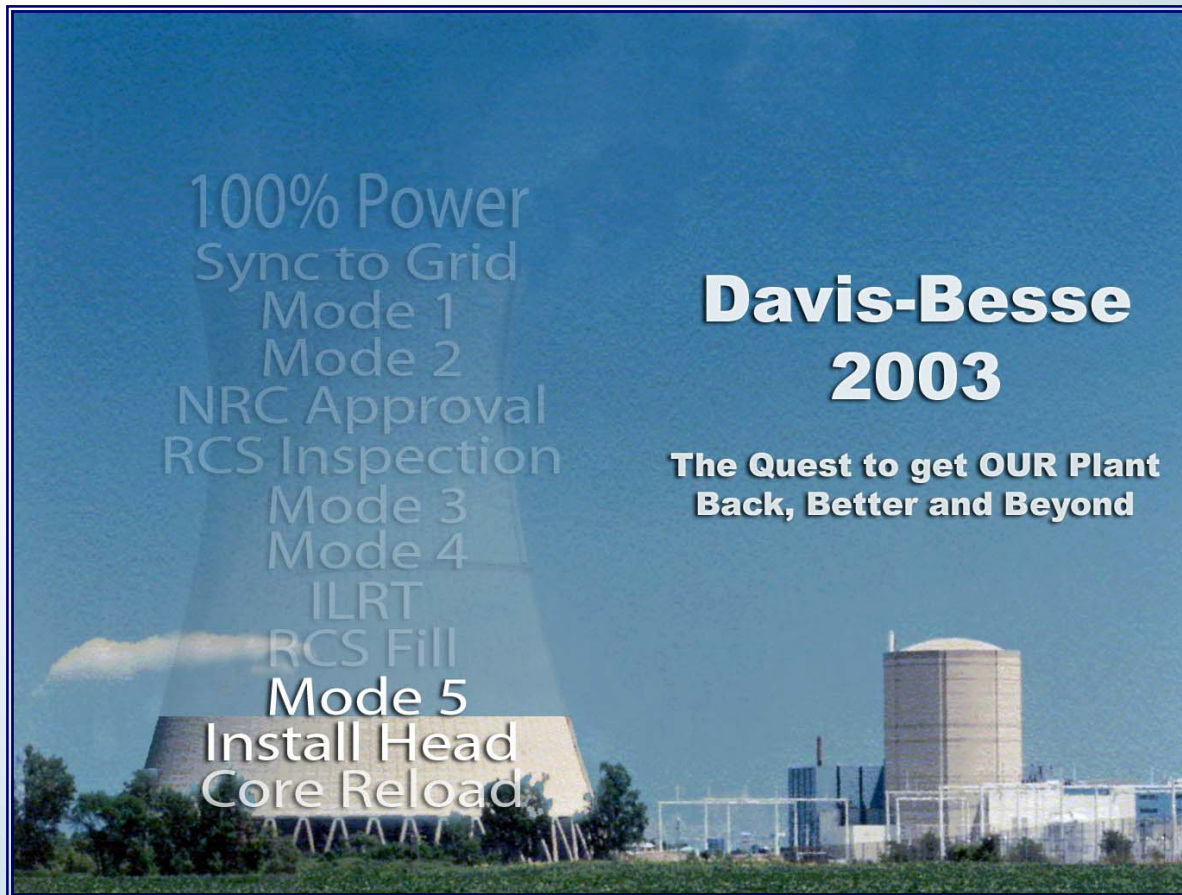


Davis-Besse Nuclear Power Station



IMC 0350 Meeting

Desired Outcomes

Return to Service Plan Progress

- Plant Programs and Scheduled Activities.....Lew Myers
- FLUS Monitoring System.....Craig Hengge

Management and Human Performance

- Problem Solving/Decision Making.....Lew Myers
- Management Observation Program.....Kathy Fehr

Quality Oversight

- Safety Culture Survey; Safety Conscious Work Environment Survey; Quality Assurance Observations.....Bill Pearce

Return to Service Building Blocks Progress

- System Health.....Bob Schrauder
- Containment Health.....Lynn Harder
- Restart Action Performance.....Clark Price
- Program Compliance.....Jim Powers

Integrated Schedule Progress

- Upcoming Activities.....Greg Dunn

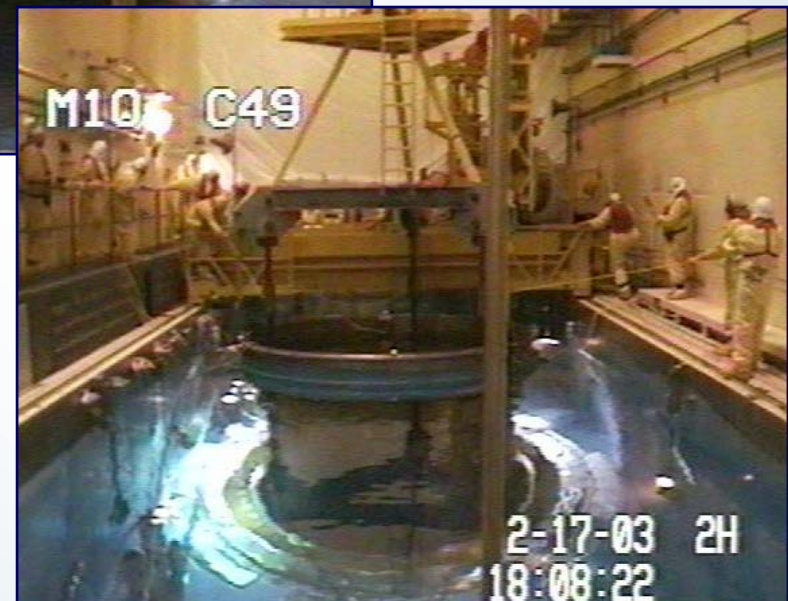
Return to Service Plan Progress



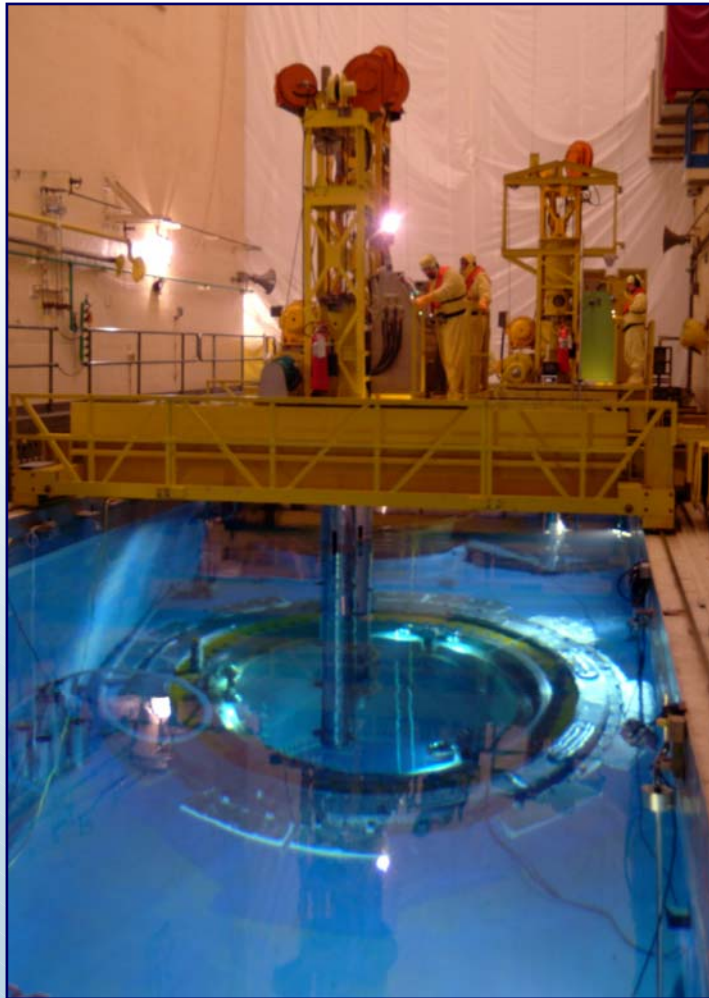
Lew Myers
Chief Operating Officer - FENOC

Return to Service Plan Progress

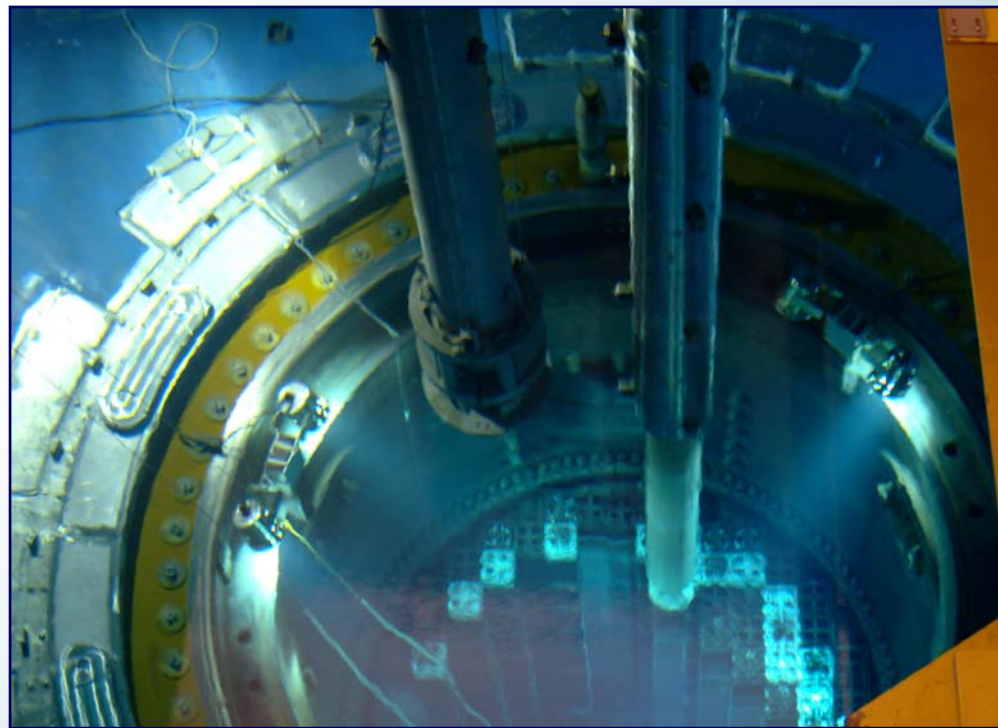
- Fuel Reload Preparation
 - Core support assembly
 - Upper Plenum
 - Vessel cleaned



