Davis-Besse Nuclear Power Station

IMC 0350 Meeting

Opening Remarks

Lew Myers

Chief Operating Officer - FENOC

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Desired Outcomes

- Update Progress Made Toward Readiness
  - Restart Readiness……...Randy Fast
  - Containment Integrated Leak Rate Test……Jim Powers
- System Health Assurance Building Blocks
  - Safety Functional Validation Project……Bob Schrauder
- Management Reviews for Reload
  - Restart Readiness and Safety Culture……Lew Myers
  - Nuclear Quality Assessments……...Steve Loehlein
- Schedule Update/Upcoming Activities
  - Integrated Schedule Progress..……..Mike Stevens

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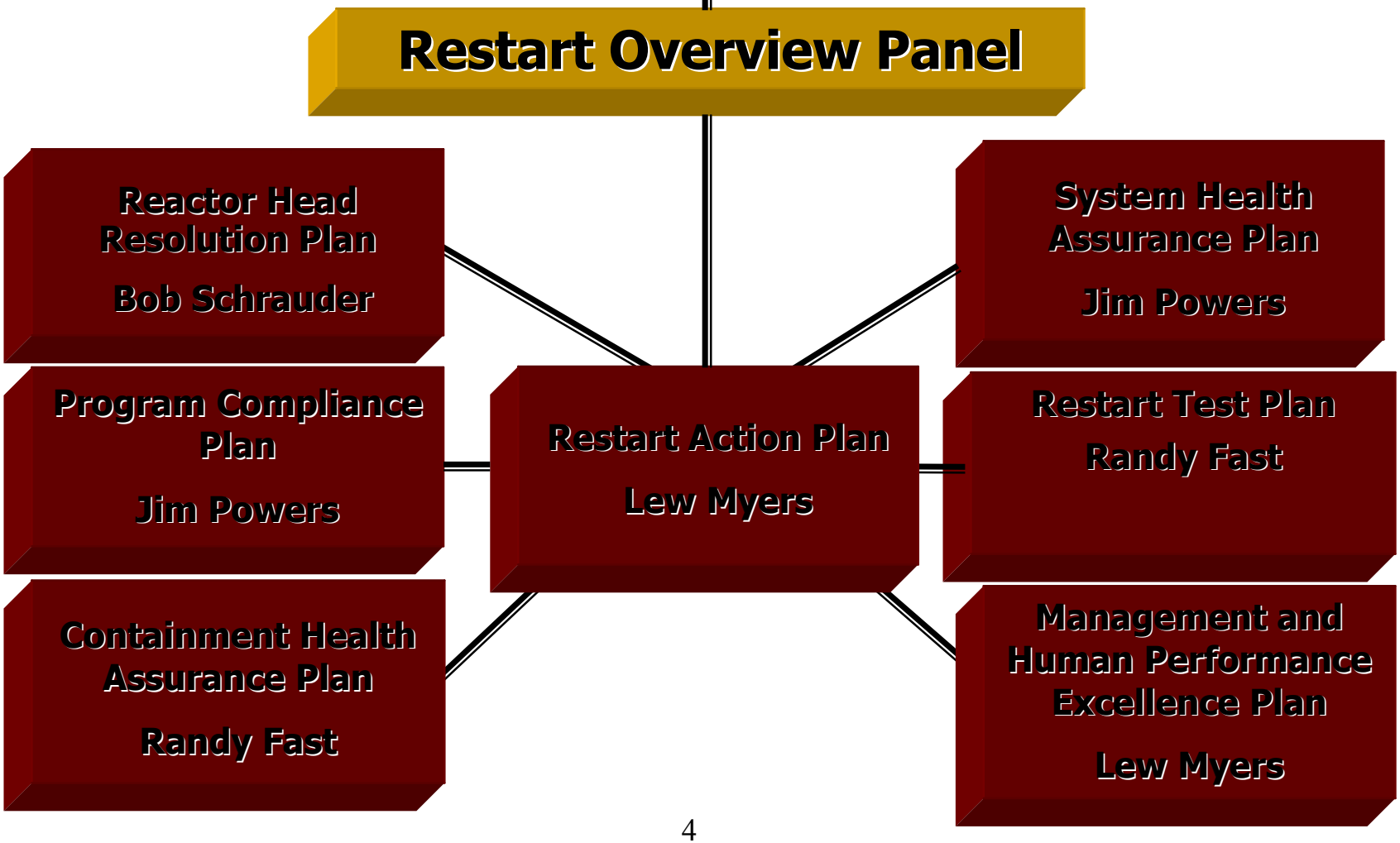
Return to Service Plan



Restart Readiness

Randy Fast

Plant Manager

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Restart Readiness

- Fuel
  - Inspections and corrective actions
  - Re-manufactured assembly
  - Fuel handling bridge modification/readiness
  - Experienced team (Operations and Framatome)
  - Training completed

