

**NMHC**

*Committed to Nuclear Excellence*

# Nuclear Management Company LLC. NRC Region III Briefing - Engineering

## November 2004

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# Agenda

- Introductions
- NMC Fleet Presentation
- Plant Presentations
  - Kewaunee
  - Palisades
  - Point Beach
  - Monticello
  - Duane Arnold
  - Prairie Island



# NMC Engineering Programs

- NMC Engineering Programs Organization
  - Fleet organizational reporting for all Engineering Program personnel
  - Site implementation and ownership
  - Fleet establishment of requirements and technical direction
- Program Health process
  - Fleet Standards
    - Select Fleet scope of programs
    - Develop fleet standards
    - Gap analysis
    - Improvement plan for correcting gaps
    - Track gap closure through annunciator panel
    - One of the inputs to Program Health



# NMC Engineering Programs

- Program Health process
  - Program Health
    - Systematic/objective approach
    - Thorough/diverse set of inputs
    - Displayed as a color coded annunciator panel
    - Used as input to review meetings, performance appraisal, etc.
    - Each site's performance is rolled into a single grade point average
- Engineering Program improvement
  - Staffing
  - Program Health GPA has increased
  - Compliance with standards
    - Reduction of red/yellow programs



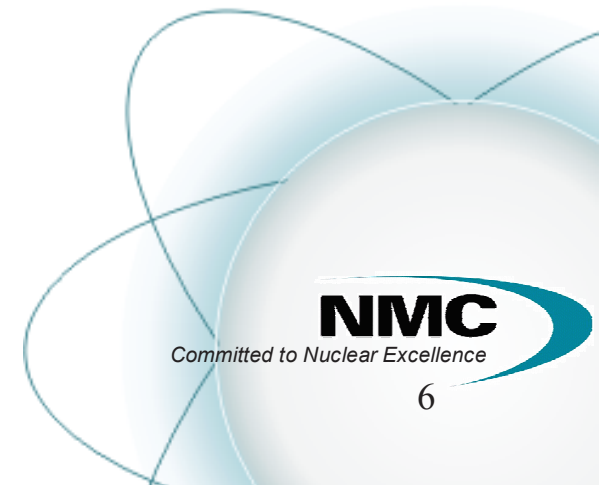
# NMC Engineering Programs

- Engineering Program Improvements
  - Engineering Program Successes
    - Fleet Welding
    - ISI Programs at MNGP and PINGP
    - Flow Accelerated Corrosion
    - AOV Program development
  - Engineering Program Focus Areas
    - Appendix R and Fire Protection
    - PMO projects
    - EQ Enhancement project



# Kewaunee

- Main Focus Areas
  - Long Standing Issues Resolution
  - System Engineering Update
  - Linked Design Basis Data
  - Human Performance Initiatives



# Kewaunee

- Long Standing Issues Resolution
  - Material Improvements
    - New Reactor Head Installed
    - Split Pin Replacement Completed
    - New Analog Rod Position Indication (NARPI) Installed
    - Reactor Coolant Pump (RCP) Seal Replacements
    - Control Room Damper Replacements



# Kewaunee

- System Engineering Status
  - System Engineering Outage Involvement
    - Diesel Generators
    - Circulating Water Intake Cleaning
    - Radiation Monitoring Troubleshooting
    - NARPI Replacements
- Fleet Support for Department Startup





# Kewaunee

- Linked Design Basis Data
  - System Functional Matrices (SFM) Status
    - External review completed
    - Service Water SFM issued
    - Future Plans
  - Electronic Data Status



# Kewaunee

- Human Performance Status
  - Product Specific Coaching Cards
    - Training planned for 1<sup>st</sup> Quarter
  - Quality Review Team Results
    - Errors analysis



# Palisades

- Main Focus Area
  - Palisades 2004 Reactor Head Inspection & Repair Activities
    - Palisades' Unique Features
    - Major Activities
    - Decision Making
    - Teamwork
    - Results



