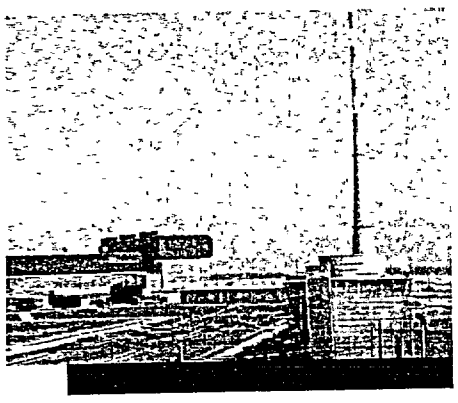
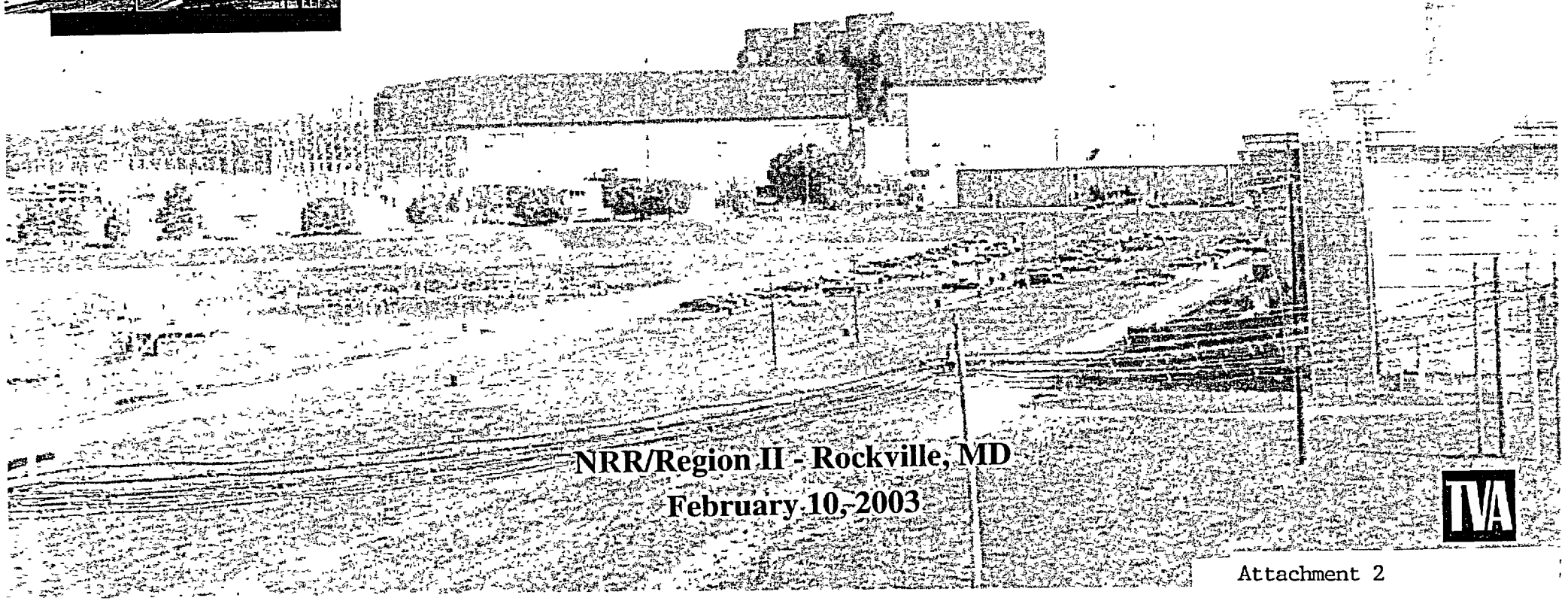
# TENNESSEE VALLEY AUTHORITY
# BROWNS FERRY NUCLEAR PLANT
# UNIT 1 RESTART STATUS





