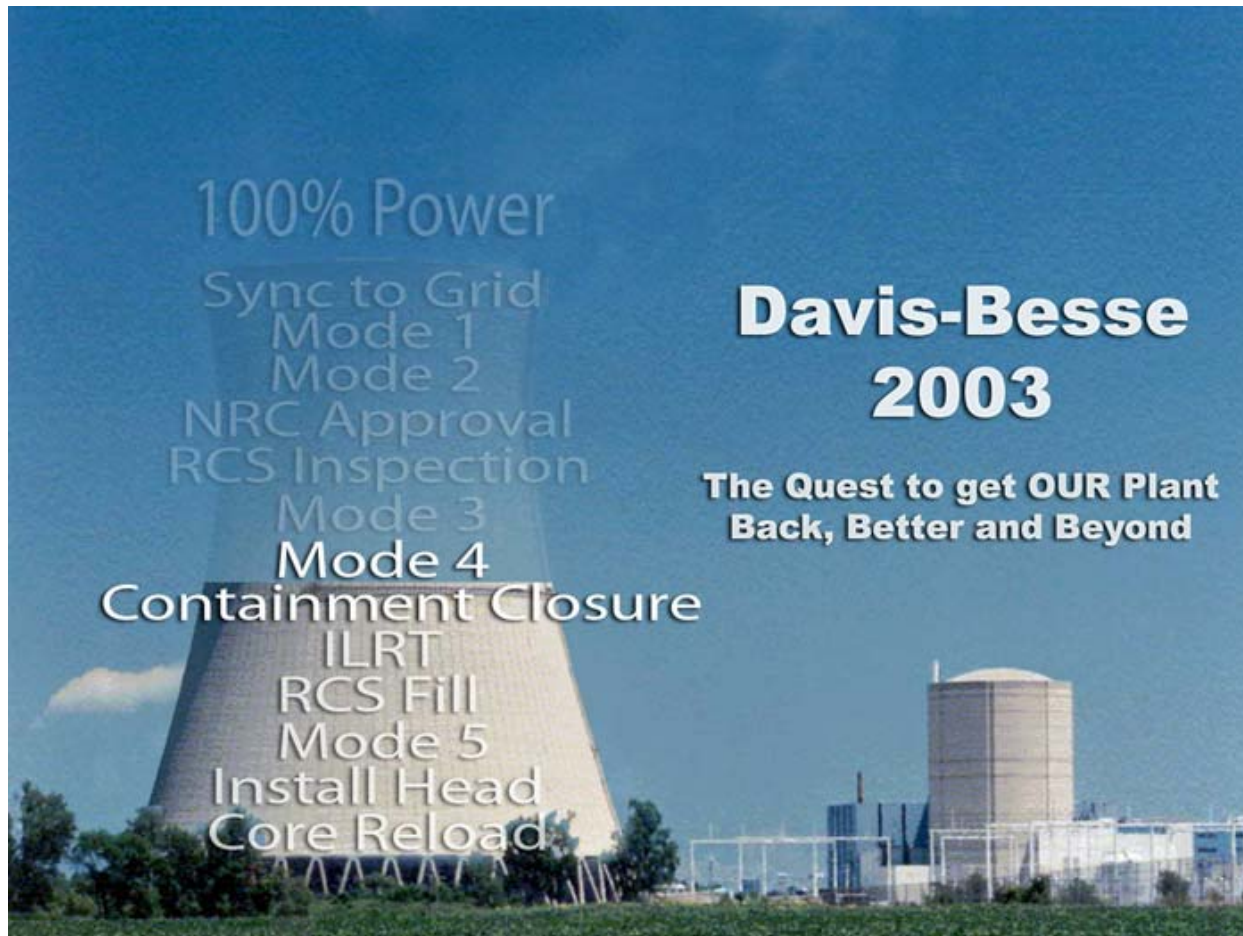


# ***Davis-Besse Nuclear Power Station***



## **IMC 0350 Meeting**

# Desired Outcomes

- Demonstrate that Davis-Besse is preparing for restart
  - Plant systems are being inspected and tested
  - Technical issues are coming to closure
  - Ongoing assessments of our people, plant and processes will ensure nuclear safety and event free operation

