submittal Schedule
- Obtain NRC feedback

Background

- **Initial License**
 - Unit 1 licensed 1973, Unit 2 licensed 1974
 - 1650 MWt Original Licensed Thermal Power (OLTP)
- **Measurement Uncertainty Recapture (MUR) Uprate**
 - MUR LAR submitted December 2009
 - 1677 MWt licensed power level (101.64% of OLTP)
 - 1683 MWt analyzed power level
 - Implementation planned for 2010 following NRC approval
- **Extended Power Uprate**
 - 1804.5 MWt licensed power level (109.4% of OLTP)
 - 1811 MWt analyzed power level
 - Unit 1 implementation 1R29, 2014
 - Unit 2 implementation 2R29, 2015

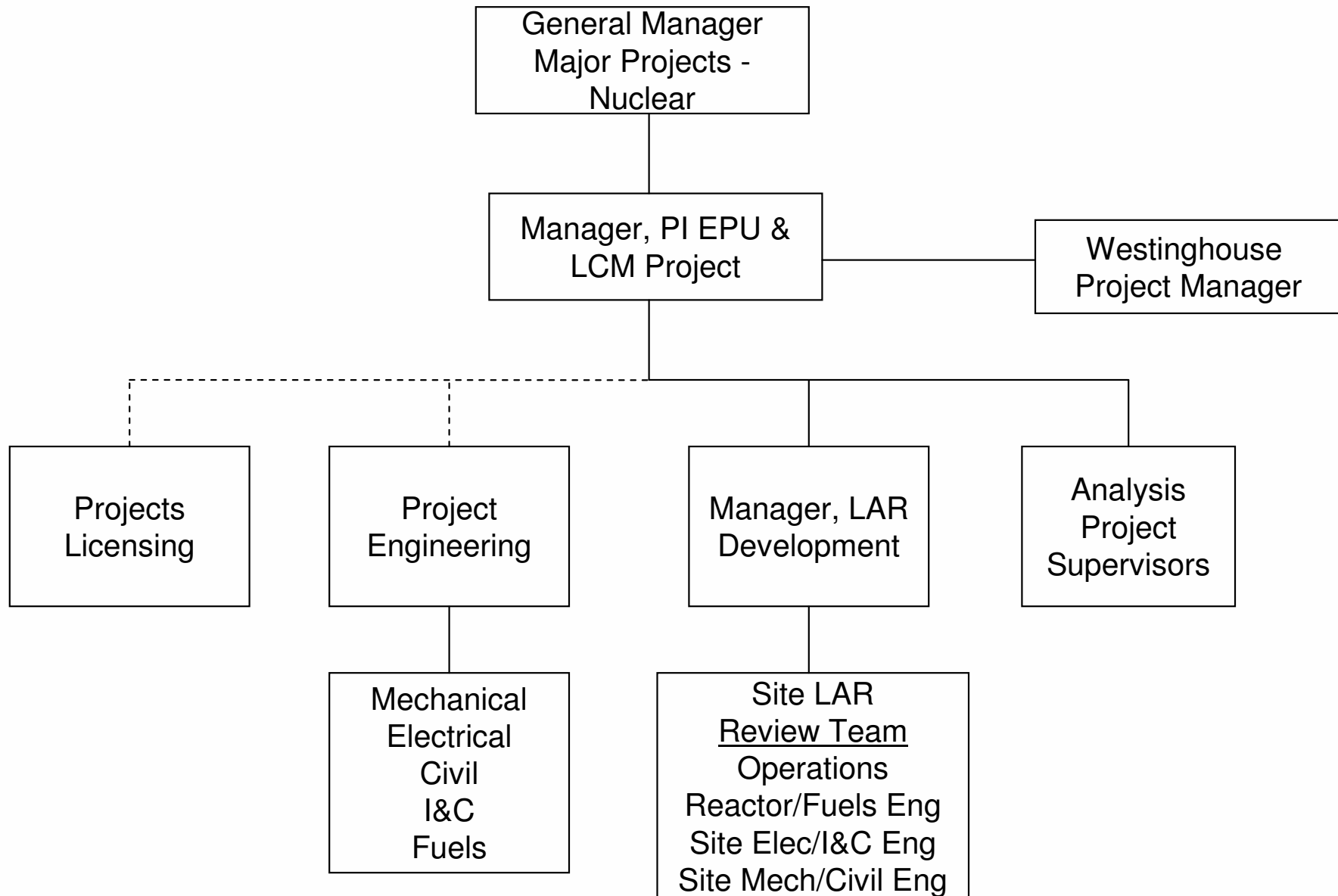
Project Overview

- Operational Strategy
 - Renew Operating License
 - Renew Independent Spent Fuel Storage Installation (ISFSI) License
 - Replace Steam Generators (Unit 2)
 - Extended Power Uprate (EPU)