**NRR/Region II - Rockville, MD**

**February 10, 2003**

Attachment 2

# TENNESSEE VALLEY AUTHORITY
# BROWNS FERRY NUCLEAR PLANT
# UNIT 1 RESTART STATUS

**NRR/Region II - Rockville, MD**
**February 10, 2003**

# Agenda

| | |
|---|---|
| • Introduction | - John Scalice |
| • Background | - Ashok Bhatnagar |
| • Unit 1 Restart Project Objectives | - Jon Rupert |
| • Unit 1 Restart Organization | - Jon Rupert |
| • Unit 1 Project Overview and Schedule | - Jon Rupert |
| • Unit 1 Engineering Activities Status | - Joe Valente |
| • Impact on Operating Units | - Rick Drake |
| • Unit 1 Maintenance & Modifications Status | - Rick Drake |
| • Regulatory Activities Status | - Tim Abney |
| • Corrective Action Program/Self Assessments | - Tim Abney |
| • Nuclear Assurance Oversight | - Steve Tanner |
| • Summary and Conclusion | - John Scalice |

# Background

- All three BFN Units are essentially identical GE BWR4, Mark I Containment reactors
- Designed and constructed by TVA
- Units 1, 2, and 3 licensed in 1973, 1974, and 1976 respectively
- All three BFN units voluntarily shutdown by TVA in March 1985, because of regulatory and management issues
  - TVA committed to obtain NRC approval prior to restart of any BFN unit
  - TVA submitted the Nuclear Performance Plan, Volume 3, in August 1986. It outlined the steps needed to recover the BFN units and was specifically directed to Unit 2

# Background

- TVA executed Unit 2 restart plan, obtained NRC approval, and restarted Unit 2 on May 24, 1991
- TVA proposed regulatory framework for restart of Units 1 and 3 in July 1991, outlining improvements to the Unit 2 restart plan
- NRC approved the regulatory framework proposed by TVA in April 1992
- TVA executed the Unit 3 restart plan, obtained NRC approval, and restarted Unit 3 on November 19, 1995
- TVA Board of Directors decided on May 16, 2002, to restart Unit 1 after detailed study and favorable Supplemental Environmental Impact Statement

