



**Nuclear**

# Browns Ferry Nuclear Plant

May 29, 2013

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# Discussion Points

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Opening Remarks

Preston Swafford

Integrated Improvement Plan

Keith Polson

Results Achieved

Keith Polson

Sustainability

Jim Morris

Closing Remarks

Preston Swafford



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# Opening Remarks

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- TVA's Nuclear Fleet Vision is:
  - Leading the industry in safety, people and performance.
- TVA's goal is to *sustain improved performance and reduce operational risk* at the station.
- TVA understands and is addressing the fundamental issues challenging the station.



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# Opening Remarks

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- Implementation of the Integrated Improvement Plan is resulting in meaningful performance improvement.
- TVA's Governance, Oversight, Execution, and Support model is key to sustaining improved performance.
- TVA is committing the necessary resources to achieve sustained excellence at Browns Ferry and across the nuclear fleet.



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# Integrated Improvement Plan

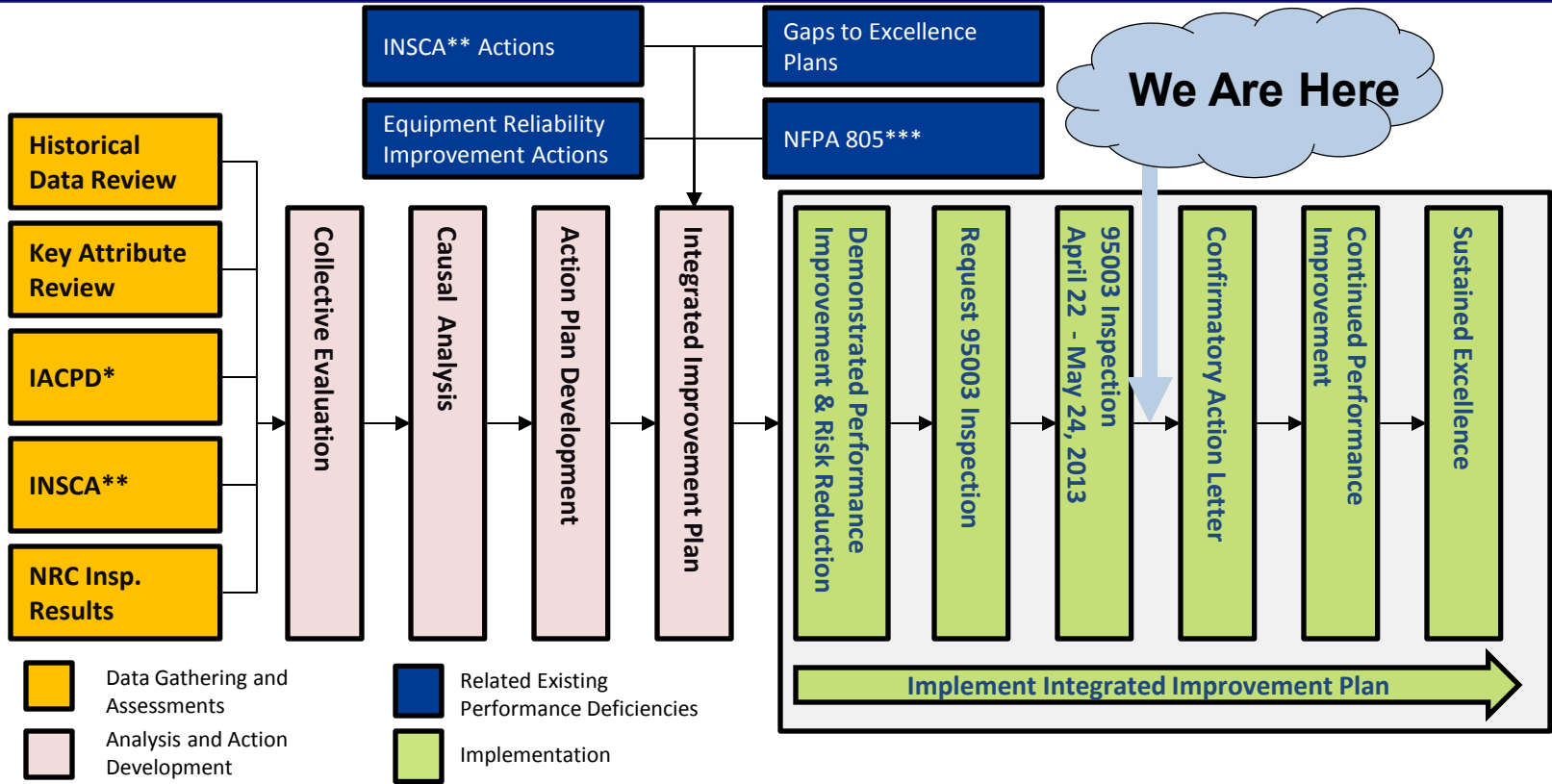
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- Integrated Improvement Plan developed to:
  - Address the red finding, the fundamental problems, and the independent nuclear safety culture assessment results;
  - Reduce risk;
  - Improve equipment reliability; and
  - Ensure sustained performance improvement.



