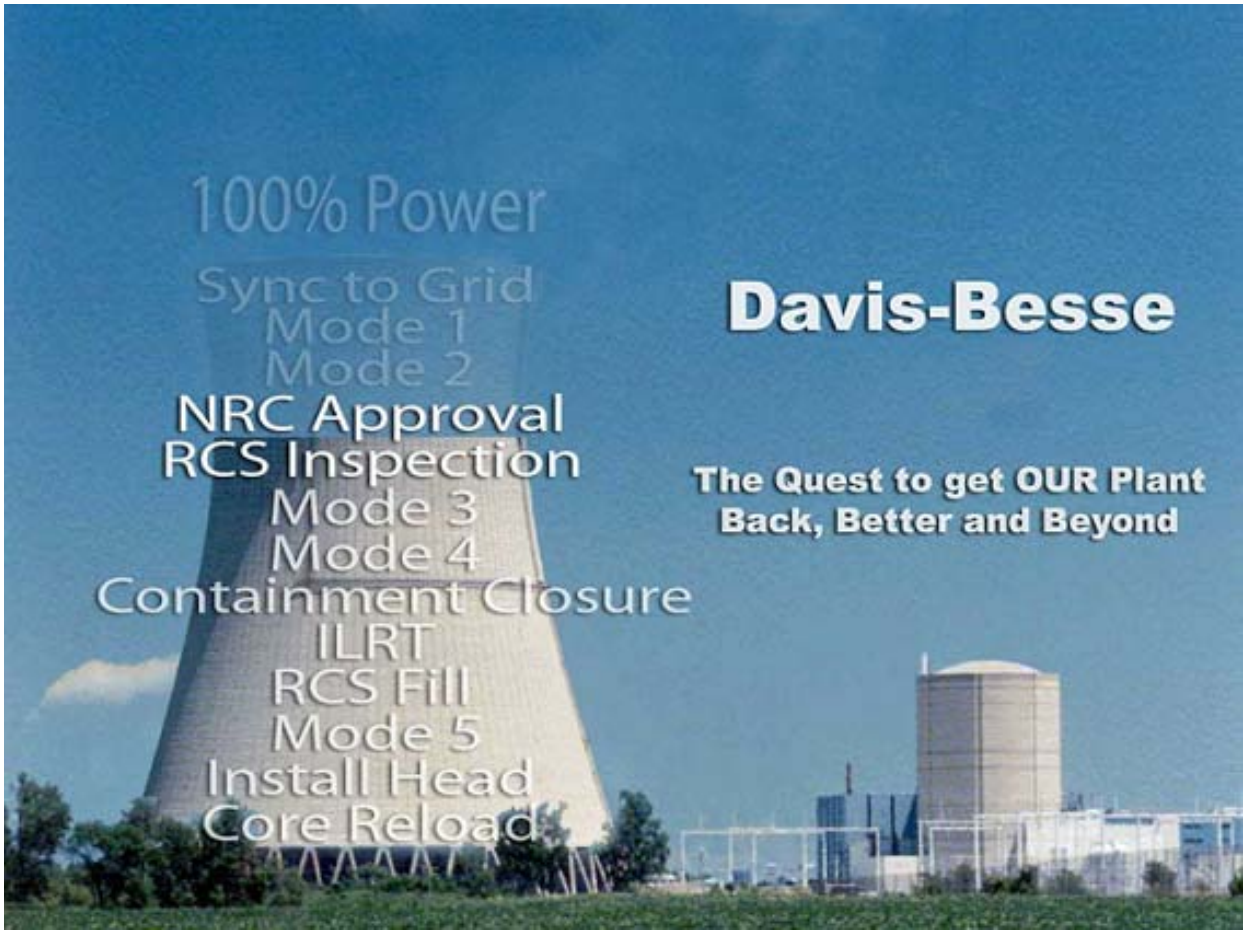
Davis-Besse Nuclear Power Station



Restart Meeting

Meeting Agenda

- Introduction…….. Gary Leidich
- Return to Service Plan……Lew Myers
- Recent Operational Performance……Barry Allen
- Readiness for Plant Operations……Mark Bezilla
- Nuclear Oversight's Assessment for Restart……Fred von Ahn
- Request for Restart……Gary Leidich