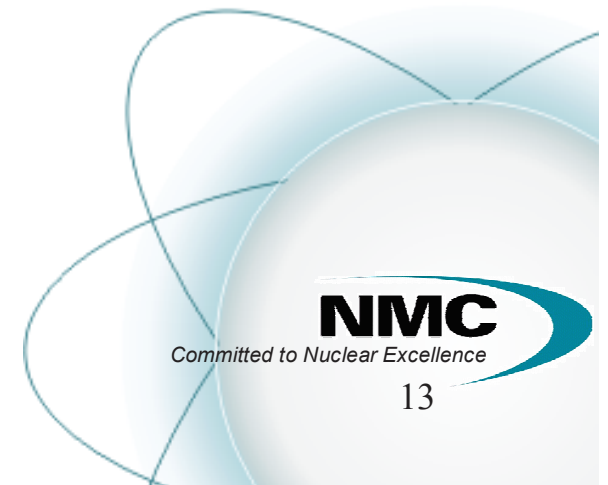
# Palisades

- Unique Features
  - Nozzle Extensions
  - Nozzle Support Grid
    - Reactor Head Lift Rig
  - Thermal Sleeves



# Palisades

- Major Activities
  - Volumetric Inspection (Ultrasonic Testing with UT Leak Path)
  - Nozzle Inside Diameter Scoring
  - Bare Metal Visual Inspection
  - J-Groove Weld Surface Inspection (Dye Penetrant Testing)
  - Nozzle Repairs



# Palisades

- Decision Making Logic Charts
  - Developed Pre-Outage
    - UT with Leak path
    - Visual Inspection
  - Supplemented Based on Initial Findings
    - Scoring of Nozzle Inside Diameter
    - UT Leak path on Two Penetrations



# Palisades

- Teamwork
  - Fleet Participation
    - Materials
    - Non-Destructive Examination
    - Challenging of Actions and Conclusions



# Palisades

- Teamwork
  - Industry Participation
    - Industry Peers
    - Industry Working Group Members
    - Vendors





# Palisades

- Results
  - Successful
    - Characterization and Evaluation of Nozzle Inside Diameter Scoring
    - Detection and Verification of Linear Penetration Test Indications in 2 J-Groove Welds
    - Nozzle Repairs



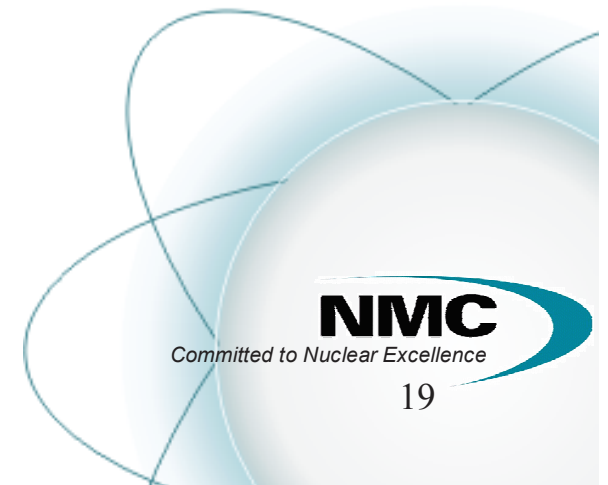
# Point Beach

- Main Focus Area
  - Confirmatory Action Letter Focus Areas
    - Engineering Organizational Effectiveness
      - Quality Engineering Products
      - Operations/Engineering Interface
      - Human Performance
      - Equipment Issues/Backlogs



# Point Beach

- Engineering Organizational Effectiveness
  - Quality Engineering Products
    - Quality Review Team
    - Engineering Safety and Design Review Group
    - Effectiveness Review Results
  - Operations/Engineering Interface
    - Operational Decision Making Model
      - Ensures continued safe operation
      - Roles and Responsibilities
      - Potential Consequences
      - Short and Long-term Risk
      - Implementation Plans
  - Examples



# Point Beach

- Engineering Organizational Effectiveness
  - Operations/Engineering Interface (cont'd)
    - Increased Engineering Support
      - System/Plant Engineering
      - Reactor Engineering
      - Troubleshooting
    - Operator Burden
    - Plant Health Committee



# Point Beach

- Engineering Organizational Effectiveness
  - Engineering Human Performance
    - Training
    - Focus on pre-job briefs
    - Human Performance investigations
    - Trend



