Nuclear Regulatory Commission
Region II
July 31, 2003

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

H/13

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

NGG

Progress Energy

# 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

NGG

Progress Energy

# 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 Enterram - 3M 3hr barrier
     - VCT Outlet Valve Cable Protection
       - Armored Cable Megjet
       - Reroute

# Project Plan Tasks (cont)

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

4. SSA Validation
   - Developed Project Scoping Document
   - A/E Selection Sargent-Lundy
   - 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**

| 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 |

Engineering Change

NGG

Progress Energy

# 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

NGG

Progress Energy