Return to Service Plan Progress

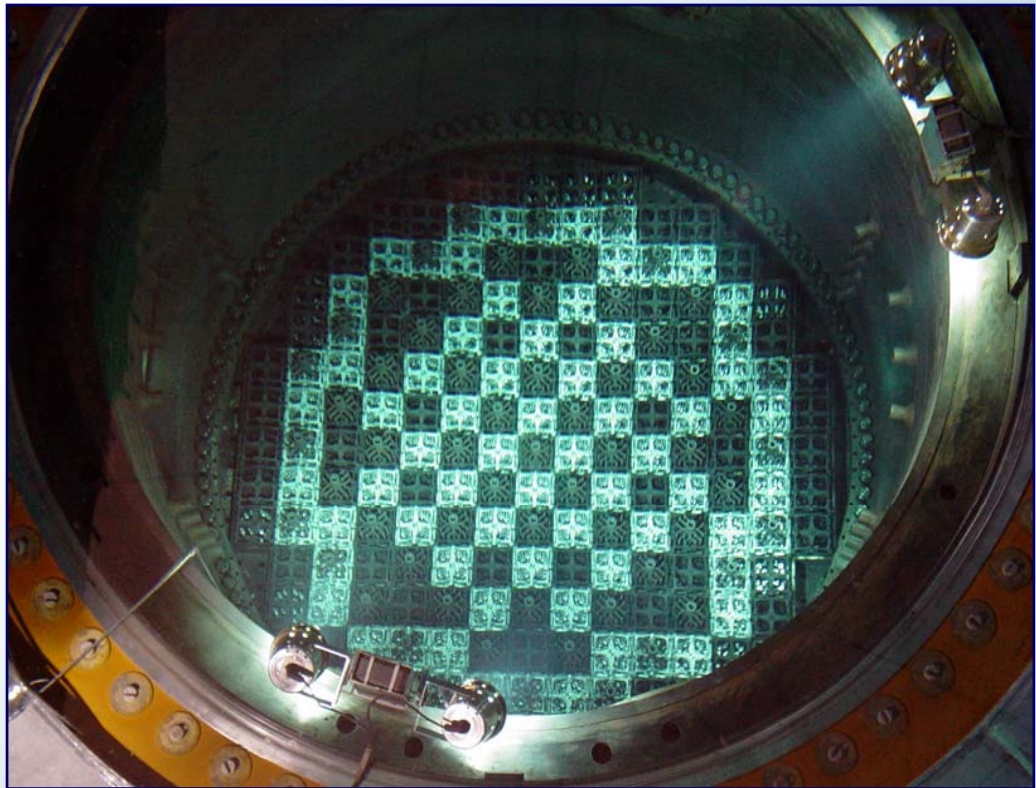


- Fuel Load Activity
 - Began Feb. 19
 - 177 fuel assemblies



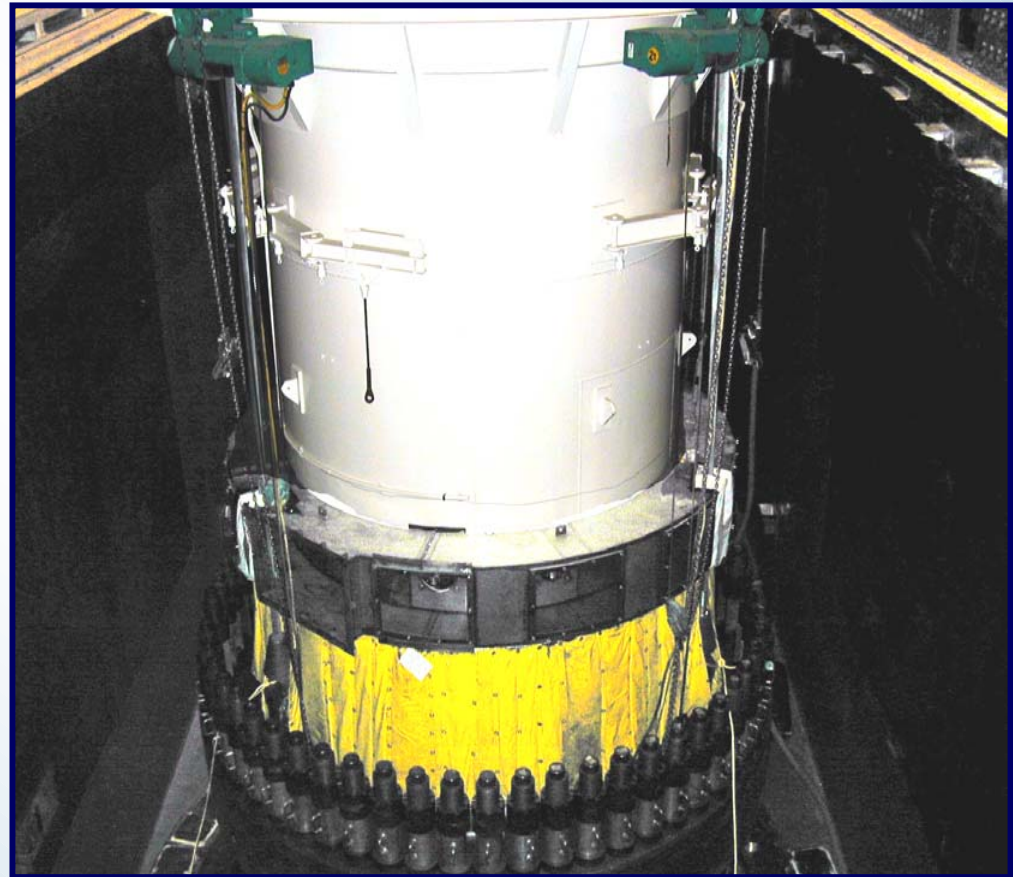
Return to Service Plan Progress

- Fuel Load Completed
 - Feb. 26, 2003



Return to Service Plan Progress

Reactor Head Installation Completed - March 10



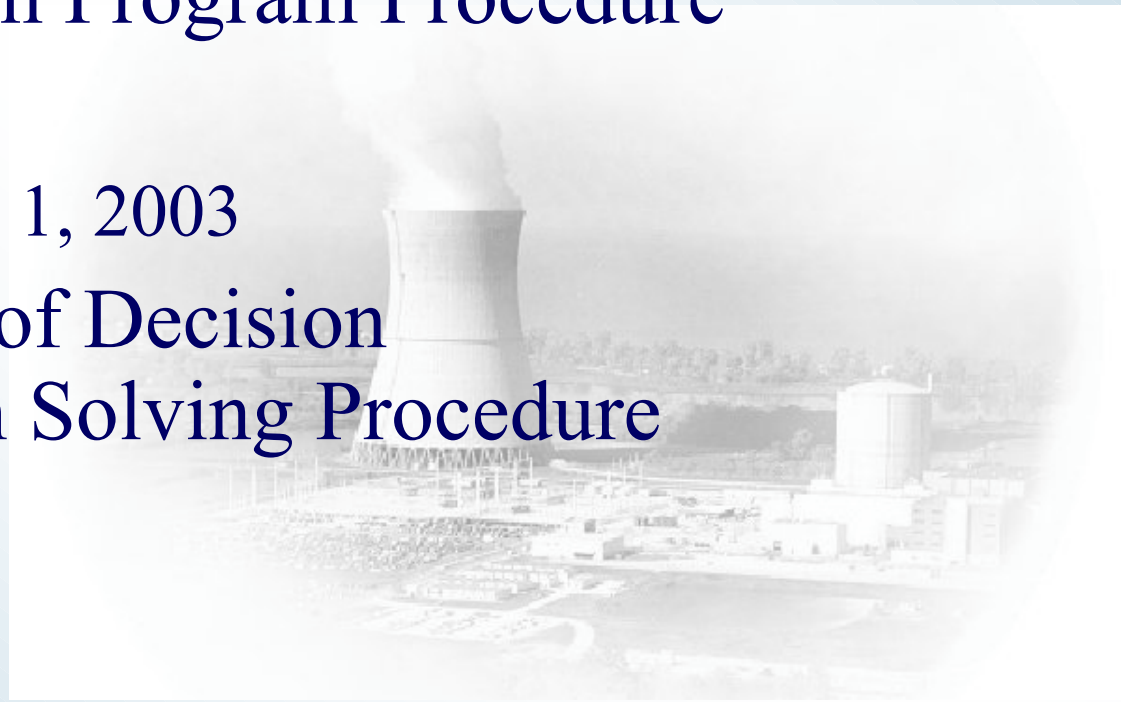
Return to Service Plan Progress

- FLUS Under Vessel Monitoring System
 - Installation underway
 - Conduit, cabinets, and tubing



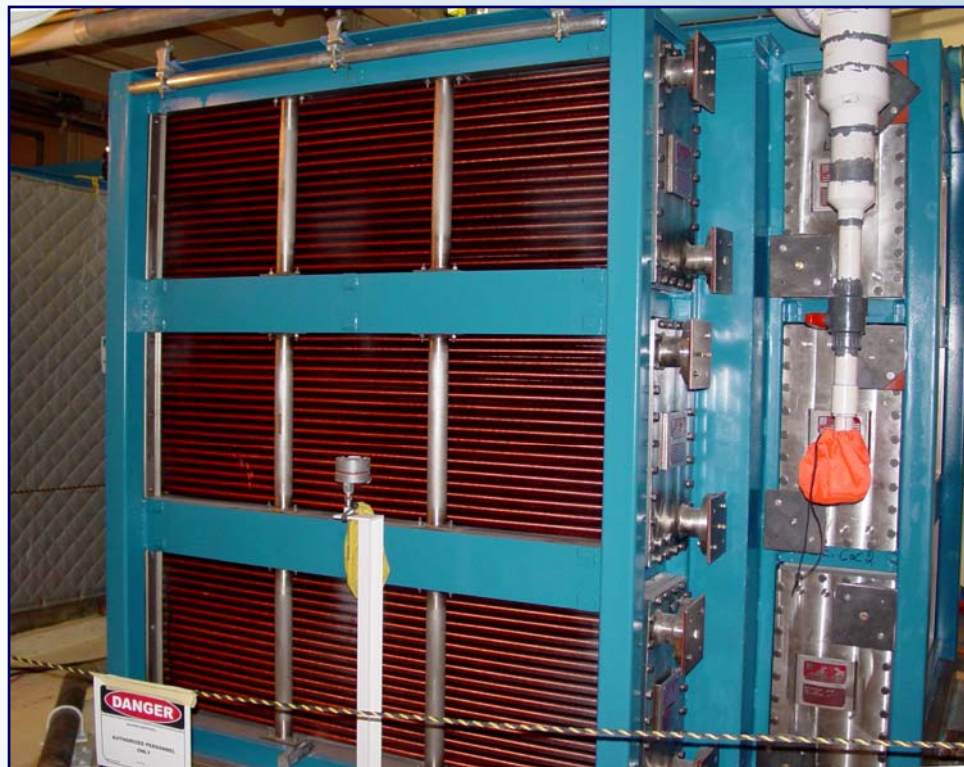
Return to Service Plan Progress

- Safety Features Actuation System Test
- Integrated Diesel Test
- Corrective Action Program Procedure Revision
 - Effective March 1, 2003
- Implementation of Decision Making/Problem Solving Procedure