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# Integrated Improvement Plan



\* Identification, Assessment, & Correction of Performance Deficiencies (IA&CPD)

\*\* Independent Nuclear Safety Culture Assessment (INSCA)

\*\*\* National Fire Protection Association 805: Performance-Based Standard for Fire Protection for Light Water Reactor Electric Plants (NFPA 805)



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# Integrated Improvement Plan

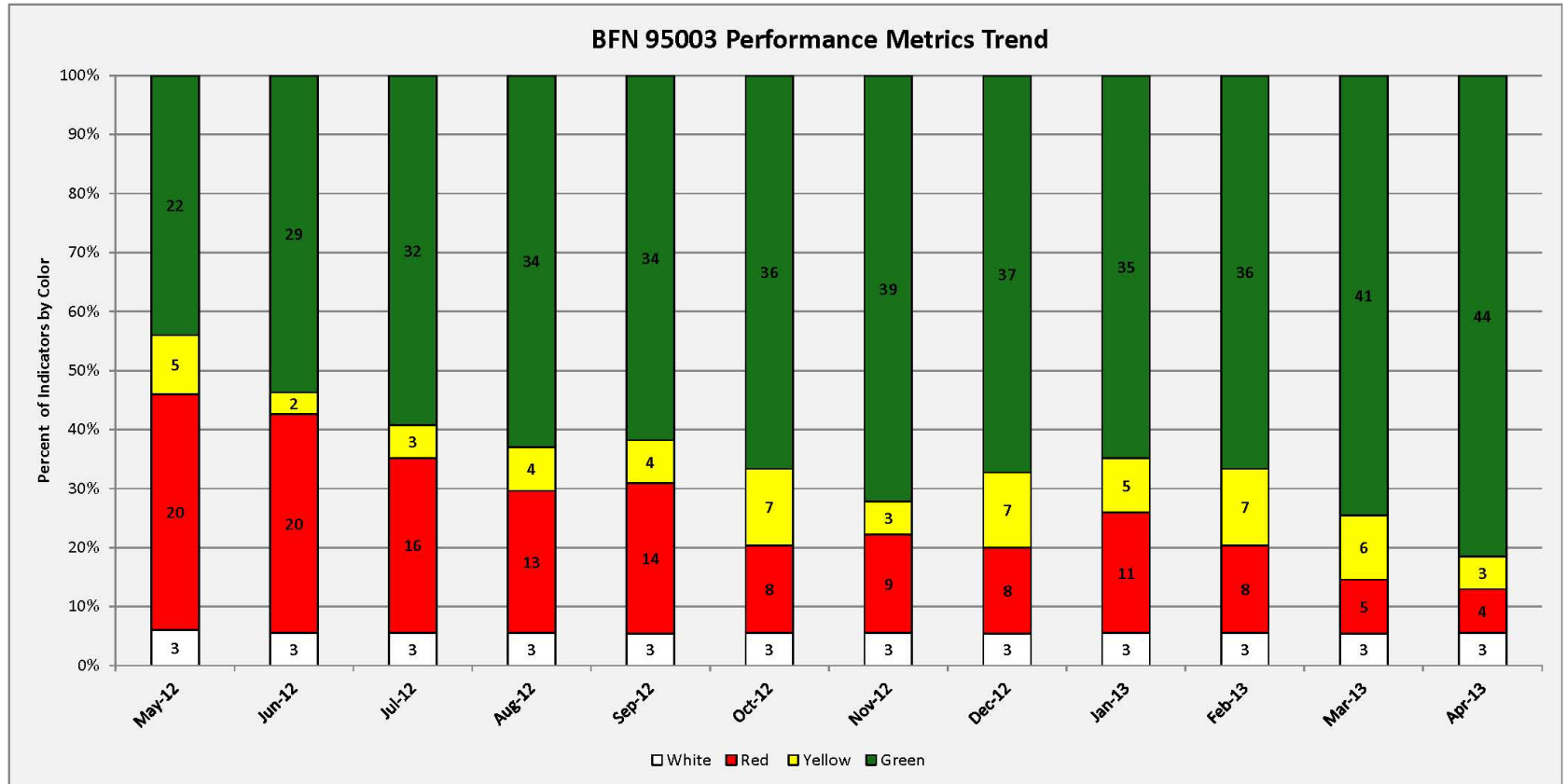


**Sustained through Governance and Oversight  
Improved through Training**



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# Results Achieved - Metrics





Management and Leadership Standards			Work Management			Strategic Equipment Management		
Industrial Safety Accident Rate	Human Performance Error Rate	Collective Radiation Exposure	Online Deficient Maintenance Backlog	Online Corrective Maintenance Backlog	PMs 2nd Half of Grace	Degraded Nonconforming Conditions	Online Deficient Maintenance Backlog	Online Corrective Maintenance Backlog
Equipment Reliability Index	Monthly CAP Health	Operational Focus Aggregate Impact	Safety System Reliability Plan	Schedule Adherence	Scope Stability	Critical PMs Deferred	Safety System Reliability Plan	ER Clock Resets
Inappropriate Reliance on Process			Resource Management			Equipment Performance Monitoring and Trending		
Industrial Safety Accident Rate	Human Performance Error Rate	Collective Radiation Exposure	Online Deficient Maintenance Backlog	Online Corrective Maintenance Backlog	PMs 2nd Half of Grace	High Critical Component Failures	Safety System Functional Failures	ER Clock Resets
Equipment Reliability Index	Monthly CAP Health	Operational Focus Aggregate Impact	Site TVA Staffing	LCO Management			Equipment Reliability Index	
