Davis-Besse Nuclear Power Station

Return to Service Plan Update

November 13, 2002

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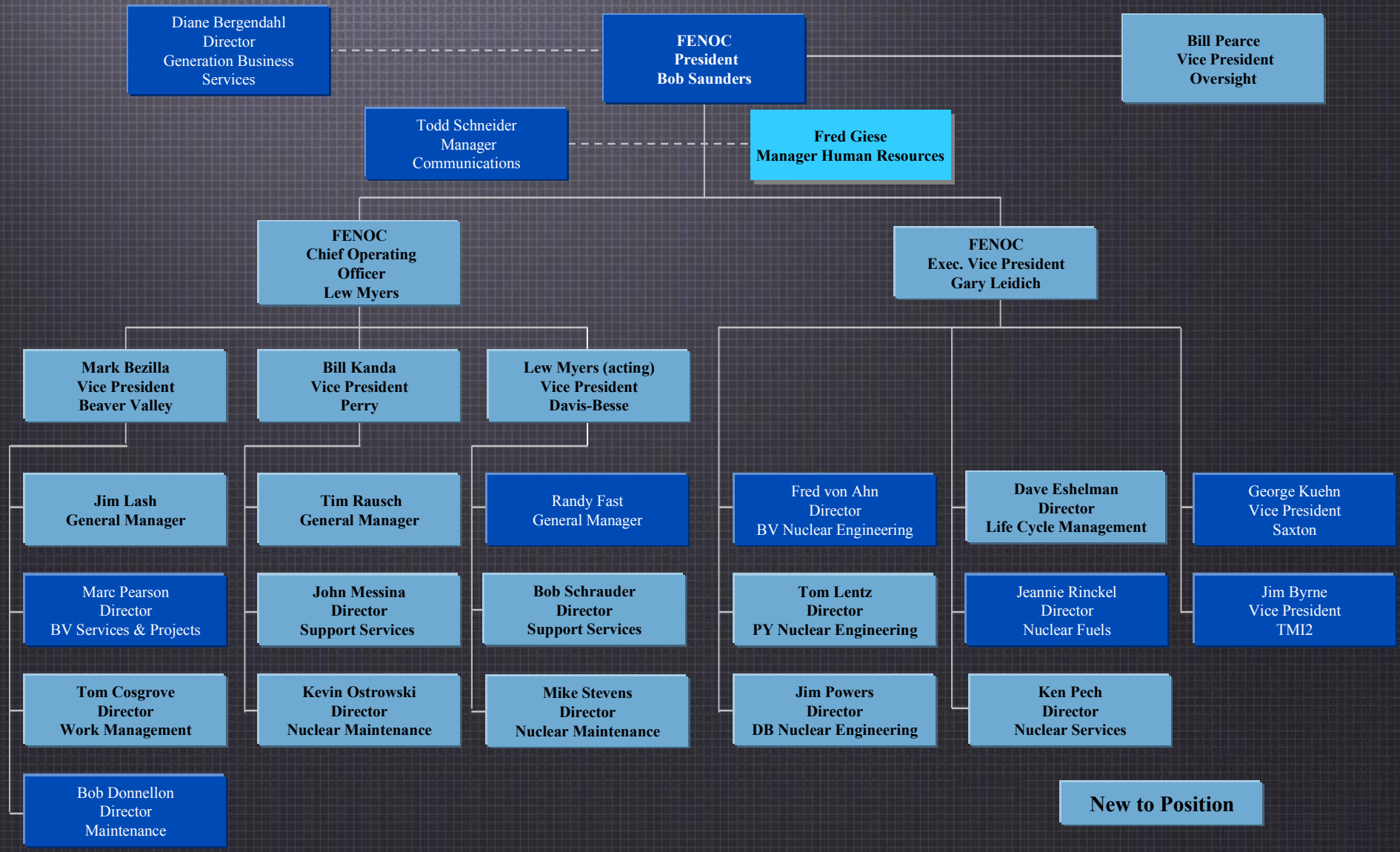
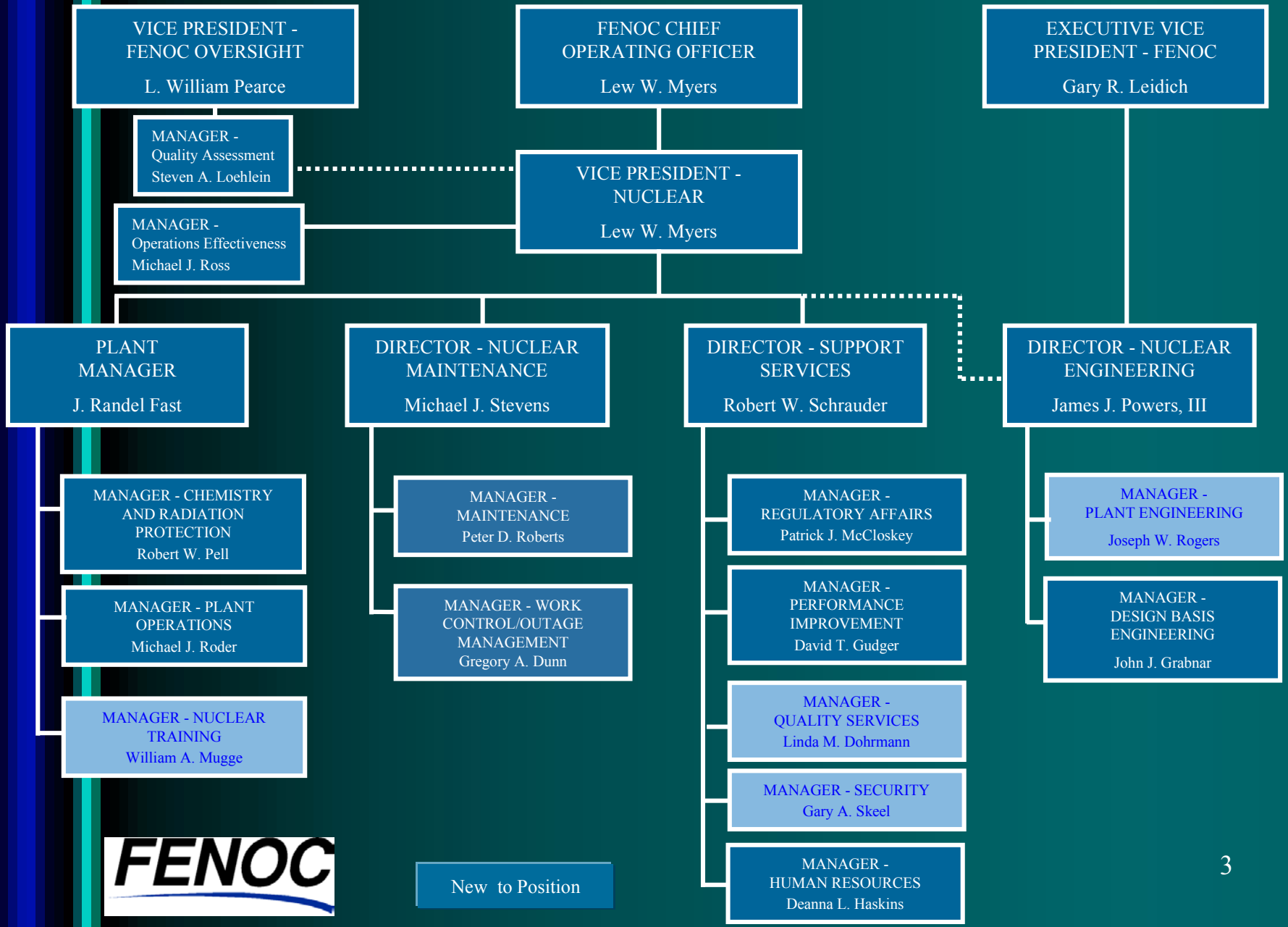
FENOC Management Reorganization