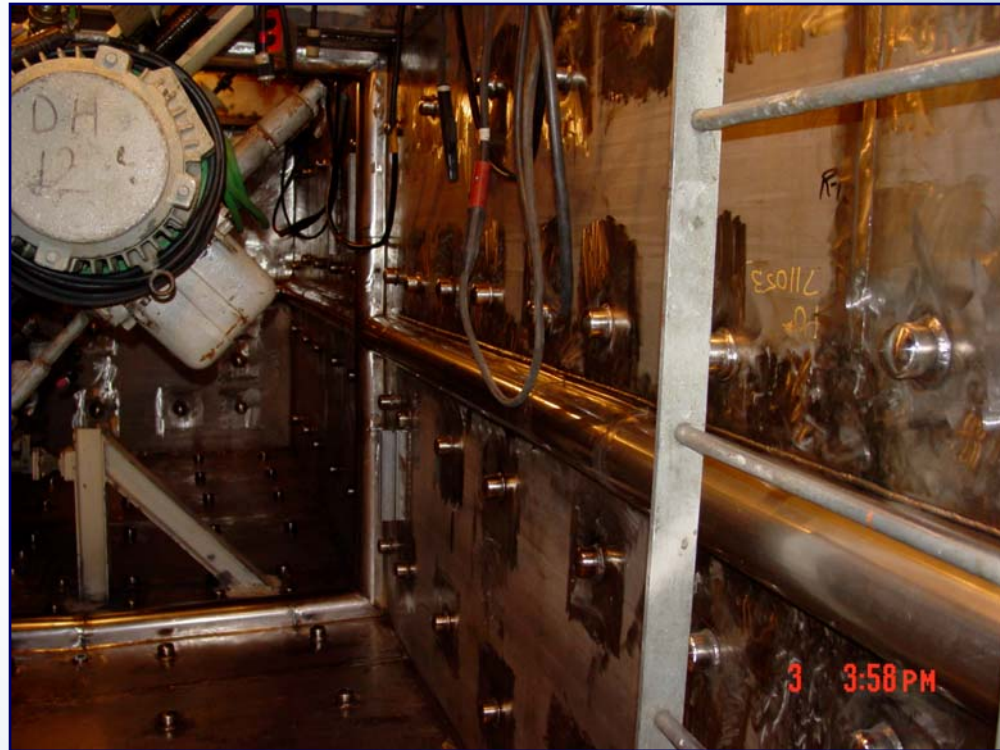
Return to Service Plan Progress

- Containment Air Coolers Installed
 - Stainless steel coils



Return to Service Plan Progress

- Decay Heat Pit Tank Upgrade
- Mode 6 Restart Readiness Reviews Conducted



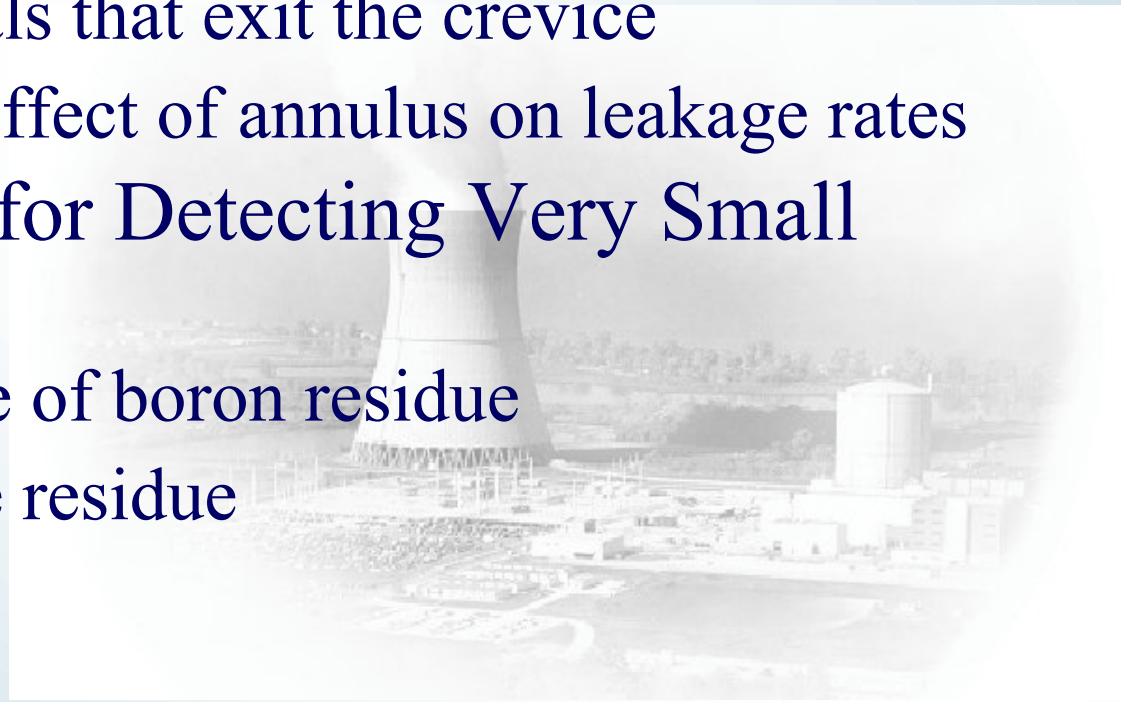
FLUS Online Leak Monitoring System



Craig Hengge
Engineer - Plant Engineering

Framatome Leak Detection Testing

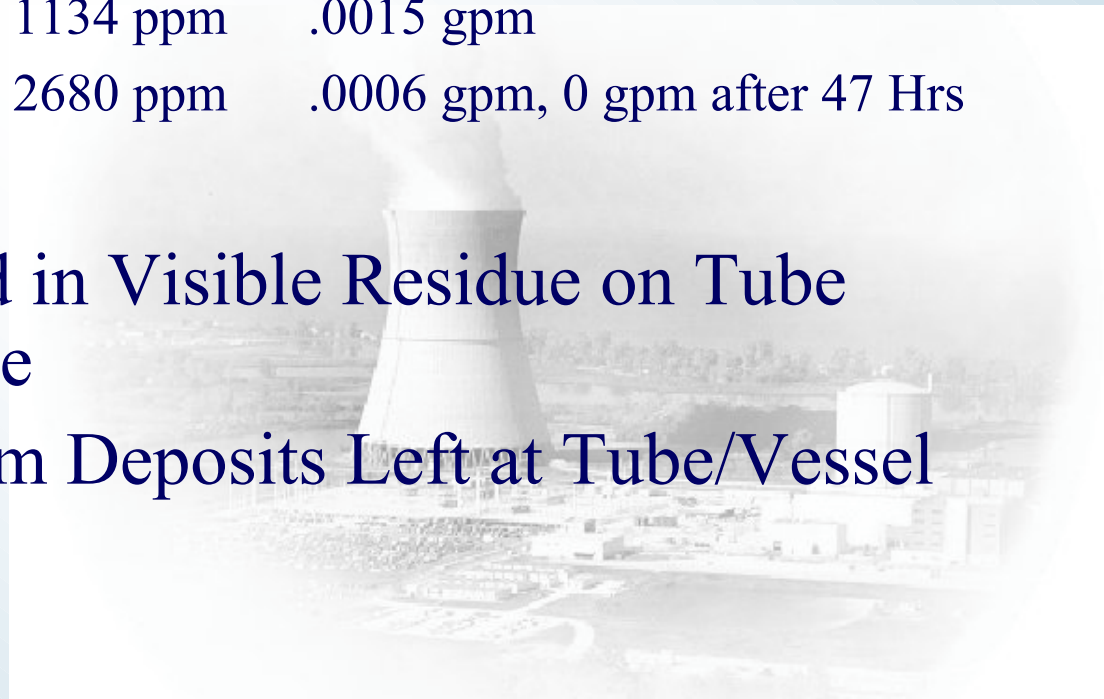
- Measure Leak Rate as a Function of Simulated Flaw Geometry
 - Identify residue deposit chemistry and any volatile chemicals that exit the crevice
 - Investigate the effect of annulus on leakage rates
- Verify Methods for Detecting Very Small Leaks
 - Visible evidence of boron residue
 - Other detectable residue



Framatome Leak Detection Testing

<u>Test #</u>	<u>Duration</u>	<u>Boron</u>	<u>Leak Rate</u>
1	8 Hours	2680 ppm	.015 gpm
2	8 Hours	2680 ppm	.0015 gpm
3	8 Hours	2680 ppm	.0004 gpm
4	8 Hours	1134 ppm	.0015 gpm
5	55 Hours	2680 ppm	.0006 gpm, 0 gpm after 47 Hrs

- All Tests Resulted in Visible Residue on Tube and Vessel Surface
- Significant Lithium Deposits Left at Tube/Vessel Surface



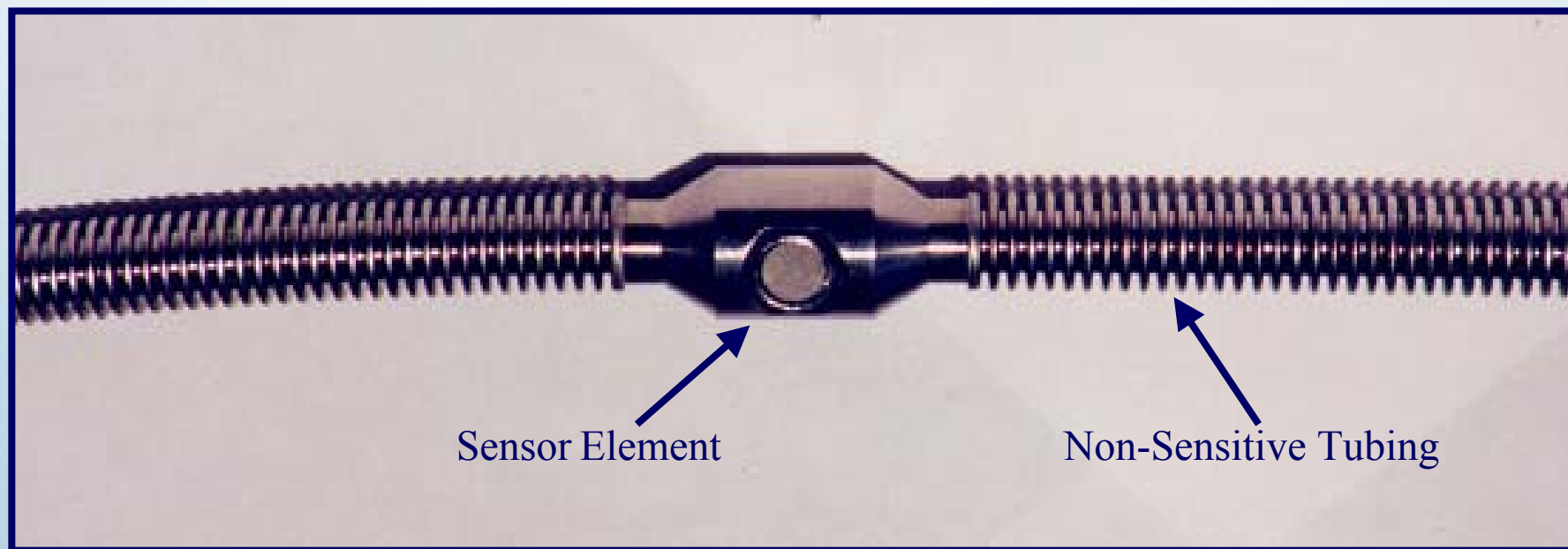
FLUS Online Leak Monitoring System



- State-of-the-Art System
- 10 Year Operational History
 - 12 installed in Europe and Canada
- Detect and Locate Under Vessel Leakage
 - Located between Reactor Vessel insulation and bottom of Reactor Vessel

FLUS Online Leak Monitoring System

- Installation
 - Simple installation; conduit, cabinets, tubing
 - Tubing is 3/8" diameter
 - Approximate three weeks to complete



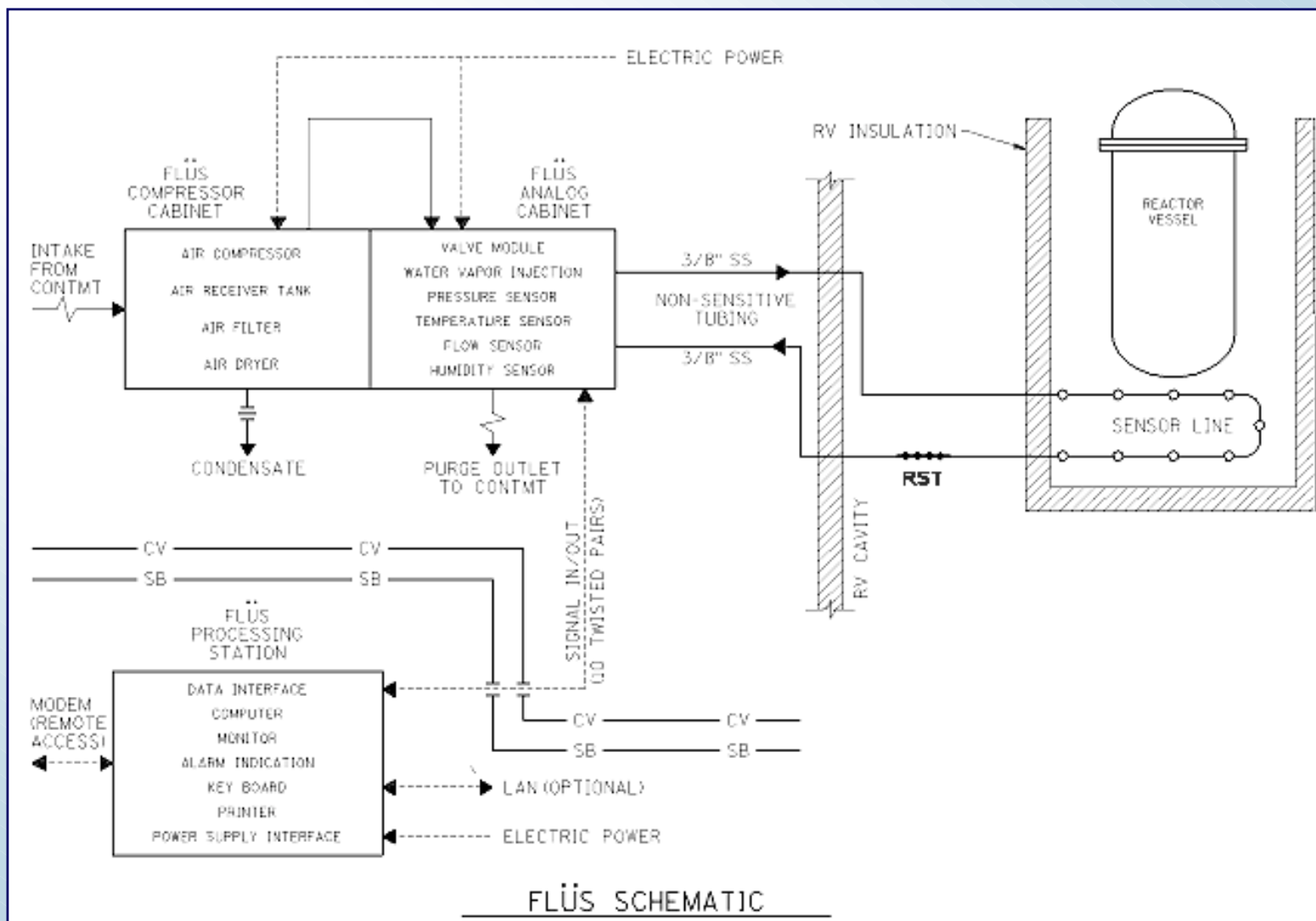
16

FLUS Online Leak Monitoring System

- Eight Channel System
 - Allows future upgrade
- Expected sensitivity:
.004 to .02 gpm
- FLUS Sensitivity Test
During Mode 3



FLUS Online Leak Monitoring System



Problem Solving/Decision Making Nuclear Operating Procedure



Lew Myers
Chief Operating Officer - FENOC

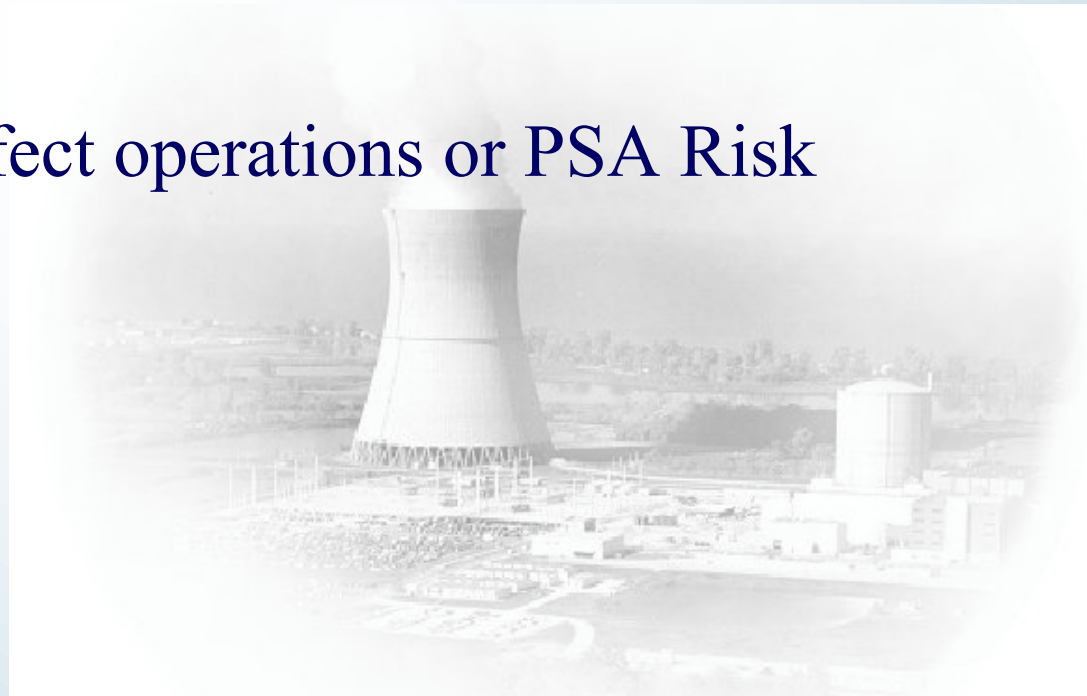
Problem Solving/Decision Making Nuclear Operating Procedure

