Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

August 23, 2012

10 CFR 50.4

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Browns Ferry Nuclear Plant, Unit 1
Facility Operating License No. DPR-33
NRC Docket No. 50-259

Subject: **Integrated Improvement Plan Summary**

Reference: Letter from NRC to TVA, "Final Significance Determination of a Red Finding, Notice of Violation, and Assessment Follow-Up Letter (NRC Inspection Report No. 05000259/2011008) Browns Ferry Nuclear Plant," dated May 9, 2011

The Nuclear Regulatory Commission (NRC) notified the Tennessee Valley Authority (TVA) in the referenced letter that they had assessed the Browns Ferry Nuclear Plant (BFN), Unit 1, performance to be in the Multiple/Repetitive Degraded Cornerstone Column of the NRC's Action Matrix (i.e., Column 4) beginning in the fourth quarter of calendar year 2010. This assessment was based on the final significance determination for failure to establish adequate design control and perform adequate maintenance on the Unit 1 low pressure coolant injection outboard injection valve, 1-FCV-74-66, resulting in the valve being left in a significantly degraded condition that led to the Residual Heat Removal System Loop II being unable to fulfill its safety function.

In response to this event, TVA has conducted extensive reviews, assessments, and causal analyses, using insights and guidance from NRC Inspection Procedure 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs or One Red Input." These reviews, assessments, and causal analyses were performed to understand the underlying issues associated with performance at BFN and to guide efforts and development of actions to achieve sustained improved performance and reduce risk.

The purpose of this letter is to provide the NRC staff with the enclosed copy of the BFN Integrated Improvement Plan Summary. The Integrated Improvement Plan was referred to in TVA's presentations at the NRC public meetings of May 15, 2012, and August 9, 2012, and the NRC Commission meeting of June 1, 2012.

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The Integrated Improvement Plan Summary describes the approach that TVA is using to guide BFN's efforts for improving performance to sustainable levels of excellence and to reduce station risk. The Integrated Improvement Plan Summary provides an overview of the diagnostic evaluation process used for identifying the underlying fundamental problems contributing to the safety culture and operational performance issues. The summary also discusses the process for identifying the key actions and includes performance monitoring indicators that are being used to assess the effectiveness of the implemented actions. The summary describes how future events or newly identified conditions will be expeditiously evaluated and incorporated into the learning and corrective action process. The Integrated Improvement Plan Summary includes the criteria that TVA will use to determine readiness for NRC inspection according to Inspection Procedure 95003 as well as criteria that will be used for long term success determination.

There are no new regulatory commitments contained in this response. Should you have any questions concerning this submittal, please contact J. W. Shea at (423) 751-6887.

Respectfully,

Preston D. Swafford
Chief Nuclear Officer

Enclosure: Integrated Improvement Plan Summary

cc (Enclosure):

NRC Regional Administrator - Region II
NRC Project Manager - Browns Ferry Nuclear Plant
NRC Senior Resident Inspector - Browns Ferry Nuclear Plant