Project Overview

- EPU Project Principles
 - Maintain or improve operational and safety margins
 - Utilize industry and internal operating experience
 - Follow existing regulatory processes
 - Minimize and manage risk

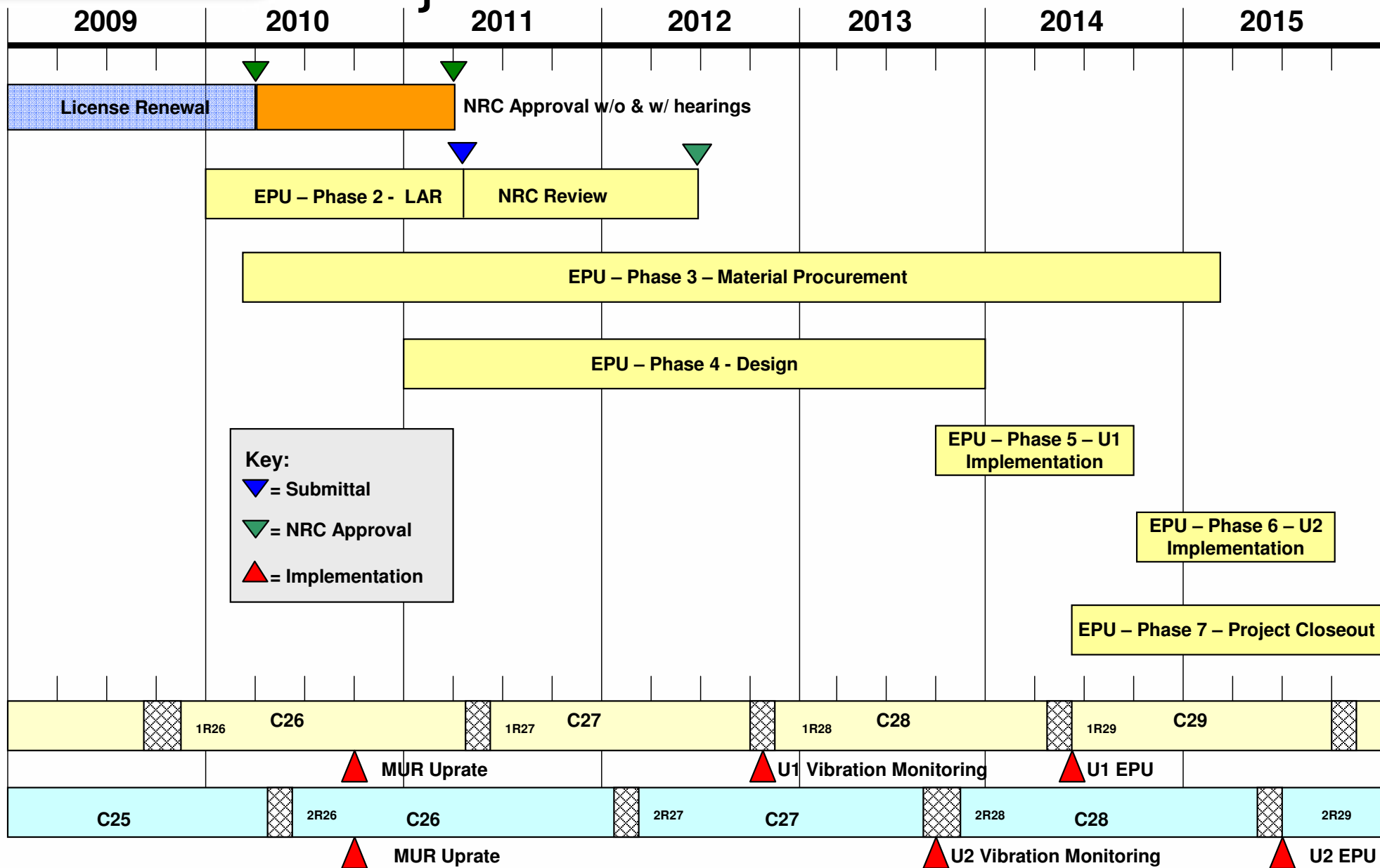
Project Overview



Project Overview

- Project Scope
 - Phase 1 – Study - *Complete*
 - Phase 2 – LAR Development and Submittal - *In Progress*
 - Phase 3 – Material Procurement - *In Progress*
 - Phase 4 – Design of Modifications
 - Phase 5 – Unit 1 Implementation
 - Phase 6 – Unit 2 Implementation
 - Phase 7 – Project Closeout

Project Overview



Project Overview

- Major Modifications
 - Main Generator Rewind (Rotor and Stator)
 - Generator Step-up Transformer Replacement
 - High Pressure Turbine Replacement
 - Moisture Separator Reheater (MSR) Replacement
 - Auxiliary Feedwater Pump Upgrades
- Associated Modification
 - Vibration Monitoring for Flow Induced Vibration (to be installed 1 cycle prior to EPU implementation on each unit)

License Amendment Request

- Licensing Principles:
 - Focus on LAR quality
 - Adherence to LIC-109 acceptance review criteria
 - Use of third party review
 - Plan for adequate NRC review time
 - Take advantage of lessons learned
 - Incorporate applicable Requests for Additional Information (RAIs)
 - Power uprate lessons learned database
 - Implement industry recommendations for excellence in performance of plant uprates (INPO 09-005, NEI 08-10)

License Amendment Request

- Licensing Principles:
 - Effective communications with NRC
 - Pre-submittal meetings
 - Routine communication with NRR Project Manager
 - Early identification and communication of technical issues
 - Timely resolution of issues and questions