- Purpose
 - Ensure plant issues are addressed consistently and effectively without consequences to plant safety and reliability
 - Evaluate significance and potential impact on nuclear safety
 - Determine level of management approval based on significance



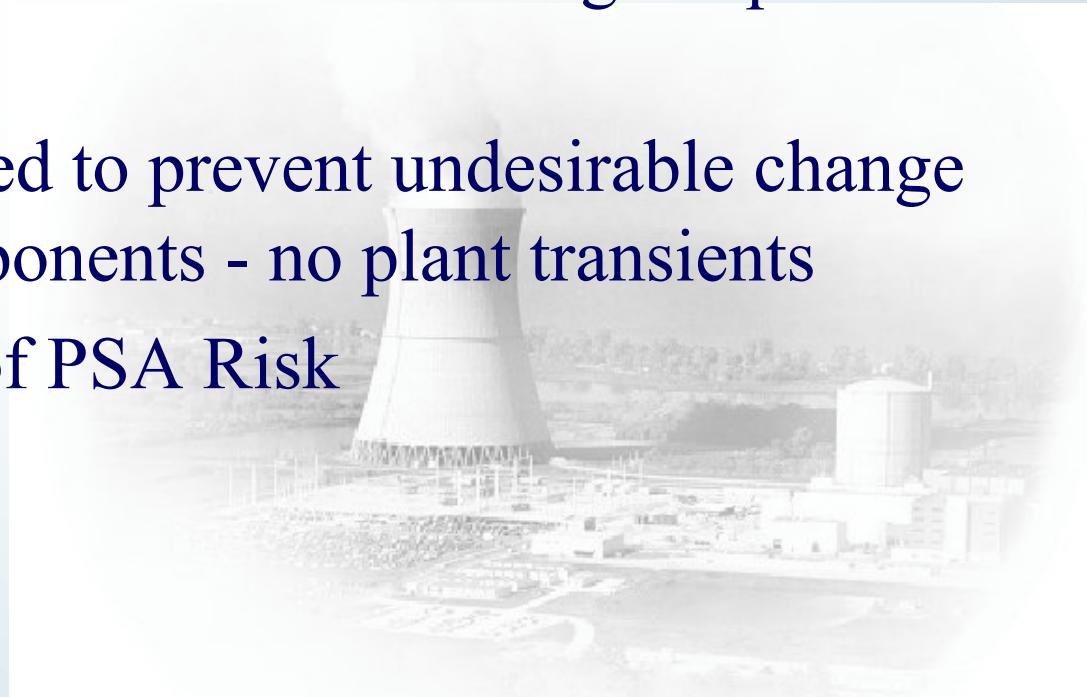
Problem Solving/Decision Making Nuclear Operating Procedure

- Low Significance
 - No personnel or radiological issues
 - Not likely to cause plant damage to components or systems
 - Not likely to effect operations or PSA Risk



Problem Solving/Decision Making Nuclear Operating Procedure

- Medium Significance
 - Potential personnel or radiological concerns
 - Without controls could cause damage to plant equipment
 - Controls required to prevent undesirable change of state of components - no plant transients
 - Re-evaluation of PSA Risk



Problem Solving/Decision Making Nuclear Operating Procedure

- High Significance
 - Without controls could cause damage to critical plant equipment
 - Could result in personnel or radiological safety issues
 - With proper controls will not result in reactor changes, generator runbacks or power reductions



Problem Solving/Decision Making Nuclear Operating Procedure

- Six Principles

- Conditions are recognized and reported using the Corrective Action Program
- Roles and responsibilities are clearly established for making and implementing decisions
- Consequences of operational challenges are clearly defined and rigorously evaluated
- Establish full understanding of short term and long term risk
- Develop implementation plans to establish actions, compensatory measures and contingencies
- Periodic evaluation of activities

Management Observation Program

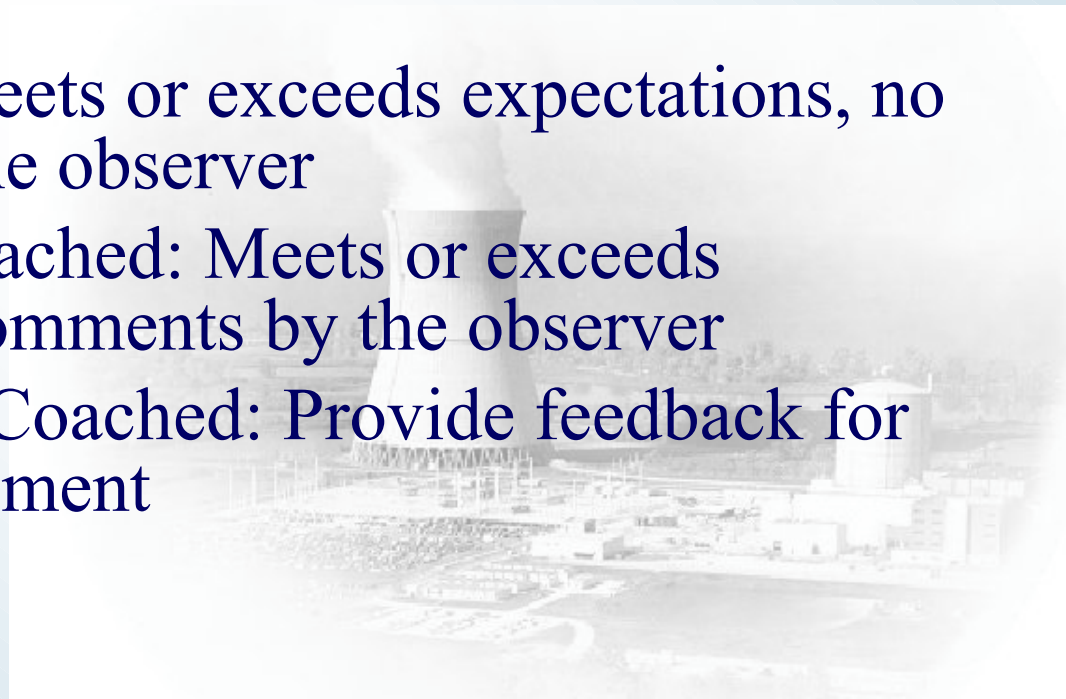


Kathy Fehr

Owner- Management Observation Program

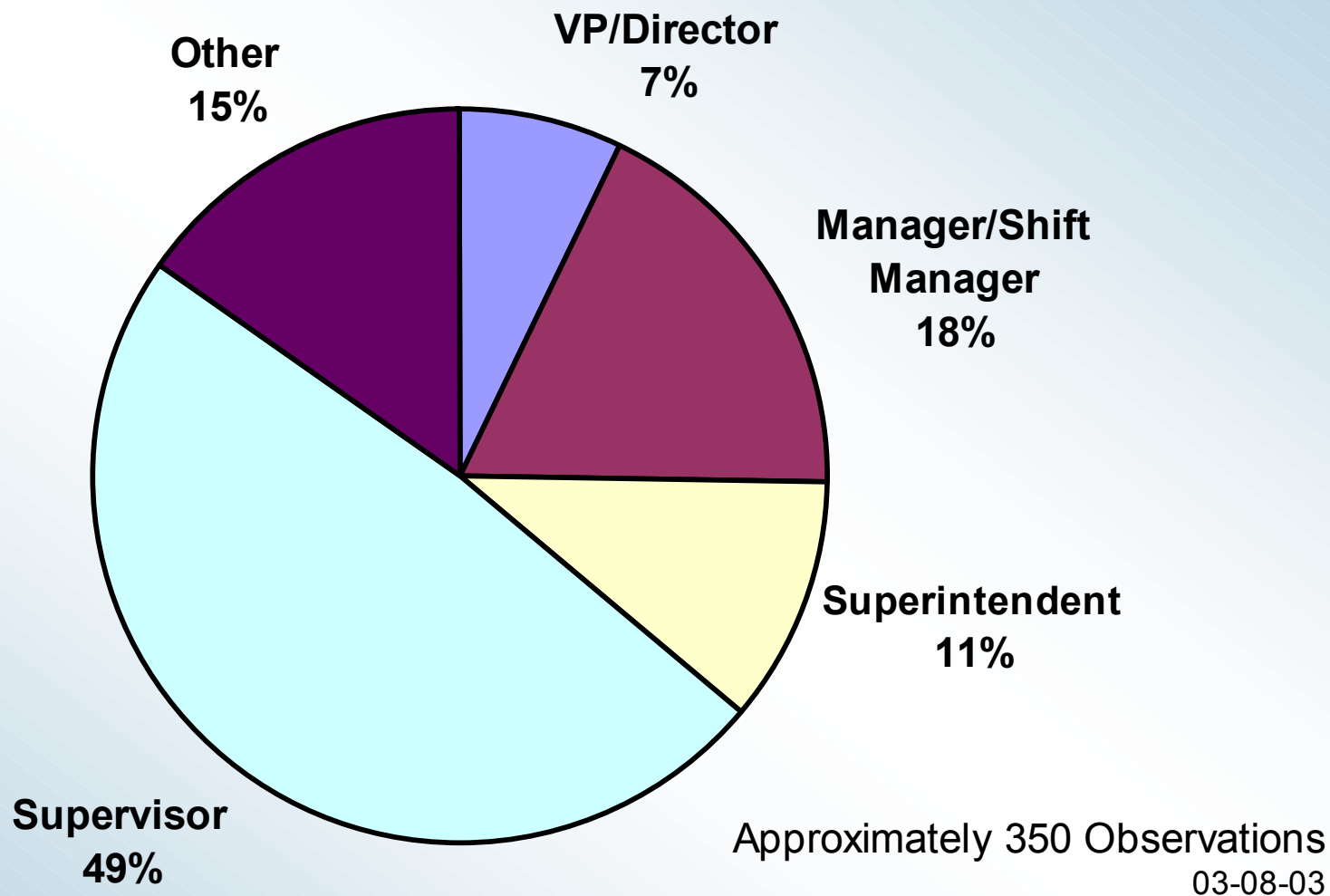
Management Observation Program

- Purpose
 - Management oversight on activities and influence desired behaviors
- Definitions
 - Satisfactory: Meets or exceeds expectations, no comments by the observer
 - Satisfactory Coached: Meets or exceeds expectations, comments by the observer
 - Unsatisfactory Coached: Provide feedback for area of improvement



Observation Percentage by Title

(February 2003)



Management Observation Program

- Total Observations
 - 350 Observations
- Scheduled Observations
 - 90% average for February
- Condition Reports
 - 6.21% of February observations generated condition reports (20)
 - 5.98% for January

Management Observation Program

February Field

- Total Coached: 12.2%
 - 9.4% satisfactory coached
 - 2.8% unsatisfactory coached

January Field

- Total Coached: 10.9%
 - 7.9% satisfactory coached
 - 3% unsatisfactory coached

- Management observations have had a positive effective
- Improvement is needed and ongoing