Restart Readiness

- Plant
  - Reactor Coolant Pumps

Restart Readiness

- Plant
  - Upper portion of the Containment Emergency Sump

Restart Readiness

- Plant
  - Decay Heat Pit

Restart Readiness

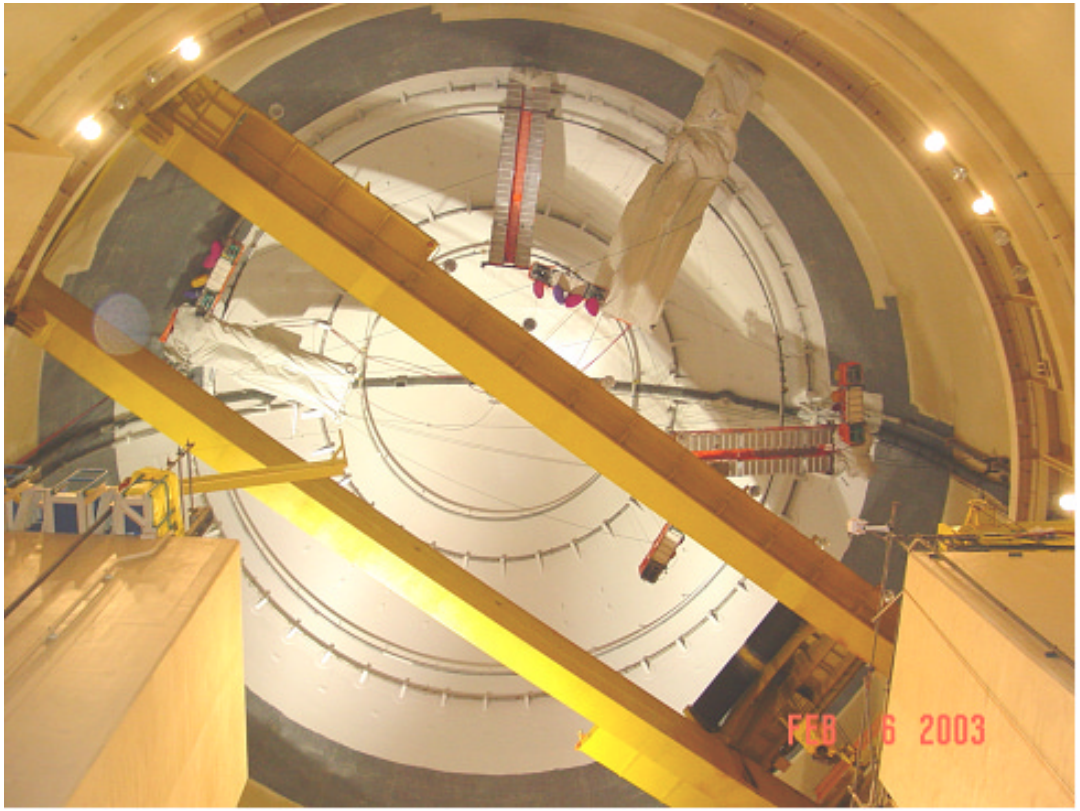
- Plant
  - Containment Air Coolers

Restart Readiness

- Plant
  - Plenum for Containment Air Coolers (Inside)

Restart Readiness

- Plant
  - Containment Dome



Restart Readiness

- Process
  - Readiness Reviews
  - Management Oversight
  - Refuel Director Roles & Responsibility
- Observations

Containment Integrated Leak Rate Test

Jim Powers

Director- Nuclear Engineering

Containment Integrated Leak Rate Test

- Integrated Leak Rate Test (ILRT): Containment is pressurized to test conditions that would occur in a 'design base accident.'
- Leakage Test Required by ASME Code
- Test Performed per 10 CFR 50, Appendix J
- Test Performed in 1991 and 2000
- Local leak rate test of repair of containment
- Scheduled Completion: Early March, 2003
- Containment Pressure: > 38 psig
- Length of Test: ~ 43 hours

System Health Assurance

Bob Schrauder

Director - Support Services

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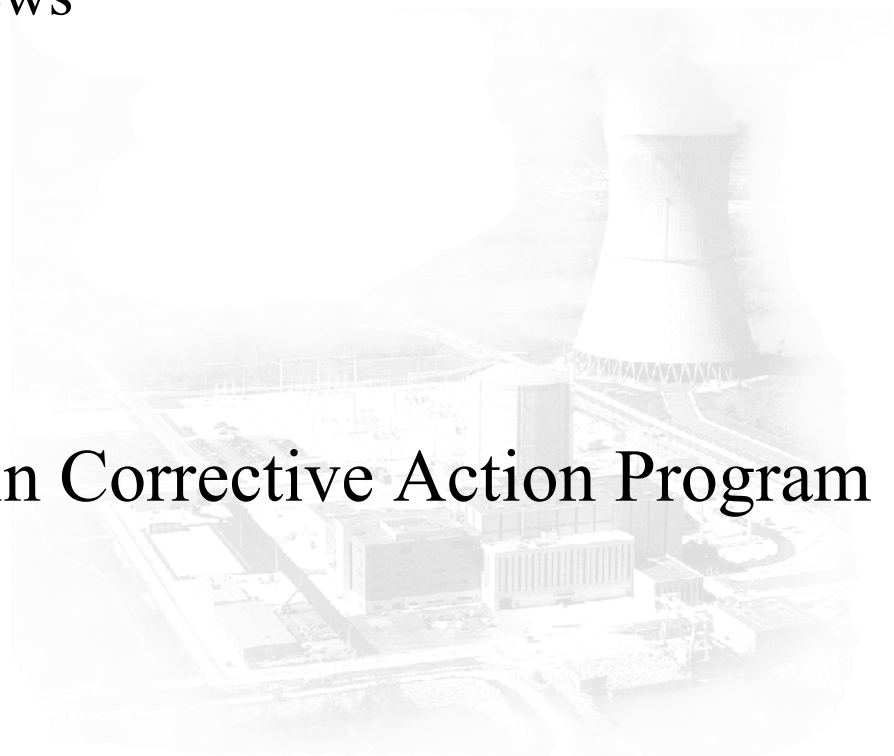
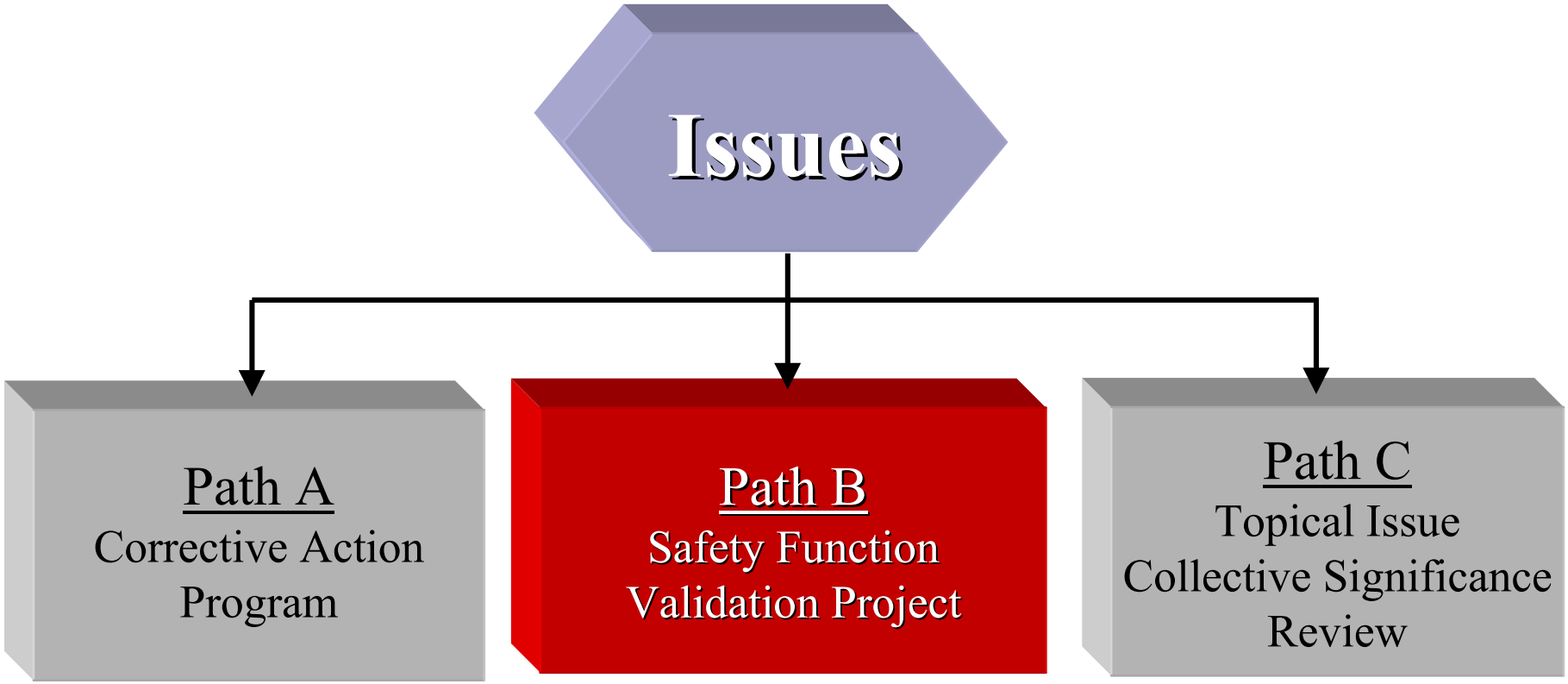
Background