Technical Rigor			<b>Integrated Improvement Plan Performance Metric Summary April, 2013</b>			Continuous Learning Environment		
Engineering Product Quality	RCA/ACE Grading	Department Clock Resets Technical Rigor				Adherence Self Assessment Schedule	Adherence Benchmarking Schedule	SARB Quality Grading
Governance, Oversight, Alignment and Monitoring						Equipment Programs and System Management		
	GOES Indicator						Program Assessment Actions	
Operational Focus/ Decision Making						Procedure Use and Adherence/Work Practices		
	Operational Focus Aggregate Impact	Engineering Product Quality	Design Configuration Control			CAP Procedure Use & Adherence	Human Performance Error Rate	
			Engineering Product Quality	Depart Clock Reset Engineering	Degraded Nonconforming Conditions			
Corrective Action			Fire Risk Reduction					
PER and PER Action Closure Quality	RCA/ACE Grading	CAP Timeliness	Vendor Manual Program	Drawing Backlog	Partially Implemented Design Changes	Fire Protection Initiative Work Off	Fire Protection Program Impairments	
	CA Backlog		Timeliness Closing DCN Packages	Open Temporary Alterations		Procedure Instruction/Quality		
						Engineering Product Quality	Maintenance Rework	Department Clock Reset Maintenance
Safety Conscious Work Environment			Execution and Confidence in ECP					
NRC Allegations	HIRD PERs	Anonymous PERs	NRC Allegations	ECP Timeliness			Department Clock Reset Planning	
Independent Oversight			Training					
Oversight (QA) Effectiveness	QA Station Interface Meetings	QA Issue Resolution Time	QA Escalated Issue Age	BFN QA Staffing	NSRB Issue Resolution	Training Qualification Index	Training Staffing Health	Management Oversight of Training