Davis-Besse Site Organization



Introduction

Lew Myers
FENOC Chief Operating Officer

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Desired Outcomes

- Demonstrate the value-added by our Quality Assessment organization
- Demonstrate progress on key Building Blocks
- Provide plan for addressing lower vessel penetrations
- Describe actions being taken to address design questions
- Review the schedule

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Quality Assessment
Value-Added

Steve Loehlein

Manager - Quality Assessment

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Quality Assessment Value-Added

Major Responsibilities

- Ensure the plant is ready to restart and operate safely
- Ensure the staff is ready to restart and sustain safe performance
- Ensure effectiveness of the Quality Assessment organization so that we are ready for sustained performance

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Quality Assessment Value-Added

Plant and Staff Readiness Assessments

- Alignment with Building Blocks
- Three-Step Approach
  - Confirm acceptability of Building Block Plans
  - Provide oversight of the plans
    - Includes independent parallel efforts to measure effectiveness
  - Evaluate effectiveness of the plans, based on the results

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Quality Assessment Value-Added

Reactor Head Resolution Plan

- Concerns with contractor QA regarding qualification of rebar cad-welding
  - "Stop Work" issued by contractor
  - Oversight provided on remediation plan

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Quality Assessment Value-Added

Containment Health Assurance Plan

- Identified containment Design Basis issues
- Provided feedback to line early in development of plan
- Independent field walkdowns
  - Identified minor differences
- Identified issues with qualifications and work packages related to the valve contractor
- Verified conditions of the reactor vessel by video review and direct observation

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Quality Assessment Value-Added

Program Compliance Plan

- Independent Phase 1 Program Readiness Baseline Assessment completed for the 6 selected programs
- Observed 49 Program Review Board presentations for the Phase 1 reviews
- Observed all Phase 2 program presentations to-date
- Confirmed intrusive, effective reviews by Program Review Board

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Quality Assessment Value-Added

System Health Assurance Plan

- Operations Readiness Reviews
  - Generated condition reports to document failure to properly capture follow-up items from the review meetings
- System Health Readiness Reviews
  - Independent review complete for 3 systems
  - Identified that line reviews of commitments and condition reports needed to be more extensive

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Quality Assessment Value-Added

Management and Human Performance Excellence Plan

- Case Study Involvement
  - Provided feedback throughout development
  - Assessed effectiveness of Case Study through observation
  - Shared Case Study with Perry and Beaver Valley Quality Assessment organizations
- Management Observation Program

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Quality Assessment Value-Added

3rd Quarter Assessment

- Noteworthy Issues
  - Issued a stop work order on nuclear fuel movement due to spacer grid strip damage during fuel movement
  - Ineffective corrective action by Radiation Protection for access control of locked high radiation areas
  - Issued a stop work order for inadequate work documentation and work execution for feedwater heater
  - Non-destructive examination for the new Caldon feedwater flow meters was inadequate

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Quality Assessment Value-Added

Strengthening Quality Assessment

- **What we've done**
  - **Organizational changes**
  - **Management changes**
  - **Taking Action**
    - Stop work orders
    - Independent, Intrusive Assessments
    - Case Study involvement with site
    - Case Study sharing with other FENOC sites
- **Quality Assessment Program Review in progress**

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Reactor Head Restoration

Bob Schrauder

Director -- Support Services

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Reactor Vessel Bottom Head Plan

- Thoroughly clean bottom head
- Raise Reactor Coolant System to Normal Operating Pressure and Temperature
- Hold for 3-7 days
- Lower temperature and pressure
- Perform bare metal inspection prior to restart
- Perform bare metal inspection at Mid-Cycle Outage.
- Install on-line leak detection system