# Unit 1 Restart Project Objectives

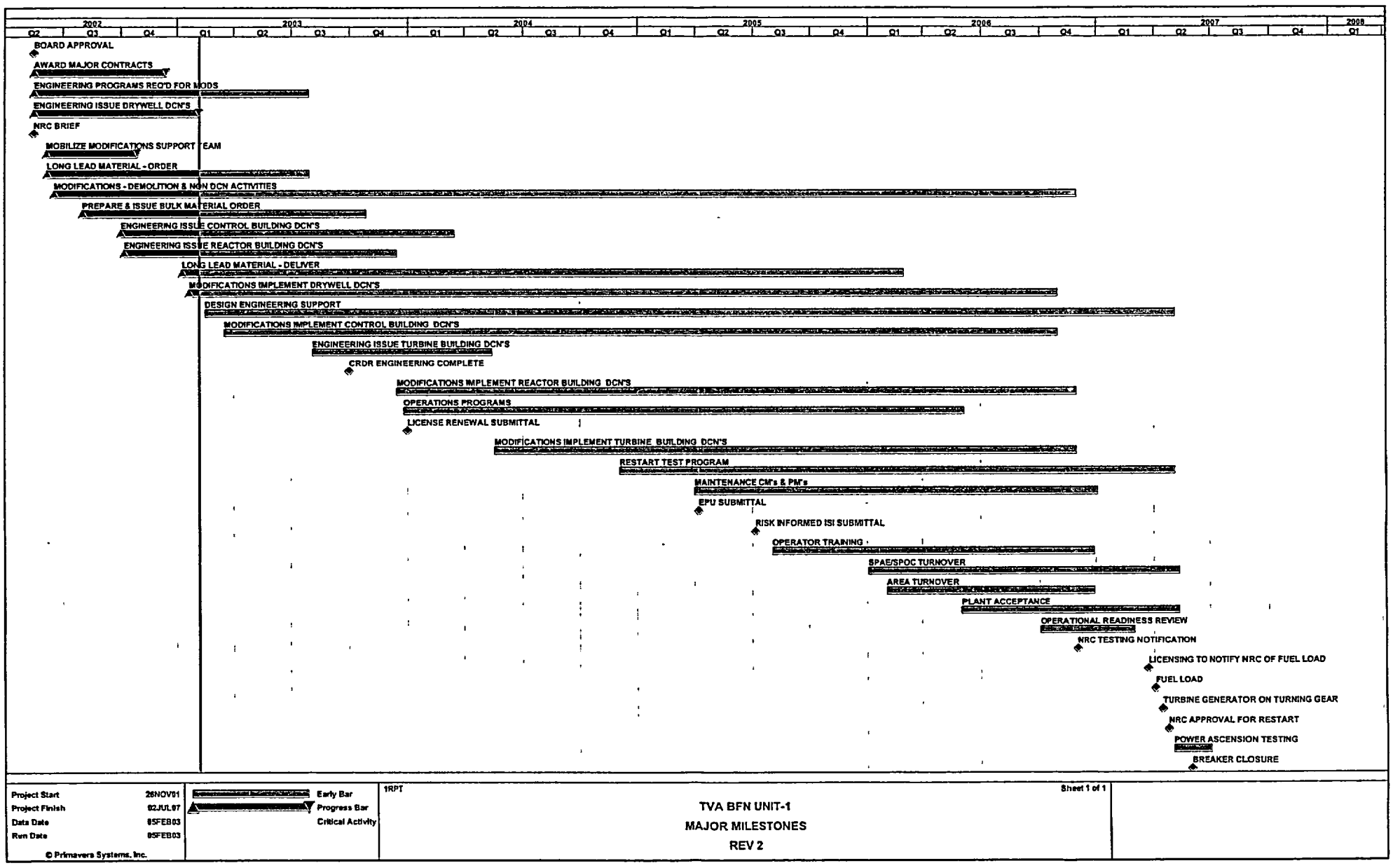
- Unit Fidelity
  - Return Unit 1 to service operationally the same as Units 2 and 3
  - Utilize current design criteria
  - Utilize existing TVA procedures, programs and processes
- Project Integration
  - Extensive integrated planning and scheduling which incorporated lessons learned from Units 2 and 3
  - Touch each component, system, and plant area only once
- Return Unit 1 in condition to operate safely, efficiently, and reliably

# Unit 1 Restart Organization

- Dedicated resources for Unit 1 restart
- TVA management team with experience on restart of Units 2 and 3
- Bechtel is primary engineering contractor, Stone and Webster is primary maintenance and modifications contractor
- Unit 1 team closely integrated with operating units' team
- Organizational structure and strong team in place for restart effort

# Unit 1 Project Overview and Schedule

- Work Scope Required for Unit 1 Restart
  - Nuclear Performance Plan Special Programs
  - Engineering analyses
  - Extensive design changes consistent with Units 2/3 restart
  - Design changes implemented since Units 2/3 restart
  - Future design changes in 5-year BFN Project Plan
  - Corrective/Preventive maintenance
  - Regulatory issues
  - Licensing actions
  - Inservice inspections
  - Restart testing




| | | | | |
|---|---|---|---|---|
| Project Start | 26NOV01 | Early Bar | 1RPT | Sheet 1 of 1 |
| Project Finish | 02JUL07 | Progress Bar | TVA BFN UNIT-1 | |
| Data Date | 05FEB03 | Critical Activity | MAJOR MILESTONES | |
| Run Date | 05FEB03 | | REV 2 | |