License Amendment Request

- Planned Approach
 - RS-001, “Review Standard For Extended Power Uprates”
 - Specific Prairie Island licensing bases sections provided (Prairie Island is not a GDC plant)
 - No “Beyond Scope” issues
 - No linked submittals
 - Identification of methodology changes

License Amendment Request

- Overview
 - Enclosure 1– Documentation and justification of all licensing bases changes
 - Enclosure 2 – Markups of Operating License and Technical Specifications (TS)
 - Enclosure 3 – Markups of TS Bases
 - Enclosure 4 - EPU Licensing Report (LR)
 - Enclosure 5 - Supplemental Environmental Report
 - Enclosure 6 - Transmission System Report
 - Enclosure 7 - List of Commitments

License Amendment Request

- Enclosure 4 - EPU Licensing Report
 - Provided in RS-001 format
 - Includes RS-001, Section 2.1, Pressurized Water Reactor (PWR) matrices mark-up with plant specific licensing basis
 - Includes RS-001, Section 3.3, PWR safety evaluation template mark-up
 - List of additional LR sections

License Amendment Request

- Enclosure 4 - Appendices
 - Summary of Accident and Transient Analyses Codes and Methods
 - Additional Codes & Methodologies
 - Matrix cross-referencing LR sections to the PINGP USAR
 - Acronym List

Non-linked LAR Interfaces

- Alternative Source Term
 - Submitted October 29, 2009
 - NRC Accepted December 23, 2009
 - Source Term per RG 1.183, Revision 0
 - Analysis used bounding core inventory

Non-linked LAR Interfaces

- Application of Leak-Before-Break (LBB)
 - Submitted December 22, 2009
 - NRC Accepted February 25, 2010
 - Expands scope of the current LBB analysis
 - Improves analysis margin for Reactor Vessel Nozzles and Supports
 - LBB will be updated for EPU