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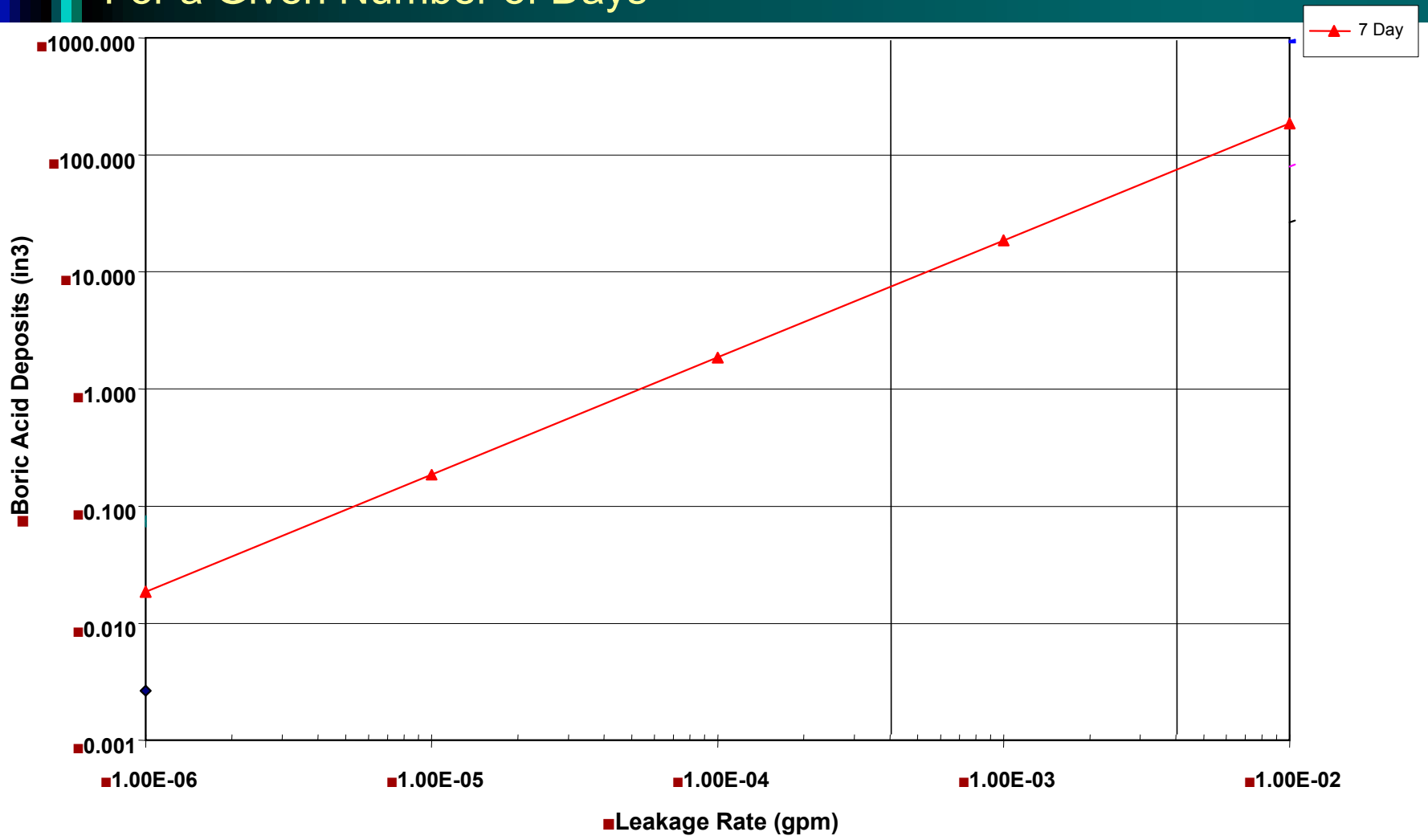
Boron Deposit Rate For 2000 ppm Boron Reactor Coolant Leakage (Unchoked Flow) 