# Unit 1 Engineering Activities Status

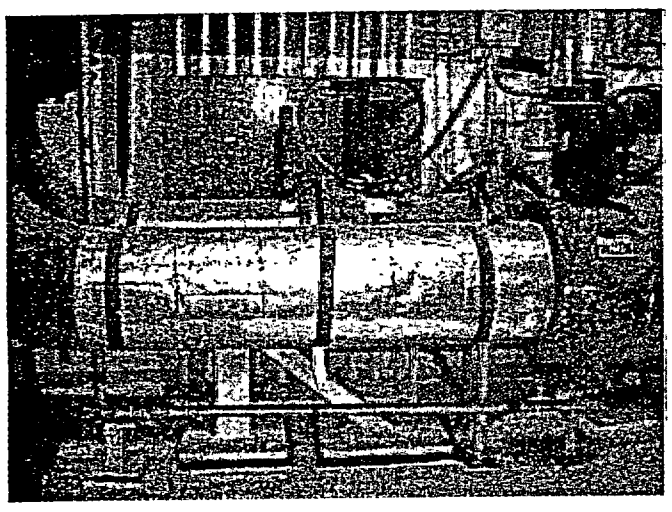
- Program Activities
  - Design Criteria Documents - complete
  - Safe Shutdown Analysis - complete
  - Operation Mode Calculations - complete
  - Generic Letter 89-10 Calculations - complete
  - EQ Basis Calculations - complete
  - Analytical Limits Calculations - complete
  - Drywell Related Baseline Calculations - complete
  - Reactor Building Baseline Calculations - in progress
  - License Renewal Activities - in progress

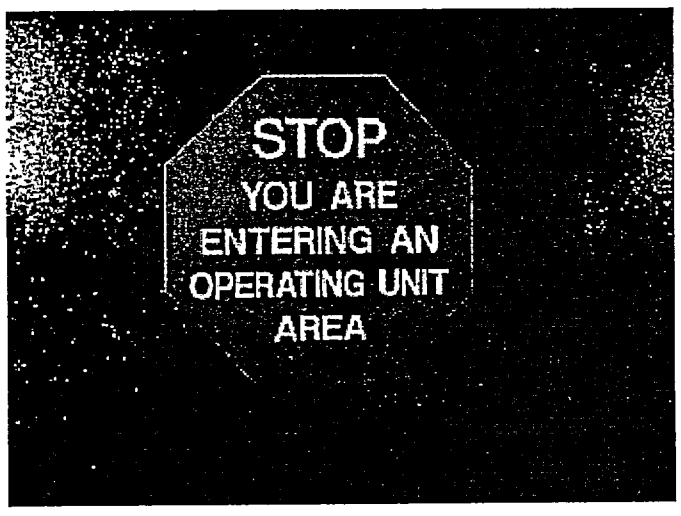
# Unit 1 Engineering Activities Status

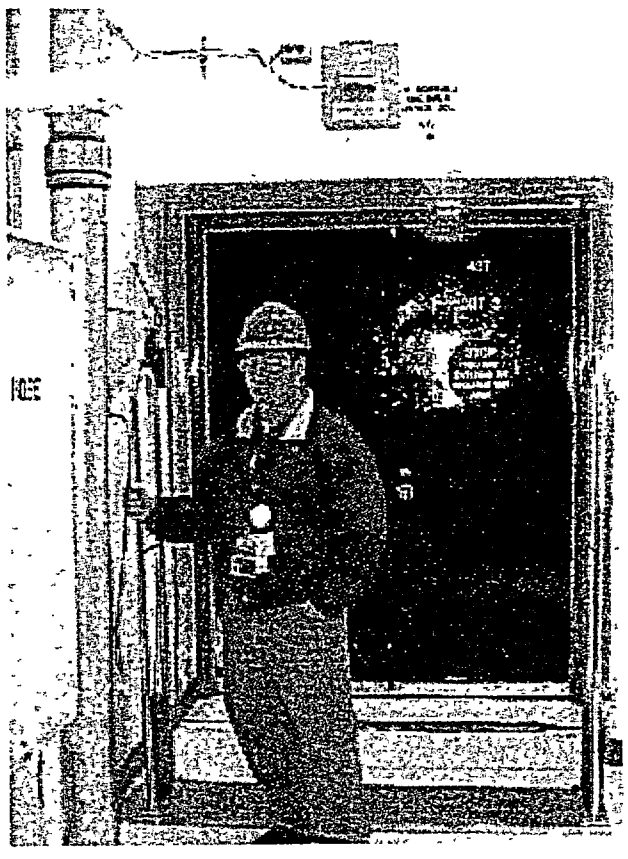
- Design Change Packages
  - Approximately 360 design change packages required for restart
  - 60 design changes issued
  - All design changes for the drywell are issued
  - Currently, 70 design changes in progress and on schedule for Reactor Building, Control Bay and Turbine Building, and yard
- Challenges
  - Modifications interface
  - Material supplier interactions