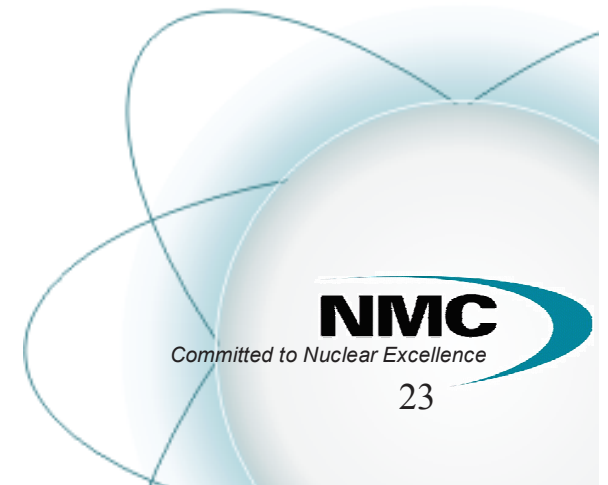
# Point Beach

- Engineering Organizational Effectiveness
  - Equipment Issues/Backlogs
    - Resolution of Station issues
      - Fire Protection
      - Operable but Degraded/Non-Conforming
      - Maintenance Rule
      - Functional Failures
      - In-Service Testing program equipment
      - Work Order backlog



# Point Beach

- Engineering Organizational Effectiveness
  - Challenges
    - Continued focus on Human Performance
    - Expanding use of Operational Decision Making model
    - Continued Work Order backlog reduction
    - Continued operation procedure backlog reduction



# Monticello

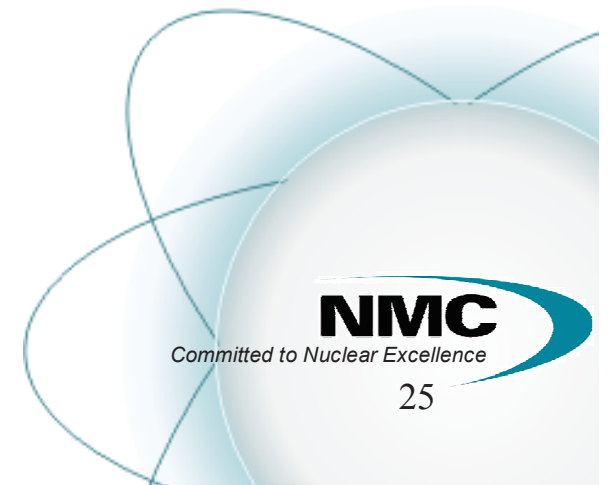
- Main Focus Areas
  - Program Engineering
    - Examples
  - Configuration Management Initiatives





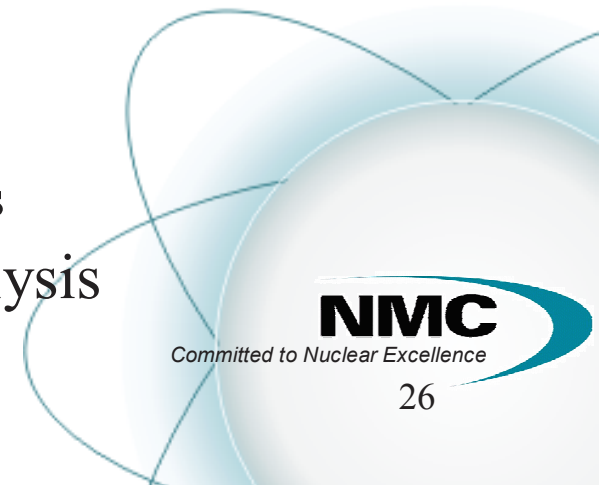
# Monticello

- NMC Engineering Programs organization
  - Established and staffed Engineering Programs Department at Monticello.
  - Initial analysis complete with recovery plans.
  - More intrusive look into programs now underway.
  - Examples:
    - PRA
    - Appendix R



# Monticello

- Enhanced Fleet Support
  - Critical Review During Reconstitution
    - Cable separation
    - Safety Relief Valve Control Modification
    - Hot Short
      - RHRSW cable Modification in Intake Structure
      - MOV Modification
  - Ventilation issues (Control Room Ventilation and Non-Safety Related Ventilation)
  - Other Modifications
    - Emergency Lighting
    - Exemption Request Related Modifications
  - Reconstitution of Safe Shutdown Analysis



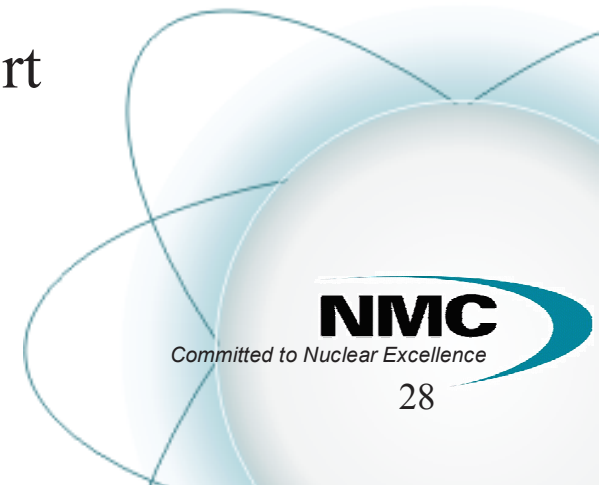
# Monticello

- Current CDF
- Internal flooding is significant contributor
- Reduce risk:
  - Implementation of Modifications
  - Procedure changes
- 2005 RFO Impact