100% Deposition Rate For a Given Number of Days



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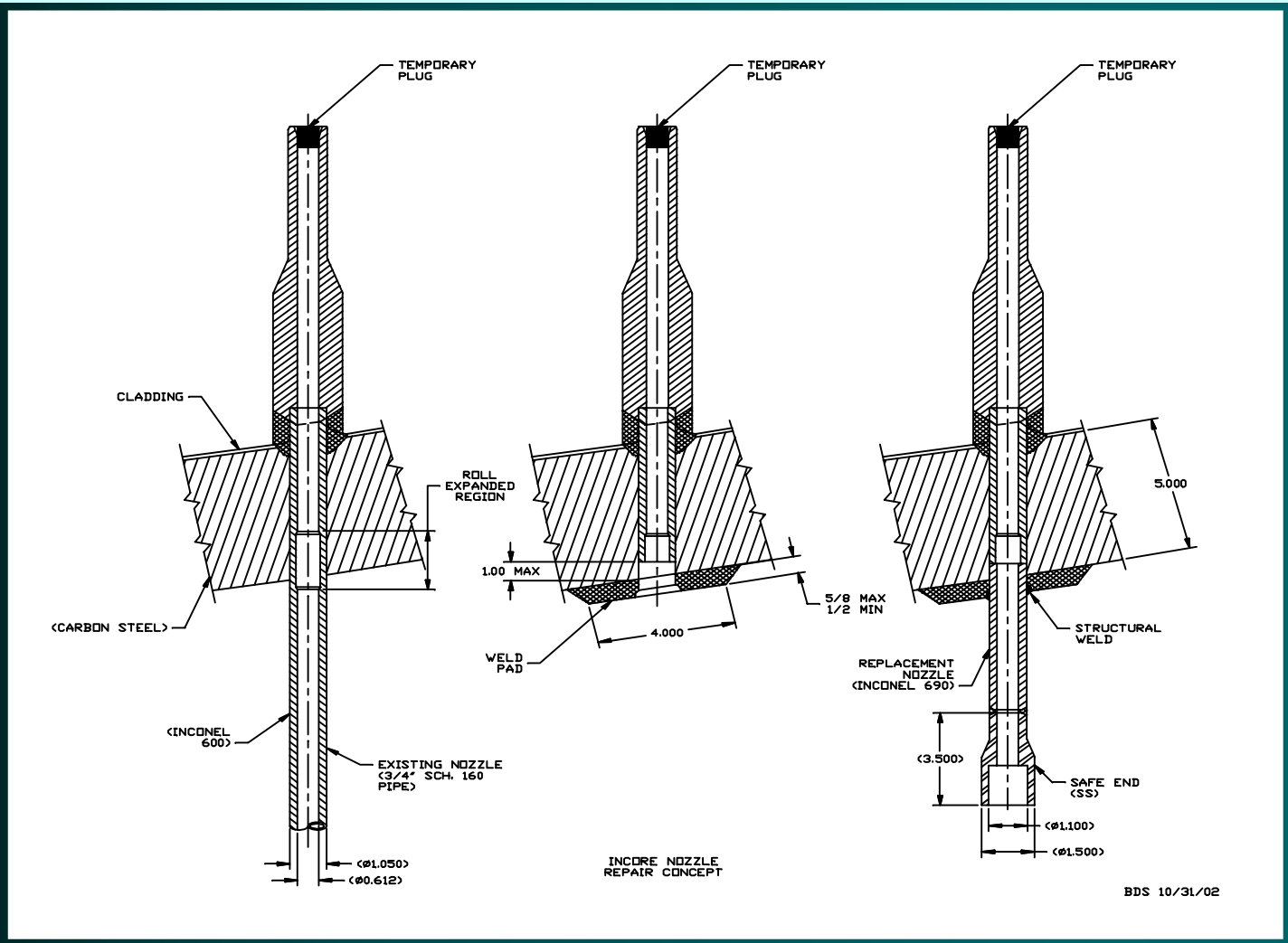
Reactor Head Resolution Plan



