Nuclear Regulatory Commission
Region II
July 31, 2003

Harris Nuclear Plant
Safe Shutdown Validation
Fire Protection
Project Plan

NGG Nuclear Generation Group
Progress Energy
Attendees

- Abdy Khanpour – Manager, Engineering
- John Caves – Supervisor, Licensing
- Tony Maness – Supervisor, Fire Protection
Agenda

- Overview Of Fire Protection Inspection Findings, Root Causes, Corrective Actions
- SSA Validation Project
  - Organization
  - Goals
  - Tasks
  - Milestones
- Latest Discoveries
Focus Team

- Team Members
  - Supervisor
  - FP Program Manager
  - SSA Program Manager
  - Operations - STA
  - FP Staff Augmentation Engineer
  - Staff Augmentation Configuration Management
  - Matrix additional staff as needed
  - Progress Energy Fleet Steering Committee
Overview of Inspection Findings

- Failure To Protect Cables Potentially Affected By Fires
- Inconsistency Between Safe Shutdown Analysis And Implementing Procedure
- Some Non-feasible Manual Actions
- Technical Compliance
  - 8 Hr Battery Backed Emergency Lighting
  - Manual Actions Not Approved
Summary of Root Causes

- Post-Fire Circuit Analysis
  - Errors In Analysis
  - Procedures Allowed Use Of Manual Action In Lieu Of Circuit Protection For 3.G.2 Fire Areas From Initial Plant Licensing Efforts In Remote Shutdown
  - HNP Understanding Of Standards For Acceptability Of Manual Actions Changed In August 2002 based on industry OE (ANO and NRC/NEI meetings)
Summary of Root Causes

- Operational Implementation
  - AOP-036, Safe Shutdown Validation
  - Lack Of Specific Criteria For Manual Action Feasibility
- Assessments Focused On Conventional Fire Protection – Barriers, Detection, Suppression, Equipment Impairments
Fire Protection Corrective Actions

- Immediate Actions Completed
  - Established Fire Watch Coverage For Identified Issues
  - Revised Safe Shutdown Operating Procedures
  - Assigned 1 Additional Auxiliary Operator To Shift Staffing
  - De-Energized MOV (MCC-1E12) To Eliminate Hot Short Potential
  - Plexiglas Cover Removed For TDAFW Fuse
Project Plan Goals

- Validate SSA Design
  - Reduce Reliance On Manual Actions
  - Correct Identified Deficiencies
  - Ensure SSA Is Properly Reflected In Operating and Maintenance Procedures
  - Configuration Controls Protects The Design Basis

- Improve Reliability Of Fire Protection Equipment
Project Plan Goals (cont)

- Position HNP For Potential Future Development Of A Fire PRA
- Ensure SSA Is Consistent With Fleet Circuit Analysis On Multiple Circuit Failures
Project Plan Tasks

- Sixteen Plan Tasks
  1. Project Initiation
  2. Modifications
     - Proposed Modifications
       ▼ Cable Protection
       ▼ Circuits In MCCs
       ▼ 8 Hour Battery Backed Lighting
Project Plan Tasks (cont)

2. Modifications (cont)
   - Modifications in Progress

   ▼ ACP Room Cable Protection
     - Remove Thermo-Lag Enclosure
     - Add Fire Wrap to Cable Tray

   ▼ VCT Outlet Valve Cable Protection
     - Armored Cable
     - Reroute
Project Plan Tasks (cont)

3. Oversight/Gap Analysis
   - NGG Fleet FP Strategic Plan

4. SSA Validation
   - Developed Project Scoping Document
   - A/E Selection
   - Kick Off Of Validation 5/20/13
   - Major Milestones
   - Additional Discoveries
     ▼ Document in Corrective Action Program
Project Plan Tasks (cont)

5. Thermo-Lag Configurations
   - ACP Room
     ▼ Current Modification
   - Cable Spread Room
     ▼ Modification Completed
Project Plan Tasks (cont)

6. Hemyc/MT Fire Barrier Wrap
   ◆ SSA Validation
     ▼ Identify functions where protection is needed and Hemyc wrap is credited
     ▼ Monitoring Industry and NRC testing

7. Fire Hazards Analysis (FHA)/SSA Integration
   ◆ Resolve Identified Deficiencies

8. NFPA Code Compliance
   ◆ Resolve Identified Deficiencies
Project Plan Tasks (cont)

9. Fire Protection QA Inspection Hold Point
   - Identify Inspection Attributes
     ▼ Update Implementing Procedures

10. Enhance Transient Combustible/Fixed Combustible Loading Controls
    - SSA Integration
      - Revise Combustible Control Program
Project Plan Tasks (cont)

11. Penetration Seals
   * Improve program
     ▼ Adopt Wisconsin Electric Internal Conduit Seal Testing
     ▼ Enhanced Pen Seal Report Generation Tool
     ▼ Drawing
Project Plan Tasks (cont)

12. Surveillance Optimization
   ♦ Evaluation And Improve
   ♦ Performance Based Assessment

13. Miscellaneous FP Program Deficiencies
   ♦ Manage and Prioritize FP Backlog

14. Fire Response/Operational Implementation
   ♦ Improve Operations Response To Fires
Project Plan Tasks (cont)

15. Effectiveness Review
   ◆ Self-Assessment

16. Allocation Of Funds
   ◆ Administrative
Design Validation

- Validation of SSA
  - Develop Safe Shutdown Equipment List
  - Perform Circuit Analysis
  - Load SSD Program Manager Database
  - Perform Compliance Fault Tree Analysis
  - Manual Action Feasibility
  - Revise Safe Shutdown Procedure
  - Revise Admin Control Procedures
## SSA/Fire Protection Major Milestones

**Best Estimate**

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<tr>
<th>SSA Tasks</th>
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<th>Finish</th>
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<td>Charging System</td>
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*Engineering Changes*
Latest Discoveries

Current State:

- HNP SSD Analysis does not include components as part of the analysis.
  - 1CT-102 - Cnmt Sump To Cnmt Spray Pump 1B-SB Isol Vlv CIV
  - 1CT-105 - Cnmt Sump To Cnmt Spray Pump 1A-SA Isol Vlv CIV
Latest Discoveries

Real or Potential Consequences:

- Valves are required to remain shut to prevent transfer of water from the RWST to the containment recirculation sump.

- Spurious opening could result in inadvertently transferring water from the RWST to the sump.

- Water used for charging would not be available from its alternate suction source (i.e., the RWST) credited by the SSA.
SUMMARY

- HNP is committed to resolving Fire Protection Program and Safe Shut Down Program concerns