ENCLOSURE

Tennessee Valley Authority

Browns Ferry Nuclear Plant, Unit 1

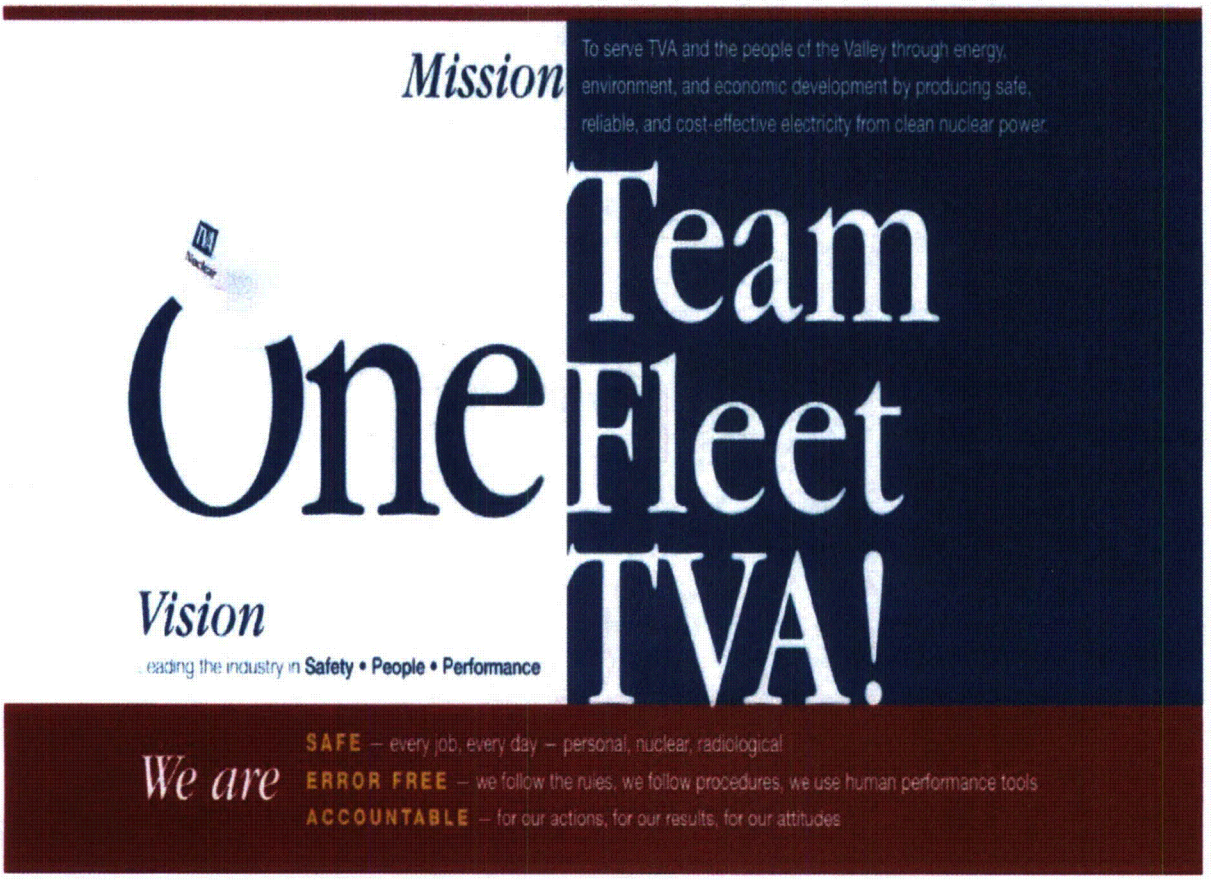
Integrated Improvement Plan Summary

Integrated Improvement Plan Summary

Tennessee Valley Authority

Browns Ferry Nuclear Plant

July 15, 2012



Approved _____

Keith J. Polson
Browns Ferry Site Vice President

1.0 Purpose

The purpose of this document is to summarize the approach that the Tennessee Valley Authority (TVA) Browns Ferry Nuclear Plant (BFN) is using to guide station efforts for improving performance to sustainable levels of excellence and to reduce station risk. This document provides an overview of the diagnostic evaluation process used for identifying the underlying fundamental problems contributing to the safety culture and operational performance issues. It also discusses the process for identifying the key actions and lists performance monitoring indicators that are being used to assess the effectiveness of the implemented actions. It further describes how any future events or newly identified conditions will be expeditiously evaluated and incorporated into the corrective action program. Finally, this document includes the criteria that TVA will use to determine readiness for NRC inspection according to Inspection Procedure (IP) 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs or One Red Input," as well as criteria that will be used for long term success determination.

2.0 Organization and Effort Governance

TVA Nuclear Power Group (NPG) developed an organization to provide fleet support and governance to the Browns Ferry team's performance improvement effort. A corporate officer was assigned full-time to this effort and led a team for the assessment and analysis phases that was comprised of site and corporate resources as well as expertise from across the industry. The effort was guided by a set of procedures that were developed using the detailed guidance in the 95003 Inspection Procedure as well as recent industry benchmarking data. These project-specific procedures were reviewed and approved by the 95003 Team to ensure quality and completeness. The procedures used for this effort include the following documents.