- System Health Assurance Plan
  - Operational Readiness Reviews
  - System Health Readiness Reviews
  - Latent Issues Reviews
- Additional Reviews
  - Self Assessments
  - NRC Inspections
- Potential Issues Documented in Corrective Action Program

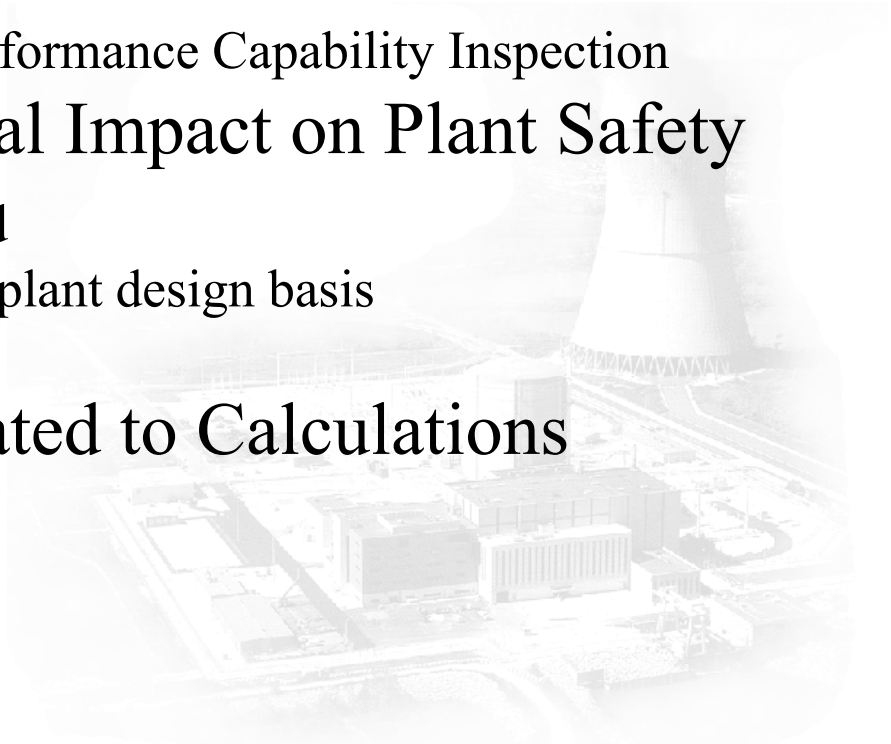


Issue Resolution



Safety Consequence Review

- Identify Potential Safety Issues
  - Restart required Condition Reports
  - Sources
    - Latent Issues Reviews (LIR)
    - Self Assessments
    - NRC Safety-System Design and Performance Capability Inspection
- Categorization Based on Potential Impact on Plant Safety
  - > 600 Condition Reports (CRs) reviewed
  - ~ 8% (51 CRs) with potential impact on plant design basis
  - 51 CRs represent 28 individual issues
- Majority of Potential Issues Related to Calculations



Safety Function Validation Project

- Purpose
  - To provide assurance that safety functions that provide significant contributions to Core Damage Frequency (CDF) can be performed
  - Assess extent of condition for calculation issues
- Evaluate Safety Functions Contributing > 1% of CDF
- Safety Functions are Provided by 15 Safety Systems
  - 5 evaluated by Latent Issues Review
  - 2 partially evaluated by Self-Assessment
  - 8 additional systems added to review

Safety Function Validation Project

- Review Methodology
  - Defined safety functions and attributes to be validated
  - Identified available calculations and testing that demonstrate system capability to perform function
  - Reviewed calculations and testing to validate safety function/attribute
- For Functions/Attributes Not Fully Validated
  - Performed technical evaluations
  - Determined effect on system capability
  - Supported Operability Determinations (if required)
- Non-Conformances Entered into Corrective Action Program

