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

NRC Headquarters
Rockville, MD

August 18, 2011

Introductions

- Jim Molden – Vice President of Engineering, Regulatory Affairs and Projects
- Tom Verbout – Manager, Prairie Island EPU and LCM Projects
- Scott McCall – Prairie Island Design Engineering Manager
- Gene Eckholt – Nuclear Projects Licensing Manager

Agenda

- Objectives
- Background
- Project Overview
- Licensing Action Interfaces
- License Amendment Request (LAR)
- Questions/Discussion

Objectives

- Open Communications with NRC
- EPU Project Status Update
- Discuss EPU License Amendment Request Development and Content
- Discuss Interfaces Between EPU and other Licensing Actions
- Obtain NRC Feedback and Expectations

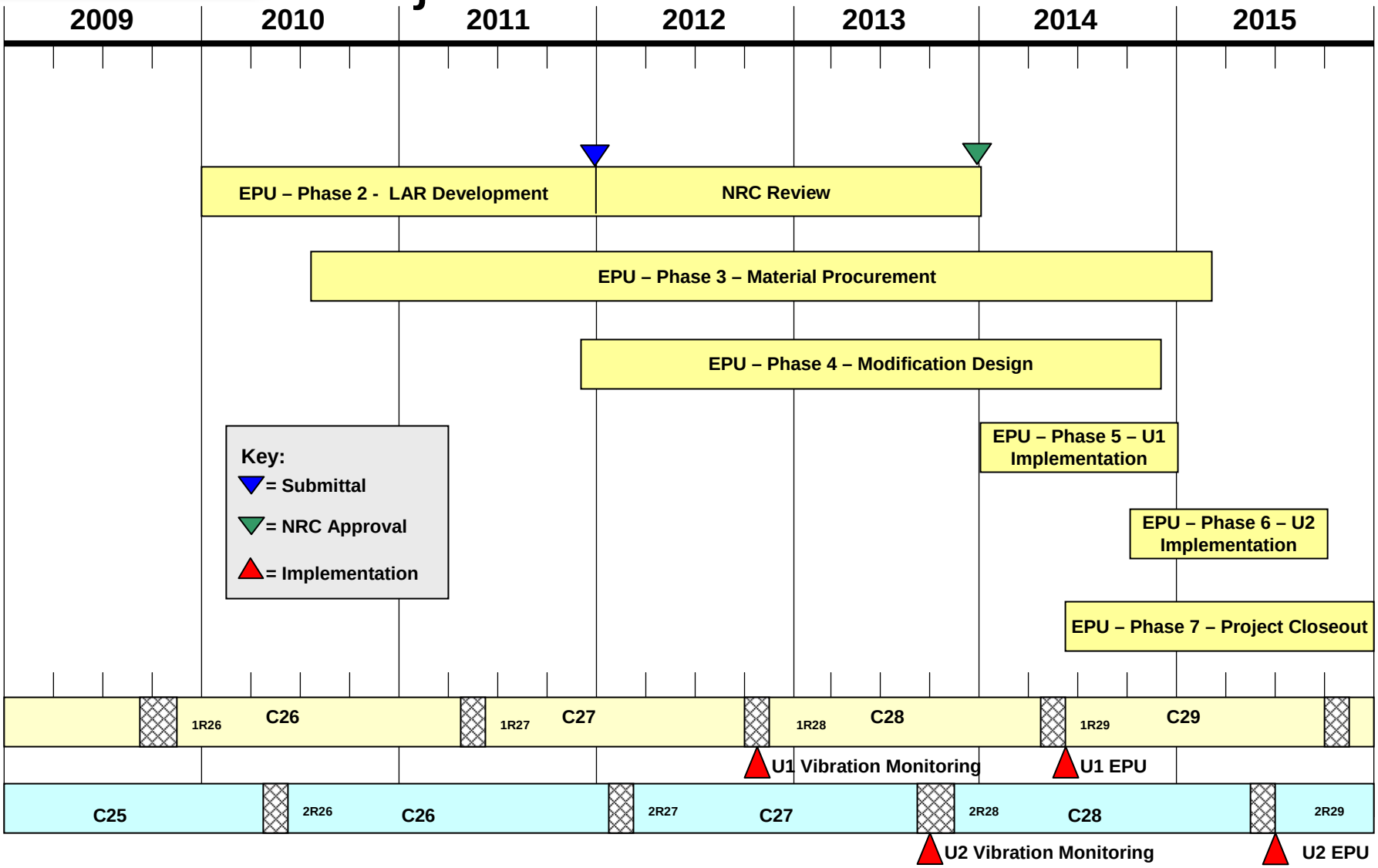
Background

- **Initial Licenses**
  - Unit 1 Operating License Issued August 1973
  - Unit 2 Operating License Issued October 1974
  - 1650 MWt Original Licensed Thermal Power (OLTP)
- **Renewed Operating Licenses issued in June 2011**
  - Unit 1 Renewed Operating License Expires August 2033
  - Unit 2 Renewed Operating License Expires October 2034

Background

- **Measurement Uncertainty Recapture (MUR) Uprate**
  - Implemented October 2010
    - 1677 MWt Licensed Power Level
    - 1683 MWt Analyzed Power Level
- **Extended Power Uprate**
  - 1804 MWt Licensed Power Level (~109 % of OLTP)
