Nuclear Regulatory Commission
Region II
March 10, 2003

Harris Nuclear Plant

Fire Protection

NGG Nuclear Generation Group

Progress Energy

Attendees

- Bob Duncan – Director, Site Operations
- Abdy Khanpour – Manager, Engineering
- Eric McCartney – Superintendent, Engineering
- Terry Morton – Manager, Support Services
- John Caves – Supervisor, Licensing
- John Yadusky – Licensing Engineeer
- George Attarian – Corporate Chief Engineer
- Jeff Ertman – Corporate Fire Protection Engineer
- Steve Laur – Supervisor, PSA

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Agenda

- Overview of Fire Protection Inspection Findings
- Summary of Root Causes → other programs.
- Corrective Actions { - short - medium - long-term.
- Overview of Project Plan

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Overview of Inspection Findings

- Failure to identify cables potentially affected by fires
- Inconsistency between Safe Shutdown Analysis and implementing procedure
- Some non-feasible manual actions → Fuses
- Technical compliance
  - Lighting ✓
  - Manual actions not approved ✓

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SSA
Equating Procedure

::: Series
Fire Area - Analysis Zone

Philosophy shift =>
Protect 1 train any area
later => Protect train depending on fire area

1. Hemyck.
2. Cable wrap

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Summary of Root Causes

- Original licensing mid 1980s
  - Errors in analysis
  - Separation issues resolved with using manual actions as the first choice
  - Abnormal Operating Procedure (AOP) for safe shutdown was a single procedure for both MCR fire and plant area fires
  - Applied a rigorous validation process for remote shutdown manual actions
  - Original submittal did not separate remote shutdown from MCR shutdown

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Summary of Root Causes

- Early 1990s
  - Separated fire response into two AOPs
  - Distinction between manual actions for remote shutdown and 3.G.2 areas not made
  - Validation not done for manual actions in 3.G.2 areas
- Assessments focused on conventional fire protection – barriers, detection, suppression, equipment impairments

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Fire Protection Corrective Actions

Interim immediate actions completed

- Revised Safe Shutdown Procedures
- Assigned 1 Additional SSD AO To Shift
- De-energized MOVs Where Possible To Eliminate Hot Short Potential
- Removed plexiglas cover for TDAFW fuse
- Established fire watch coverage for identified issues

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On-Shift Staffing

- Developed drill scenarios for ACP fire area using Plant Simulator
  - Conducted drill scenarios with spurious actuations inserted for all 5 shifts with 1 Auxiliary Operator
  - All crews successful in achieving shutdown
  - Success defined by remote shutdown time line
  - Will validate all remaining fire areas

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□ ACP room] → recognized couldn't proceed all the way because of the manual action issue

OSSA → Analysis complete / training / procedure.

① Five watch - present ⇒ Roving

② Recognized needed NRR permission

Project Plan Goals

- Restore compliance for identified deficiencies
- Fire Hazards Analysis design validation
  - SSA validation
  - Clear documentation of compliance
- Validation of fire response
  - Design adequately reflected in operational response procedures
  - Training

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Right to prioritize

Wrap cables Minimize manual actions.

⇒ 100% validation of SSA.

⇒ Operators / Actions also.

⇒ Will validate process for safe shutdown

Needs to be more focused on areas → Fault responses.

Eliminate equipment failures not possible for fires in

Project Plan Goals

- Improve system reliability
  - Validate QA program → Fell down.
  - Optimize surveillances and testing
- Reduce plant risk for operational implementation
  - Reduce operator manual actions to the greatest extent possible
- Improve self-evaluation
  - Establish program health monitoring schedule that verifies design basis through implementation on a periodic basis

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Operators can operate plant from manual actions.

