U.S.NRC
UNITED STATES NUCLEAR REGULATORY COMMISSION
Protecting People and the Environment

Briefing on Browns Ferry Unit 1

Bill Borchardt
Executive Director for Operations

October 18, 2011

Objectives

- **Provide overview of performance issue**
- **Describe staff's review and assessment of performance**
- **Review agency actions**

Agenda

- Browns Ferry Performance
  - Victor McCree
- Increased Oversight
  - Richard Croteau

Browns Ferry Performance

Victor McCree
Regional Administrator
Region II

Browns Ferry Performance

- Unit 1 low pressure coolant injection valve failure
  - Inspection finding and violation
  - Red (high) significance determination
- Units 2 and 3 in Column 1
- All performance indicators are green

Performance Assessment

	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011
Unit 1	Degraded Cornerstone		Multiple Repetitive/ Degraded Cornerstone		
Finding	Yellow Violation of 10 CFR 50 Appendix R III.G.1 & III.G.2		Low Pressure Coolant Injection Valve Failure		
Unit 2	Degraded Cornerstone			Licensee Response	
Finding	Yellow Violation of 10 CFR 50 Appendix R III.G.1 & III.G.2				
Unit 3	Degraded Cornerstone			Licensee Response	
Finding	Yellow Violation of 10 CFR 50 Appendix R III.G.1 & III.G.2				

Staff's Review and Assessment

- **Browns Ferry Unit 1 moved to Column 4**
  - **Licensee appealed final significance determination**
  - **Independent review panel**
  - **Conclusion: Red finding sustained**

Increased Oversight

Richard Croteau, Director
Division of Reactor Projects, Region II

Increased Oversight

- **Regional reorganization**
- **Overall inspection effort focused on equipment reliability**

Increased Oversight (Cont'd)

- **Supplemental inspection conducted in three parts**
  - **Component testing programs (complete)**
  - **Maintenance programs (in progress)**
  - **Formal 95003 procedure (planned)**
    - **Includes third-party review of safety culture assessment**

PLANS FOR IMPROVEMENT AT TVA'S BROWNS FERRY NUCLEAR PLANT

October 18, 2011

Preston D. Swafford, Executive Vice President and Chief Nuclear Officer, Tennessee Valley Authority

Background

- A failed Browns Ferry, Unit 1, Residual Heat Removal (RHR)/Low Pressure Coolant Injection (LPCI) system valve was discovered during shutdown in October 2010
- Due to the plant's fire protection strategy at that time, the previously undetected failure of this valve was determined to be of high ("Red") safety significance

Background *(continued)*

- TVA acknowledges the safety significance of this occurrence
- Actions were promptly taken to address the valve failure mechanism at all three Browns Ferry units

Background *(continued)*

- While TVA identified a number of factors that could have mitigated the safety significance, we understand these factors could not be credited
- TVA fully agrees that the issue here is the lack of rigor that was applied in evaluating operating and testing information and as a result, not taking appropriate and timely corrective actions

Causal Investigation and Analysis

- New root cause analysis is finding all the possible missed opportunities to identify this valve failure
- Our investigation is going well beyond those issues only associated with the "Red" finding

Causal Investigation and Analysis *(continued)*

- The safety culture assessment part of the root cause analysis will review the actions being taken to address the open substantive cross-cutting issues of thoroughness of evaluating identified problems and the appropriateness and timeliness of corrective actions

Causal Investigation and Analysis *(continued)*

- The causal investigation and analysis also includes the broader issues associated with a long-standing culture of taking a minimalist approach to problems that adversely affect equipment reliability

Improvement Plan

- TVA is using this "Red" finding to accelerate all actions that will lead to equipment reliability improvement at Browns Ferry
  - All actions will be rolled up into an Integrated Improvement Plan
  - Integrated Improvement Plan will include actions necessary to sustain improvement

Improvement Plan *(continued)*

- Some improvements already in place are:
  - Strong corporate governance and oversight
  - Equipment Reliability program including the establishment of necessary proceduralized processes and tools
  - ~$260 M expended or allocated from FY 2009 through FY 2011 strictly for equipment reliability improvements

Improvement Plan *(continued)*

- Objective of the Integrated Improvement Plan is for Browns Ferry to identify equipment problems, thoroughly evaluate them, and take appropriate and timely corrective actions before they cause occurrences of safety significance
- TVA executive management fully supports this effort