Gary Leidich
FENOC President and Chief Nuclear Officer

Desired Outcomes

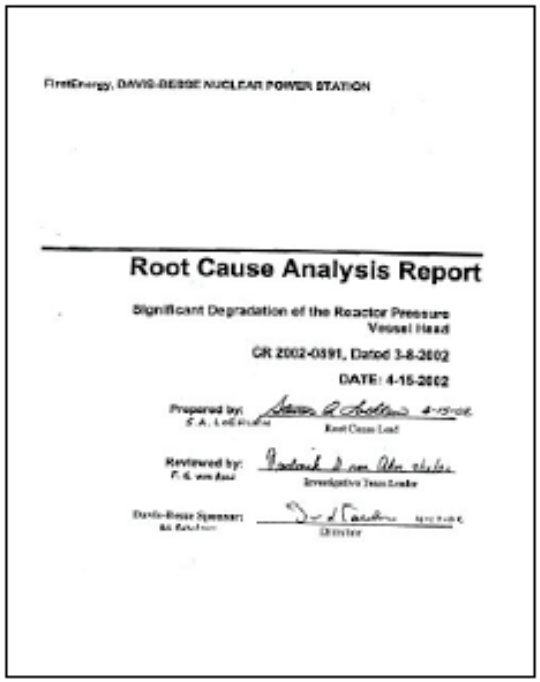
- Provide an overview of the safety improvements accomplished over the past two years
- Demonstrate that our people, plant, and programs are ready for safe and reliable operation
- Request NRC approval for restart

