



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II**

245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

November 10, 2016

Mr. Joseph W. Shea  
Vice President, Nuclear Licensing  
Tennessee Valley Authority  
1101 Market Street, LP 3D-C  
Chattanooga, TN 37402-2801

**SUBJECT: PUBLIC MEETING SUMMARY – CURRENT STATUS OF TVA RESPONSE  
ACTIVITIES TO NRC LETTER CONCERNING CHILLED WORK ENVIRONMENT  
FOR RAISING AND ADDRESSING SAFETY CONCERNS - WATTS BAR  
NUCLEAR PLANT, DOCKET NO. 50-390 AND 50-391**

Dear Mr. Shea:

This refers to the meeting conducted at our request at the Comfort Inn in Athens, TN on November 3, 2016, at 6:00 p.m. The purpose of the meeting was for the Nuclear Regulatory Commission (NRC) and Tennessee Valley Authority (TVA) to discuss the status of activities related to the chilled work environment at the Watts Bar Nuclear Plant (WBN) which was identified in the NRC's March 23, 2016, Chilled Work Environment Letter (CEL) (ADAMS Accession No. ML16083A479). Enclosed are a list of attendees and the presentation handouts.

The NRC issued the CEL to Watts Bar Nuclear Plant in an effort to ensure a clear understanding of the scope of concerns related to the chilled work environment in the Operations Department. The NRC discussed the history and basis of the CEL, as well as NRC activities after issuance of the CEL. These activities included the increase in inspector emphasis on Safety Conscious Work Environment (SCWE), the additional NRC and TVA management engagement, completion of NRC inspections related to SCWE, and continued NRC actions to confirm safe operations. The NRC noted that while the chilled environment in the Operations Department has improved, indications of weaknesses in various attributes of a SCWE outside of the operations department were observed.

The TVA management discussed their corrective action plan and completed corrective actions. They stated that the initial CEL action plan was adjusted based on the root cause evaluation and an independent review of the root cause completed in August of 2016. TVA managers discussed their accountability for the safety culture issues and the challenge to reestablish trust and respect with the staff, which they expect to take time. The TVA described discussed completed and ongoing actions which included: increased direct and comprehensive communications, more engagement of the workforce, recognizing and reducing stress from organization and personnel events, and emphasis on a commitment to safety over production behavior. The TVA management stated their intention to conduct an effectiveness review of the plan, check and adjust the plan as needed, and submit an update to the CEL response letter in December, 2016.

In closing, the NRC acknowledged that TVA actions have resulted in improvements in the Operations Department SCWE, however, sustaining these improvements and ensuring the SCWE in other departments is similarly addressed remains a focus of the NRC. The NRC noted that no serious safety violations or instances involving significant plant safety issues associated with the work environment were identified. The NRC will continue increased management and inspection focus on Watts Bar Nuclear Plant SCWE.

In accordance with Title 10 of the Code of Federal Regulations (CFR) 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be made available electronically for public inspection in the NRC Public Document Room (PDR) or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this meeting, please contact me at (404) 997-4415.

Sincerely,

**/RA/**

Alan Blamey, Chief  
Reactor Projects Branch 6  
Division of Reactor Projects

Docket No.: 50-390, 50-391  
License No.: NPF-90, 96

Enclosures: 1. List of Attendees  
2. NRC Meeting Slides  
3. TVA Meeting Slides

cc: distribution via ListServ



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Reactor Projects Branch 6  
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**\*See previous concurrence**

☒ PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE

☐ SENSITIVE ☒ NON-SENSITIVE

ADAMS: ☒ Yes

ACCESSION NUMBER: ML16315A394

☒ SUNSI REVIEW COMPLETE ☒ FORM 665 ATTACHED

OFFICE	RII:DRP	RII:DRP					
SIGNATURE	*/RA/	*/RA/					
NAME	J. Seat	A. Blamey					
DATE	11/ 10 /2016	11/ 10 /2016					
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: G:\DRP\IRPB6\WATTS BAR\CHILLING EFFECT 2016\11-3-2016 PUBLIC MEETING\PM SUMMARY 110316 REV 1.DOCX

Letter to Joseph W. Shea from Alan Blamey dated November 10, 2016

SUBJECT: PUBLIC MEETING SUMMARY FOR WATTS BAR NUCLEAR PLANT,  
DOCKET NO. 50-390 and 50-391

Distribution:

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### **NRC PARTICIPANTS**

C. Haney, Regional Administrator, Region II  
L. Jarriel, Agency Allegations Advisor, NRC Headquarters  
A. Blamey, Chief, Reactor Projects Branch 6, DRP, RII  
J. Hamman, NRC Resident Inspector assigned to Watts Bar Nuclear Plant

### **TVA PARTICIPANTS**

M. Balduzzi, Senior Vice President Operations, TVA  
P. Simmons, Site Vice President, Watts Bar  
S. Connors, Plant Manager, Watts Bar  
D. J. Allen, Shift Manager, Watts Bar