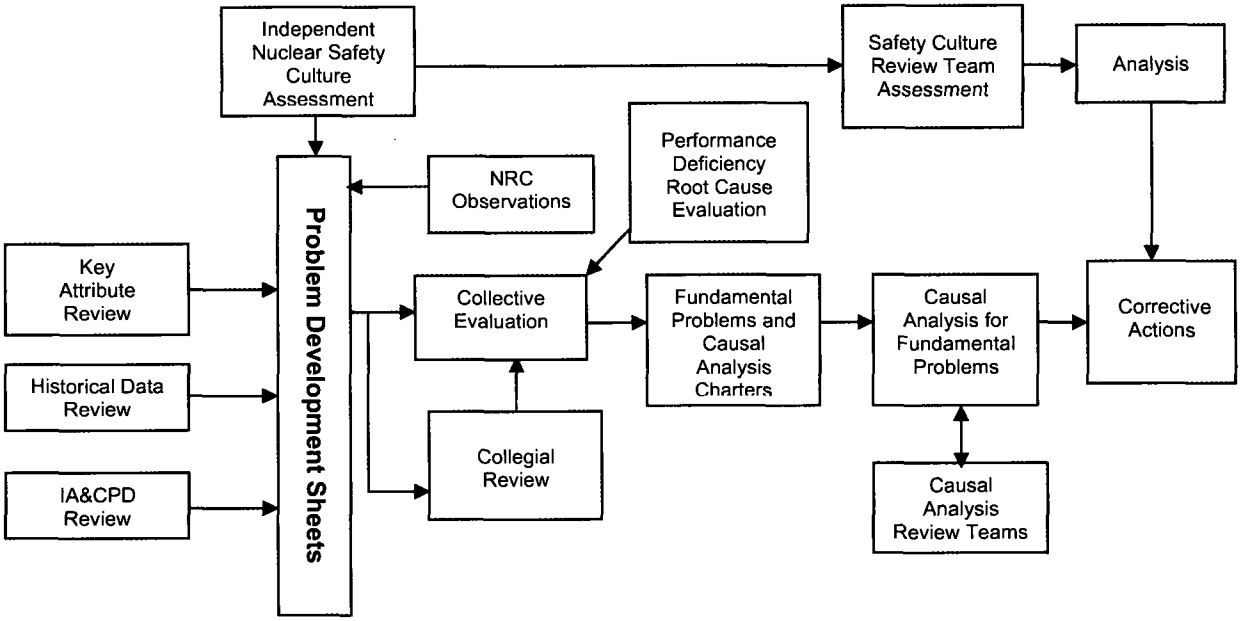
95003-001 Historical Data Review
95003-002 Collective Evaluation and Action Plan Development
95003-003 Identification, Assessment and Correction of Performance Deficiencies
95003-004 Assessment of Performance in the Reactor Safety Strategic Performance Area
95003-005 BFN NRC Column 4 Inspection Readiness and Administrative Controls
95003-006 Third Party Independent Nuclear Safety Culture Assessment
95003-007 Project Review Boards

Following the diagnostic phase, the effort transitioned from a corporate-led effort to a line owned effort with the corporate office providing governance, oversight, and support.

3.0 Scope Identification and Process for Diagnostic Evaluation

Figure 1 provides an overview of the process used for identifying the issues within the scope of the diagnostic evaluation process leading to the identification of Corrective Actions.

Figure 1



The Browns Ferry 95003 Team used the following data gathering efforts to support subsequent diagnostic analysis: (1) Historical Data Review (HDR), (2) Identification, Assessment & Correction of Performance Deficiencies (IA&CPD), (3) Key Attribute Review (KAR), and (4) an Independent Nuclear Safety Culture Assessment (INSCA). Each of these four efforts was governed by a specific procedure and the assessments were conducted consistent with documented plans. The results of each of these assessments were documented in Problem Development Sheets (PDS) to support further evaluation and aggregate analysis. In addition, the observations from the NRC's Part 1 and Part 2 IP 95003 Supplemental Inspections and Problem Identification & Resolution (PI&R) inspection were considered as part of the problem development process.

The data-mining and evaluation process employed in these efforts was rigorous and extensive. The challenge process sought to produce the best products that will result in sustained performance improvement and to promote a continuous learning environment. For example, the HDR looked at events involving regulatory/safety issues as well as other plant events and assessments going back 5 years to develop insights used in this analysis. The IA& CPD was a broad scope assessment of seven performance areas to determine whether current programs in place to identify, assess, and correct performance deficiencies are sufficient to prevent further performance degradation. The performance areas assessed included: (1) Significant Performance Deficiencies, (2) Audit and Assessment, (3) Allocating Resources, (4) Performance Goals, (5) Employee Concerns Program (ECP), (6) Technical Resolution Dispositions, and (7) Use of Industry information. The purpose of the KAR was to evaluate and verify the high safety and risk systems capability to fulfill their intended safety functions; to identify broad based safety, organization and performance issues; and to evaluate Emergency Response Organization readiness. The scope of this review was focused on evaluating the

adequacy of programs and processes in six key areas: Design, Human Performance, Procedure Quality, Equipment Performance, Configuration Control, and Emergency Response Organization Readiness.

The results of these assessments, combined with the findings and results from the Performance Deficiency (failed Residual Heat Removal System Loop II outboard injection valve) Root Cause Evaluation (RCE) were integrated and collectively analyzed by the 95003 Team for patterns, trends, or groupings. In addition to the results from the various collective evaluations, the team used several techniques to develop the groupings and potential PDS. The techniques and insights included INPO Performance Objectives and Criteria (PO&Cs), trend and failure codes, and NRC safety culture components. Based on this iterative and collaborative process, the 95003 team identified the following Fundamental Problems that must be addressed in order to achieve the objectives of sustained improved performance and risk reduction.