**Lew Myers**  
**Chief Operating Officer - FENOC**

# Meeting Agenda

- Plant Response to Loss of Transmission Grid.....Lew Myers
- Plant Status.....Mark Bezilla
- Closure of Technical Issues.....Jim Powers
- Operational Readiness Assessment Plan.....Rick Dame
- Quality Assurance Oversight.....Steve Loehlein
- Actions to Anchor Long-Term Improvement.....Lew Myers

**Lew Myers**  
**Chief Operating Officer - FENOC**

# Plant Response to Loss of Transmission Grid



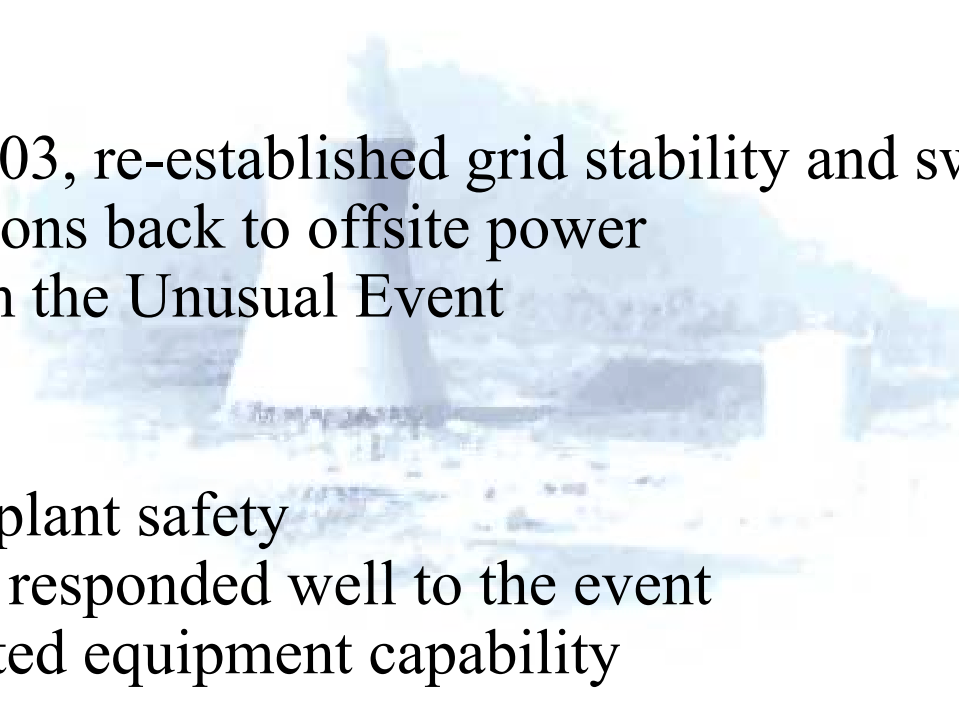
**Lew Myers**  
**Chief Operating Officer - FENOC**

# Plant Response to Loss of Transmission Grid

## •Event

- On 8/14/03, a power outage impacted electrical grid system
  - Offsite power lost shortly after 4 p.m.
  - Declared an Unusual Event at 4:21 p.m.
    - Loss of Offsite Power
    - NRC notified
  - Plant work activities stopped and Emergency Plan initiated
  - Technical Support Center manned
- Both Emergency Diesel Generators started to provide site electricity
  - Operated EDG #2 for Safety-Related equipment
  - EDG #1 and Station Blackout Diesel was on standby
- Perry was operating at 100% power and tripped off line
- Beaver Valley was operating at 100% power, reduced power for a short time and later resumed full power