# Impact on Operating Units

- Access Control
  - Physical access accommodations
  - Personnel Identification
  - Training
  - Unit color codes
  - Unit 1 equipment required for Unit 2/3 operation identification





Rick Drake

# Impact on Operating Units

- Work Control Reviews
  - Experienced Work Control Personnel in Unit 1
  - Work schedules evaluated by operating units' personnel

# Unit 1 Maintenance & Modifications Status

- Completed Activities
  - Drywell piping removal
  - Drywell cable determinations
  - Drywell decontamination
- Near-Term Planned Work
  - Asbestos abatement
  - Extraction steam piping removal
  - Condenser retube preparation
  - Modifications inside drywell
- Challenges
  - Human performance
  - Industrial safety
  - Constructability of designs

# Regulatory Activities Status

- Proposed Regulatory Framework for Unit 1 Restart Submitted December 13, 2002
- Licensing Actions
  - Relief Requests PD-1 and PD-2 submitted October 25, 2002
  - ISI Program update submitted November 8, 2002
  - Detailed Schedules being developed for 18 license amendments

# Corrective Action Program/Self Assessments

- Corrective Action Program Being Used to Monitor and Improve Quality
  - Management Review Committee Subcommittee reviews all Unit 1 Problem Evaluation Reports (PERs)
  - Extensive efforts to encourage contractors to write PERs
  - Analysis of PER data to identify trends requiring further action
- Self Assessments Completed
  - Drywell Disassembly
  - Drywell Structural Steel Design
  - Asbestos Abatement
  - Contractor Control

# Corrective Action Program/Self Assessments

- Self Assessments Planned FY 03
  - Mechanical Baseline Calculations
  - Reactor Water Cleanup Design Change Notice
  - Auxiliary Power System Analysis
  - Appendix R Analysis
  - Engineering Training
  - Unit Barrier Separations
  - Work Plan/Work Order
  - Drywell Steel Modification Implementation
  - Materials Process
  - Drawing Improvement Program
  - Corrective Action Program
  - Work Control
  - Rad Chem Activities
  - Integrated Data base (ITEL)
- Findings from PERs and Self Assessments

# Nuclear Assurance Oversight

- Nuclear Assurance Staffing
  - Quality Control, Quality Programs, and Quality Assessments
  - Inspections, Source Surveillances, Assessments, and Evaluation and Analysis
  - Experienced Nuclear Assurance staff
- Assessments
  - Routine Observations
    - ♦ Drywell preparatory work
    - ♦ Program and support activities
  - Formal Planned/Scheduled
    - ♦ Engineering Walkdown Program (Completed)
    - ♦ Vertical Slice of RHR System Design (In-progress)
    - ♦ Engineering, Maintenance & Modifications, Support, and Operations
- Conclusions
  - No significant issues identified to date
  - Demonstrated ability to self-identify and resolve problems in Corrective Action Program

# Summary and Conclusion