- Management and Leadership Standards: Leaders at all levels are not effectively modeling or reinforcing high standards to drive sustained positive performance changes and are tolerating less than acceptable standards of performance.
- Operational Focus / Decision Making: Decision making at all levels of the station does not consistently demonstrate nuclear safety as the top priority and has contributed to significant events, unrecognized equipment inoperability, and deficient operability determinations.
- Resource Management: Resource allocation decisions are inconsistent and have conflicting priority in managing core business and emergent work. This weakness manifests itself in reactive responses on equipment reliability and on the margin for *managing nuclear safety.*
- Work Management: Work management shortfalls contribute to maintenance backlogs and adversely affect equipment performance resulting in continued challenges to safe and reliable operation of the station. Previous actions to implement a robust work management process have been ineffective.
- Corrective Action Program: Execution of the corrective action program has been inconsistent and previous actions to improve performance have been ineffective.
- Procedure Use and Adherence and Work Practices (Human Performance): Procedures and work instructions that support plant operations, maintenance, and engineering are not followed and have contributed to plant operational events, maintenance errors, and industrial safety events.
- Equipment Performance, Monitoring and Trending: Equipment Performance Monitoring and Trending programs are not being implemented in a manner to prevent equipment failures. Performance metrics are not consistent or utilized to proactively identify and resolve equipment reliability issues.
- Strategic Equipment Management: Equipment Reliability programs and processes needed to drive and sustain high levels of equipment reliability are not being implemented in a manner that results in the timely resolution of long-standing equipment problems and the prevention of new problems.
- Technical Rigor: Insufficient technical rigor results in rework, engineering design basis documentation flaws, and/or mis-configurations requiring additional work and resources.

- Governance, Oversight, Alignment, & Monitoring: The Nuclear Operating Model has not been effectively implemented. Governance, use of performance metrics, and corporate oversight have been less than effective at improving human and equipment performance, and regulatory margin.
- Inappropriate Reliance on Processes / Silo'd Performance: Inadequate follow through and ownership through resolution, coincident with the belief that processes, not people, solve problems has hindered performance improvement.
- Procedure/Instruction Quality: Procedures and work instructions do not fully support quality work, configuration control, human performance or record keeping and have contributed to plant events and performance deficiencies.
- Equipment Programs and System Management: Engineering Programs designed to monitor and improve equipment performance are not effectively implemented and do not support long-term equipment availability and reliability goals.
- Design/Configuration Control: Comprehensive understanding and management of design bases including key inputs, expected results, and outputs are not adequate. Configuration documentation and control (e.g., drawings, calculations, procedures, change backlog, modification packages, observations, and long-standing clearances) challenges reliable plant operations.
- Continuous Learning Environment: Self assessments, benchmarking, and the use and operating experience are not used effectively to improve station performance.

Each of these Fundamental Problems were entered into the Corrective Action Program and appropriate causal analysis was performed to determine underlying causes, appropriate extent of condition and extent of cause, corrective actions, and measures of effectiveness. Immediate / interim actions were considered and added for each of the fundamental problems as appropriate. The causal analysis products were reviewed by appropriate challenge boards and then processed through the site Corrective Action Review Board (CARB) for station leadership review and approval.

The identified causes and subsequent corrective actions were then integrated and reviewed in aggregate with other station high priority performance improvement initiative outputs such as Equipment Reliability Improvement Actions, Safety System Reliability Effort, efforts to implement National Fire Protection Association (NFPA) 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," and various Gaps to Excellence Plans via a challenge process to ensure the actions given specific focus were coordinated such that they did not create additional organizational stresses due to excessive workload and were appropriately prioritized. This challenge process was in accordance with 95003 readiness specific procedures (95003-007).

Attachment 1 lists the CAP Problem Evaluation Report (PER) number associated with each Fundamental Problem to support review and subsequent inspection(s).

In addition to the Fundamental Problem causal analysis and action development, an assessment of the INSCA Report was performed to determine if there were additional issues not directly addressed by the Fundamental Problem action plans. This assessment noted two issues that would benefit from additional causal analysis,

specifically Safety Conscious Work Environment and the Employee Concerns Program. The problem statements are noted below.

- BFN Safety Conscious Work Environment (SCWE) Weaknesses: Identified weaknesses include examples of an unwillingness to report or inform supervisors of safety issues, and management failures to effectively use indicators/precursors of a chilled environment to correct performance. This has resulted in the SCWE at Browns Ferry being in the 4th Quartile since 2006.
- Weakness in the Execution of and Confidence in the Employee Concerns Program (ECP): These weaknesses have contributed to BFN being ineffective at evaluating and resolving potential nuclear safety issues.

4.0 Effectiveness Reviews and Performance Metrics

For each of the Fundamental Problems, specific actions have been identified to assess the effectiveness of any action deemed necessary to steadily improve performance to help prevent recurrence of the identified causes. In addition, performance metrics have been established to assess the resulting effectiveness of the various actions implemented for resolving each of the Fundamental Problems.