# 2013 INSCA Results

- **Nuclear Safety Culture (NSC)** has improved and is rated Area of Competency or 2<sup>nd</sup> quartile.
- Nuclear Safety Values, Behaviors & Practices (NSVB&P) has improved and is rated 2<sup>nd</sup> quartile.
- Safety Conscious Work Environment (SCWE) has improved and is rated as an Area of Competency or 2<sup>nd</sup> quartile.
- Employee Concerns Program (ECP) performance improved and is rated an Area of Competency or 2<sup>nd</sup> quartile.

Summary of Survey Results		
Dimension	2011 Rating	2013 Rating
NSC	4 <sup>th</sup> quartile	2 <sup>nd</sup> quartile
NSVB&P	4 <sup>th</sup> quartile	2 <sup>nd</sup> quartile
SCWE	4 <sup>th</sup> quartile	2 <sup>nd</sup> quartile
ECP	3 <sup>rd</sup> quartile	2 <sup>nd</sup> quartile



# 2013 INSCA Results

- General Culture and Work Environment (GCWE) Improved and is rated an Area of Strength.
- Leadership, Management and Supervisory (LMS) skills and practices improved and is rated as an Area of Strength.

Summary of Survey Results		
Dimension	2011 Rating	2013 Rating
GCWE	2 <sup>nd</sup> quartile	1 <sup>st</sup> quartile
LMS	3 <sup>rd</sup> quartile	1 <sup>st</sup> quartile
Weaknesses	77	4
Priority Organizations	23	4



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# 2013 INSCA Results

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## Assessment Team Conclusions

- BFN has made good progress in improving the nuclear safety culture.
- There is a workforce frame of reference issue that produces a positive bias in the assessment results.
- There is positive momentum in the rate of improvement of Nuclear Safety Culture and a strong desire on the part of the workforce for improvements to continue.



# 2013 INSCA Results

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## Assessment Team Conclusions

- The primary drivers of improvement have been senior management's establishment, communication, demonstration, and reinforcement of higher standards and expectations for good nuclear safety culture and performance.
- Current improvement in nuclear safety culture is considered fragile.
- The ability to continue to improve will depend on how well management responds to the remaining challenges.



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# Sustainability

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- Nuclear Operating Model implemented
- Safety culture improved
- Nuclear oversight strengthened
  - Corporate oversight
  - Quality Assurance
  - Nuclear Safety Review Board



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# Closing Remarks

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- TVA understands the fundamental issues challenging the station.
- TVA's goal is to *sustain improved performance and reduce operational risk* at the station.
- TVA is seeing meaningful performance improvement.
- TVA is committing the necessary resources to achieve sustained excellence at Browns Ferry and across the nuclear fleet.



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# List of Acronyms

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ECP	Employee Concerns Program
GCWE	General Culture and Work Environment
IIP	Integrated Improvement Plan
INSCA	Independent Nuclear Safety Culture Assessment
LMS	Leadership, Management and Supervisory
NFPA	National Fire Protection Association
NSC	Nuclear Safety Culture
NSVB&P	Nuclear Safety Values, Behaviors & Practices
SCWE	Safety Conscious Work Environment
TVA	Tennessee Valley Authority