

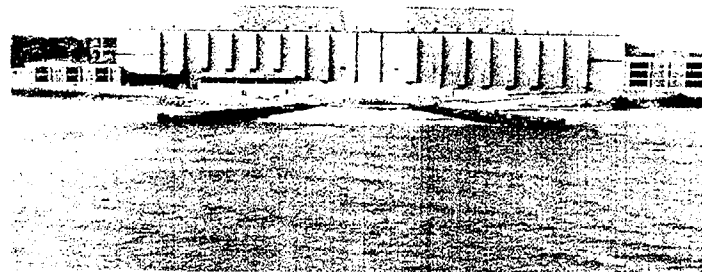
NRC Briefing

NMC
Committed to Nuclear Excellence

Licensing Actions Related to License Renewal

April 20, 2001

NMC
Committed to Nuclear Excellence



Point Beach Nuclear Plant
Nuclear Management Company, LLC

Agenda

- **Introduction and Purpose ----- Doug Johnson**
- **Point Beach Business Plan ----- Doug Johnson**
- **Planned Licensing Actions ----- Doug Johnson**
- **Scope of Licensing Actions ----- Jim Knorr
Roger Newton
Harv Hanneman**
- **Licensing Actions Plan ----- Tom Webb**
- **Organizational Impact ----- Tom Webb**
- **Discussion ----- All**

Introduction and Meeting Purpose

- **Brief NRC Staff on License Renewal Plan**
- **Brief NRC Staff on Licensing Action Submittals Prior to License Renewal Application Submittal**
- **Discuss How Licensing Action Submittals can be Successfully Integrated**

Point Beach Business Plan

- **Operational Excellence**
- **Optimized Performance**
- **Operational Efficiency**

Planned Licensing Actions

- **Operational Excellence**
 - **Improved Technical Specifications**
 - **Control Room Habitability**
 - **License Renewal Application**
 - **Unit 2 Reactor Vessel Resolution**
- **Optimized Performance**
 - **Power Uprate**
 - **Hafnium Insert Removal**

Planned Licensing Actions (Cont.)

- **Operational Efficiency**
 - **Risk Based ISI**
 - **Boric Acid Credit in Spent Fuel Pool**
 - **Turbine Missile Elimination**
 - **PASS Elimination**

Scope of Licensing Actions

- **Improved Technical Specifications**
 - **Followup questions response April**
 - **Draft SER complete May 4**
 - **Comment on Draft SER June 1**
 - **OGC Review June 15**
 - **Amendment Issuance August 6**
 - **Implementation Prior to Thanksgiving 2001**
 - **Beneficial to License Renewal**

Scope of Licensing Actions (Cont.)

- **Power Uprate Project Scope**
 - **Thermal Uprate – 8.7% from 1518.5 to 1650 MWt (same as Westinghouse 2-Loop Plants Kewaunee & Prairie Island)**
 - **Additional Appendix K/Calorimetric Uprate – 1.4% App K to 1673 MWt**
 - **Requires LEFM Upgrade to Reduce RTO Uncertainty from 2% to 0.6%**

Scope of Licensing Actions (Cont.)

- **Power Uprate Licensing Analyses/Evaluations**
 - **Containment Integrity Analysis Using EPRI MAAP5 Code**
 - **FAI Benchmarking Analysis**
 - **Topical Report Submittal**
 - **PBNP First to Use Topical**
 - **Plant Specific LOCA and SLB Analysis**
 - **Increased Margin for Containment Fan Cooler Service Water Boiling Issue**
 - **Radiological Analysis Using Alternate Source Term Assuming 102% of 1650 MWt**

Scope of Licensing Actions (Cont.)

- **Power Uprate Licensing Analyses/Evaluations (Cont.)**
 - **Loss of Normal Feedwater - Requires Increased Aux-Feedwater Flow (50.59)**
 - 200-210 gpm
 - Requires Upgrade of Motor-Driven Pumps
 - **Best Estimate LOCA Reanalyzed with PCT Margin Recovery (PCT still ~ 2132°F)**
 - **DNB-Limited Accidents Re-evaluated**
 - Updated Revised Thermal Design Procedure

Scope of Licensing Actions (Cont.)

- **Power Uprate Licensing Analyses/Evaluations (Cont.)**
 - **NSSS Systems & Components Analysis**
 - Currently 1650 MWt (SG Replacement Project)
 - Update to 1673 MWt (1679 with RCP Heat)
 - **BOP Systems Analyses/Evaluations**
 - Perform for ≥ 1679 MWt
 - **Plant Modifications for Power Uprate**
 - HP Turbine, MSR Upgrade, Main Feedwater Pump Replacement, Step-up Transformer Cooling, Main Steam Piping Supports, Miscellaneous

Scope of Licensing Actions (Cont.)

- **Power Uprate Licensing Analyses/Evaluations (Cont.)**
 - **Programs and Evaluations/Upgrades**
 - **Environmental Qualification (EQ)**
 - Containment Pressure-Temperature (MAAP5)
 - Radiation Dose Rate/Doses (TID 14844)
 - HELB Outside Containment (M&E Releases)
 - **Reactor Vessel Integrity (Evaluate Fluence)**
 - **Flow Accelerated Corrosion (FAC)**
 - **Station Blackout (Minimum CST Level)**

Scope of Licensing Actions (Cont.)

- **Credit for Boric Acid in the Spent Fuel Pool**
 - Boroflex Alternative
- **Turbine Missile Response Elimination**
 - New LP Turbines with Integral Hubs
(50.59 or 50.90 CLB Change)
- **PASS Elimination**
 - 65FR65018 conveys model SE & NSHC

Scope of Licensing Actions (Cont.)