Any Fundamental Problem having a Root Cause Analysis as specified by the TVA Corrective Action Program is required to have formal actions for determining effectiveness of the specific actions assigned by the causal analysis. For those Fundamental Problems that did not screen as requiring a formal Root Cause Analysis, but had other formal causal analysis, the actions are required to be reviewed in aggregate for effectiveness by the 95003 response process (95003-002/007). In all cases, CARB is responsible for reviewing and accepting effectiveness measures.

The overall effectiveness of the various site actions at addressing the identified Fundamental Problems is measured by Performance Metrics. These metrics were reviewed and approved by the senior leadership team on site at BFN and the executive leadership team of TVA-NPG. These performance metrics are listed in Attachment 2. The basis for the utilized performance metrics and the associated performance thresholds is documented.

A number of the performance metrics are established metrics from the current suite of TVA-NPG Performance Indicators. In some cases, additional metrics had to be developed or specific data was taken from the established metrics to best measure the effectiveness of improving performance in the affected areas of the Fundamental Problems.

5.0 Communication

To better support understanding of the fundamental problems, improved communication of issues, and alignment of employees around behavior improvement initiatives, the 15 Fundamental Problems plus the 2 issues identified by the Safety Culture Review Team were consolidated into 5 discrete Focus Areas. These Focus Areas have concise statements describing the aggregate issue and align directly to the Fundamental Problems. Associated actions and metrics were also applied from those established for the Fundamental Problems to support site personnel engagement and tracking of

improvement initiative effectiveness. The Fundamental Problems that were grouped to establish each Focus Area were deemed to have substantive alignment such that the groupings made sense to employees and the relationship was such that the organizational learning's from the Fundamental Problems were not diluted. The alignment of the Focus Areas to the Fundamental Problems, are provided in Attachment 3.

The focus areas have been arranged and developed for communication to BFN employees with a specific focus on the relationship of each of these areas to Safety Culture. The Focus Areas and communications tools are represented in Attachment 3.

6.0 Disposition of Newly Identified Conditions or Significant Events

If events or conditions occur that either demonstrate behavior not conducive to sustained improved performance or represent a new condition or emerging trend, the condition will be reviewed and evaluated as part of the Corrective Action Program. The CAP review and screening process will properly code the identified issue to ensure the proper level of analysis is achieved and that the actions are properly addressed with a commensurate sense of urgency and responsibly tracked to completion. The issues will also be reviewed by the 95003 Team to determine if the condition (1) is significant to station performance, (2) is enveloped by the current fundamental problem statements, and (3) would have been prevented if the current corrective actions had been fully implemented. A determination will then be made to either include additional actions in the tactical response effort or if the issues or condition was unrelated to the 95003 response effort and can be handled independently in CAP. This process is controlled by guidance found in 95003-002.

7.0 Criteria for Determining Readiness for Inspection

Criteria have been established to guide the leadership decision making process for assessing readiness and informing the NRC of readiness for the IP 95003 inspection. In summary, the criteria include the following.

- No risk significant event or condition
  - Resulting from a cause that would alter the basis of the established plan
  - Resulting from the developed corrective actions being ineffective
- Designated corrective actions have been completed (Guidance in 95003-002)
- Longer-term corrective actions are on schedule
- Performance criteria/metrics indicate adequate performance improvement and sustainability
- Assessments by the governance and oversight organizations support readiness

Site and corporate executive leadership will review and concur with the evidence and make the recommendation to the Chief Nuclear Officer (CNO) that BFN is ready for inspection. The NRC will be notified when all criteria are met and leadership alignment exists concurring with readiness.

8.0 Determination of Long Term Success

To ensure sustained excellent performance, long term success will be measured following completion of the IP 95003 Inspection and when the Confirmatory Action Letter

actions are complete. Sustained excellence will be demonstrated by noted improvements on the performance metrics and process closure will be demonstrated by the following.

- Browns Ferry in the Licensee Response Column of the NRC's Reactor Oversight Process Action Matrix
- All Designated Actions Complete (Guidance in 95003-002)
- BFN Using TVA-NPG Standard Fleet Programs and Procedures without reliance on the 95003 Team

9.0 Governance and Oversight

As guided by the TVA-NPG Nuclear Operating Model (NOM), Governance and Oversight is playing and will play a key role in process development, process implementation, validation of results, readiness determinations, and assessing sustained performance. The lessons learned from this effort at Browns Ferry will be applied to the fleet as appropriate. Site ownership and alignment, complemented by strong corporate Governance and Oversight, is essential to the sustainability of improved station performance. Both the Quality Assurance and Corporate Functional Area organizations play a key role in the oversight function of Browns Ferry as part of this process. In support of the 95003 response effort, the governance and oversight function is enhanced by various measures as discussed in 95003-007. Some of the unique oversight organizations are listed below.