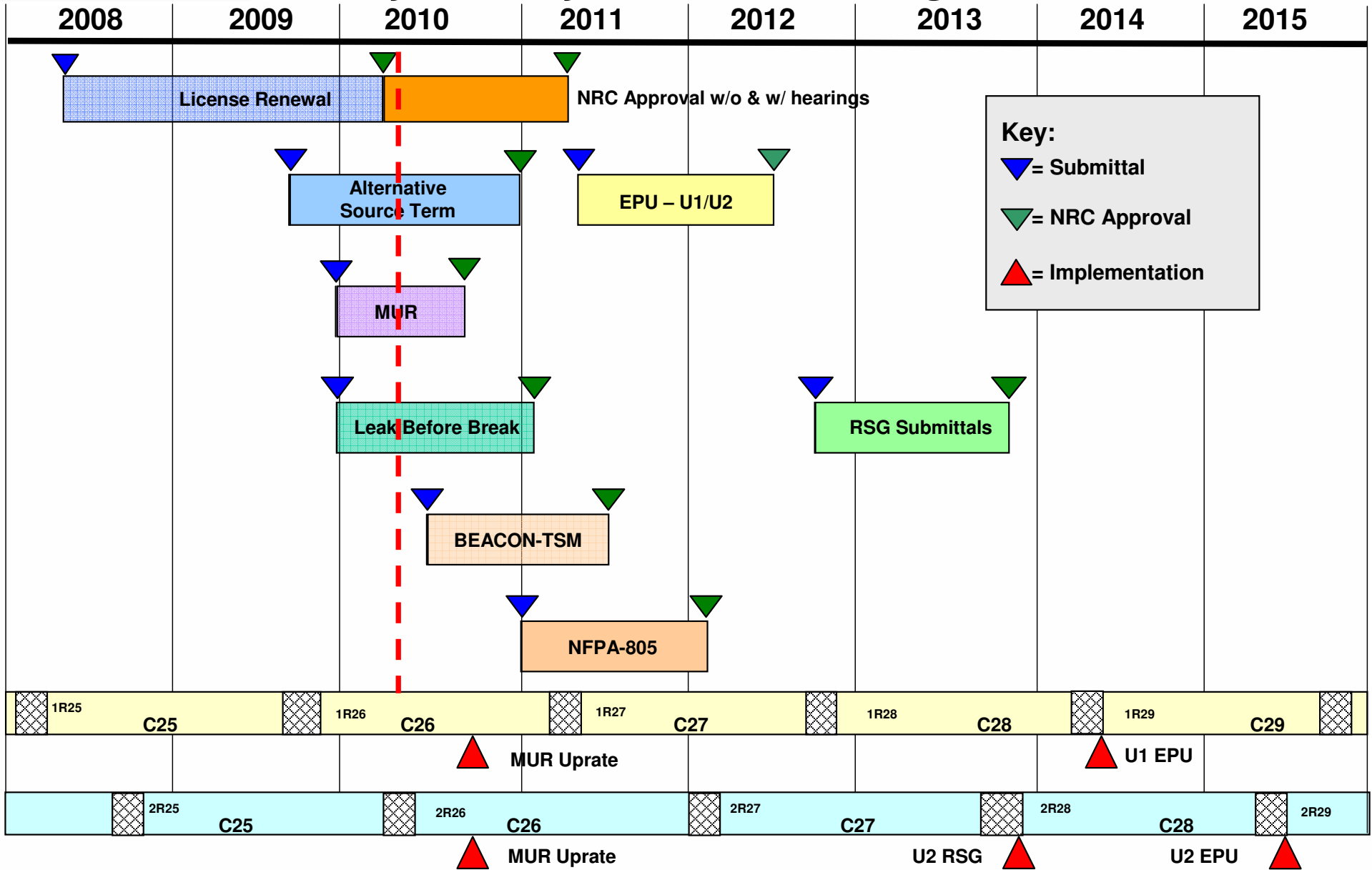
Non-linked LAR Interfaces

- Measurement Uncertainty Recapture (MUR)
 - Submitted December 28, 2009
 - NRC Accepted February 19, 2010
 - Caldon Leading Edge Flow Meter
 - Implement MUR by 4th quarter 2010

Non-linked LAR Interfaces

- Planned submittals concurrent with EPU application:
 - BEACON-TSM (Technical Specification Monitor)
 - Replacement Steam Generator (SG) submittals
 - Revise SG program for repairs
 - Exception to Appendix J integrated leak rate test (ILRT) following replacement
 - NFPA-805

Major Projects Licensing Schedule



Summary and Conclusions

- EPU Strategy
 - EPU submittal second quarter 2011
 - RS-001 Format
 - No “Beyond Scope” issues
 - No linked submittals
 - Implementation in one phase
 - Unit 1 in 2014
 - Unit 2 in 2015

Questions/Discussion