Vertical slice never done on this program

Project Plan
Scope

- Results of root cause analysis
- Corrective action program trends
- Industry issues
- Identified 14 tasks to be included in plan
  - Design modifications
  - Benchmarking
  - Administrative control upgrades

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Project Plan
Schedule

- SSA validation
  - Contractor selection in progress
  - Begin prior to R11
  - Expected completion in mid 2004

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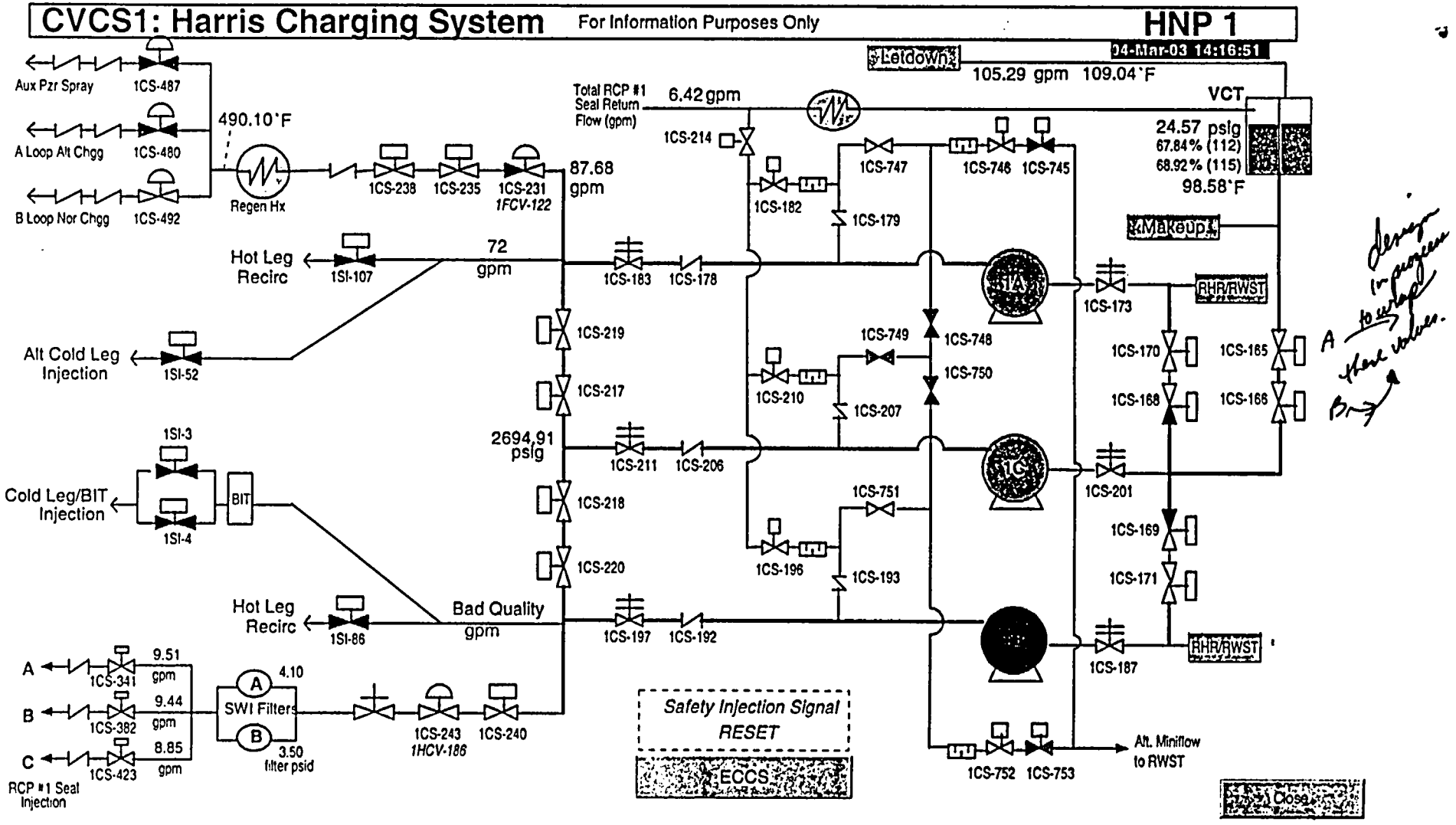

design in progress to swap these valves.