- Augmented Quality Assurance
- 95003 Executive Oversight Board
- Nuclear Safety Review Board
- Nuclear Oversight Committee of the TVA Board

Attachment 1
Fundamental Problems and Causal Analysis CAP Reference

No.	Fundamental Problem	Causal Analysis CAP Reference
1	**Management and Leadership Standards:** *Leaders at all levels are not effectively modeling or reinforcing high standards to drive sustained positive performance changes and are tolerating less than acceptable standards of performance.*	PER 516437
2	**Operational Focus / Decision Making:** *Decision making at all levels of the station does not consistently demonstrate nuclear safety as the top priority and has contributed to significant events, unrecognized equipment inoperability, and deficient operability determinations.*	PER 516455
3	**Resource Management:** *Resource allocation decisions are inconsistent and have conflicting priority in managing core business and emergent work. This weakness manifests itself in reactive responses on equipment reliability and on the margin for managing nuclear safety.*	PER 543130
4	**Work Management:** *Work management shortfalls contribute to maintenance backlogs and adversely affect equipment performance resulting in continued challenges to safe and reliable operation of the station. Previous actions to implement a robust work management process have been ineffective.*	PER 516458
5	**Corrective Action Program:** *Execution of the corrective action program has been inconsistent and previous actions to improve performance have been ineffective.*	PER 549159
6	**Procedure Use and Adherence and Work Practices (Human Performance):** *Procedures and work instructions that support plant operations, maintenance, and engineering are not followed and have contributed to plant operational events, maintenance errors, and industrial safety events.*	PER 543135
7	**Equipment Performance, Monitoring and Trending:** *Equipment Performance Monitoring and Trending programs are not being implemented in a manner to prevent equipment failures. Performance metrics are not consistent or utilized to proactively identify and resolve equipment reliability issues.*	PER 547430
8	**Strategic Equipment Management:** *Equipment Reliability programs and processes needed to drive and sustain high levels of equipment reliability are not being implemented in a manner that results in the timely resolution of long-standing equipment problems and the prevention of new problems.*	PER 547424
9	**Technical Rigor:** *Insufficient technical rigor results in rework, engineering design basis documentation flaws, and/or mis-configurations requiring additional work and resources.*	PER 543131

Attachment 1
Fundamental Problems and Causal Analysis CAP Reference

No.	Fundamental Problem	Causal Analysis CAP Reference
10	**Governance, Oversight, Alignment, & Monitoring:** *The Nuclear Operating Model has not been effectively implemented. Governance, use of performance metrics, and corporate oversight have been less than effective at improving human and equipment performance, and regulatory margin.*	PER 542377
11	**Inappropriate Reliance on Processes/Silo'd Performance:** *Inadequate follow through and ownership through resolution, coincident with the belief that processes, not people, solve problems has hindered performance improvement.*	PER 543134
12	**Procedure/Instruction Quality:** *Procedures and work instructions do not fully support quality work, configuration control, human performance or record keeping and have contributed to plant events and performance deficiencies.*	PER 552135
13	**Equipment Programs and System Management:** *Engineering Programs designed to monitor and improve equipment performance are not effectively implemented and do not support long-term equipment availability and reliability goals.*	PER 547427
14	**Design/Configuration Control:** *Comprehensive understanding and management of design bases including key inputs, expected results, and outputs are not adequate. Configuration documentation and control (e.g., drawings, calculations, procedures, change backlog, modification packages, observations, and long-standing clearances) challenges reliable plant operations.*	PER 543132
15	**Continuous Learning Environment:** *Self assessments, benchmarking, and the use and operating experience are not used effectively to improve station performance.*	PER 547431
*	**BFN Safety Conscious Work Environment Weaknesses:** *Examples of an unwillingness to report or inform supervisors of safety issues, and management failures to effectively use indicators/precursors of a chilled environment to correct performance. This has resulted in the SCWE at Browns Ferry being in the 4th Quartile since 2006.*	PER 571348
*	**Weakness in the Execution of and Confidence in the ECP:** *These weaknesses have contributed to BFN being ineffective at evaluating and resolving potential nuclear safety issues.*	PER 571345