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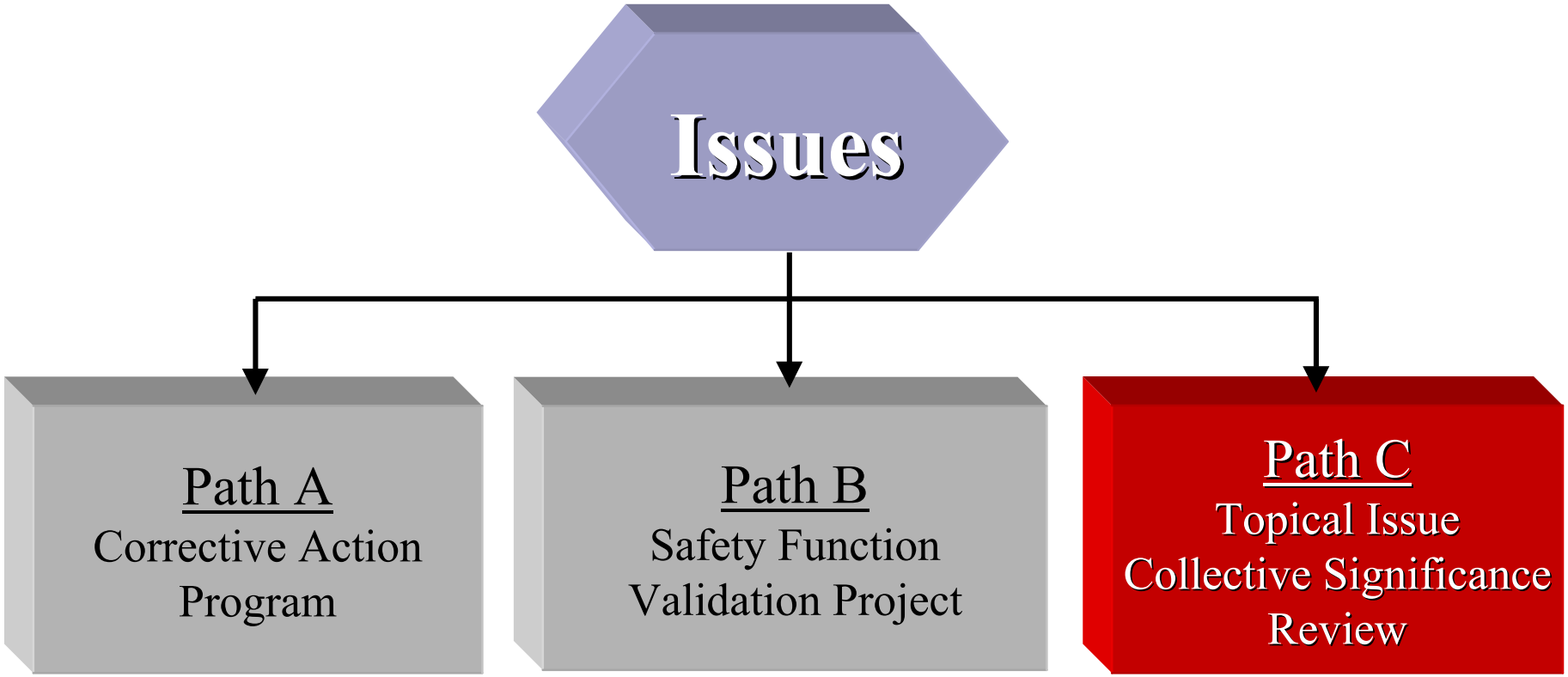
Project Results

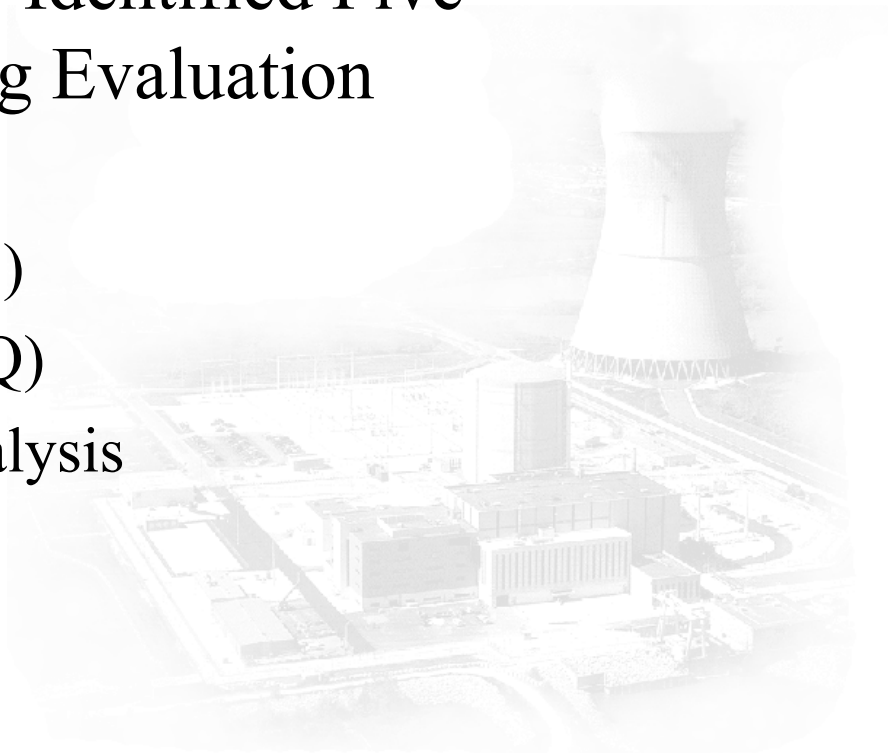
- Systems Fully Validated
  - High Pressure Injection
  - Main Steam
  - Steam Generator
  - Safety Features Actuation System
- Systems Requiring Additional Analysis
  - Low Pressure Injection System
  - Emergency Core Cooling System-HVAC
  - Steam Feed Rupture Control System
  - Electrical Distribution Systems

Issue Resolution



Collective Significance Reviews

- System Health Assurance Plan Reviews Identified Potential Cross Cutting Issues
- Collective Significance Review Identified Five Programmatic Areas Warranting Evaluation
  - Seismic Qualification
  - High Energy Line Break (HELB)
  - Environmental Qualification (EQ)
  - Appendix R Safe Shutdown Analysis
  - Station Flooding