Lew Myers
Chief Operating Officer - FENOC

Return to Service Plan

Lew Myers
Chief Operating Officer - FENOC

Results of Root Cause Assessments



FirstEnergy, DAVIS-BESSE NUCLEAR POWER STATION

Root Cause Analysis Report

Significant Degradation of the Reactor Pressure Vessel Head

CR 2002-0891, Dated 3-8-2002

DATE: 4-15-2002

Prepared by: S. A. Loehlein, Root Cause Lead

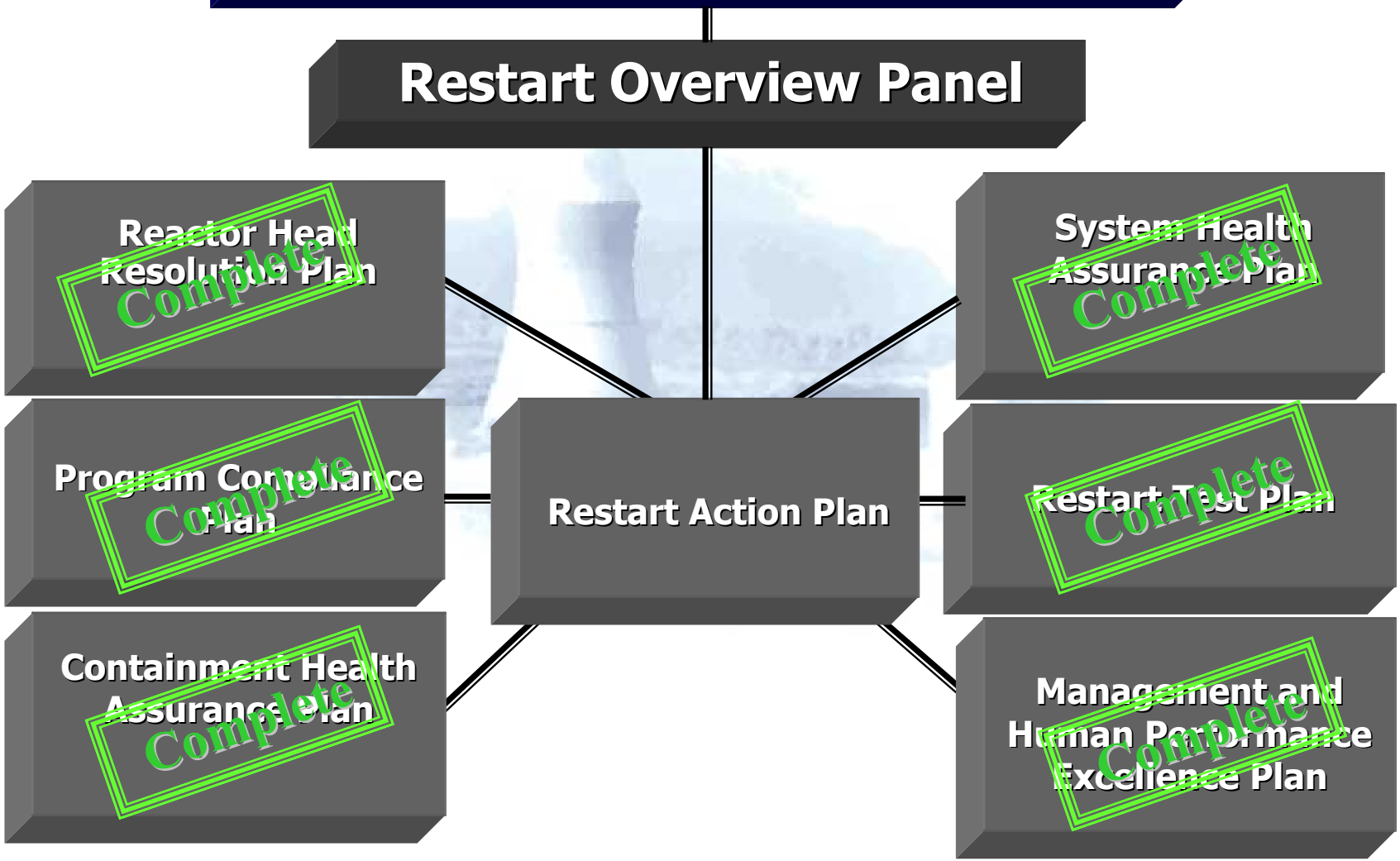
Reviewed by: P. G. von Aulock, Investigative Team Leader

Davis-Besse Sponsor: M. Roder, Director

- Completed comprehensive root cause analyses and identified causes:
  - Reactor Pressure Vessel (RPV) head degradation caused by primary water stress corrosion cracking (PWSCC) and boric acid corrosion
  - Nuclear Safety Focus
    - Acceptance of degraded conditions
  - Deficiencies in corrective actions, Engineering analyses, procedure compliance, Quality Assurance (QA) oversight, Operations leadership, and safety focus of Company Nuclear Review Board (CNRB)
- New management team established to implement Return to Service Plan

FirstEnergy

Return to Service Plan



Reactor Pressure Vessel Head Replaced

Reactor Pressure Vessel Head

- Replacement reactor vessel head fabricated to same ASME Code Edition and Addenda as original
- Supplemental radiographs satisfactory
- Pressure tests of Reactor Coolant System (RCS) with new head were acceptable
- Control Rod Drive Insertion Time Test was successful
- Reactor Pressure Vessel Head is ready for restart

Containment Health is Excellent

Containment Sump

FLÜS Online Leak Monitoring System

- Upgraded Emergency Containment Sump
- Installed Decay Heat Valve Tank
- Refurbished Reactor Coolant Pumps
- Installed FLÜS Leak Monitoring System
- Installed Permanent Reactor Cavity Seal
- Replaced Coatings in Containment
- Removed Fibrous Insulation
- Upgraded Cranes and Bridges
- Sealed Containment Vessel-to-Concrete Interface (inner and outer seals)
- Performed Integrated Leak Rate Test
- Ensured Fuel Integrity