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System Health Assurance

Jim Powers

Director - Technical Services

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System Health Assurance

Collective Significance Assessment

- Combines results of individual evaluations
- Determines areas requiring improvement
- Considers significance of findings

Inputs to Collective Significance

- Latent Issues Reviews
- System Health Readiness Reviews
- Self Assessments of Design Basis calculations
- Inspection results

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System Health Assurance

Collective Significance Assessment

- Latent Issues Review results (5 systems):
  - 31 topical areas checked for 5 systems
  - 14,898 individual checks performed
  - 777 discrepancies identified (5%)
  - 447 discrepancies classified as restart (3%)

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System Health Assurance

Collective Significance Assessment

- Topical areas with collective significance:
  - Electrical calculations/analysis
  - Instrumentation & Control calculation/analysis
  - Mechanical and Structural calculation/analysis
  - System Descriptions
  - Configuration Management

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System Health Assurance

Collective Significance Assessment

- Common attributes with collective significance:
  - High Energy Line Break
  - Environmental Qualification
  - Appendix R
  - Seismic Qualification
  - Temperature Effects on System Operability
  - Natural Phenomenon
- Summary
  - Evaluation phase for collective significance review of the Latent Issues Review discrepancies

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Design Issues Resolution

John Grabnar

Manager - Design Basis Engineering

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Design Issues Resolution

Functionality Review

Design Basis Validation Program

- Developed historical timeline
- Started in 1997 in response to industry letter on Design Basis
- Validated System Descriptions and Design Criteria Manual
- Performed for risk significant systems

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Design Issues Resolution

Latent Issues Reviews

- A number of Design Basis questions raised
- Preliminary investigation suggests many are previously identified or are non-issues
- Several potentially important issues were not previously identified