Quality Oversight

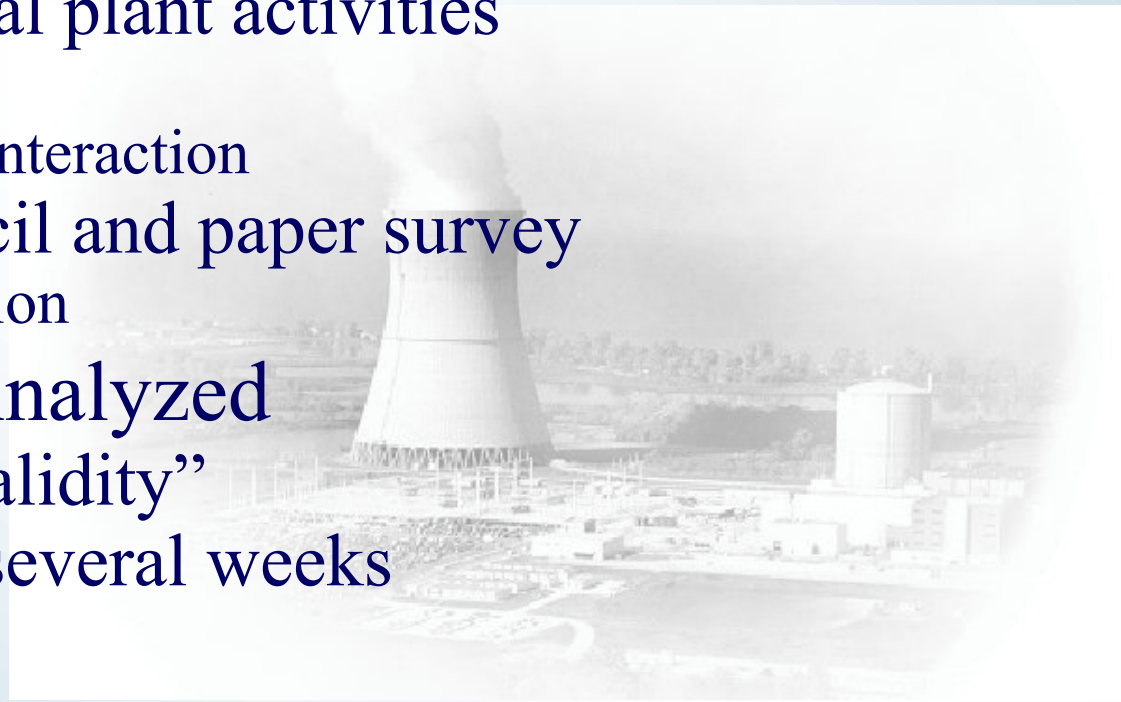


Bill Pearce
Vice President - FENOC Oversight

Quality Oversight

Safety Culture Assessment

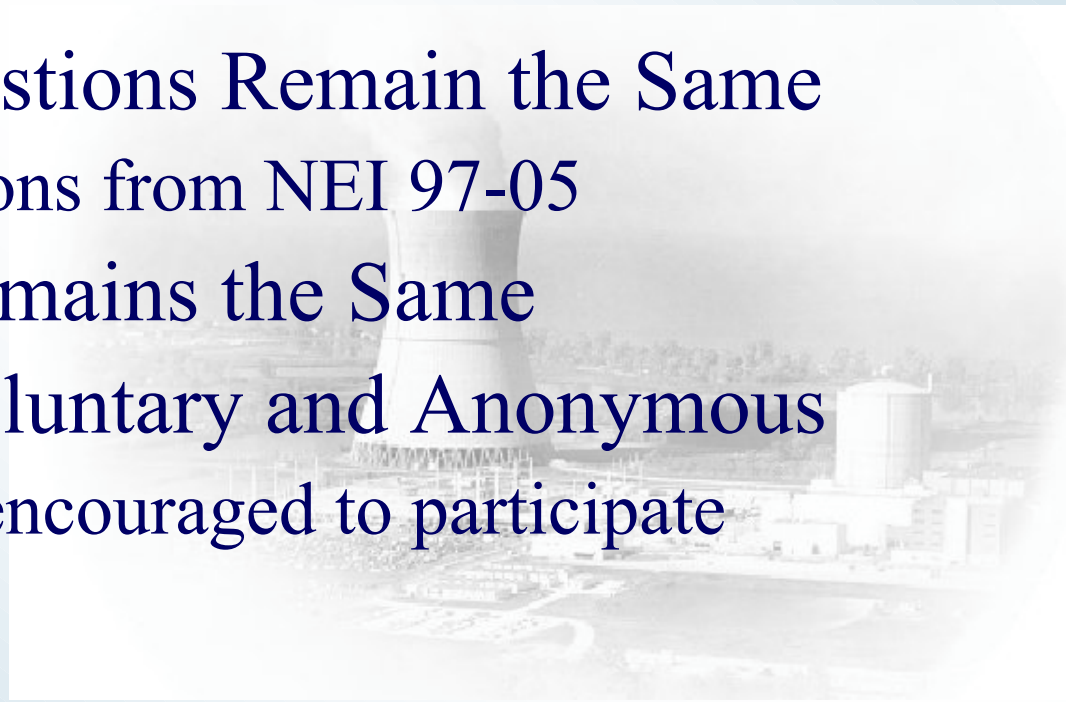
- Activities Completed
 - Interviewed approximately 90 employees
 - Observed normal plant activities
 - Site meetings
 - Departmental interaction
 - Conducted pencil and paper survey
 - 80% participation
- Results Being Analyzed
 - “Convergent Validity”
 - Results within several weeks



Quality Oversight

Safety Conscious Work Environment

- Periodic Survey to be Conducted
 - Week of March 24
- Majority of Questions Remain the Same
 - Includes questions from NEI 97-05
- Rating Scale Remains the Same
- Survey to be Voluntary and Anonymous
 - Site personnel encouraged to participate
- Results in April



Quality Oversight

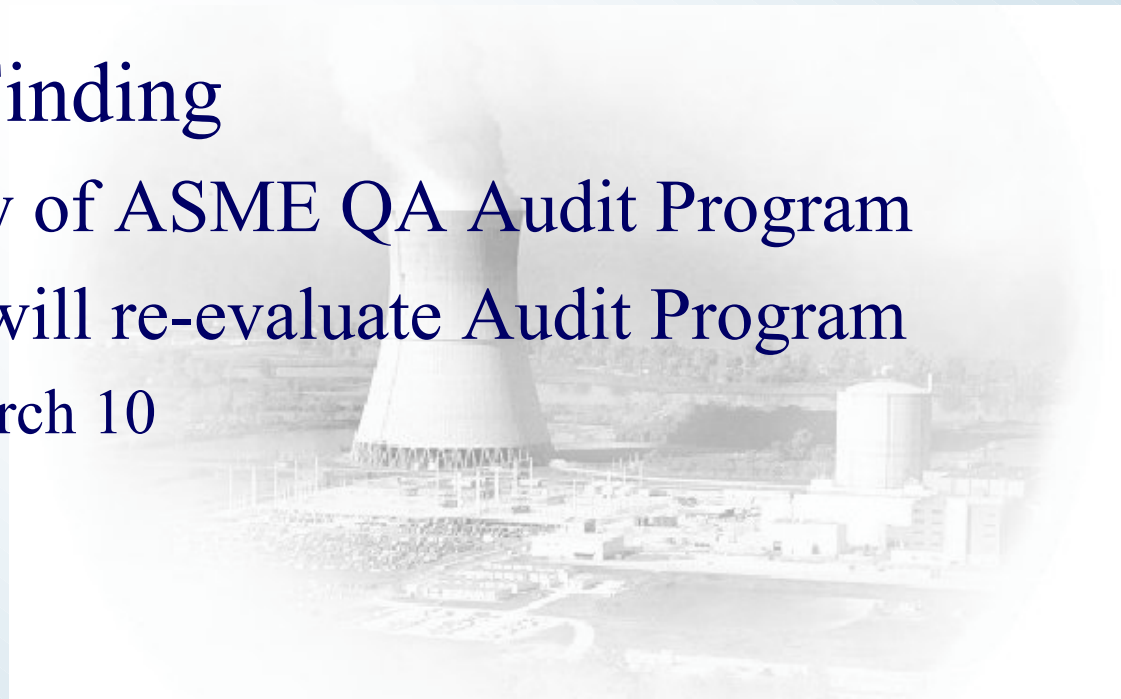
Quality Assurance Observations

- QA Audit Program Review
 - Areas in Need of Improvement
 - Implementation of commitments
 - Audit checklists
 - Use of Operating Experience in auditing
 - Training/qualification of auditors
 - Escalation of inadequate actions to audit findings
 - Interface issues with American Society of Mechanical Engineers (ASME) QA Program

Quality Oversight

Quality Assurance Observations

- Review Presented to Program Review Board
 - February 10
- Review Board Finding
 - Need for review of ASME QA Audit Program
 - Review Board will re-evaluate Audit Program
 - Completed March 10



Quality Oversight

Quality Assurance Observations

- Oversight of New Reactor Head
- Restart Station Review Board
- Fuel Handling
- In-Service Inspection
- Quality Control
- Contractor Control
- Corrective Action
- Safety Culture
- Feedwater Flow Modification
- Quality of Work



System Health Progress



Bob Schrauder
Director - Support Services

System Health Progress

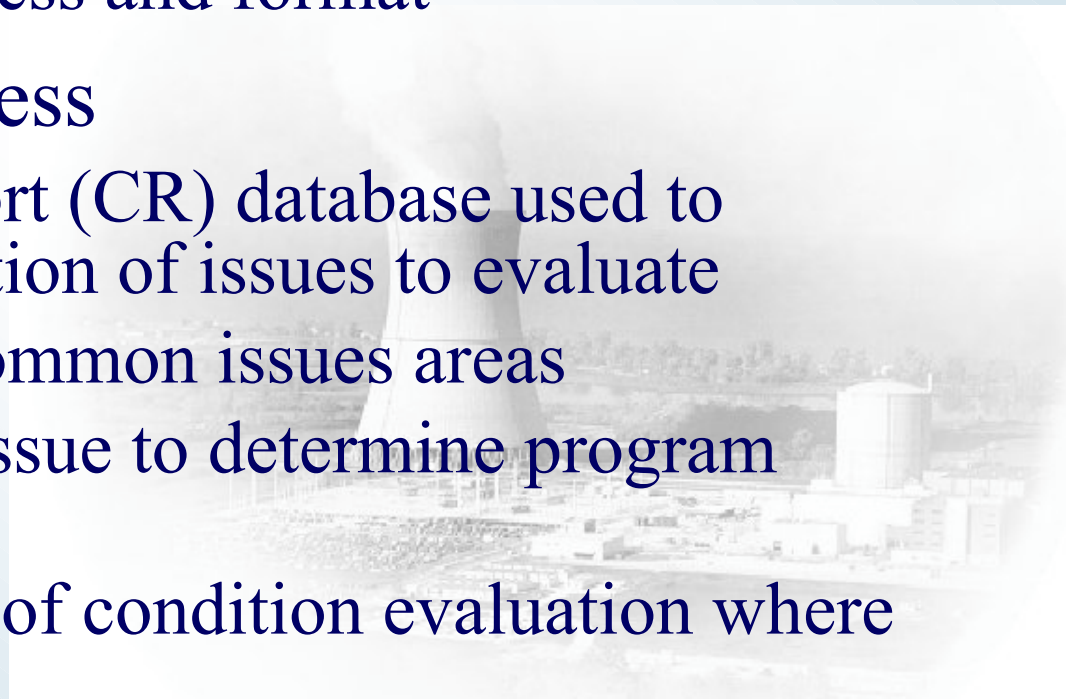
Collective Significance Reviews

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

System Health Progress

Review Process

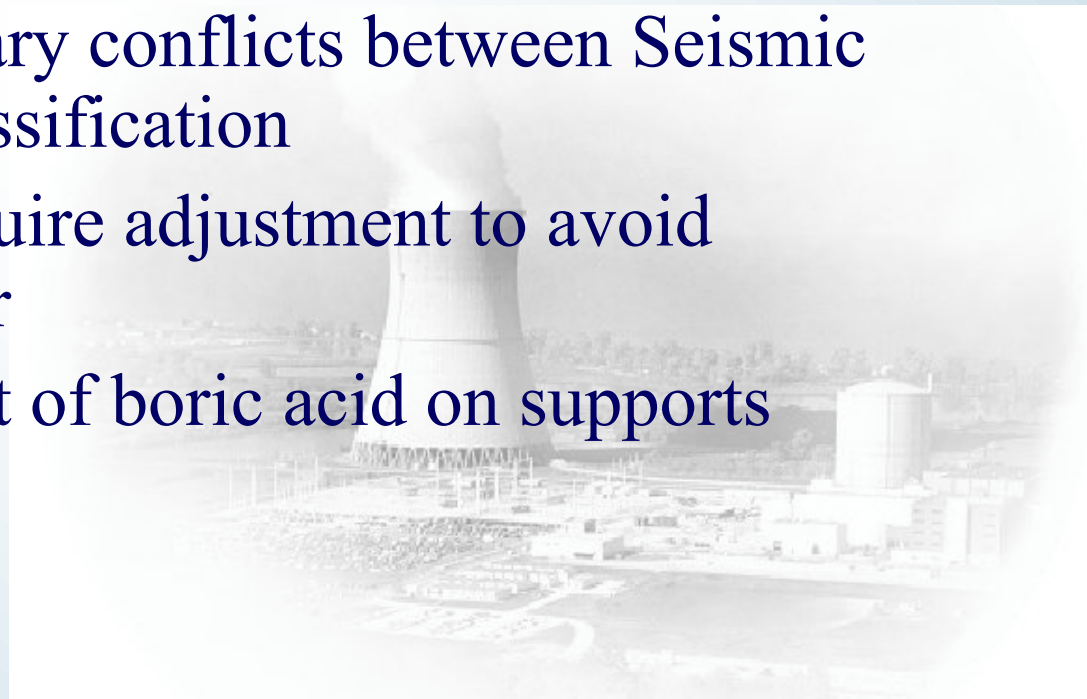
- Nuclear Operating Business Practice “Collective Significance Review”
 - Consistent process and format
- Evaluation Process
 - Condition Report (CR) database used to identify population of issues to evaluate
 - Bin CRs into common issues areas
 - Evaluate each issue to determine program significance
 - Conduct extent of condition evaluation where warranted