# Plant Response to Loss of Transmission Grid

- 
- A faded, blue-tinted image of a power plant, likely the Davis-Besse Nuclear Power Station, serving as a background for the text.
- End of Event
    - On 8/15/2003, re-established grid stability and switched non-vital plant functions back to offsite power
    - Exited from the Unusual Event
  - Observations
    - Focus was plant safety
    - Employees responded well to the event
    - Demonstrated equipment capability

# Plant Status



**Mark Bezilla**  
**Vice President/Plant Manager**

# Desired Outcome

- 
- A faded, blue-tinted background image of a nuclear power plant, showing a large cooling tower and other industrial structures.
- Demonstrate that Davis-Besse's preparation for the Normal Operating Pressure (NOP) Test is thorough, well-planned, and comprehensive



# Plant Status

- Today's  
Plant  
Status



# Plant Status

- Management preparation and focus during NOP Test

- Nuclear Safety

- People

- Plant

- Processes



**Mode 4 Readiness Review Meeting**



# Plant Status



**Control Room**

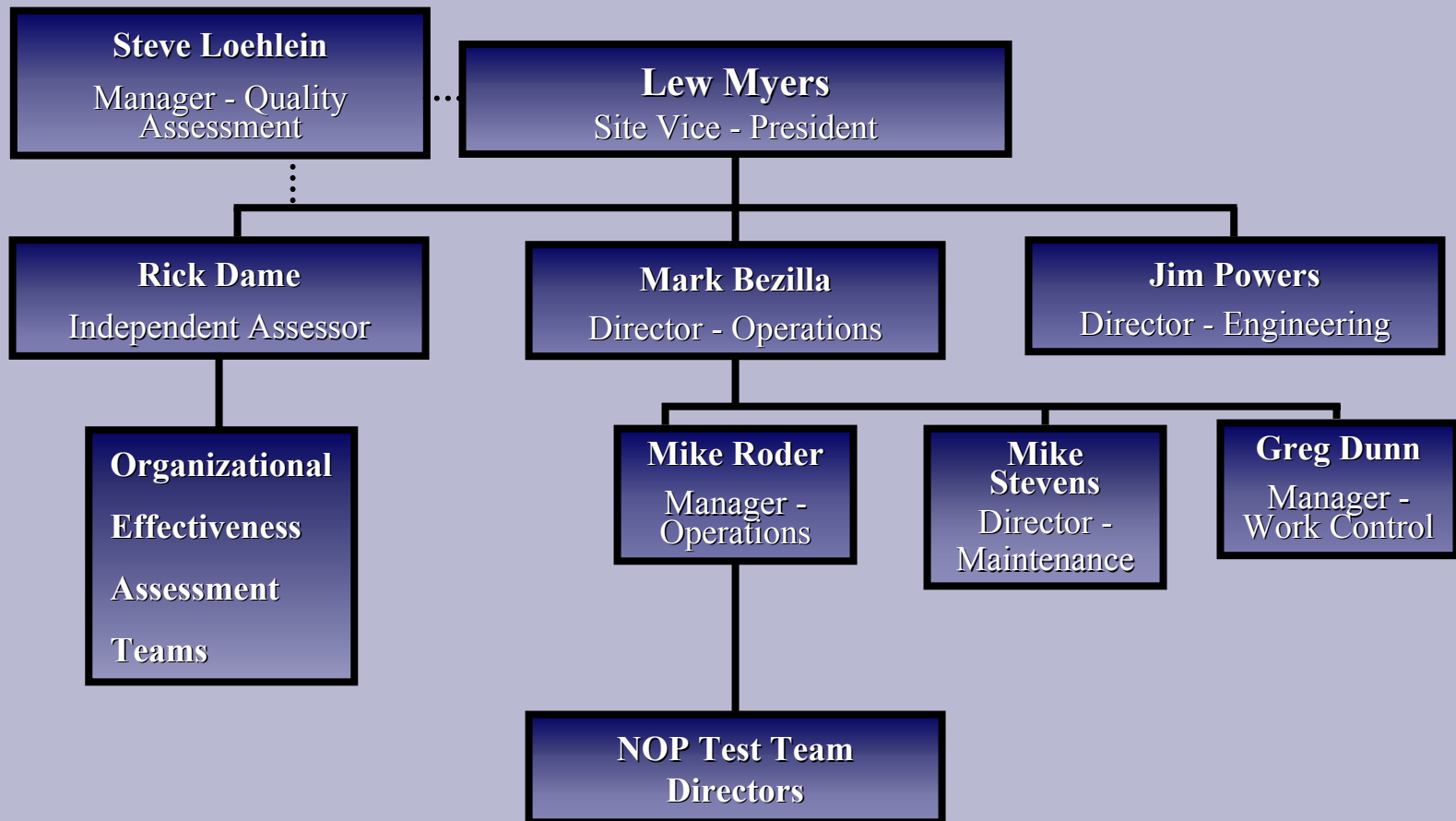


- Expectations of site employees during NOP Test
  - Nuclear Safety
  - Preparation
  - Communication
  - Accountability