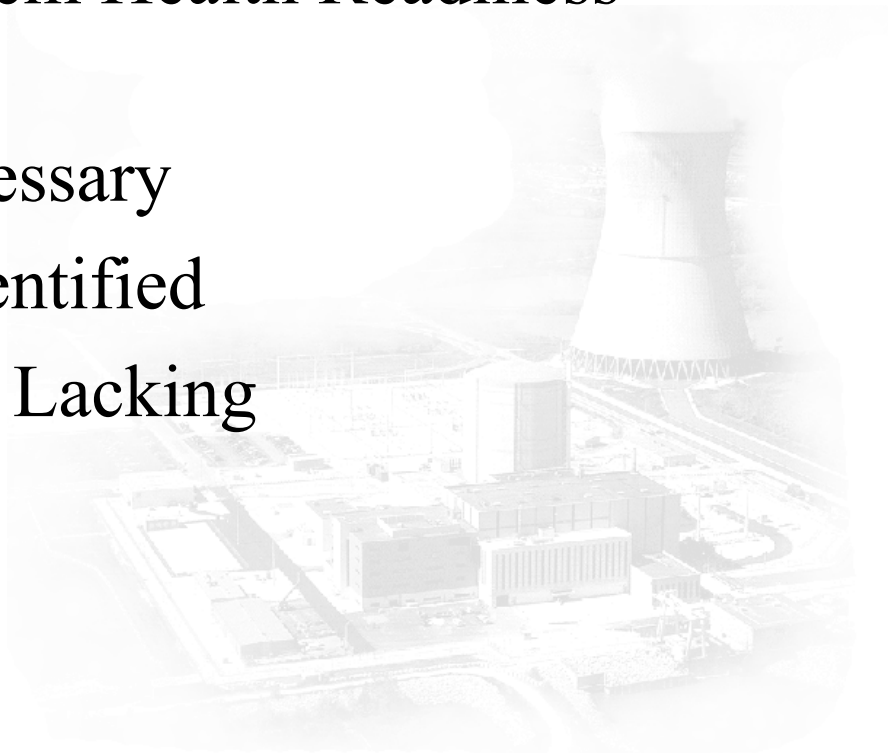


Review Process

- Nuclear Operating Business Procedure-LP-2006, "Collective Significance Review" Used
  - Consistent process
  - Consistent format
- Evaluation Process
  - Condition Report database provides population of issues to evaluate
  - Bin condition reports into common issue areas
  - Evaluate each issue area to determine programmatic impact
  - Conduct extent-of-condition evaluation where warranted
  - Determine and schedule corrective actions
- Engineering Assessment Board to Review Results

Summary

- Good Correlation with System Health Readiness Reviews
- More Analytical Work Necessary
- No Major Modifications Identified
- Some Rigor in Calculations Lacking



Restart Readiness and Safety Culture Assessment

Lew Myers
Chief Operating Officer - FENOC

Background

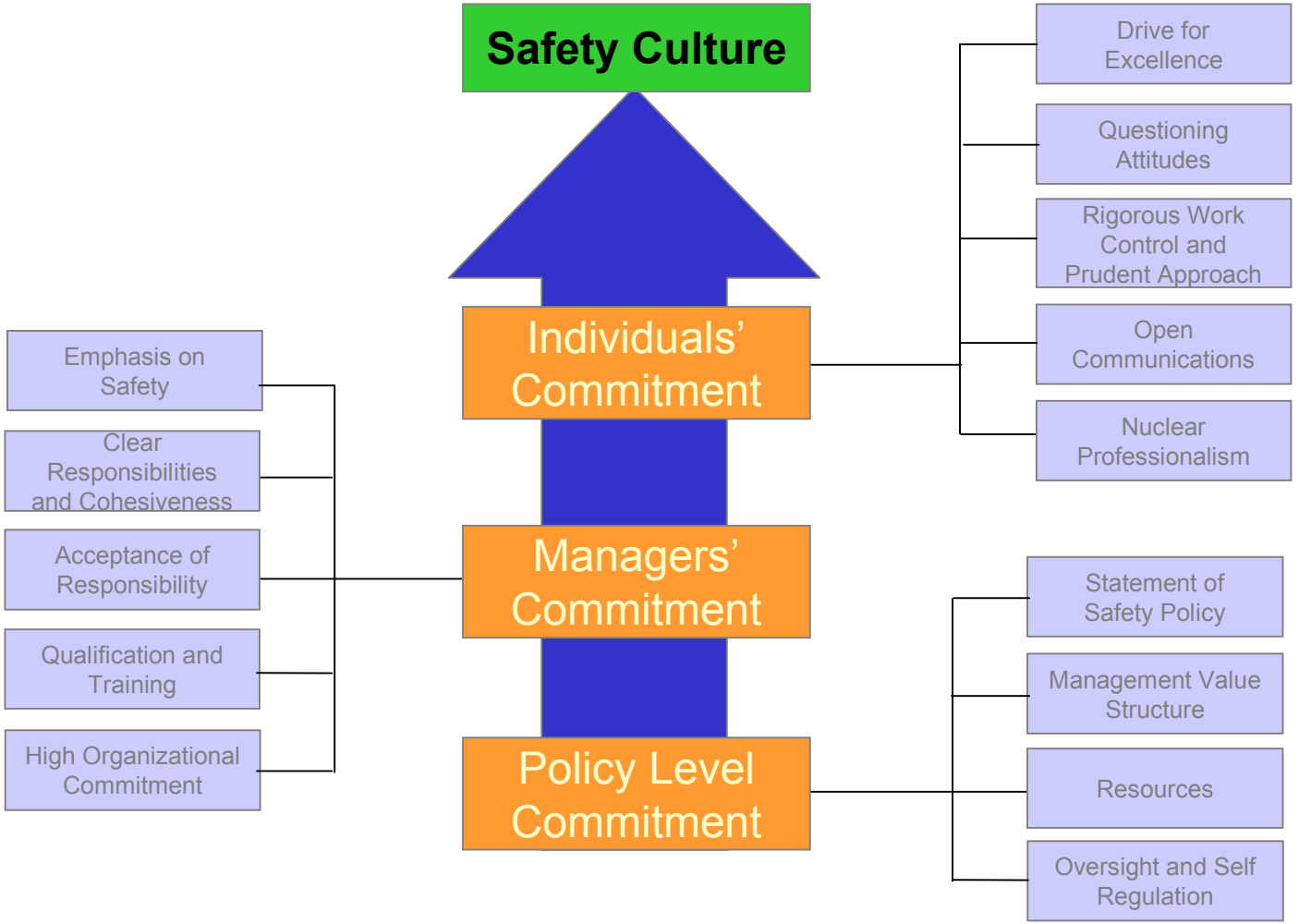
- Root Cause Report on Reactor Pressure Vessel Head Degradation Found:
  - Production focus, established by management, combined with taking minimum actions to meet regulatory requirements, resulted in acceptance of degraded conditions
  - Davis-Besse was operated as a stand alone plant
  - Conditions were identified at relative low threshold, but not properly classified or evaluated by management
  - Quality Assurance finding were mixed quality
  - Operations not active in role of improvements in plant conditions