- **Risk Based ISI Program**
 - **Alternative to Current Requirements of ASME Section XI for Class 1 and 2 Piping.**
- **Hafnium Insert Removal**
 - **Avoid Replacement of Hf Inserts**
 - **Potential Fuel Cost Reduction**
 - **Margin Obtained from use of Master Curve**

Scope of Licensing Actions (Cont.)

- **Reactor Vessel Time Limited Aging Analysis**
 - **Analysis: Unit 2 May Not Meet PTS Screening Criteria for 60 year Operation**
 - **Solution: Use master Curve Technology**
 - **Best to have MCT in Place for LRA**

Scope of Licensing Actions (Cont.)

- **Master Curve Technology Application**
 - **Use of FERRET Code**
 - **Separate Submittal for NRC Approval**
 - **Revision of CLB Via Exemptions to CFR**
 - **10CFR50.61, Fracture Toughness Criteria for Fracture Prevention Measures for Lightwater Nuclear Power Reactors for Normal Operation**
 - » ASME Code Case N-629 defines the indexing reference temperature RT_{T_0}
 - » WCAP-15075 provides a methodology for determining ART/RT_{PTS} from RT_{T_0}

Scope of Licensing Actions (Cont.)

- **Master Curve Technology Application (Cont.)**

- Revision of CLB Via Exemption to CFR (Cont.)**

- **10CFR App. G, Fracture Toughness Requirements**
 - » ASTM E185-98 recommends fracture toughness testing (E636, E1820, E1921) if the surveillance materials exhibit marginal properties
 - **10CFR App. H, Reactor Vessel Material Surveillance Program Requirements**
 - » ASTM E185: Supplemental fracture toughness testing
 - » ASTM E1921-97: Test method for fracture toughness
 - » Davis Bessie and Crystal River weld material project fracture toughness through EOLE
 - » Fabrication and Insertion of Additional Surveillance Capsule(s)

Scope of Licensing Actions (Cont.)

- **PBNP Unit 2 Vessel Surveillance Capsule Program**
 - **Materials of Interest for Unit 2 (SA-1484) are Installed at Davis Bessie and Crystal River**
 - Existing Surveillance Capsule Materials Currently Being Tested at Framatome
 - Those to Be Tested in 2008/2010 Under B&WOG Will Monitor/Establish Material Properties to Approximately Year 50
 - **New Surveillance Capsule Needed to Monitor Material Properties for Operation out to years 50**
 - Installed in Unit 2 and Withdrawn in ~2022

Scope of Licensing Actions (Cont.)

- **License Renewal Project**
 - **Core Team Formed in Mid 2000**
 - **Full Team Formed March 2001**
 - **Scoping and Screening Complete Mid 2001**
 - **AMRs and AMPs Complete Late 2001**
 - **Application Complete Early 2002**
 - **Reviews, Approvals and BOD Approval Mid 2002**
 - **Expected Submittal August 2002**

Scope of Licensing Actions (Cont.)

- **License Renewal Application**
- The License Renewal Application will Assume any CLB Changes in Progress at Submittal will be Complete by the Issue Date of the Renewed License

PBNP Licensing Actions Plan

- **Improved Technical Specifications**
(August 2001 approval expected)
- **PASS Elimination (October 2001 submittal)**
- **Power Uprate (January 2002 submittal expected)**
 - **Containment Integrity Analysis Using MAAP5**
 - **Radiological Analysis Using Alternate Source Term**
- **Control Room Habitability**
(Early 2002 submittal expected)



PBNP Licensing Actions Plan

- **Credit for Boric Acid in Spent Fuel Pool
(Late 2001 submittal expected)**
- **Turbine Missile Elimination (Late 2001
submittal expected)**
- **Unit 2 Reactor Vessel Program
(December 2001 submittal expected)**

PBNP Licensing Actions Plan

- **Risk Based ISI Plan (Spring 2002 submittal expected)**

**EPRI Methodology , Class 1 and 2 Piping, Next 10
Year ISI Program**

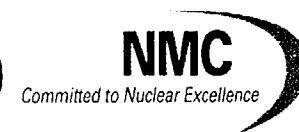
- **License Renewal Application (August 2002 submittal expected)**

Organizational Impact



- NMC
 - ITS 4 Years Preparation
 - PASS 6 Month Preparation
 - Power Uprate 12 Month Analysis and Preparation - With Hardware Changes
 - Rx Vessel 12 Month
 - BA in SFP 6 Month Preparation
 - Turbine Missile 6 Month Preparation
 - Risk Based ISI 12 Month Preparation
 - LRA 2 Years Preparation

Organizational Impact (Cont.)



- **Actions Complete Prior to LRA Submittal**

- **ITS** Presently 8 Months of review
- **PASS** September 2001 submittal
- **BA in SFP** Late 2001 submittal
- **Turbine Missile** Late 2001 submittal

- **Some Review After LRA Submittal**

- **Power Uprate** Dec. 2001 submittal
- **Rx Vessel** Dec. 2001 submittal
- **CR Habitability** Early 2002 submittal
- **Risk Based ISI** January 2002 submittal

- **LRA** August 2002 submittal

Discussion

- **Feedback on Licensing Actions Plan**
- **Path to Successful Integration of Submittals and Staff Review**
- **Licensee And Staff Discussions During Review, When Needed**
- **Future Actions/Meetings**