# Plant Status

## NOP Test Management Team



# Plant Status

## NOP Test Team

**Mike Roder**  
Manager - Operations

**NOP Test Directors** - Days - Tony Stallard / Nights - Scott Wise  
**NOP Assistant Test Directors** - Days - Randy Patrick / Nights - Craig Gillig

**Boric Acid**  
**Inspection Managers**  
Pete Seniuk / Ron Perry

**Boric Acid Inspection**  
**Assistant Managers**  
Tom Simonetti  
John Grimm

**Boric Acid Inspection**  
**Teams**  
Various - Inspections have  
been pre-assigned

**RCS Sensitivity Leakage**  
**Test Manager**  
Days - Jerry Lee  
Nights - Gary Melssen

**RCS Sensitivity Leakage**  
**Test Support**  
Chemistry / RP

**Maintenance**  
**Contingency Support**  
**Managers**  
Days - John Reddington  
Nights - Bill Mugge

# Plant Status

- Normal Operating Pressure Test
  - Heat Reactor Coolant System to  $\sim 532^{\circ}$  using Reactor Coolant Pump
  - Pressurize Reactor Coolant System to  $\sim 2155$  pounds per square inch
  - Conduct initial walkdown
    - Perform  $> 1,000$  visual inspections of Reactor Coolant System and components
  - Conduct 2<sup>nd</sup> walkdown
    - Repeat same inspections
  - Perform post-maintenance and modification testing
  - Perform organizational effectiveness exercises