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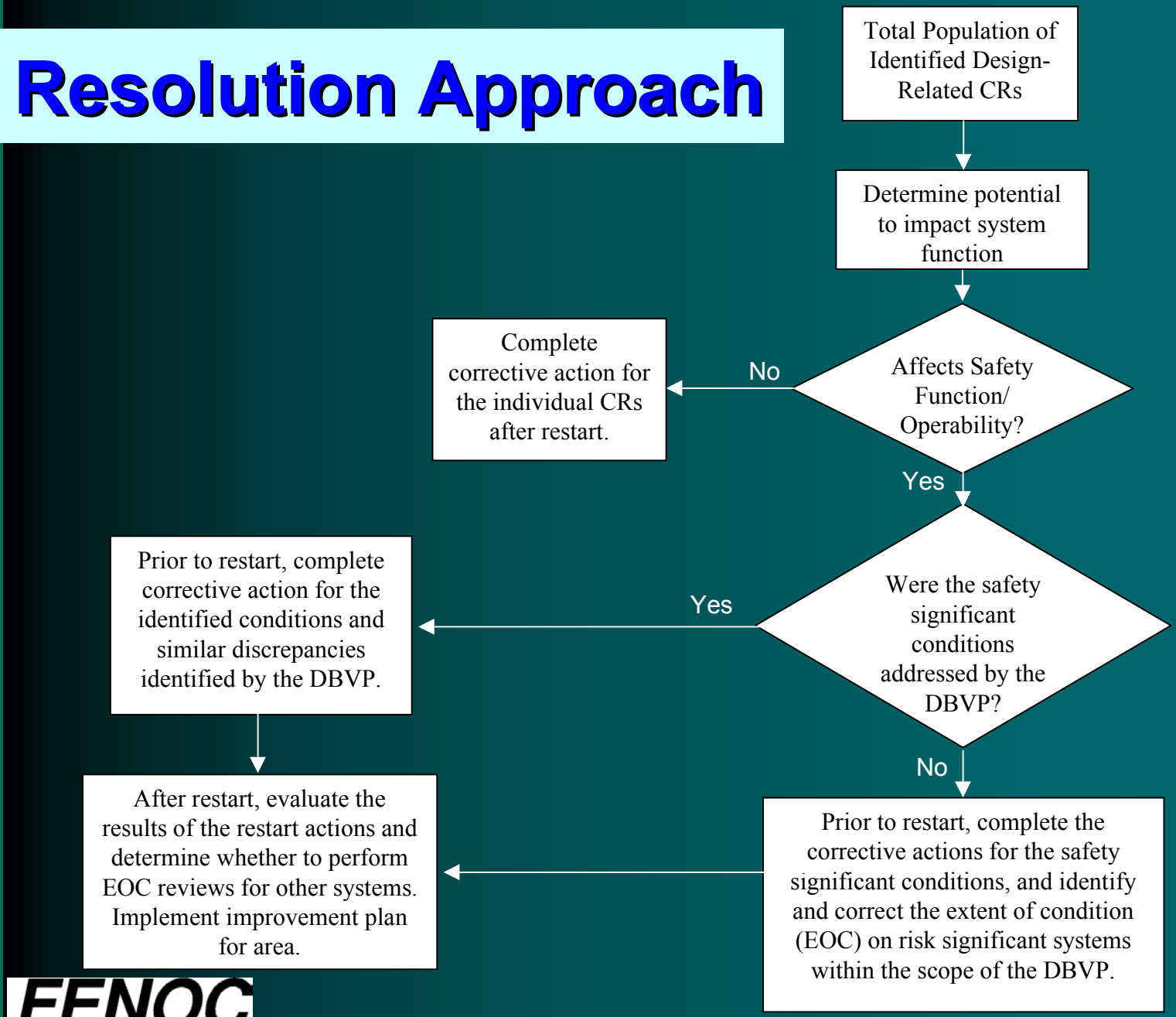
Resolution Approach



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Design Issues Resolution

Summary

- Process to efficiently and effectively resolve Design Basis discrepancies has been established
- Responsible system engineers are leading restart readiness teams to safely return their systems to service

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Management and Human Performance Actions

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FENOC Chief Operating Officer

