

**Nuclear Regulatory Commission
Region II
July 31, 2003**

**Harris Nuclear Plant
Safe Shutdown Validation
Fire Protection
Project Plan**



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
- ◆ 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

| SSA Tasks | Start | Finish |
|---|----------|----------|
| ▶ SSA Project Kick-Off Mtg | 5/20/03 | 5/20/03 |
| ▶ Discovery Phase | 6/9/03 | 1/5/04 |
| ▶ Manual Action Identification/Feasibility Analysis | 10/17/03 | 3/9/04 |
| ▶ EC Approval | -- | 6/9/04 |
| ▶ EC Turnover – Implementation Of New SSA | 6/10/04 | 9/30/04 |
| ▶ Self-Assessment Of New SSA | 7/25/05 | 9/25/05 |
| Cable Protection Mods | | |
| ▶ ACP Room | 5/21/03 | 12/15/03 |
| ▶ Charging System | 7/7/03 | 12/31/03 |



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