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Current Status of TVA Response Activities to NRC Letter Concerning Chilled Work  
Environment for Raising and Addressing Safety Concerns at the Watts Bar Nuclear Plant  
Athens, TN  
November 3, 2016

<u>Name (Print)</u>	<u>Title and Organization</u>
Beth Jenkins	Plant Support Dir / WBN
Gordon Arent	Licensing Dir / WBN
Danuel Visausie	Online Work Mgr / WBN
Stephanie Morrow	Human Factors Engineer / NRC
Robert Collins	SRO / TVA
TOM WHIOBY	TVA MAINTENANCE
Chris Rice	OPS / TVA
Leonard Wert	Deputy Regional Administrator, USNRC
SPENCER ESSEX	MMC BOILERMAKER
Kay Esposito	TVA WBN/NPG
Sam Collins	SI Collins LLC / TVA Adviser to the Board
Chuck Bresch	Shift Mgr, TVA
MICHAEL J. BARLOK	MUMFORD CITY RESIDENT / TVA
SANDY KURTZ	CAP WBZ: BREDL / BEST / MATR

Current Status of TVA Response Activities to NRC Letter Concerning Chilled Work  
Environment for Raising and Addressing Safety Concerns at the Watts Bar Nuclear Plant  
Athens, TN  
November 3, 2016

### Title and Organization

## Union of Concerned Scientists

東. E 100 + BAUM

Dyson Evs

B. (15.220)

Teri Caen

Thomas Huskey

John Tust

Jessica Moody

OPERATIONS Director WBN

TVA - Croll's Bar Communications

VA

Unit Operator WBN

Shift Manager WBN

# Radiation Protection WBN

Current Status of TVA Response Activities to NRC Letter Concerning Chilled Work  
Environment for Raising and Addressing Safety Concerns at the Watts Bar Nuclear Plant  
Athens, TN  
November 3, 2016

### Title and Organization

Tony White  
Garry Morgan  
William Hahn

WBN SQA M

BRED/BEST/MATR

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WBN-OPS-IBEN



# ***Status of Chilled Work Environment at the Watts Bar Nuclear Plant.***

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**Catherine Haney  
Regional Administrator  
November 3, 2016**



# ***Agenda***

- **Introduction**
- **Brief History**
- **NRC Actions**
- **TVA Comments**
- **NRC Closing Remarks**
- **NRC available to address public questions**





# ***Introduction***

## **Purpose**

- **Discuss the status of the NRC and TVA activities related to the Chilled Work Environment at the Watts Bar Nuclear Plant.**



# ***History***

- **Dec 11, 2015 Inspection of recent operational events at Watts Bar (WB)**
- **Mar 22, 2016 Public meeting on WB safety culture**
- **Mar 23, 2016 NRC Issued Chilling Effect Letter**
- **July 16, 2016 WB assessed with a Theme in Safety Conscious Work Environment**



## ***NRC Activities***

- **Increased inspector emphasis on Safety Conscious Work Environment (SCWE).**
- **Increased NRC and TVA management engagement.**
- **Completed September SCWE / Problem Identification & Resolution inspection.**
- **Continued NRC activities to address the Chilling Effect Letter (CEL) and the license's response.**



# ***TVA Comments***



## ***Closing Remarks***

### **The NRC will**

- **Maintain an increased management and inspection focus on the Safety Conscious Work Environment.**
- **Continue to confirm safe operation through inspection and assessment.**



***5 Minute Break***

***Questions***





## ***Open to the Public***

- **NRC places a high priority on keeping the public and stakeholders informed of its activities.**
- **At [www.nrc.gov](http://www.nrc.gov), you can:**
  - **Find public meeting dates and transcripts;**
  - **Read NRC testimony, speeches, press releases, and policy decisions; and**
  - **Access the agency's Electronic Reading Room to find NRC publications and documents.**



## ***Contacting the NRC***

- **Report an emergency**
  - (301) 816-5100 (call collect)
- **Report a safety concern**
  - (800) 695-7403
  - Allegation@nrc.gov
- **General information or questions**
  - [www.nrc.gov](http://www.nrc.gov)
  - Select “What We Do” for Public Affairs





## ***NRC Representatives***

- Catherine Haney, Regional Administrator
- Alan Blamey, Branch Chief
- Lisamarie Jarriel, Agency Allegation Advisor



## ***Reference Sources***

- **Reactor Oversight Process**

<http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/index.html>

- **Public Electronic Reading Room**

<http://www.nrc.gov/reading-rm.html>

- **Public Document Room**

1-800-397-4209 (Toll Free)



# Watts Bar Nuclear Plant Chilled Work Environment Assessment of Progress

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November 3, 2016

## Agenda

- Introduction and Opening Remarks
- Chilled Work Environment Letter
- TVA Response
- Independent Assessment
- Assessment of Progress
- Next Steps
- Summary
- Closing Remarks