Containment Extent of Condition Identified and Corrected

Containment Air Coolers

Decay Heat Valve Tank

- Conducted thorough boric acid and Alloy 600 component inspections
- Corrective Actions included
  - Repacked ~ 100 valves
  - Completed ~ 2,500 restart corrective actions
  - Upgraded Containment Air Coolers
  - Replaced and repaired other components (ductwork, cable trays, coatings)
- Excellent RCS integrity
- Containment systems, structures, and components are ready for restart

System Health Supports Safe and Reliable Operation

High Pressure Injection Pump

Emergency Diesel Generator

- Completed System Reviews
  - –Operational Readiness Reviews performed on 43 plant systems
  - –System Health Readiness Reviews of 31 risk-significant Maintenance Rule systems
  - –Latent Issues Reviews of five systems
  - –Topical Area Reviews
  - –Safety Function Validation Project
- More than 140 modifications completed to improve Safety and Reliability
- Plant systems, structures, and components are ready to support safe operation

Programs Meet Regulatory and Industry Standards

Plant Engineering

Fuel Inspection

- Completed Program Reviews
  - 65 in Phase 1 and 6 in Phase 2
- Quality Assurance Program also assessed through the Phase 2 Review Process
- More than 600 restart corrective actions completed to improve programs
- Programs meet/exceed regulatory and industry standards
  - Boric Acid Corrosion Control and Leak Detection Programs, Employee Concerns, Operating Experience, Radiation Protection
- Plant programs are ready to support safe operation

Management & Human Performance Excellence Plan Anchors Safe Performance

Senior Management Meets with ROP

- Management/Personnel Development
  - –New corporate management
  - –New plant management
  - –Evaluations of competence of management personnel
- Safety Culture and Safety Conscious Work Environment
- Standards and Decision-Making
- Oversight and Assessments
- Procedure Compliance

Restart Test Plan
Demonstrated Plant Integrity

Inspected Incore nozzles (bottom of reactor vessel)

- Completed Testing
  - Containment Integrated Leak Rate Test (April 9)
  - RCS 50 psig Test (May 6)
  - RCS 250 psig Test (May 25)
  - RCS Normal Operating Pressure Test (October 2)
    - Heated Reactor Coolant System to ~ 532° using Reactor Coolant Pumps
    - Pressurized Reactor Coolant System to ~ 2155 psi
    - Conducted plant walkdowns
- Excellent RCS integrity

Recent Operational Performance

Barry Allen
Plant Manager

Operations Continues to Demonstrate Visible Improvement

Control Room

- Operations Leadership driving the site
- Managers are visible in plant enforcing standards
- Improved Shift Manager oversight
- Pre-jobs briefs facilitate desired results
- Reactor Operator's role has been expanded
- Operator ownership and accountability
- Consistent annunciator response
- Detailed operational log keeping
- Prescriptive implementation of Technical Specifications
- Plant heat-ups and cool-downs have been successfully completed

Operations has Demonstrated Readiness for Restart

- NOP Assessment Criteria fully satisfied
  - No inadvertent safety system actuations...
  - No significant events...
  - No integrated plant operating procedure content errors...
  - No unplanned entry into technical specifications...
  - Consistent implementation of Conduct of Operations...
  - Actions taken by management show an improving trend...
  - Work implementation schedule adherence at 90% or above...
  - Risk profile matches the schedule…