System Health Progress

Seismic

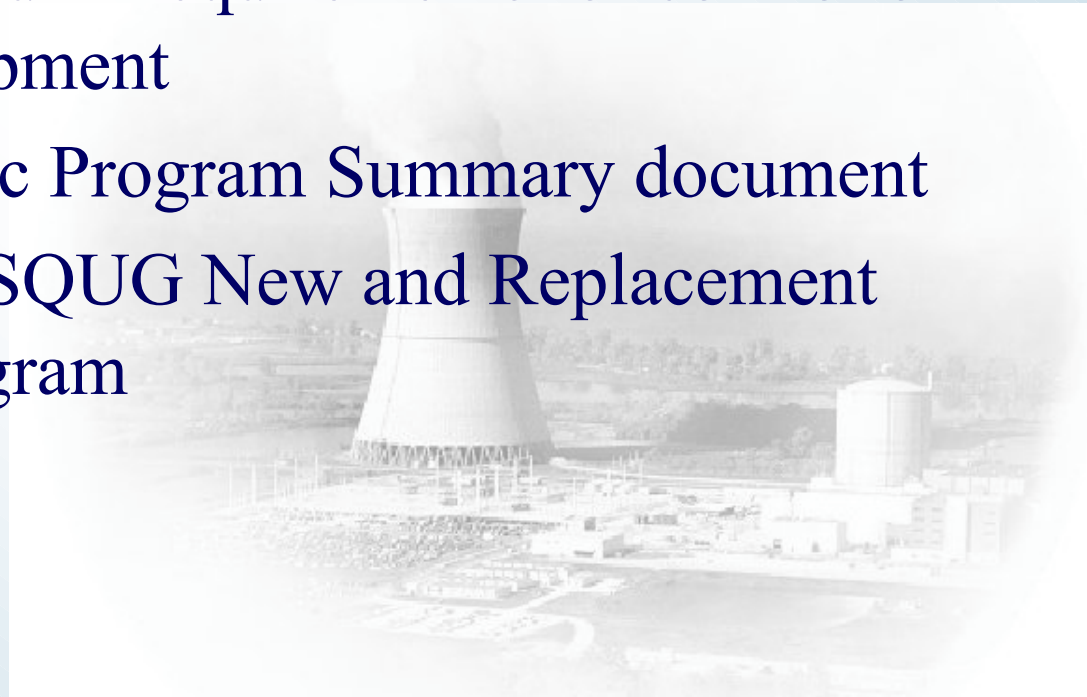
- Actions to Support Restart
 - Evaluate impact of Cooling Tower Makeup pumps not in accordance with USAR
 - Resolve boundary conflicts between Seismic and Quality classification
 - HFA relays require adjustment to avoid potential chatter
 - Evaluate impact of boric acid on supports



System Health Progress

Seismic

- Future Improvements
 - Eliminate confusion on boundary classifications
 - Improve procedural requirements for control of temporary equipment
 - Create a Seismic Program Summary document
 - Implement the SQUG New and Replacement Equipment program



System Health Progress

Station Flooding

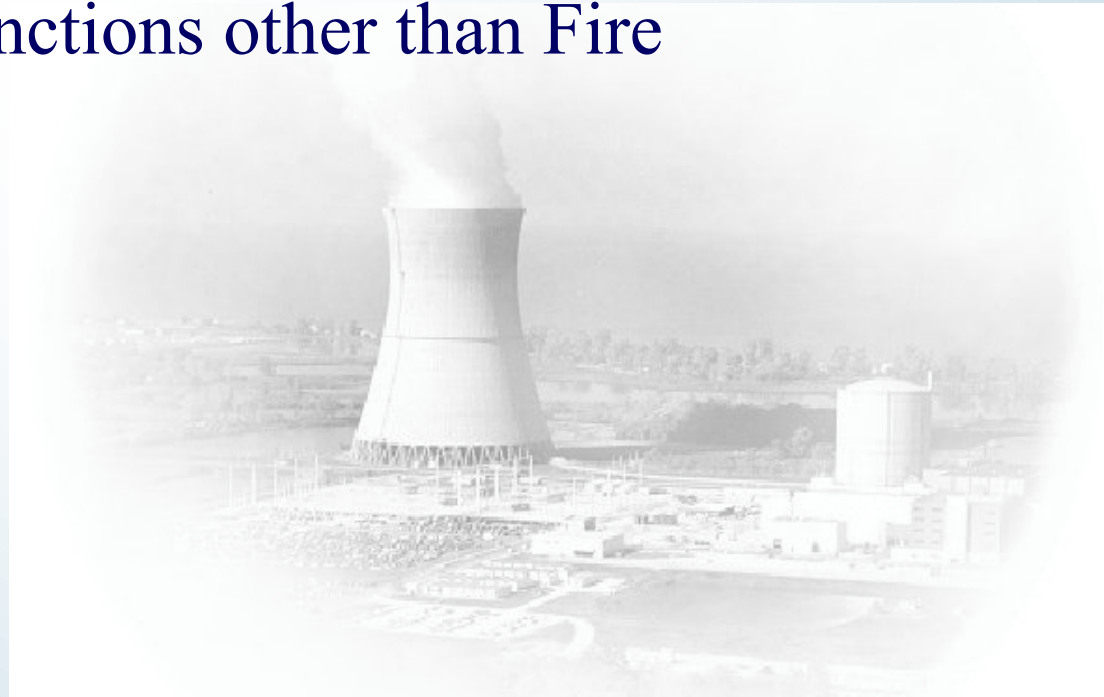
- Actions to Support Restart
 - Assess impact of Cooling Tower Makeup Pump seismic categorization on Service Water System
 - Evaluate impact of flooding service water tunnel on service water isolation valves to turbine building
 - Verify functionality of critical floor drains



System Health Progress

Station Flooding

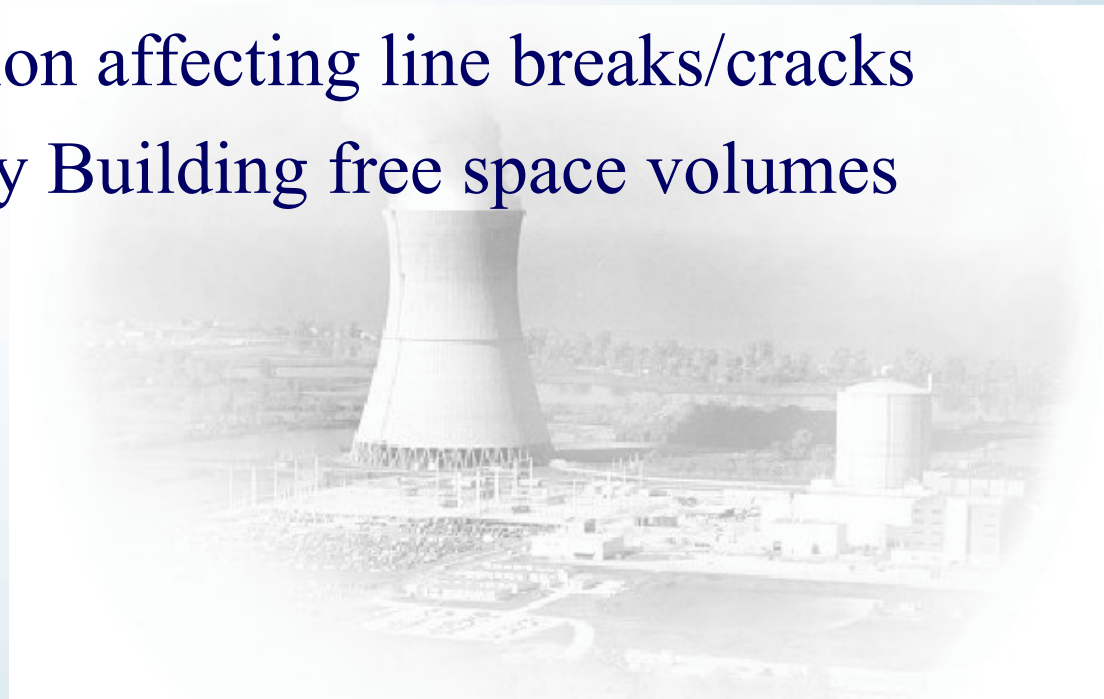
- Future Improvements
 - Install flood seals in conduit penetrations
 - Implement a formal inspection program for barriers with functions other than Fire Protection



System Health Progress

High Energy Line Break

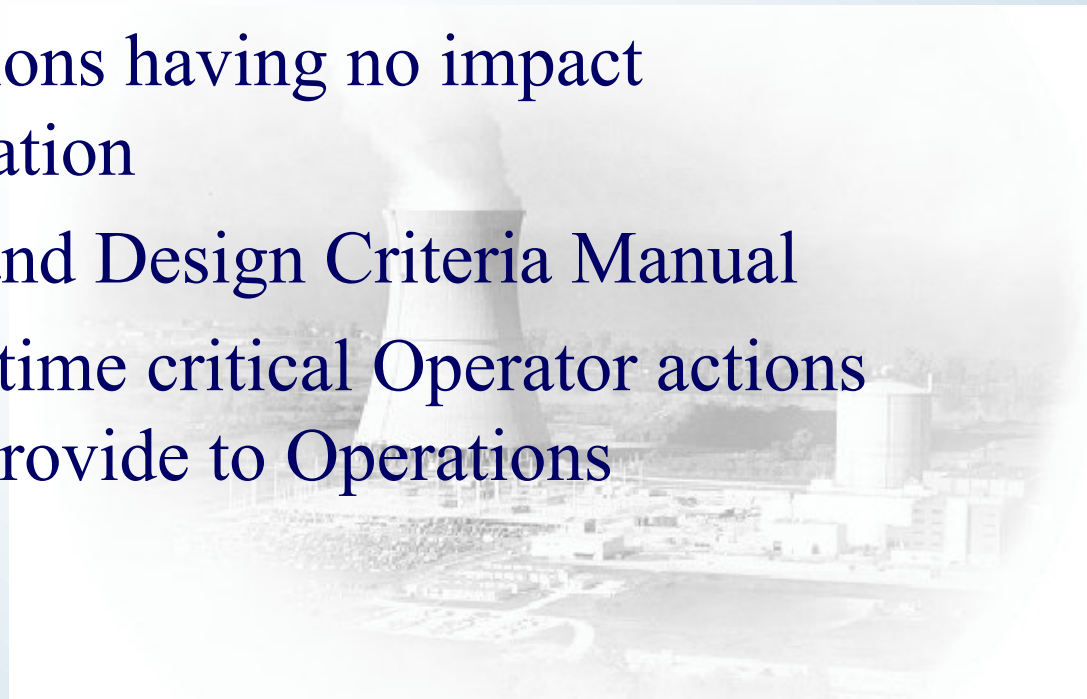
- Actions to Support Restart
 - Complete re-analysis of Turbine Building breaks
 - Revise calculation affecting line breaks/cracks
 - Verify Auxiliary Building free space volumes and openings



System Health Progress

High Energy Line Break

- Future Improvements
 - Update model for Auxiliary Building environmental conditions
 - Revise calculations having no impact crack/break location
 - Revise USAR and Design Criteria Manual
 - Compile list of time critical Operator actions and bases and provide to Operations



System Health Progress

Environmental Qualification

- Actions to Support Restart
 - Evaluate environmental effects on EQ equipment due to HELB reanalysis
 - Replace vendor supplied splices with EQ splices in Containment Limitorque actuators
 - Correct Raychem splice bend radius on four level transmitters
 - Replace containment purge inlet isolation solenoid valve due to accelerated thermal aging

System Health Progress

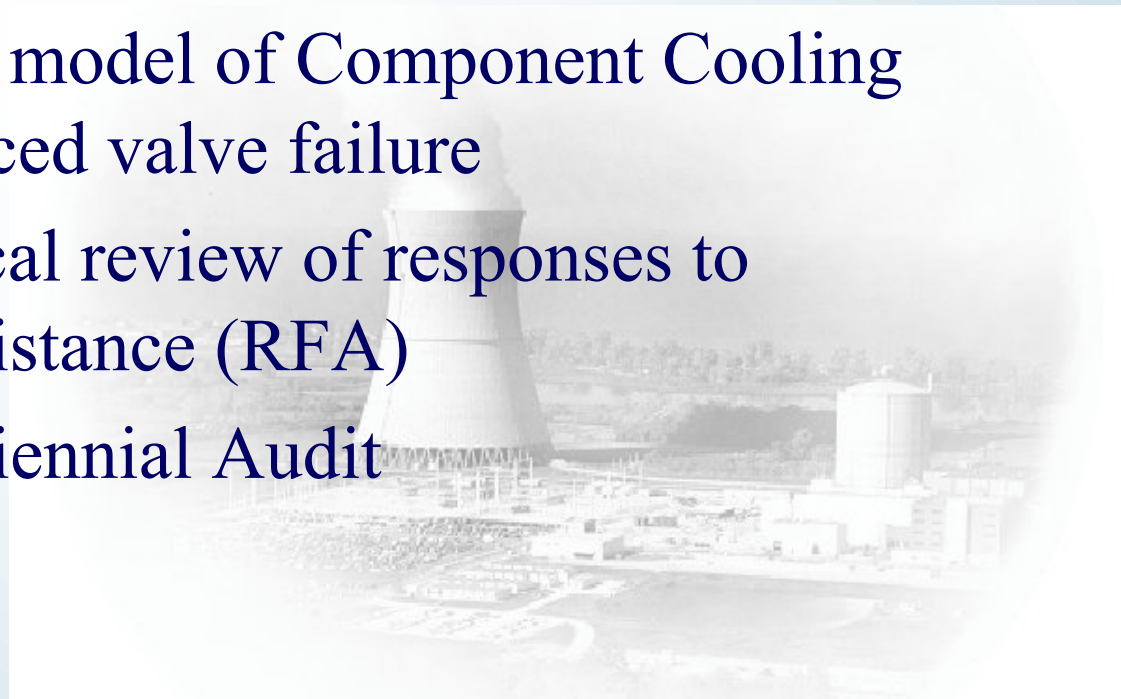
Environmental Qualifications

- Future Improvements
 - Revise guidance documents on installation of Limitorque actuators to ensure installation with qualified splices
 - Provide drainage configurations for containment conduit, as necessary
 - Maintenance Matrix of EQ files will be revised to require weep holes at low points of raceways in containment
 - Revise EQ program to provide guidance on recognizing components needing raceway drainage
 - Develop and conduct EQ refresher training