Definitions

- **Safety Culture**: "That assembly of characteristics and attitudes in organizations and individuals which establishes an overriding priority towards nuclear safety activities and ensures that issues receive the attention warranted by their significance."

- **Safety Conscious Work Environment**: "That part of a Safety Culture addressing employee willingness to raise issues and management's response to these issues."

Safety Culture - - FENOC Model



Actions Taken

- Policy
  - FirstEnergy Board of Directors passed and issued a resolution on Nuclear Safety
  - FENOC Policy on Safety Culture and Safety Conscious Work Environment
  - Strengthened Incentive Program to tie to safety
  - Established Independent Executive - Level Quality Assurance, Executive VP Engineering and Chief Operating Officer
  - Strengthened Employee Concerns Program
- Management
  - Strong technically competent management team
  - Strengthened Corrective Action Program/Corrective Action Review Board
  - Improved leadership competencies
  - Strengthened problem-solving and decision-making Nuclear Operating Procedure
  - Engineering Assessment Board to monitor engineering products
- Individual
  - Reactor Vessel Head group training
  - Town Hall meetings
  - 4C's meetings with small groups with site Vice-President
  - Operability training
  - Requalified all Root Cause Evaluators

Restart Readiness Review

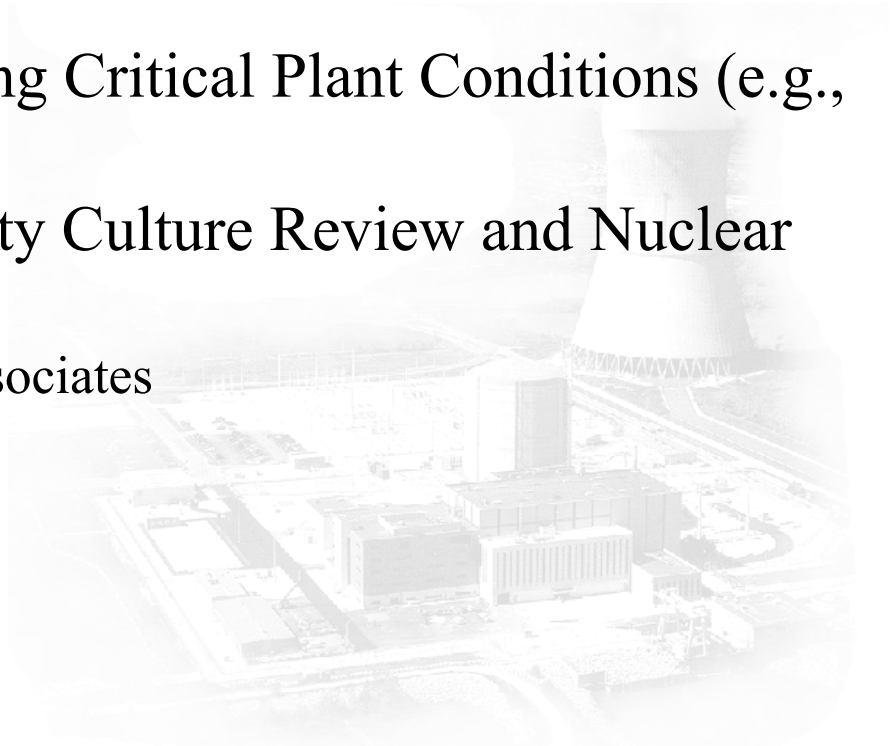
- Purpose
  - To determine why we should load fuel
- Group Review Readiness
- Assured Plant and Staff is Ready for fuel load
- Key Review Programs
  - Corrective Action Program
  - Management Observation Program
  - Radiological Control Program
  - Reactor Coolant System Leakage Program
  - Employee Concerns Program
- System Engineering Reviewed Key Systems
- Safety Culture of Employees was Assessed