Control Room

Readiness for Plant Operations

Mark Bezilla
Site Vice President

Effective Barriers Ensure Success

Control Room

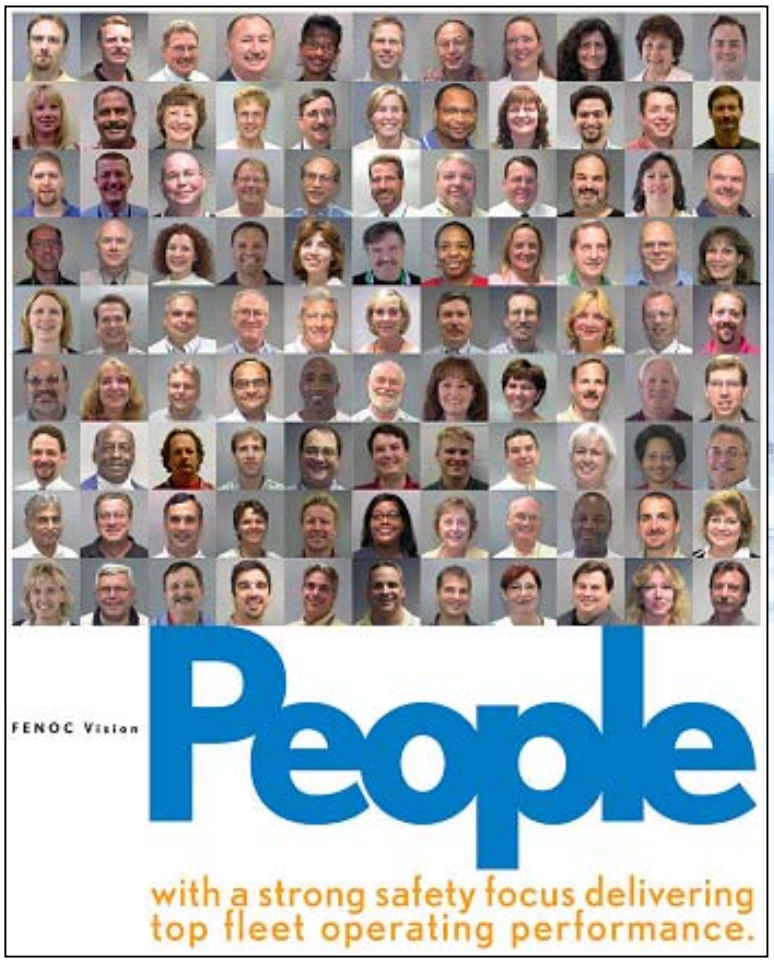
- Competent individuals
- Strong programs
- Effective management
- Intrusive Independent Oversight

Integrated Restart Test Plan Assures Safe, Controlled Return to Service

- Plant is in Mode 3 at Normal Operating Pressure
  - Plant Systems have been tested and are ready for Mode 2

- Following NRC Approval for Restart
  - Complete final Mode 2 Readiness Review and Mode Change Checklist
  - Enter Mode 2 (Restart)
  - Enter Mode 1
  - Management Hold for Effectiveness & Readiness Assessment
  - Synchronize to the Grid
  - At ~ 50% Power - Management Hold for Effectiveness & Readiness Assessment
  - 100% Power Operation
  - Post-Restart Effectiveness Critiques at two weeks and one month

Performance Improvement Operational Plan



- Improvement Initiatives
  - Organizational Effectiveness
  - Operations
  - Maintenance
  - Training
  - Work Management
  - Engineering
  - Safety Culture
  - Procedures
  - Corrective Action Program
  - Internal and External Oversight

Readiness for Plant Operation

- People, plant, and programs are ready for safe restart

All-Hands Meeting

Employee alignment training

Restart banner signing

Nuclear Oversight's Assessment for Restart

Fred von Ahn

Vice President - Oversight

Independent Oversight Conclusions

Senior Management Team with the Restart Overview Panel

Restart Overview Panel Restart Approval

- Nuclear Quality Assurance
  - Return to Service Plan adequately implemented and Davis-Besse is ready for restart
- Company Nuclear Review Board
  - No safety issues preventing restart
- Restart Overview Panel
  - Davis-Besse is ready for restart

Independent Oversight Assures Continued Improvement After Restart

Quality Assurance Oversight

- QA and CNRB Oversight
- Corporate Collective Significance Assessments
- External Focused Assessments
  - Safety culture
  - Engineering quality
  - Corrective Action Program

Request for Restart

Gary Leidich
President and Chief Nuclear Officer

FENOC Respectfully Requests NRC Approval for Restart

- Management team strengthened
- People, plant, and programs are ready for safe, reliable operations
- Established a foundation for sustained, long-term safety performance
- Strong corporate governance and oversight
- Established a strong safety focus