  - 1811 MWt Analyzed Power Level
  - Unit 1 Implementation 1R29, 2014
  - Unit 2 Implementation 2R29, 2015

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 System Upgrades
    - Same Basic System Design with Larger Pumps and Larger Recirculation Lines
- **Pre-Implementation Modification**
  - Vibration Monitoring for Flow Induced Vibration (to be installed 1 cycle prior to EPU implementation on each unit)

Project Overview

- **Project Status**
  - NSSS Systems
    - Safety Analysis of Events Impacted by EPU Complete
      - Demonstrates Safety Analysis Limits are Met at EPU Conditions
    - Major Components Analysis Complete
      - Demonstrates Components Capable of Operation at Uprated Conditions Maintaining Adequate Margins
    - Impacts
      - Uninterrupted Post-LOCA RHR flow
      - Feedwater Isolation Modification
  - Methodology Changes Identified
    - RAVE (Locked Rotor/Loss of RC Flow Analyses)
      - RAVE Methodology WCAP-16259-P-A Approved by an SER dated September 15, 2005
      - Will be Submitted for Plant-Specific Approval by the EPU LAR

Project Overview

- **Project Status**
  - Margin Management
    - Impact of EPU on Plant Margin Being Evaluated
      - Overall Margin Impact of EPU Evaluated Prior to Submittal
      - Review Process Includes Plant Margin Review Board
      - Margin Impact Also Evaluated as Part of the Modification Process