Monitoring Safety Culture for Fuel Load

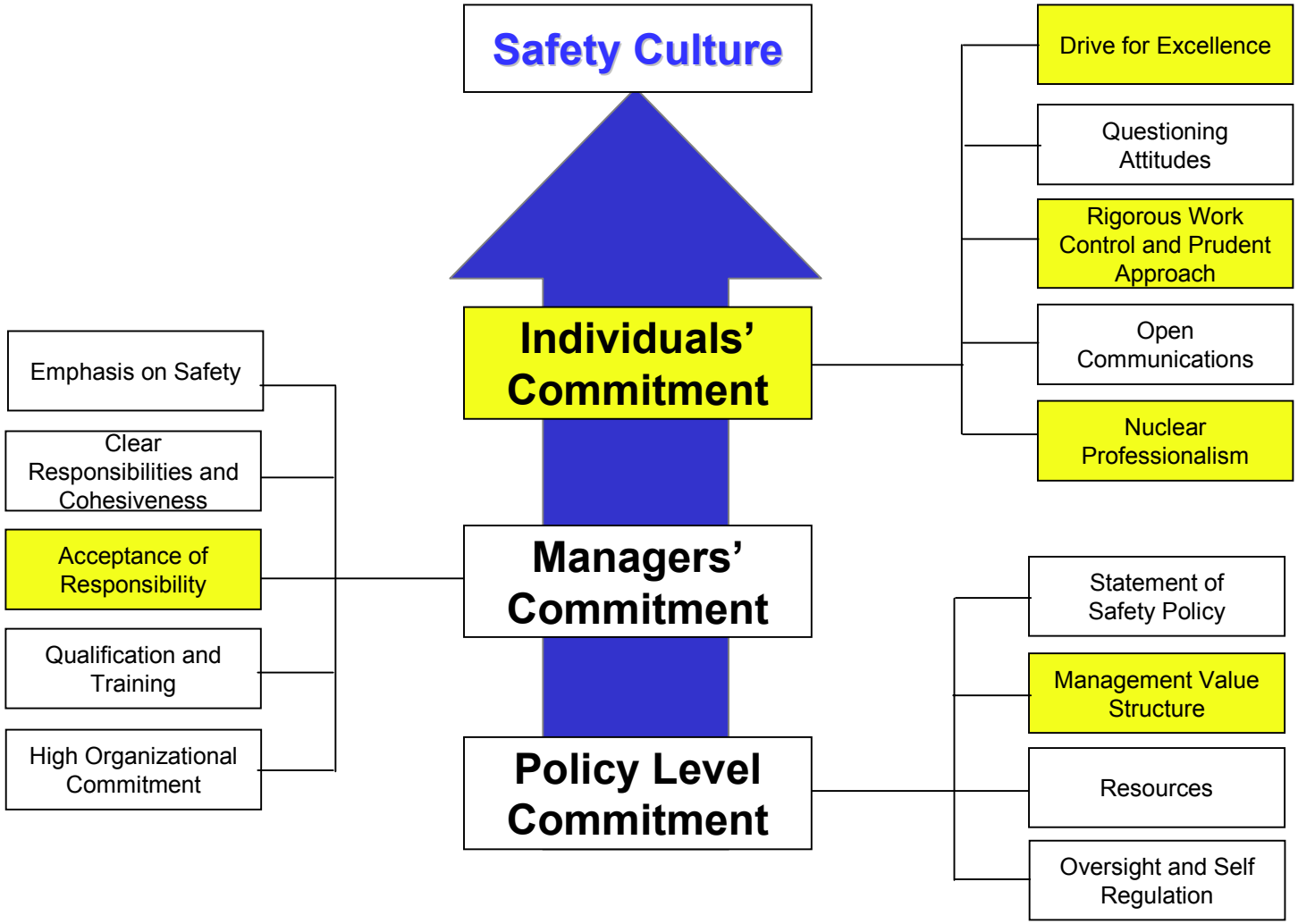
- Safety Culture Commitments Rating
  - Individual group assessment
  - **Green**: All major areas are acceptable with a few minor deviations
  - **White**: All major areas are acceptable with a few indicators requiring management action
  - **Yellow**: All major areas are acceptable with several indicators requiring management action
  - **Red**: Several major commitment areas do not meet acceptable standards and require immediate management action

Monitoring Safety Culture for Fuel Load

- Ratings Based on Convergent Assessment
  - Performance Indicators (e.g., Risk Index, Backlogs)
  - Management Observations
  - Demonstrated Performance During Critical Plant Conditions (e.g., Fuel Load)
  - Feedback from Independent Safety Culture Review and Nuclear Quality Assurance Assessments
    - Performance, Safety and Health Associates
      - Sonja B. Haber, Ph.D.



Fuel Load Safety Culture Assessment



Summary

- Safety Culture Model is Unique and State of the Art
- Safety Culture Assessment is Innovative
  - Under refinement
  - Provides fair assessment of status
  - Contains areas that are qualitative and quantitative
  - Useful tool for management focus
- Assessment is a Fair Representation of Our Readiness for Fuel Load

Nuclear Quality Assessments

Steve Loehlein

Manager - Quality Assessments

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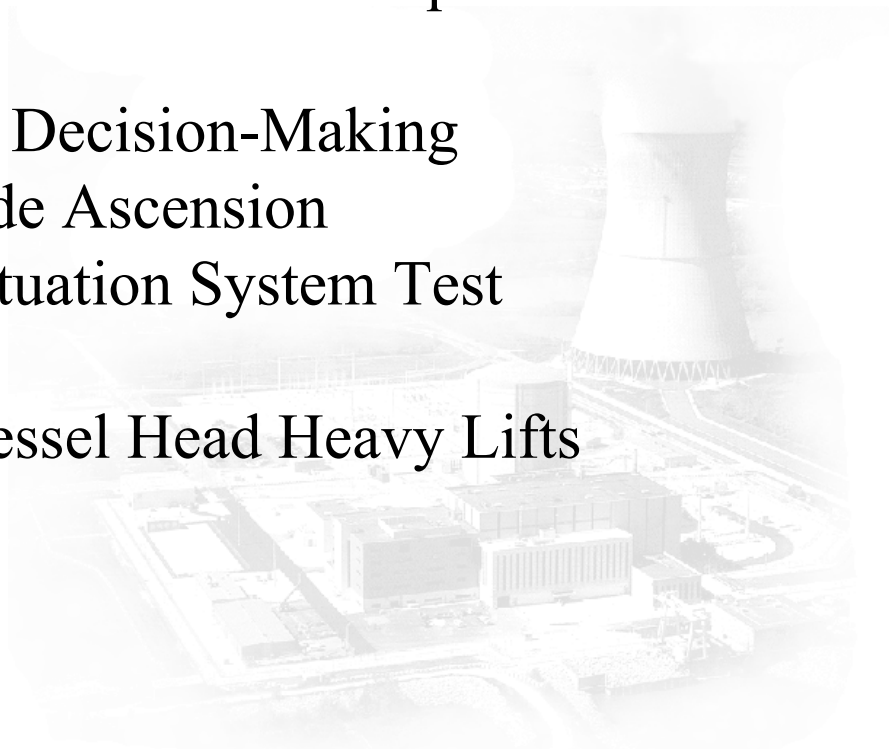
Nuclear Quality Assessments

- Past/Recent Observations and Assessments
  - Safety Function Validation Project
  - Fuel Spacer Grid Damage and Associated 'Stop Work'
  - Restart Readiness Meetings
  - Restart Station Review Board Decision-Making
  - Operations Readiness for Mode Ascension
  - Integrated Safety Features Actuation System Test Preparation and Completion
  - Reactor Coolant Pump and Vessel Head Heavy Lifts