# Plant Status

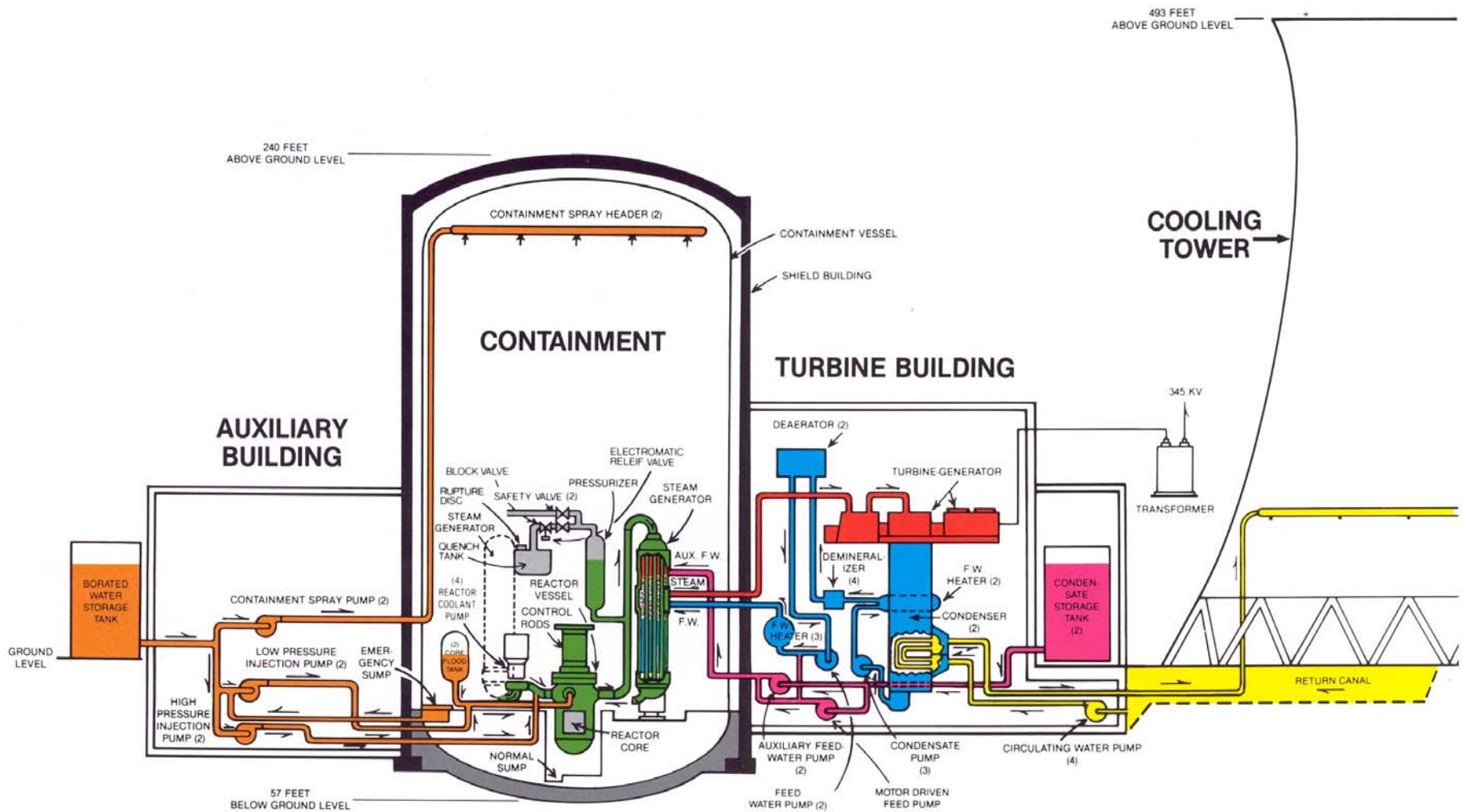
- Normal Operating Pressure Test being performed to demonstrate confidence in plant systems and equipment
  - Safety Equipment
    - Tested Safety Features Actuation System, Reactor Protection System, and Steam and Feedwater Line Rupture Control System
  - Primary Systems
    - Numerous inspections (Reactor Coolant System (RCS), Make Up & Purification, and Pressurizer)
    - Validate RCS Integrated Leakage Program and RCS Sensitivity Leakage Test (FLÜS Monitoring System)
  - Secondary Systems
    - Numerous inspections (Feed Water, Condensate, Circulating Water, Main Steam)

# Plant Status

- Primary System Inspections include
  - Reactor Vessel flange
  - Reactor Head Control Rod Drive Mechanism (CRDM) nozzle penetrations and flanges
  - Reactor Vessel Incore Monitoring Instrumentation Nozzles
  - Steam Generator and Pressurizer manways and hand-holes
  - Reactor Coolant Pump covers and seal area
  - Pressurizer Heaters, Pressurizer Safety and Relief Valves
  - Body to bonnets on RCS Valves and packing glands
  - Bolted connections and flanges