System Health Progress

Appendix R - Safe Shutdown Analysis

- Actions to Support Restart
 - Complete Framatome transient calculation upgrade project
 - Complete Flow model of Component Cooling Water fire induced valve failure
 - Perform technical review of responses to requests for assistance (RFA)
 - Perform QA Triennial Audit



System Health Progress

Appendix R - Safe Shutdown Analysis

- Future Improvements
 - Formalize informal calculation in Requests for Assistance (RFAs) where necessary
 - Complete safe shutdown procedures upgrade project



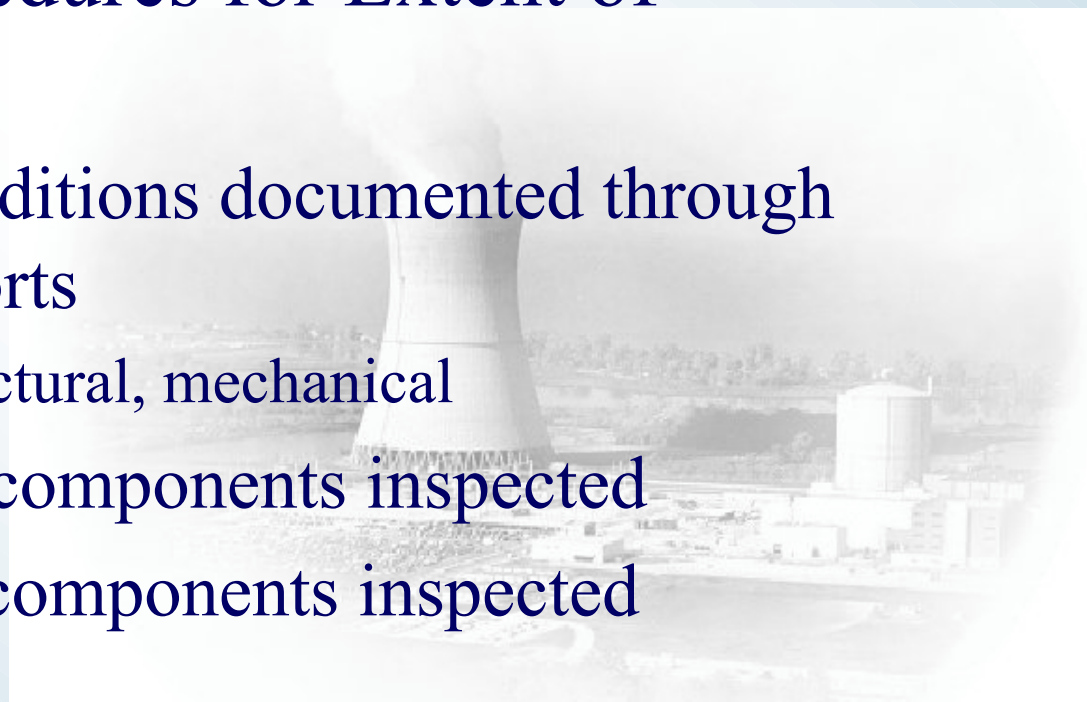
Containment Health



Lynn Harder
Containment Health Inspection Project Manager

Containment Health

- Ensuring Equipment Supports Safe and Reliable Plant Operation
- Inspection Procedures for Extent of Condition
 - “As found” conditions documented through Condition Reports
 - Electrical, structural, mechanical
 - More than 500 components inspected
 - 200 Alloy 600 components inspected



Containment Health

- Independent Evaluators Performed Cause Analysis on More Than 950 Condition Reports
 - More than 6,400 Corrective Actions developed to ensure remediation
 - Rework, replace, refurbish, and clean
 - More than 12,000 assets involved



Containment Health



Containment Air Cooler



Core Flood Tank

Containment Health



Plenum Sensing Line



Service Water Piping/Support

Containment Health



Containment Air Cooler
Plenum

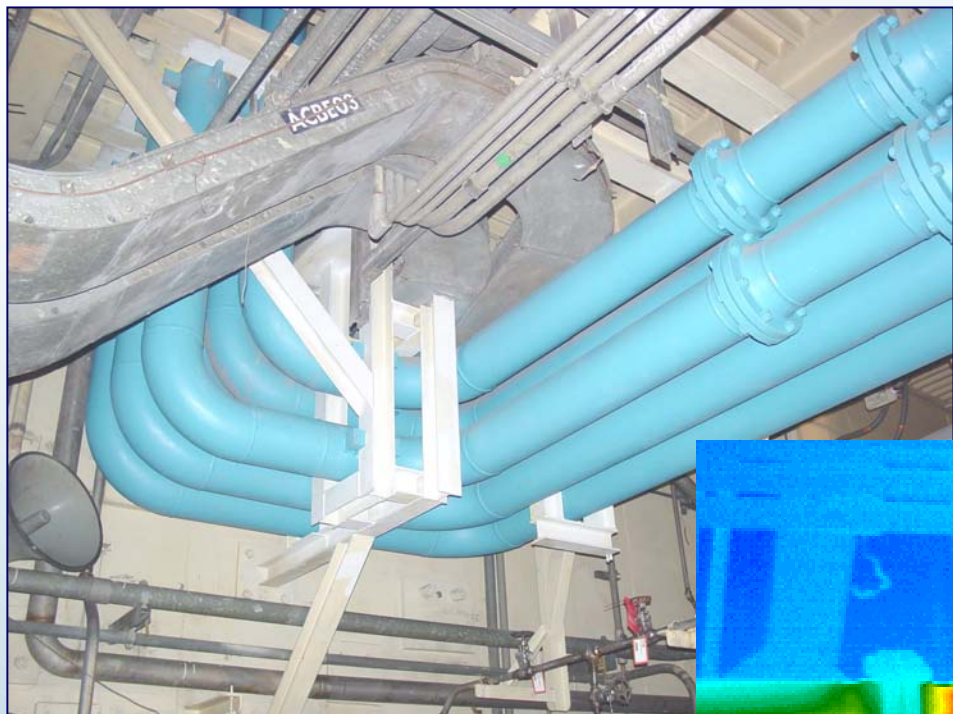


Containment Air Cooler
Service Water Piping

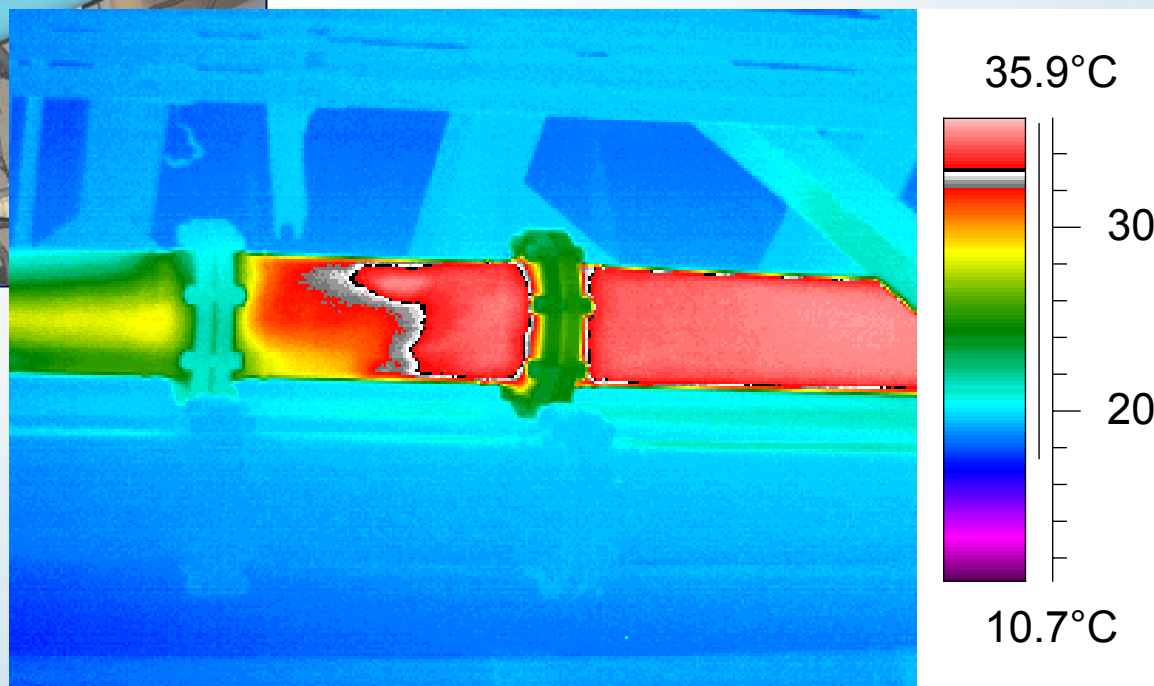
Containment Health



Containment Health



Station Water Piping (left) and
Thermography Shots (below)



Containment Health

- Containment Health Inspection Teams
 - Final “clean-up” of remaining work
- “As Left” Conditions
 - Documented by inspectors after cleaning
 - Assessed by independent evaluators
 - “As left” compared against “as found”
 - Final “as left” inspection
 - Baseline for Boric Acid Corrosion Control Program procedure
 - Provides for a systematic method
- Restart Test Plan
 - Four independent tests verify no Reactor Coolant System leakage

Restart Action Performance



Clark Price Owner - Restart Action Plan

Restart Action Performance

- 0350 Checklist Items
- Restart Action Progress

Restart Action Performance

Item No.	0350 Item Description	Discovery	Implementation
1	Adequacy of Root Cause		
a	Penetration cracking and reactor pressure vessel corrosion	Technical Root Cause 02-0891	
b	Organizational, programmatic and human performance issues	95	
2	Adequacy of Safety Significant Structures, Systems and Components		
a	Reactor Pressure Vessel Head Replacement		97
b	Containment Vessel Restoration following RPV Head Replacement		90
c	Structures, Systems and Components Inside Containment	100	78
c.1	Containment Emergency Sump	100	84
d	Boric Acid in Systems Outside Containment	100	72



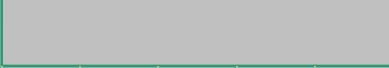
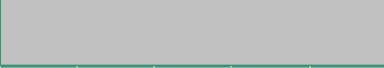






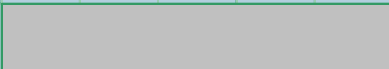

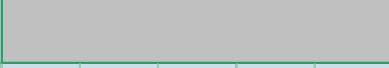
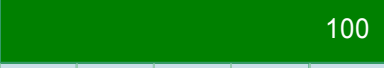



Restart Action Performance

Item No.	0350 Item Description	Discovery	Implementation
3	Adequacy of Safety Significant Programs		
a	Corrective Action Program	100	85
b	Operating Experience Program	100	95
c.1	Quality Audits	95	75
c.2	Self-Assessments of Programs		100
d	Boric Acid Corrosion Management Program	100	100
e	Reactor Coolant System Unidentified Leakage Monitoring Program		75
f	In-Service Inspection Program	100	100
g	Modification Program	100	100
h	Radiation Protection Program	100	85
i	Completeness & Accuracy of Required Records & Submittals to NRC		25