## Opening Remarks

Michael Balduzzi, Senior Vice President Nuclear Operations

## Chilled Work Environment Letter

- Nuclear Regulatory Commission (NRC) issues Chilled Work Environment Letter (CWEL) to Watts Bar (WBN) on March 23, 2016
- Key points in CWEL
  - A chilled work environment exists in Operations Department
  - No serious safety violations or significant plant safety issues were identified
  - Concerns existed regarding impact of chilled work environment on plant operations
- NRC issued CWEL to ensure clear understanding of the scope of concerns

## TVA Response

- TVA Action Plan included in initial response to CWEL
- Action Plan adjusted to include additional actions identified by Root Cause
  - Re-enforcing roles and responsibilities of Main Control Room and Outage Control Center
  - Enhancing Nuclear Safety Culture Monitoring Panel to include craft and non-licensed operators
  - Conducting seminars to improve understanding of the corrective action program the work control process in correcting issues
- Plant Manager shared lessons learned with Industry
- Recognized need to “check and adjust” actions based on effectiveness

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## Independent Assessment

- Independent Team – August 2016
- Contemporary Snapshot of Safety Conscious Work Environment
  - Focus Groups
  - Interviews
  - Observations
- Approximately 10% of workforce, across all organizational levels and functional groups, interviewed.
- Provided insights regarding extent of condition of Chilled Work Environment

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## Additional Independent Assessments

- Independent Review of Chilled Work Environment Root Cause Analysis
  - Additional Causal Analysis recommended and performed
  - Original root causes confirmed
  - Corrective actions strengthened
- Independent Review of CWEL Response
  - Supplement the CWEL with contemporary status of SCWE at WBN
  - Conduct an Independent Safety Culture Survey, and
  - Reexamining the effectiveness of the 2009 Confirmatory Order actions

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## Assessment of Progress

### Key Themes from Independent Assessments

- Gaps in Respectful Work Environment
  - Challenges exist site-wide
  - Improvements needed to:
    - build mutual respect, value workforce input more
      - Both nuclear safety and non-nuclear safety concerns
    - build trust, communicate in a balanced manner, ensure sustainability of improvements

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## Assessment of Progress

### Key Themes from Independent Assessments

- Gaps in Leadership Safety, Values, and Actions
  - Improvements needed:
    - continuing to acknowledge that senior management owns accountability for CWEL
    - managing the turnover of site managers to ensure new managers demonstrate ownership and commitment to the station
    - addressing and resolving issues in a timely manner through active engagement by site leadership
    - Consistent behavior under stressful conditions – “wait and see” attitude by workforce

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## Assessment of Progress

### Key Themes from Independent Assessments

- Gaps in Effective Safety Communications
  - Improvements needed:
    - engaging in more “face-to-face” communications
    - communicating messages that are understood and readily accepted
    - in communicating the “whys” behind decisions

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## Assessment of Progress

### Areas of Positive Feedback

- Workforce willing to raise nuclear safety concerns
- Workforce believes that the Senior Management Team will make the right decisions regarding nuclear safety
- Ownership by workforce remains strong

## Assessment of Progress

### Actions improving Respectful Work Environment

- Engaging Workforce
  - Maintenance Improvement Team
  - Non-Licensed Operator (NLO) input at the Plant Health Committee
  - Craft and NLO attendance at Nuclear Safety Culture Monitoring Panel Meetings
  - Superintendent Working Group
  - People Health Meetings
  - 2c's Meetings
- Commitment to safety over production
  - Operations Led Safety Performance "Stop Work"
  - Restoration of Main Bank Transformers



## Next Steps

### Actions to support sustainability of Respectful Work Environment

- Conduct an Independent Nuclear Safety Culture Survey at WBN
- Establish protocol for Excellence Plan development in response to Nuclear Safety Culture assessments
- Strengthen Shift Manager's role as key component of site senior leadership
- Develop Employees Concerns Program methods to pre-determine stressors – "Heat Map"
- Conduct enhanced training for Managing and Communicating in a Changing Work Environment
- Implement additional corrective actions from Chilled Work Environment Root Cause Analysis

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## Next Steps

### Monitoring Actions

- Continue to monitor the Safety Conscious Work Environment and Nuclear Safety Culture
  - Complete a supplemental effectiveness review of root cause actions
    - Target schedule – December 2016
  - Adjust corrective actions based on results
  - Continue enhanced Nuclear Safety Culture Monitoring Panel
  - Continue Senior Executive Management Oversight
- Submit updated CWEL Response letter
  - Target December 15, 2016

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## Summary

- The senior leadership team acknowledges and owns the chilled work environment at Watts Bar
- Progress made to date but more work to do
- Improving behaviors, processes and programs
- Senior Executive Management Oversight Ongoing
- We will continue to monitor progress and adjust actions to achieve and sustain a respectful work environment at WBN

## Closing Remarks

Michael Balduzzi, Senior Vice President Nuclear Operations