# Davis-Besse Nuclear Power Station



# Plant Status

## Accomplishments

- Replaced Reactor Pressure Vessel Head
- Improved Containment Emergency Sump
- Modified High Pressure Injection Pump Recirculation Line
- Painted the Containment Dome
- Installed FLÜS Online Leak Monitoring System
- Replaced Containment Air Coolers
- Enhanced Decay Heat Valve Enclosure
- Cleaned Reactor Vessel
- Confirmed Fuel Integrity
- Performed Boric Acid Extent of Condition Inspections, Evaluations, and Corrective Actions
- Cleaned Containment Building

# Plant Status

## Activities Completed

- August, 2003
  - Shipped original Reactor Pressure Vessel Head by rail to Envirocare Low-Level Radioactive Waste Facility in Utah for permanent storage



# Plant Status

## Actions Completed

- Items completed to date
  - ~ 100 Modifications
  - ~ 7,700 Work Orders
  - ~ 14,600 Condition Report Evaluations
  - ~ 23,800 Corrective Actions
  - ~ 15,000 Surveillance Tests
  - ~ 2,200 Preventive Maintenance Tasks
  - ~ 2,700 Procedure Changes

## Plant Status

### Future Activities

- Complete 7-Day Normal Operating Pressure Test of Reactor Coolant System
- Return to Mode 5 and assess results
- Remove / Modify / Re-install High Pressure Injection Pumps
- Address people, plant, and process issues identified
- Transition from Return to Service Plan practices to normal operating practices
- Request NRC permission to restart plant

# Closure of Technical Issues



**Jim Powers**  
**Director - Engineering**

# Desired Outcome

- Demonstrate that technical issues are coming to closure

# Closure of Technical Issues

- Return to Service Plan reviewed plant systems
  - Inspections complete
  - Issues identified and documented
  - Issues are clearly understood and bounded
- Three issues remain
  - High Pressure Injection Pumps
  - Electrical Distribution System
  - Containment Air Coolers



# Closure of Technical Issues High Pressure Injection Pumps

## •Status

- Qualification testing in progress
- Debris characterization finalized
- Pump Guinard hydrostatic bearing design adapted and improved for Davis-Besse High Pressure Injection pumps
- Hardfaced replacement parts ordered
- Pump modifications to be made following Normal Operating Pressure Test

# Closure of Technical Issues Electrical Distribution System

- Status

- Analysis complete
- 1<sup>st</sup> Mode 4/3 modifications complete
- 2<sup>nd</sup> Mode 4/3 modifications identified
- Final resolution to occur prior to restart

# Closure of Technical Issues

## Containment Air Coolers

### •Status

- During loss of offsite power event from electrical grid disturbance on 8/14/03, Containment Air Coolers experienced a water pressure surge
- Misalignment and expansion of piping bellows assemblies identified
- Significant Condition Adverse to Quality created
- Event Investigation Team/Problem-solving and Decision-making Process initiated
- Short-term assessment/actions completed
- Long-term actions being finalized

# Operational Readiness Assessment Plan



**Rick Dame**  
Reliability Unit - Supervisor

# Operational Readiness Assessment Plan

- Desired Outcome
  - Demonstrate the readiness of people and processes to safely and reliably operate the plant

# Operational Readiness Assessment Plan

- Methodology

- Conduct observations and assessments of organizational performance during 7-Day Reactor Coolant System (RCS) Normal Operating Pressure (NOP) Test
- Perform exercises to ensure that standards and processes are appropriate to support safe and reliable plant operation