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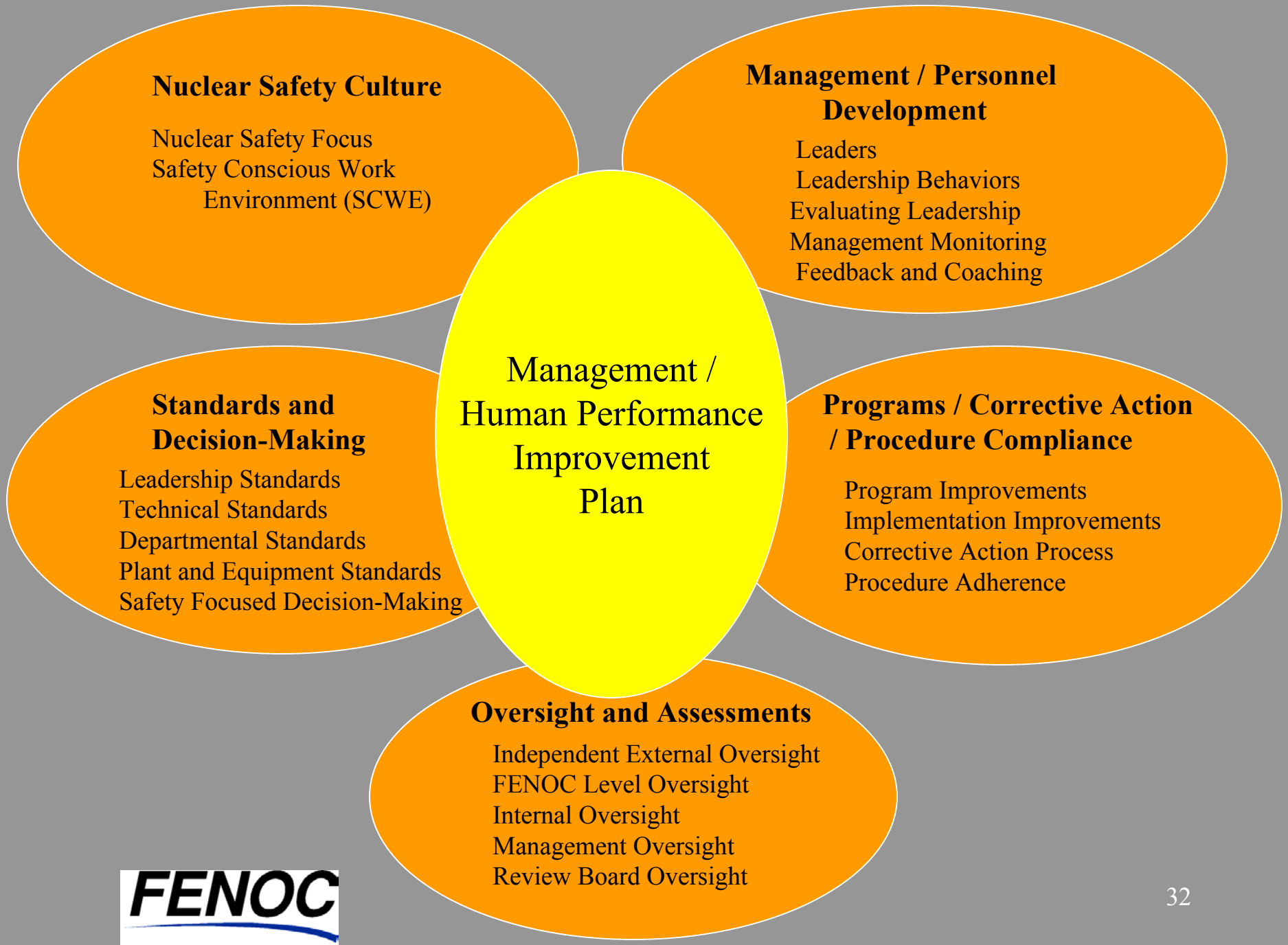
Nuclear Safety Culture
Nuclear Safety Focus
Safety Conscious Work Environment (SCWE)
Management / Personnel Development
Leaders
Leadership Behaviors
Evaluating Leadership
Management Monitoring
Feedback and Coaching
Management / Human Performance Improvement Plan
Standards and Decision-Making
Leadership Standards
Technical Standards
Departmental Standards
Plant and Equipment Standards
Safety Focused Decision-Making
Programs / Corrective Action / Procedure Compliance
Program Improvements
Implementation Improvements
Corrective Action Process
Procedure Adherence
Oversight and Assessments
Independent External Oversight
FENOC Level Oversight
Internal Oversight
Management Oversight
Review Board Oversight

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Management and Human Performance Actions

Significant Improvement Initiatives Completed

- Safety Conscious Work Environment Training for ~210 of 250 site and contractor supervisors
- 98 RHR Assessments of:
  - FENOC Executives
  - Managers and Directors
  - Supervisors
    - Operations
    - Engineering
    - Work Management
    - Chemistry/Radiation Protection
    - Quality Assessment

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Management and Human Performance Actions

Significant Improvement Initiatives Completed

- SCWE Plan Communication
- Case Study Training (864 personnel)
- Revised Leadership in Action Training for 17 new supervisory personnel
- Pete Burg (FirstEnergy Chief Executive Officer) employee discussion

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Management and Human Performance Actions

Significant Improvement Initiatives Continuing

- 4-C's Meetings
  (~280 employees attended so far)
- Town Hall Meetings (18 held to-date)
- Management Observation Program
  (over 500 observations in October)

