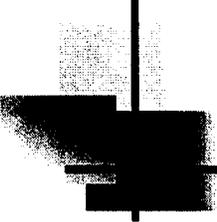


Raceway Fire Barrier Project

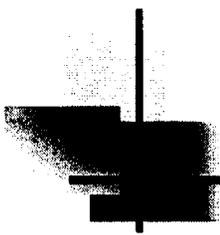
NRC Status Meeting

April 5, 2001



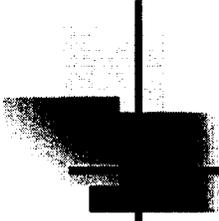
Agenda

- Introduction
 - Gabe Salamon
- Background & Project Status
 - Ashok Moudgill
- Analyses & Resolution Strategy
 - Kiran Mathur
- Licensing Summary
 - Brian Thomas
- Project Summary
 - Ashok Moudgill



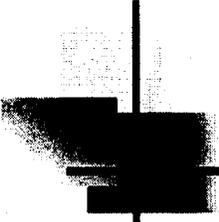
Background

- Industry Fire Wrap Issue
 - Salem Does Not Meet 1 hour Requirement.
- Established Compensatory Measures.
- PSEG Committed to Resolve the Identified Fire Wrap Issues by November 2002



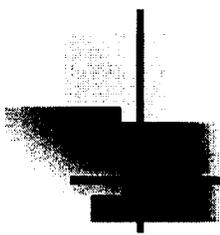
Project Scope

- Salem uses approximately 20,000 feet of fire wrap materials:
 - Kaowool 500 linear feet
 - 3M FS-195 14,500 linear feet
 - 3M E-50 5,230 linear feet



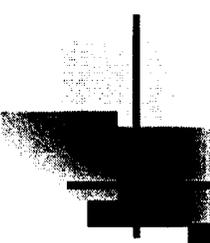
Project Status

- Phase 1, Engineering Scoping and Analysis (completed)
- Phase 2, Select Resolution Strategy & Design Change Package Preparation (in-progress)
- Phase 3, Design Change Implementation



Phase 1 Results

- Configuration Walk Down
 - completed
- Baseline Testing of Fire Wrap
 - completed
- Safe Shutdown Reanalysis
 - completed



Safe Shutdown Reanalysis

- Purpose: Optimize Fire Wrap Scope
- Methodology:
 - Evaluated Availability of Offsite Power
 - Analyzed Component on Circuit Level
 - Used GL 86-10 Position on 3 Phase Hot Shorts
 - Assessed Manual Actions
- Results: Reduction in Reliance on Fire Wrap from ~20,000' to ~6,500'
- Verified by 2 Independent Parties

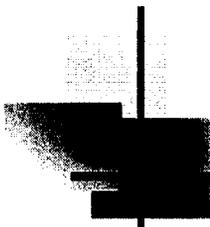
Phase 2

Resolution Strategies Considered

- Upgrade Fire Wrap Per Revised SSD Analysis
- Risk Informed/Performance Based Methods
- Cross-Tie Systems Between Units and Reduced Fire Wrap
 - Cross-Tie Charging System
 - Cross-Tie Power for Process Monitoring Indication (PMI)

Resolution Strategies Considered (Continued)

- **Fire Wrap per Revised SSD Analyses**
 - Complies with Appendix R Within Existing Exemptions
- **Risk Informed/Performance Based**
 - Reduces Reliance on Fire Wrap
 - No Improvement to Plant Safety
 - Requires New Exemptions
- **Cross-Ties Between Units**
 - Reduces Reliance on Fire Wrap
 - Improves Plant Safety
 - Eliminates Reliance on Two Exemptions



Selected Resolution

- Cross-Tie and Reduced Fire Wrap Scope
- Credit Cross-Ties for ASD in 3 Fire Areas
 - 4160VAC Vital Switchgear
 - 460VAC Vital Switchgear
 - 84' Auxiliary Building (Vital Pumps)
- No Change to Existing ASD Areas
 - Control Room
 - Relay Room
- Other Areas Remain "Normal Shutdown" and comply with III.G.2.

Hot Standby Cross-Ties For New ASD Areas

- Charging System Cross-ties
 - RCS Make-up
 - RCP Seal Injection
 - Boration

- HSD Panel Power
 - HSD Panel Process Monitoring Indication (PMI) powered from either unit.

Figure 1 CVCS CROSS CONNECTS

This figure shows valves in normal configuration (both units in normal operation).