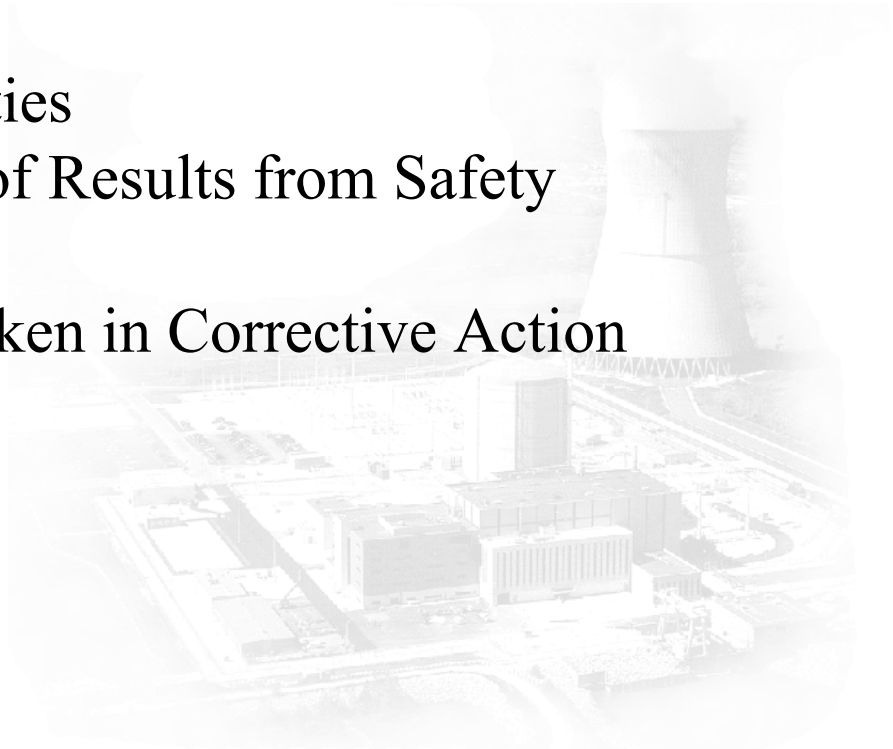


Nuclear Quality Assessments

- Current/Ongoing Activities
  - System Health Readiness Reviews
  - Program Reviews
  - Radiation Protection Phase II Program Review
  - Safety Culture and Safety Conscious Work Environment Independent Survey
  - Corrective Action Program Implementation Plan
  - Implementation of Corrective Actions
  - Safety Function Validation Project

Nuclear Quality Assessments

- Upcoming Observations and Assessments
  - Restart Test Plan and Associated Procedures
  - Fuel Movement Activities
  - Radiation Protection Activities
  - Evaluation and Integration of Results from Safety Function Validation Project
  - Effectiveness of Actions Taken in Corrective Action Program



Integrated Schedule Progress

Mike Stevens

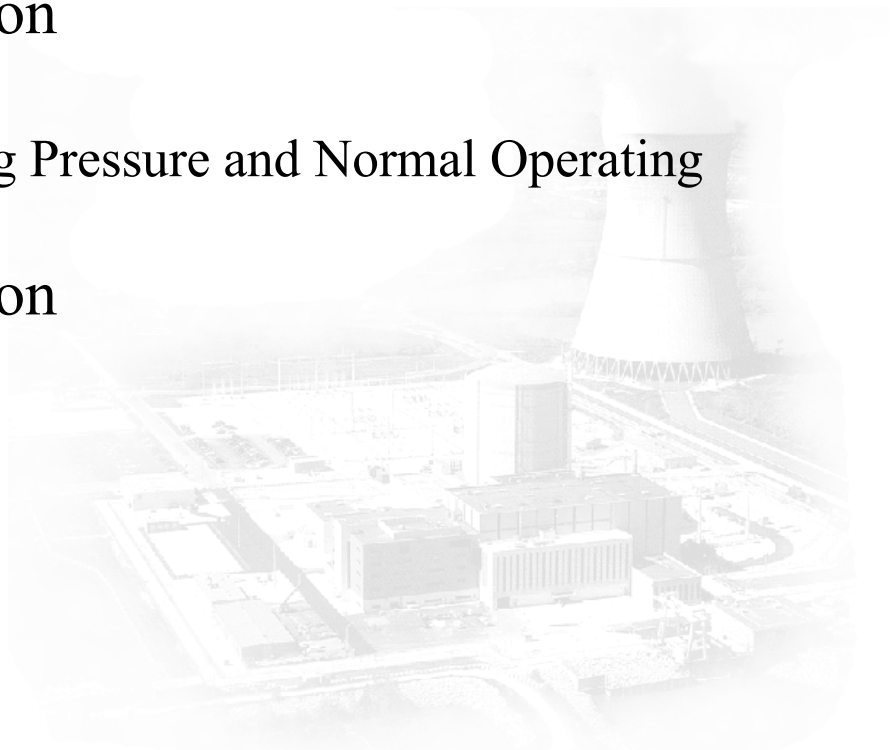
Director- Work Management

Integrated Schedule Progress

- Critical Path Milestones for Containment Testing
  - Install and Bolt the Reactor Head
  - Complete Lower Portion of Emergency Sump Strainer
  - Perform Integrated Safety Features Actuation System Test/Train #2
  - Complete Decay Heat Valve Tank
  - Fill and Vent the Reactor Coolant System
  - Perform Integrated Leak Rate Test on Containment Vessel

Integrated Schedule Progress

- Critical Path Milestones for Reactor Coolant System Testing
  - Readiness Review for Reactor Coolant System Pressure Test
  - Reactor Coolant System Inspection
  - Non-Nuclear Heat-up
    - Operate 7 days at Normal Operating Pressure and Normal Operating Temperature
  - Reactor Coolant System Inspection
  - Under Vessel Nozzle Inspection



Performance Measures

Clark Price

Owner - Restart Action Plan

Closing Remarks

Lew Myers

Chief Operating Officer - FENOC