# Operational Readiness Assessment Plan

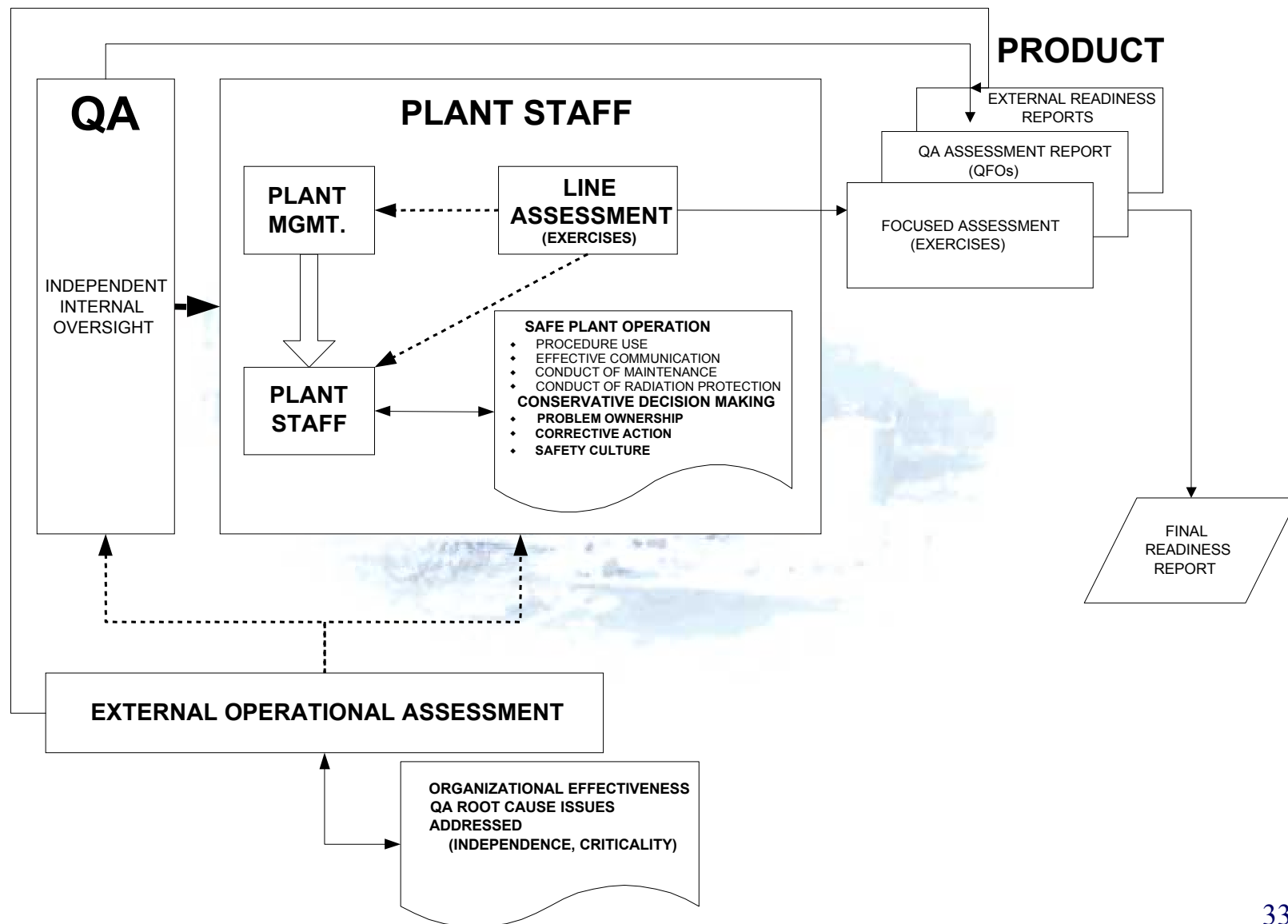
- Assessment Criteria
  - Davis-Besse Operations Section “Conduct for Excellence” Handbook
  - Davis-Besse “Conduct of Operations” procedure
  - World Association of Nuclear Operators (WANO) Performance Objectives and Criteria

# Operational Readiness Assessment Plan

- WANO Performance Criteria
  - Provides a consistent standard of excellence to determine station strengths and weaknesses
  - Selected WANO Performance Objectives for this assessment are “Organizational Effectiveness” and “Operations”