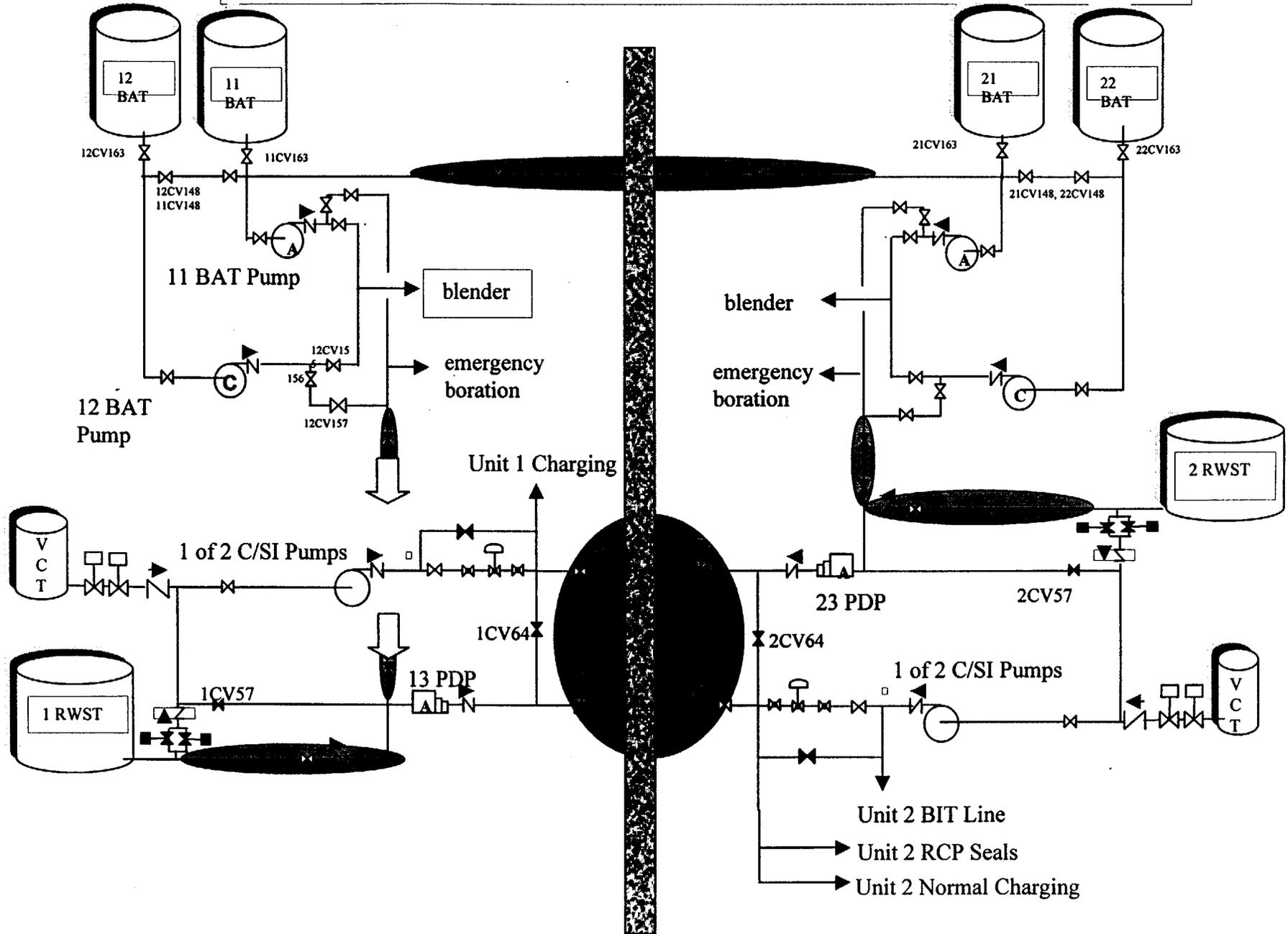