Attachment 2
Performance Metrics

95003 Problem	Problem Statement	Performance Metrics
Management and Leadership Standards	Leaders at all levels are not effectively modeling or reinforcing high standards to drive sustained positive performance changes and are tolerating less than acceptable standards of performance.	• Total Industrial Safety Accident Rate (TISAR) • Site Human Performance Error Rate • Collective Radiation Exposure • Operational Focus Aggregate Impact • Equipment Reliability Index • Monthly CAP Health
Operational Focus/Decision Making	Decision making at all levels of the station does not consistently demonstrate nuclear safety as the top priority and has contributed to significant events, unrecognized equipment inoperability, and deficient operability determinations.	• Operational Focus Aggregate Impact
Resource Management	Resource allocation decisions are inconsistent and have conflicting priority in managing core business and emergent work. This weakness manifests itself in reactive responses on equipment reliability and on the margin for managing nuclear safety.	• On-Line Deficient Maintenance Backlog (Critical WOs) • On-Line Corrective Maintenance Backlog (Critical WOs) • Total PMs in 2nd Half of Grace • Site TVA Staffing • LCO Management
Work Management	Work management failures contribute to maintenance backlogs and adversely affect equipment performance resulting in continued challenges to safe and reliable operation of the station. Previous actions to implement a robust work management process have been ineffective.	• Safety System Reliability Plan (SSRP) Work Off Curve • On-Line Deficient Maintenance Backlog (Critical WOs) • On-Line Corrective Maintenance Backlog (Critical WOs) • Total PMs in 2nd Half of Grace • Schedule Adherence/Completion • Scope Stability (T-6)
Corrective Action	Execution of the corrective action program has been inconsistent and previous actions to improve performance have been ineffective.	• PERs and PER Actions Closure Quality • Root Cause Analysis and Apparent Cause Evaluation Grading • CAP Timeliness (A/B Level CAPs) • Corrective Action Backlog (Open Corrective Actions > 180 Days)
Procedure Use and Adherence and Work Practices(Human Performance)	Procedures and work instructions that support plant operations, maintenance, and engineering are not followed and have contributed to plant operational events, maintenance errors, and industrial safety events.	• Site Human Performance Error Rate • CAP Procedure Use and Adherence Trend
Equipment Performance, Monitoring and Trending	Equipment Performance, Monitoring and Trending programs are not being implemented in a manner to prevent equipment failures. Performance metrics are not consistent or utilized to proactively identify and resolve equipment reliability issues.	• High Critical Component Failures • Safety System Functional Failures • Equipment Reliability Clock Resets • Equipment Reliability Index

Attachment 2
Performance Metrics

95003 Problem	Problem Statement	Performance Metrics
Strategic Equipment Management	Equipment Reliability programs and processes needed to drive and sustain high levels of equipment reliability are not being implemented in a manner that results in the timely resolution of long standing equipment problems and the prevention of new problems.	• Degraded/Non-Conforming Conditions > 1 Cycle • On-Line Deficient Maintenance Backlog (Critical WOs) • On-Line Corrective Maintenance Backlog (Critical WOs) • Critical PMs Deferred • Equipment Reliability Clock Resets • Safety System Reliability Plan (SSRP) Work Off Curve
Technical Rigor	Insufficient technical rigor results in rework, engineering design basis documentation flaws, and/or mis-configurations requiring additional work and resources.	• Engineering Product Quality (QRT Scoring) • Root Cause Analysis and Apparent Cause Evaluation Grading • All Department Clock Resets for Technical Rigor
Governance, Oversight, Alignment and Monitoring	The Nuclear Operating Model has not been effectively implemented. Governance, use of performance metrics, and corporate oversight have been less than effective at improving human and equipment performance, and regulatory margin.	• GOES Indicator
Inappropriate Reliance on Process	Inadequate follow through and ownership through resolution, coincident with the belief that processes, not people, solve problems has hindered performance improvement.	• Total Industrial Safety Accident Rate (TISAR) • Site Human Performance Error Rate • Collective Radiation Exposure • Operational Focus Aggregate Impact • Equipment Reliability Index • Monthly CAP Health
Procedure/Instruction Quality	Procedures and work instructions do not fully support quality work, configuration control, human performance or record keeping and have contributed to plant events and performance deficiencies.	• Engineering Product Quality (QRT Scoring) • Maintenance Rework • Department Clock Resets - Planning/Maintenance
Equipment Programs and System Management	Engineering Programs designed to monitor and improve equipment performance are not effectively implemented and do not support long term equipment availability and reliability goals.	• Program Assessments Action Item Work Off Curve
Design/Configuration Control	Comprehensive understanding and management of design bases including key inputs, expected results, and outputs are not adequate. Configuration documentation and control (e.g., drawings, calculations, procedures, change backlog, modification packages, observations, and long standing clearances) challenges reliable plant operations.	• Engineering Product Quality (QRT Scoring) • Department Clock Resets - Engineering (Design) • Degraded/Non-Conforming Conditions > 1 Cycle • Vendor Manual Program Backlog • Drawing Backlog • Partially Implemented Design Change Notices • Timeliness Closing DCN Packages • Open Temporary Alterations
Continuous Learning Environment	Self assessments, benchmarking, and the use and operating experience are not used effectively to improve station performance.	• Adherence to Self Assessment Schedule • Adherence to Benchmarking Schedule • Self Assessment Quality Grading