# INTEGRATED ASSESSMENT DURING NOP TESTING



# Operational Readiness Assessment Plan

- Data Gathering Opportunities
  - Operational evolutions associated with the 7-Day RCS NOP Test
  - Organizational response to actual emergent issues
  - Organizational response to emergent issue exercises

# Operational Readiness Assessment Plan

- “Emergent Issue” Exercises
- Exercises will be designed to have minimal impact on Control Room crews
- Examples of exercises:
  - Operability Determination
  - Priority 200 Work Order
  - Procedure change
  - Immediate Investigation
  - Off-hour equipment challenge

# Operational Readiness Assessment Plan

- 7-Day NOP Test Assessment Documentation
  - Internal Assessment Team - FENOC Focused Self-Assessment Report
  - External Assessment Team - External Readiness Reports
  - Quality Assurance (QA) Assessment Team - QA Assessment Report
- Results will be included in the final Integrated Restart Report

# Quality Assurance Oversight



**Steve Loehlein**

**Manager – Nuclear Quality Assessment**

# Corrective Action Program

- Corrective Action Review

- 5402 completed corrective actions were reviewed
- 4980 (92%) acceptable
- 422 (8%) inconclusive/unacceptable
  - 221 answered as of 9/7/03
  - 185 documentation errors/inadequacies (84% of the 221)
  - 36 missed items or procedure errors (16% of the 221)
- Status
  - Continuing resolution indicates that relatively few issues were missed, and these are of low significance

# Corrective Action Program

- Focus for Improvements
  - Implement effective trending
  - Increase management involvement in improving program implementation
    - Increase management involvement in Management Review Board
    - Increase management involvement in ensuring issues are appropriately evaluated

# Oversight Activities for Mode 4

- Assessment of Restart Activities
  - Ongoing oversight of qualification testing at testing laboratory
  - Some of the Focus areas
    - Operations Leadership
    - Safety Culture
    - Configuration Control
    - Procedure Compliance
    - Test Control



# Oversight Activities for Mode 4

- Assessment during NOP Testing Activities
  - Control Room Command and Control
  - Component/System Testing Activities
  - RCS walkdown teams
  - Organizational Response to Emergent Issues
    - Identification and prioritization of issues
    - Quality of problem resolutions

# Actions to Anchor Long-Term Improvement



**Lew Myers**  
**Chief Operating Officer - FENOC**

# Actions to Anchor Long-Term Improvement

- New officers and management
  - At corporate level
  - At plant level
  - New corporate-level departments for fleet-wide improvements
- Improvements in plant systems to add margin
- New vision, strategic objectives, and metrics
  - Safe Plant Operation
  - Improved Outage Performance
  - Excellent Material Condition
  - Fleet Efficiency and Effectiveness

# Actions to Anchor Long-Term Improvement

- Improvements for Personnel Performance
  - Training on lessons learned
  - New training for managers and supervisors on nuclear safety focus and professionalism
  - Department level expectations
  - Improvements in communications and teamwork
  - Alignment of management and personnel
  - Improvements in personnel evaluations and development
  - Leadership development
  - Operations Leadership

# Actions to Anchor Long-Term Improvement

- Improvements in Programs
  - Program reviews and benchmarking
  - Corrective Action Program
  - Employee Concerns Program
  - Operating Experience Program
  - Radiation Protection Program
  - Boric Acid Corrosion Control and Lead Detection Programs
  - Operability Determinations
  - Problem Solving and Decision-Making

# Actions to Anchor Long-Term Improvement

- Improvements in Monitoring and Oversight
  - Management Observations
  - New performance indicators
  - New Safety Culture Assessments
  - New Engineering Assessment Board and improved Corrective Action Review Board
  - Augmented independence and capability of Quality Assurance
  - Improvements in Company Nuclear Review Board and Board oversight

# Closing Comments



**Lew Myers**  
**Chief Operating Officer - FENOC**