Int' LAN ⇒ GL 86-10 Testing

Lightweight

Resolution

- Immediate Design Changes
  - Design in progress
    - VCT outlet valve cables, 1CS-165 & 166
    - Protect CSIP flow paths in all fire events
    - Eliminate manual actions in ACP fire area
    - Utilize Interam fire wrap, qualified to GL 86-10, Supplement 1 standards
  - Evaluating MCC hot short solutions
    - Cable reroutes
    - Valve interlocks

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Design Validation

- Validation of SSA
  - Develop safe shutdown equipment list
  - Select SSEL cables
  - Load cable database
  - Utilize automated software analysis methods
  - Revise safe shutdown procedure

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Additional Program Improvements

- Administrative controls
  - Transient combustibles
- Training and Qualification
  - Program manager
  - General engineering population
  - Operations crews
  - Station management

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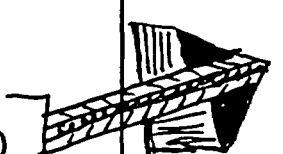
Risk Insight

- Fire areas identified in findings, except ACP room, have full detection and suppression
- Affected cable routes are greater than 20 feet from fixed ignition sources
- Multiple hot short spurious actions are required to cause loss of a safe shutdown function



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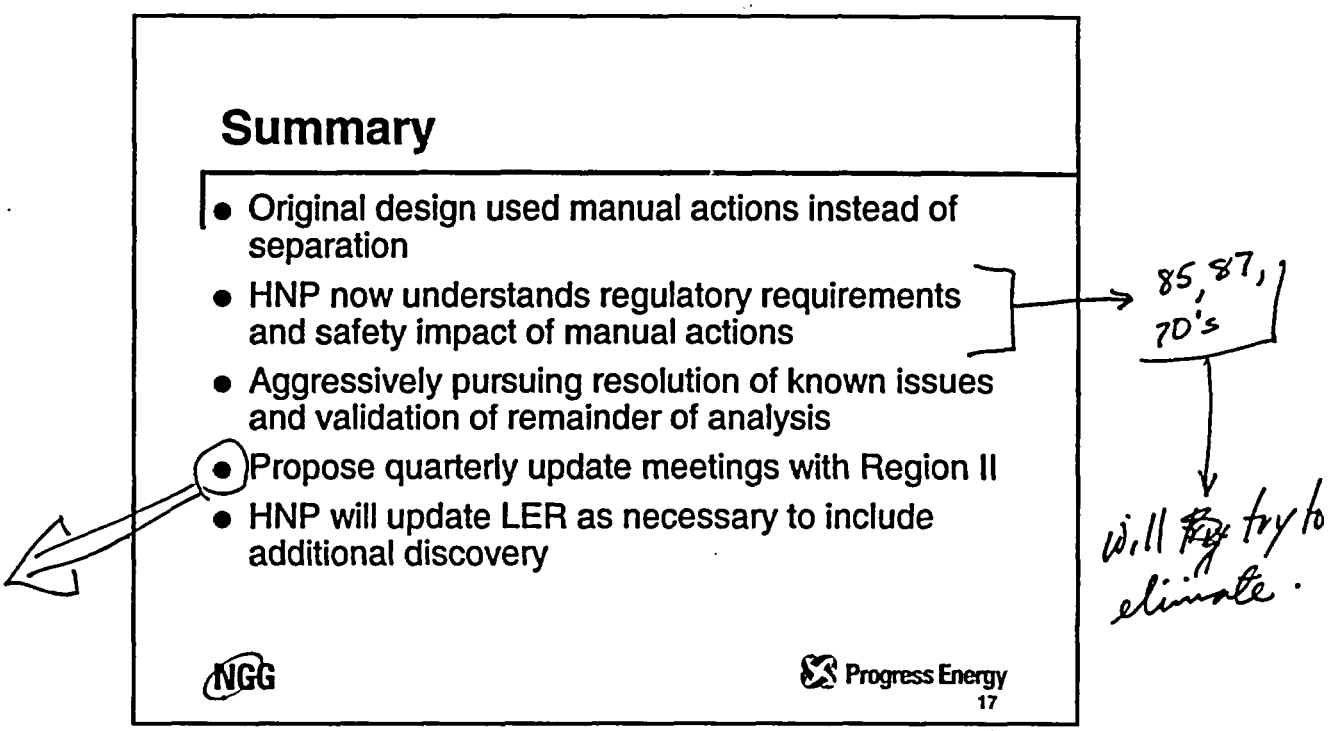

⇒ NEI NRC arbitration board.

Hinnant ⇒ Fleet problem.

Cultural transition progress