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Management and Human Performance Actions

Case Study Results

- Logged completions: 864
- Feedback: 665 Sheets received (~76% response)
- Overall Ratings:
  - Met expectations or above: ~96%
  - Marked complete success: ~15%
- Uniform across sections
  - Craft vs. Non-craft
  - Technical vs. Non-technical

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Management and Human Performance Actions

Case Study Feedback Recurring Themes

- Must "Walk the Talk" to be effective
- This is just a beginning (we must follow through)
- Mr. Saunders joining in seen as very positive
- Important to get out to everyone, but should have been done sooner
- The presenters consistently did an overall excellent job

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Management and Human Performance Actions

Case Study Feedback Concerns

- **Management's production versus quality/safety priorities concerns**
  - **Management Actions**
    - Feedwater Heater 1-6 stop work
    - Containment closure stop work
    - Fuel movement stop work
    - Polar Crane stop work
- **Skepticism about management response for raising issues/concerns (fear of reprisal)**

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Management and Human Performance Actions

Case Study Test Results

- Approximate average grade: 93%
- Failures @ 80% criteria: 1
  - Immediate remediation provided during summary
- 100% Scores: ~45%

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Management and Human Performance Actions

Significant Pending Activities

- **Collective Significance Review**
  - **Outstanding items:**
    - Operations Root Cause
    - Engineering Assessment
    - CAP Implementation Root Cause
    - NOBP for Collective Significance Process

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Management and Human Performance Actions

Significant Pending Activities

- Engineering Organization Assessment
- Engineering Restart Readiness Review
- Functional Area Reviews

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Operations Leadership Plan

Mike Ross

Manager - Operations Effectiveness

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Operations Leadership Plan

Function/Assignment Manager - Operations Effectiveness

- Assessment of Operations personnel and standards
- Prepare Operations for restart and ensure sustained performance
- Personnel assessment
  - RHR assessment of all Operations supervisory personnel
  - Strength and alignment of Operations management

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Operations Leadership Plan

Purpose

- Strengthen and prepare Operations for restart
- Ensure future sustainable high level of performance

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Operations Leadership Plan

Vision

- Operations Department recognized as the lead organization at Davis-Besse
- Continuous improvement is expected, demonstrated, and embraced by Operations personnel
- Operations ownership of equipment deficiencies, nuclear fuel performance, and plant chemistry is strong
- Operations management communicates, demonstrates, and reinforces desired performance standards
- Shift Management consistently demonstrates leadership

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Operations Leadership Plan

Content of Plan

- 67 items total
- 42 for restart
- Benchmarking, training, improvement of standards, expectations, and conduct of Operations

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Operations Leadership Plan

Actions Completed

- Benchmarked 3 facilities
- Standards expectations rewritten and compiled in one directive
- Moved the Shift Manager out of the Work Support Center
- Completed training
  - Case Study
  - INPO First-Line Supervisor Course
  - Boric Acid Program requirements
  - Safety Conscious Work Environment
  - Operability Determinations

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Operations Leadership Plan

Actions In Progress/Scheduled

- Training in Progress
  - Operator Requalification testing
- Additional training scheduled for restart
  - Standards/Expectations with testing
  - Decision Making
  - Restart Test Plan
  - Plant Modifications
  - Licensed Operator responsibilities
  - Ombudsman procedures/responsibilities

Other Scheduled Activities

- INPO assist visit

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Schedule Review

Mike Stevens

Director - Nuclear Maintenance

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Major Milestones

Milestone	Forecast
• Initial System Reviews Complete	12/15
• Program Reviews Complete	12/16
• Reactor Head Installed	01/01
• Containment ILRT	01/08
• System Readiness for Heatup	01/11
• Systems Pressure Inspections (NOP/NOT)	01/14

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Major Milestones

Projects Under Schedule Development

- Emergency Diesel Air Start Modification
- Permanent Reactor Seal Plate
- Decay Heat Valve Pit

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Integrated Schedule

Making Progress

- Containment Air Cooler 1 & 3 Motor installed
- High Pressure Feedwater Heater 1-6 new tubes
- Reactor Coolant Motor & Pump (1-1) removed
- Reactor Head Control Rod Drives Installed
- Paint applied to Containment Dome

Next Major Milestone

- Reactor Coolant System Drain for first isolation valve maintenance (75 valves)

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Closing Remarks

Lew Myers
FENOC Chief Operating Officer

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