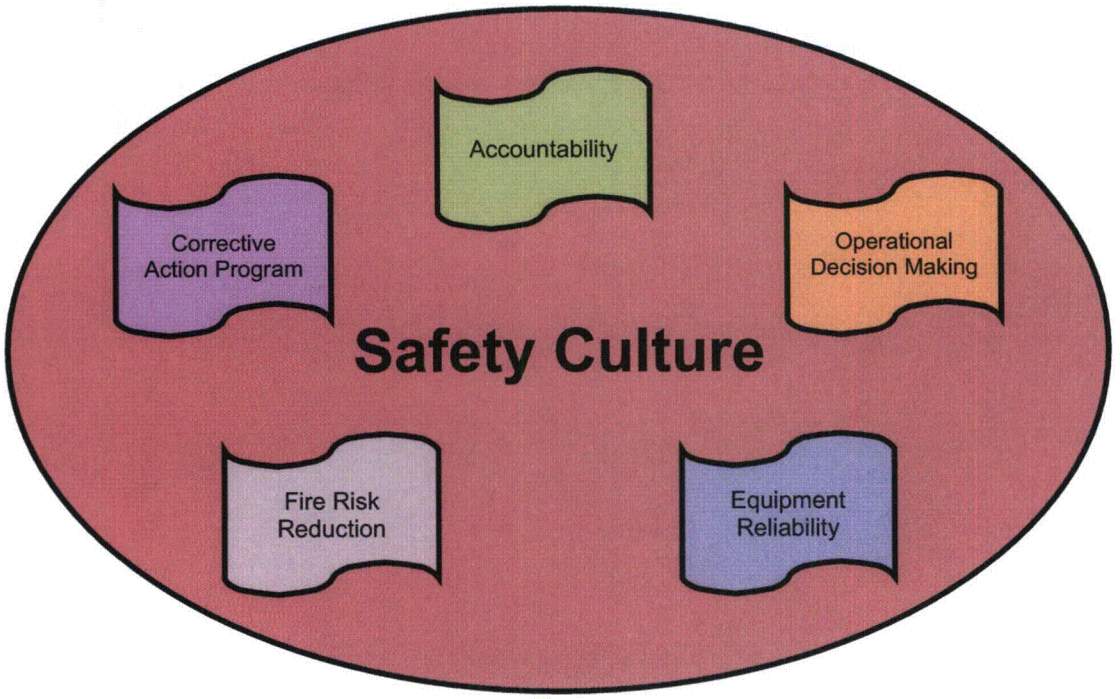
Attachment 2
Performance Metrics

95003 Problem	Problem Statement	Performance Metrics
Safety Conscious Work Environment	Examples of an unwillingness to report or inform supervisors of safety issues, and management failures to effectively use indicators/precursors of a chilled environment to correct performance. This has resulted in the SCWE at Browns Ferry being in the 4th Quartile since 2006.	• NRC Allegations (Onsite) • Anonymous HIRD PERs • Anonymous PERs
Fire Risk Reduction	BFN fire risk is high	• Fire Protection Initiatives Progress Work Off Curve • Fire Protection Program Impairments
Employee Concerns Program	These weaknesses have contributed to BFN being ineffective at evaluating and resolving potential nuclear safety issues.	• NRC Allegations (Onsite) • ECP Timeliness

Attachment 3
Focus Areas

Focus Area	Fundamental Problem
Accountability *Station personnel are not reinforcing and complying with site standards.*	• Management and Leadership Standards • Procedure Use and Adherence and Work Practices (Human Performance) • Procedure/Instruction Quality • Inappropriate Reliance on Processes/Silo'd Performance • Safety Conscious Work Environment
Operational Decision Making (Risk Management) *Station personnel are not consistently evaluating issues with respect to risk.*	• Operations Focus / Decision Making • Resource Management • Governance, Oversight, Alignment, & Monitoring
Equipment Reliability *Key programs and processes supporting Equipment Performance have gaps or are not being effectively implemented.*	• Work Management • Engineering Programs and System Management • Technical Rigor • Strategic Equipment Management • Equipment Performance, Monitoring and Trending • Design/Configuration Control
Fire Risk Reduction *Browns Ferry has high fire risk.*	• Operational Focus/Decision Making
Corrective Action Program *Execution of CAP is weak leading to repeat issues.*	• Corrective Action Program • Continuous Learning Environment • Employee Concerns Program

Attachment 3
Focus Areas



Sustained through Governance and Oversight
Improved through Training