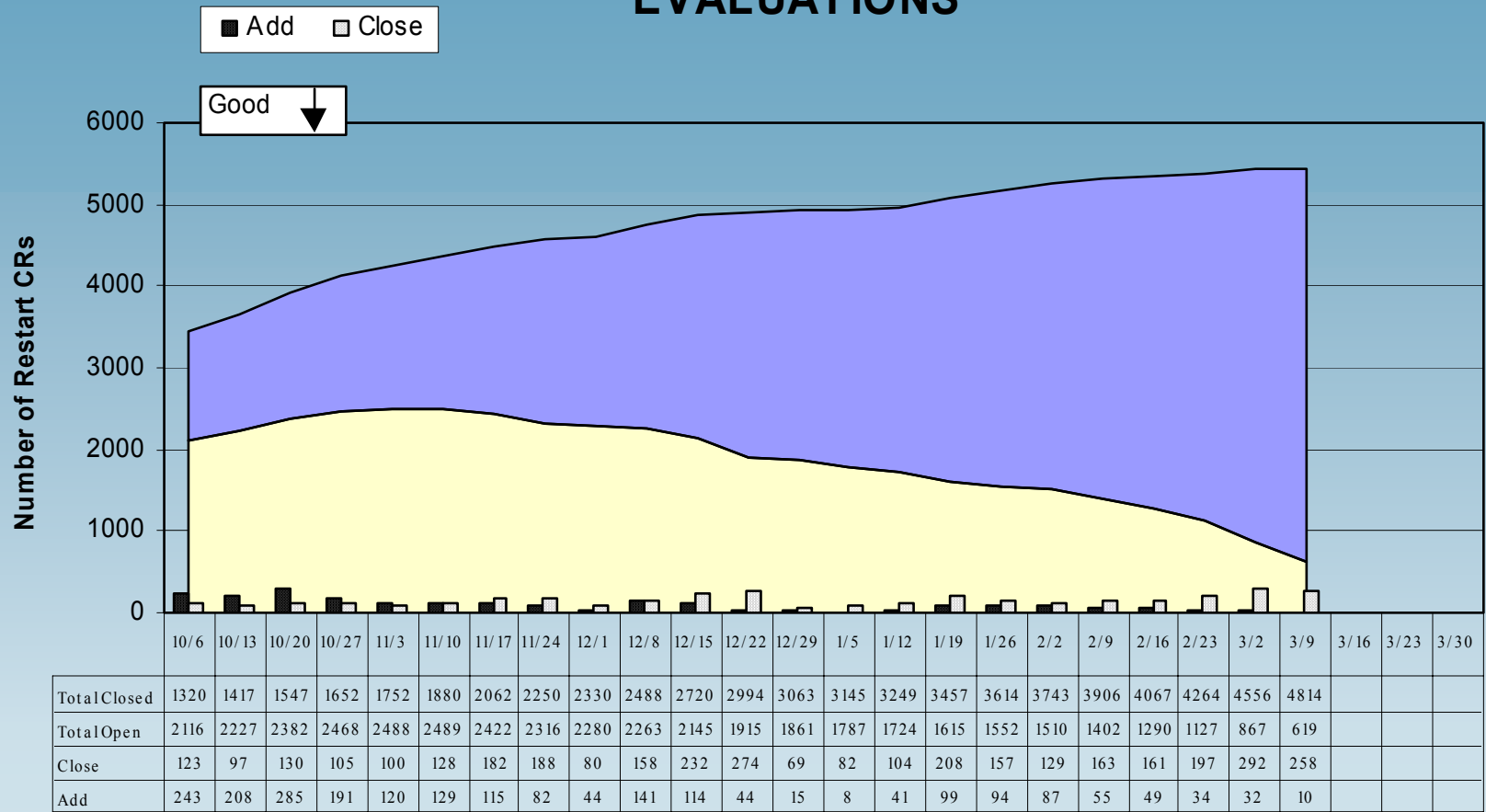
Restart Action Performance

Item No.	0350 Item Description	Discovery	Implementation
4 a-b	Adequacy of Organizational Effectiveness & Human Performance		 85
5	Readiness for Restart		
a	Review of Licensee's Restart Action Plan		
b	Systems Readiness for Restart	 100	
b.1	Design Calculation Resolution	 80	
c	Operations Readiness for Restart		
d	Test Program Development and Implementation		 60
6 a-f	Licensing Issue Resolution		 100
7 a	Confirmatory Action Letter Resolution		

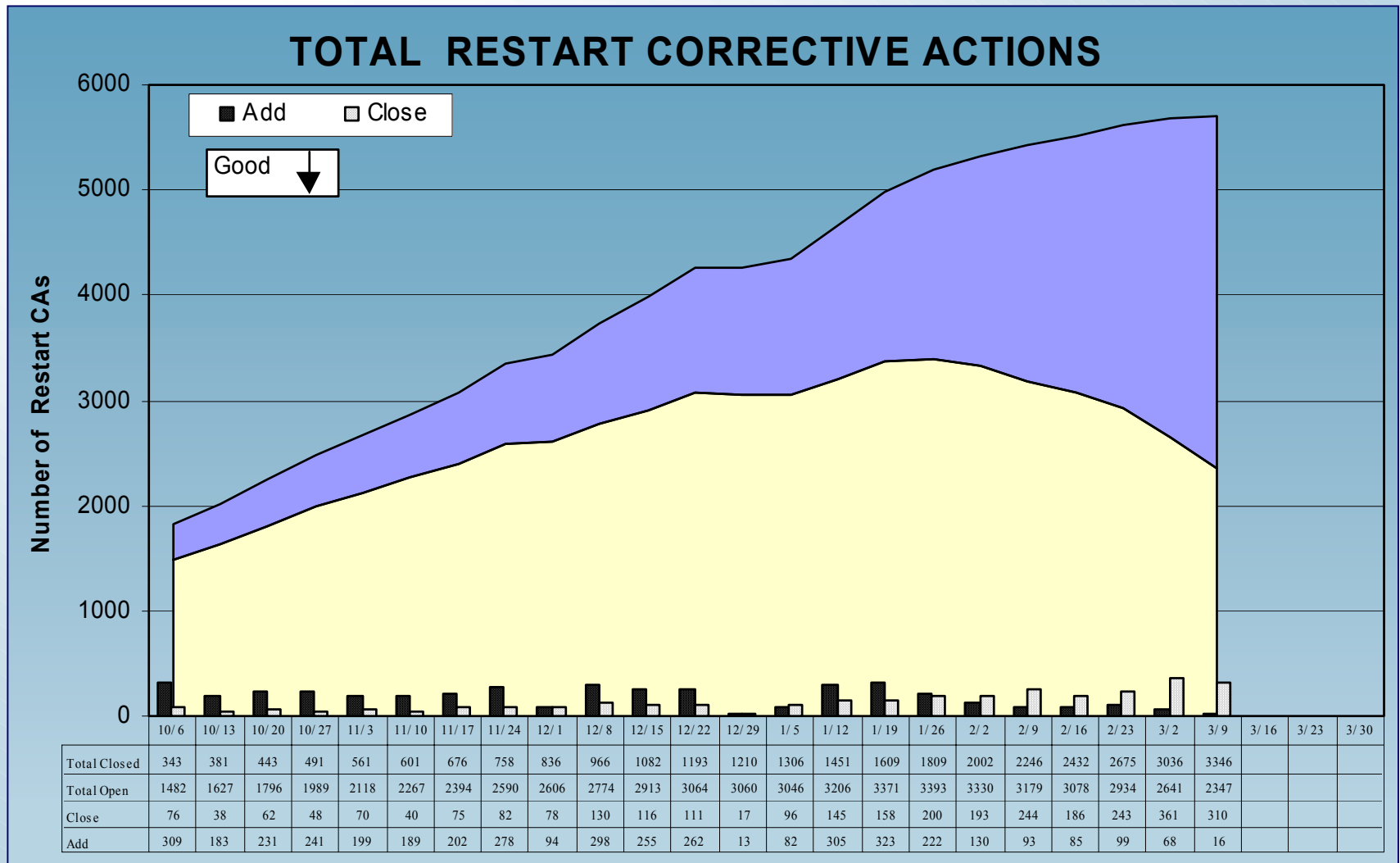


Restart Action Performance

TOTAL RESTART CONDITION REPORT EVALUATIONS



Restart Action Performance



Restart Action Performance

Restart Work-Off Rates - 4 Week Average						
		Week Ending				
BUILDING BLOCK		9-Feb	16-Feb	23-Feb	2-Mar	9-Mar
CONTAINMENT HEALTH						
	Condition Reports	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
	Corrective Actions	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
SYSTEM HEALTH						
	Condition Reports	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
	Corrective Actions	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
PROGRAM COMPLIANCE						
	Condition Reports	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
	Corrective Actions	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
NON BUILDING BLOCK						
	Condition Reports	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
	Corrective Actions	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
TOTAL RESTART						
	Condition Reports	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
	Corrective Actions	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
Work Off Rate Declined from Prior Week						
Work Off Rate Improved from Prior Week						
Work Off Rate Unchanged from Prior Week						

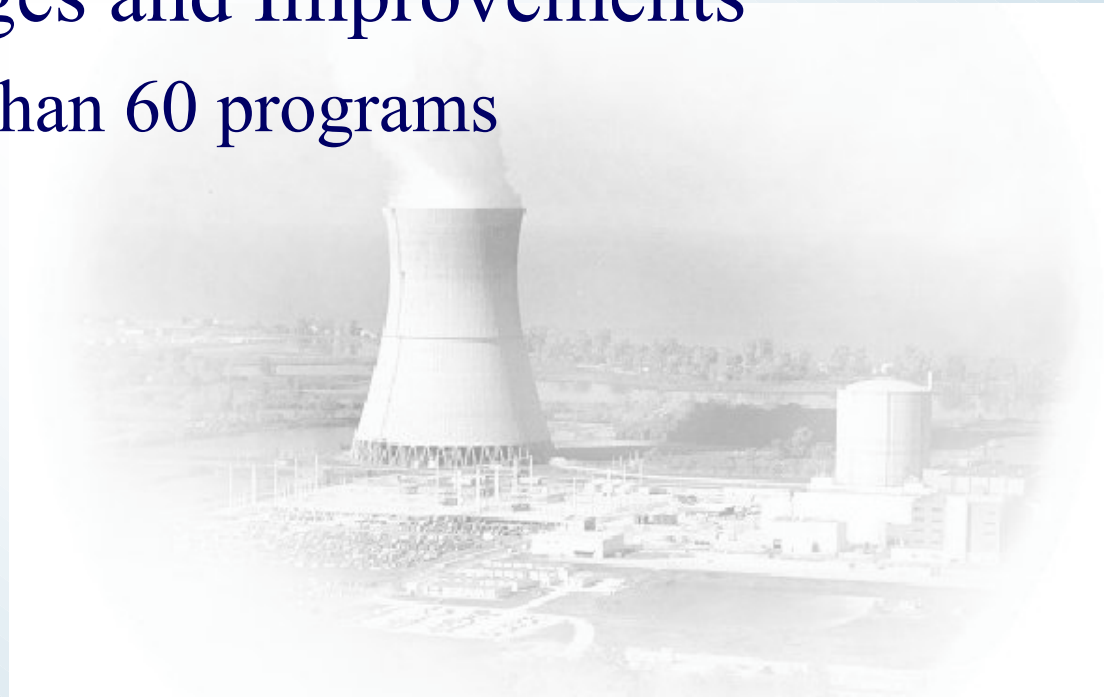
Program Compliance



Jim Powers
Director - Nuclear Engineering

Program Compliance

- Program Review Process Approval
- New Set Point Program Prior to Restart
- Programs Changes and Improvements
 - Involves more than 60 programs

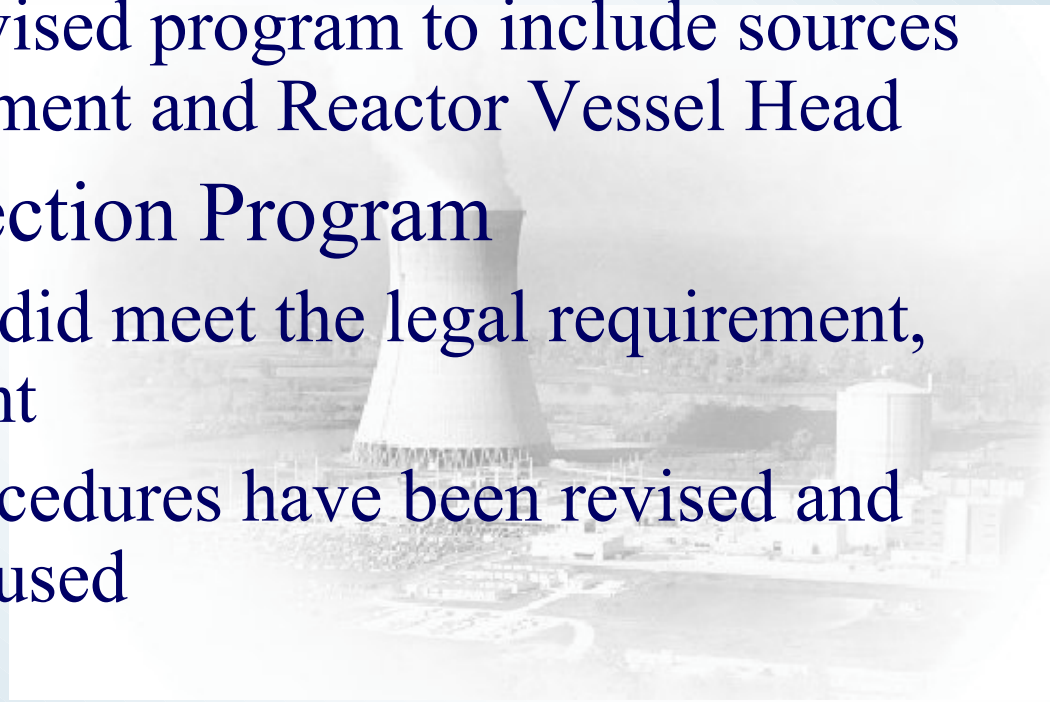


Program Compliance

- Corrective Action Program
 - Issue: Inadequate implementation of the program
 - Resolution: Condition Report Analyst, Corrective Action Review Board improvements, and procedure changes
- Operating Experience (OE)
 - Issue: OE not properly evaluated and incorporated into activities
 - Resolution: Procedure changed to improve process and OE use promoted

Program Compliance

- Boric Acid Corrosion Control
 - Issue: Did not address sources of boric acid outside containment and Reactor Vessel Head
 - Resolution: Revised program to include sources outside containment and Reactor Vessel Head
- In-Service Inspection Program
 - Issue: Program did meet the legal requirement, but not the intent
 - Resolution: Procedures have been revised and personnel refocused



Program Compliance

- Plant Modification Program
 - Issue: Handoff of engineering package activities to planning and field relies on tribal knowledge to function
 - Resolution: Procedures are being developed and revised to address the issues
- Radiation Protection Program
 - Issue: Content of procedures does not contain requirements
 - Resolution: Procedures are being upgraded to incorporate requirements

Upcoming Activities



Greg Dunn

Manager - Outage Management & Work Control

Upcoming Activities

- Restart Milestones
 - Tension Studs/Mode 5
 - Drain Down/Nozzle Dams
 - Reactor Coolant System Fill
 - Integrated Leak Rate Test
 - Emergency Sump Lower Strainer Assembly
 - Containment Air Coolers
 - Mode 4 Restart Readiness Meeting
 - Reactor Pressure Test



Closing Remarks



Lew Myers
Chief Operating Officer - FENOC