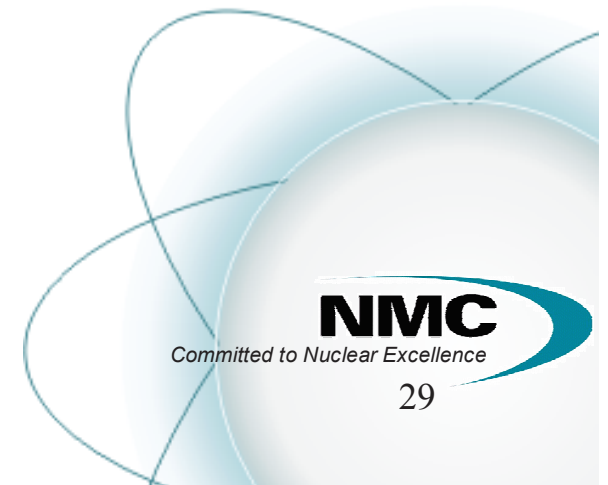
# Monticello

- Configuration Management Initiatives
  - Design Basis Documents Update
    - Status
    - Timeline
  - Calculation database
    - One database with relational links
    - Inputting Purpose paragraph of older calculations
  - Configuration Management Fleet Support
    - Peer group established



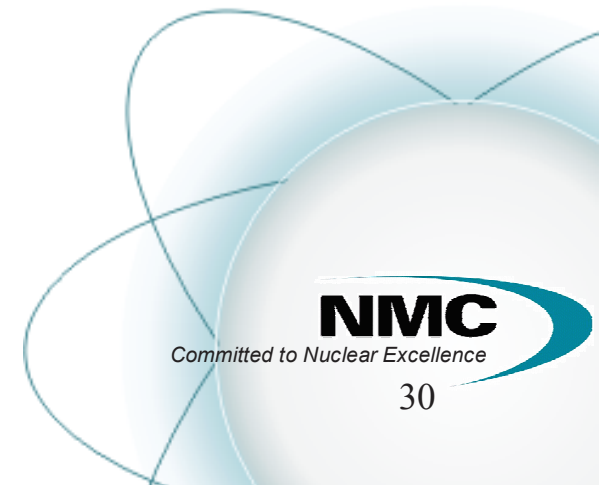
# Duane Arnold

- Main Focus Area
  - Equipment Reliability
    - Standardized Equipment Reliability Plan
    - Equipment Reliability Coordinators
    - “Top 10” equipment issues list
    - Plant Health Committee (PHC)
    - Common performance indicators
    - AP-913 monitoring by PHC
    - Operator Burden reduction



# Duane Arnold

- Equipment Reliability plan implementation
  - Preventive Maintenance Optimization
  - Condenser Reliability Plan
  - Diesel Generator Plan
  - Feedwater Reliability Plan
  - Spare Emergency Core Cooling System pump motors
  - Dry Well Cooler Plan



# Duane Arnold

- Equipment Reliability Results
  - Focus on equipment
  - Prioritization
  - Management Sponsorship
  - Equipment performance
  - Opportunities



# Prairie Island

- Main Focus Area
  - Equipment Reliability
    - Accomplishments
    - Areas of Focus





# Prairie Island

- Accomplishments
  - 4 Large projects
    - Security
    - U-1 Steam Generator replacement
    - Reactor Head replacement
    - Dry Cask Storage



# Prairie Island

- Accomplishments
  - Outage
    - Reduction of Operator Burden
      - 20 targeted issues
  - Enhanced reliability and performance
    - Focused improvements based on:
      - Engineering programs
      - System Health



# Prairie Island

- Focus Areas
  - Equipment Reliability
    - Burning Platform
      - Site awareness
        - Excellence Plan
        - Equipment clock reset program
  - Focus the site
    - Limited number of projects
    - Team approach
  - Individual performance
    - Match people and job
    - Challenge boards
    - Accountability