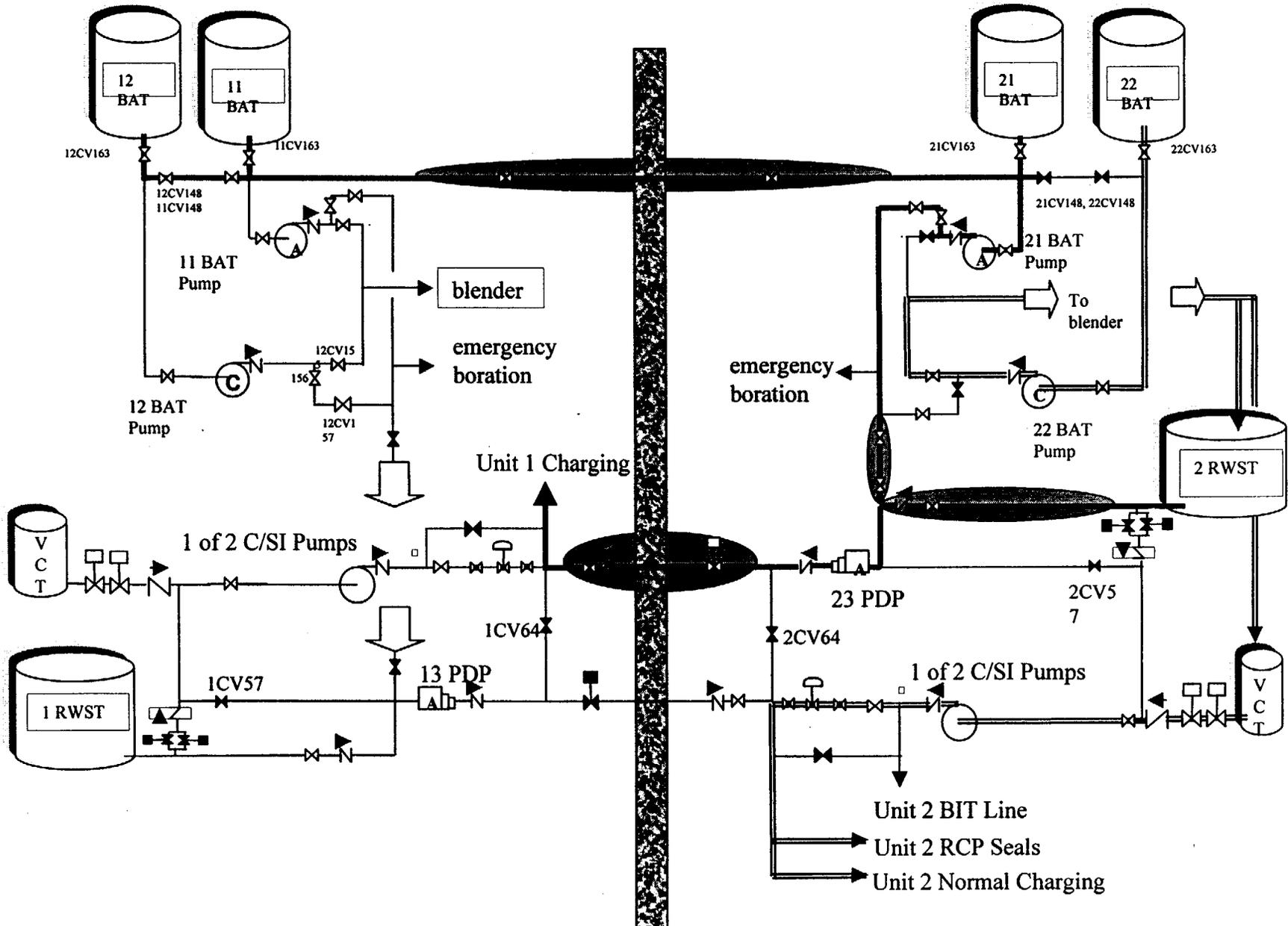