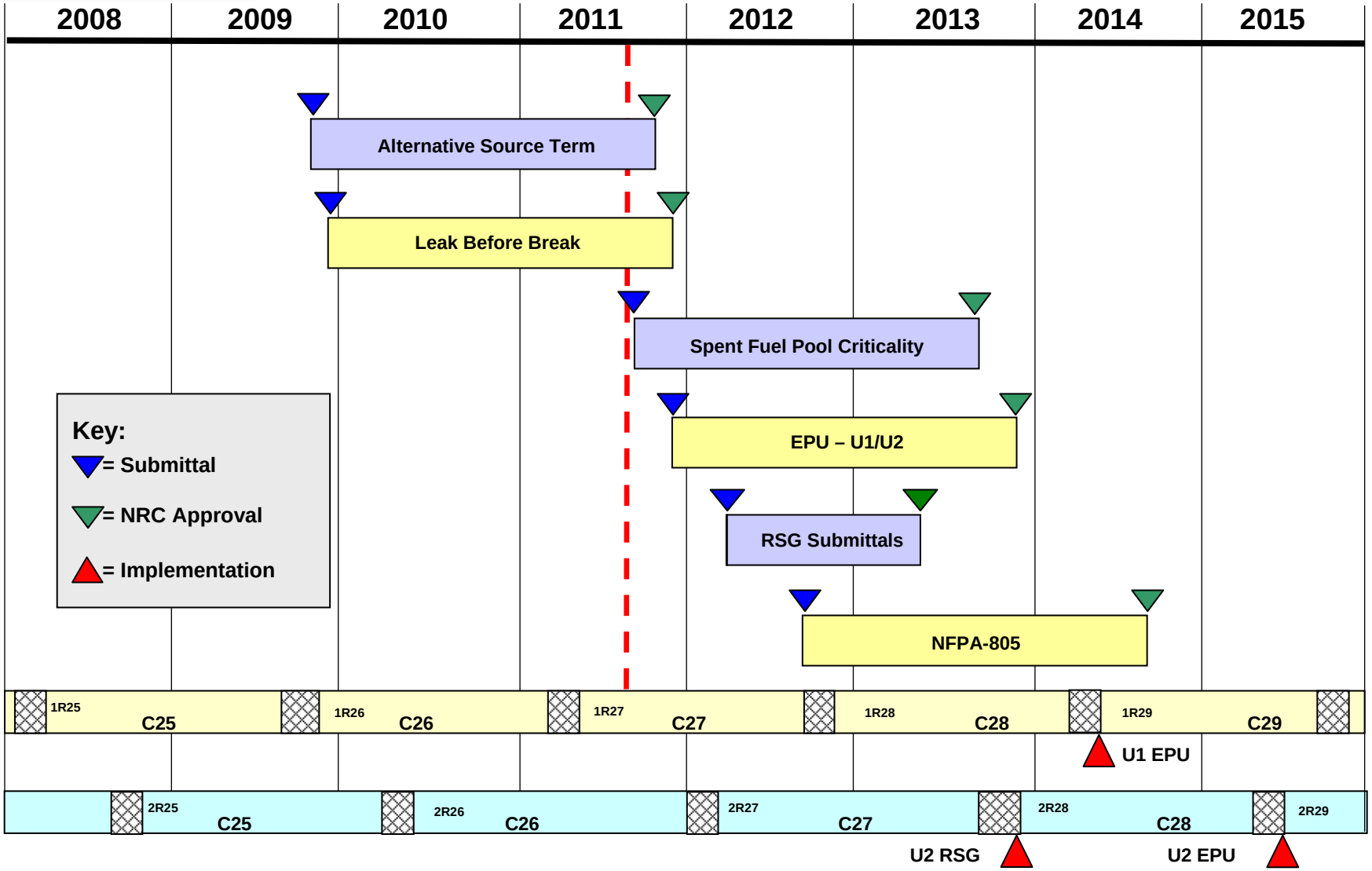
Project Overview

- **Project Status**
  - BOP Systems
    - System and Program Evaluations 95% Complete
    - Auxiliary Feedwater System Modification
      - Preliminary Design Option Chosen
    - Component Cooling Pump Impellers
  - Electrical Systems Analyses
    - Preliminary MISO Study Completed
      - Based on Assumed Prior-Queued Projects
      - Additional Power Assumptions Bound EPU Design
      - Need for Additional Capacitor Banks and Voltage Support Identified
    - MISO Study Completion Prior to Implementation of EPU

Project Overview

- **Status of LAR Development**
  - Licensing Report Sections
    - 95% Drafted
  - LAR Submittal Packages
    - Under Development

Licensing Action Interfaces



License Amendment Request

- **EPU License Amendment Request Approach**
  - Content and Structure in Accordance with RS-001, “Review Standard for Extended Power Uprates”
    - Content and structure followed closely
    - PINGP is not designed to GDCs
  - Applicable Operating Experience Reviewed and Considered in EPU LAR
    - Continuous Process Through EPU Implementation
    - Includes Review of Applicable NRC Requests for Additional Information (RAIs)
  - LAR Content will be Frozen Prior to Submittal
    - Necessary to Support Validation and Final Reviews

License Amendment Request

- **NRC Acceptance Review Expectations**
  - Acceptance Review Expectations Appear to be Changing
  - Recent Acceptance Review RAI
    - All Structural Modifications and/or Additions Identified and Designed
    - All Structural Evaluations and Required Calculations Completed
    - All Controlled Documentation Exists Which Finds SSCs Structurally Adequate for EPU Conditions
  - Component Level Detailed Design Not Scheduled for Completion Prior to PINGP EPU LAR Submittal.
  - Significant Impact on Schedule for Submittal of PINGP EPU LAR
    - AFW System Redesign
    - Piping Support Modifications
    - Feedwater Isolation

Questions/Discussion