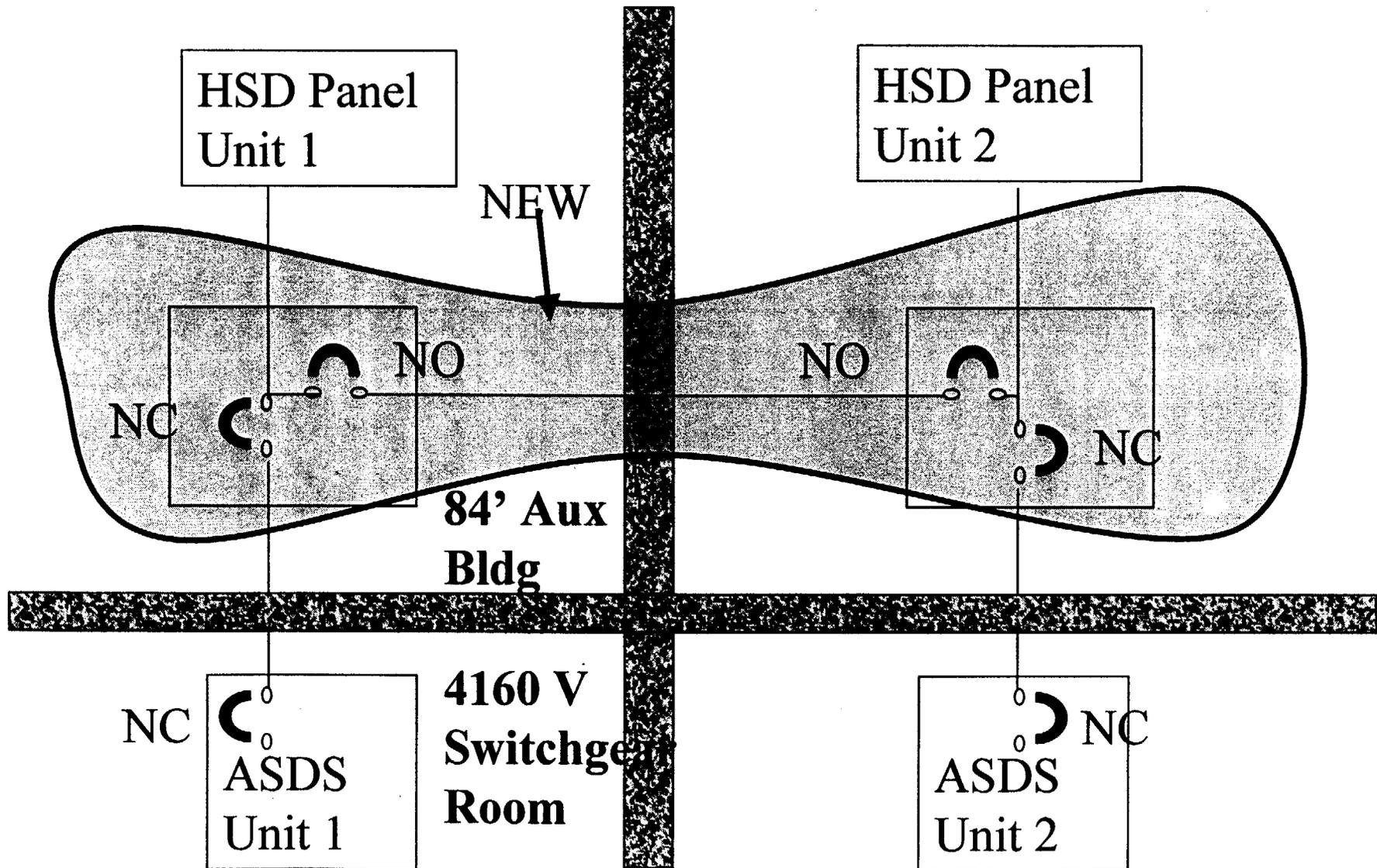
Figure 2 CVCS CROSS CONNECTS

This figure shows cross-ties assuming Unit 2 is charging to Unit 1.
Bold Lines are x-tie paths. Double lines are normal flow paths.

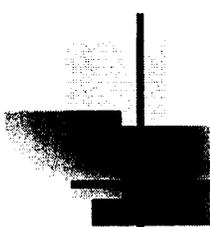


HSD Panel Cross-tie

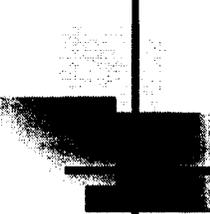
(Simplified Sketch)



Cold Shutdown Approach

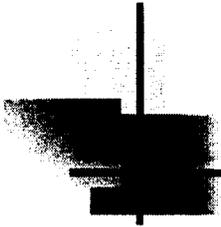


- Utilize III.G.1.b option to repair normal, cold shutdown system components
- Repair Procedures/Spare Equipment to be based on assessment of “maximum level of damage that is expected”.
- Fire Models will account for uncertainties.



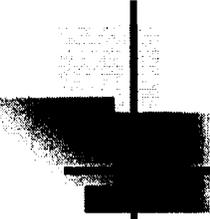
Cross-Tie Impact

- During Normal Plant Operation:
 - CVCS cross-ties will be isolated
 - HSD Panel power cross tie will be de-energized
- If cross-tie is used, Unaffected Unit not expected to enter Technical Specifications (TS) Action Statement.
- Design Reviewed with Outage Management to Minimize Impact of Unavailable Equipment



Cross Tie Benefits

- Plant Safety Improved by $\sim 9\%$
- Impact on Exemptions
 - Eliminates Reliance on 4160 V and 460 V Switchgear Room Exemptions
- Reduce Reliance on Fire Wrap



PSA Upgrade

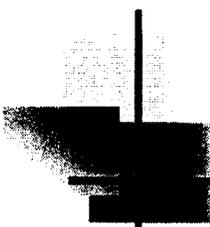
- Scope
 - Upgrade the IPEEE Fire Hazard Analyses
 - Upgrade the Internal Events PSA
- Preliminary Results of Cross-ties
 - Slight Advantage on Fire PSA
 - ~ 9% Reduction in Overall CDF and LERF
- The Fire PSA is Being Reviewed by An Independent Expert Panel.

Licensing Summary

- Cross-Ties Can Be Performed Under 10CFR50.59

- ASD Impact on Exemptions
 - 4160 VAC switchgear will fully comply with III.G.3
 - 460 VAC switchgear will fully comply with III.G.3

- Equipment availability will be procedurally controlled



Project Summary

- Project Schedule
- Implement Cross-Ties
 - Improved Plant Safety
- Cross-Tie Installed by End of 2002
 - Completion for both Units is tie-in in Unit 1
 - Unit 2 Commitment was Spring 2002