



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

CNL-14-182

October 31, 2014

10 CFR 50.4

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

Watts Bar Nuclear Plant, Unit 2
Construction Permit No. CPPR-92
NRC Docket No. 50-391

Subject: Watts Bar Nuclear Plant Unit 2 – Nuclear Safety Culture Assessment

Reference: Confirmatory Order Modifying License (EA-09-009; EA-09-203),
December 22, 2009 (ML093510993)

The purpose of this letter is to provide the Tennessee Valley Authority (TVA) responses to Nuclear Regulatory Commission (NRC) questions asked during the August 18, 2014 Category 1 public meeting. The NRC hosted the public meeting with TVA staff to discuss actions that have been taken at Watts Bar Nuclear Plant Unit 2 to assess the safety culture and safety conscious work environment in response to the referenced confirmatory order. The enclosure documents the questions asked by the NRC and the associated responses provided by TVA.

There are no new regulatory commitments associated with this submittal. If you have any questions, please contact Gordon Arent at (423) 365-2004.

Respectfully,

A handwritten signature in blue ink, appearing to read 'J. W. Shea', written over the typed name and title.

J. W. Shea
Vice President, Nuclear Licensing

Enclosure: Responses to NRC Questions from August 18, 2014 Public Meeting Related to
Tennessee Valley Authority Nuclear Safety Culture Assessment for Watts Bar
Nuclear Plant Unit 2

cc: (see page 2)

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cc (Enclosure):

NRC Regional Administrator - Region II
NRC Office of Enforcement
NRC Senior Resident Inspector – Watts Bar Nuclear Plant, Unit 2
NRC Project Manager – Watts Bar Nuclear Plant, Unit 2

ENCLOSURE

**TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT, UNIT 2**

**Responses to NRC Questions from August 18, 2014 Public Meeting
Related to Tennessee Valley Authority Nuclear Safety Culture
Assessment for Watts Bar Nuclear Plant Unit 2**

ENCLOSURE

Responses to NRC Questions from August 18, 2014 Public Meeting Related to Tennessee Valley Authority Nuclear Safety Culture Assessment for Watts Bar Nuclear Plant Unit 2

The Nuclear Regulatory Commission (NRC) public meeting held on August 18, 2014 addressed the nuclear safety culture (NSC) and safety conscious work environment (SCWE) for the Tennessee Valley Authority (TVA) Watts Bar Nuclear Plant (WBN), Unit 2. During the course of the meeting, the NRC staff asked a number of questions directly related to the WBN Unit 2 safety culture and SCWE. These NRC questions and TVA's responses are documented below.

A. CORRECTIVE ACTION PROGRAM

A-1 NRC Question:

The 2010 Levanway Assessment indicated that workers were not engaged with the Problem Evaluation Report (PER) process.

- What were the negative response rates to questions related to the use of the corrective action program (CAP)?
- How did this trend over subsequent assessments (improve/unchanged/decline)?

A-1 TVA Response:

Each year, the following two questions were asked related to the CAP which utilizes the PER process to document questions and concerns. The response rates and positive trend over subsequent WBN Unit 2 assessments are noted below.

Would you utilize the PER process to raise or report a safety or quality issue?

YEAR	YES	NO	NO OPINION
2010	91%	8%	1%
2011	92%	8%	-----
2013	96%	4%	-----

Do you think PERs and the CAP are effective at getting issues resolved?

YEAR	YES	NO	NO OPINION
2010	79%	14%	7%
2011	93%	2%	5%
2013	95%	-----	5%

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The 2013 conclusion statement with regards to the CAP process from the Levanway Assessment was as follows: "There is a ready willingness to use the PER process (96%) and a strong belief that PERs and the CAP process are effective at resolving issues (95%). Frustration over the amount of resources being spent on what some consider frivolous PERs was a common theme among many, but that frustration is not impacting the willingness to write a PER."

B. LEVANWAY ASSESSMENTS

B-1 NRC Question:

- What was the average length of time (or allotted time) for the Levanway interviews?

B-1 TVA Response:

Interviews were scheduled for 30 minutes, but lasted 15-20 minutes. The meetings, while scheduled for 30 minutes, were not limited to that length of time. For example, some interviews exceeded one hour in length and the schedule was adjusted as needed.

B-2 NRC Question:

- Was Levanway provided with the Synergy[®] Surveys as part of the background information used to develop his assessment tool and interview questions?

B-2 TVA Response:

Mr. Levanway was not provided the Synergy[®] Surveys due to the proprietary restrictions placed on the surveys by Synergy[®]. However, Mr. Levanway, an attorney with Wise, Carter, Child & Caraway, P.A., Attorneys at Law, has extensive history and background in SCWE and Safety Culture analysis. Mr. Levanway has worked directly with Synergy Consulting Services performing Nuclear Safety Culture (NSC)/SCWE assessments since 1997. His experience includes NSC/SCWE assessments at more than twenty operating nuclear power plants for five different utilities, as well as United States Enrichment Corporation facilities.

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C. POTENTIAL FOR CHILLED WORK ENVIRONMENT

In 2013, the electrical craft organization on WBN Unit 2 indicated that the potential for a chilled work environment existed.

C-1 NRC Question:

- What were the corrective actions taken for the potential chilled work environment in the electrical group?

C-1 TVA Response:

- The electrical department was reorganized to better align management skills. As part of this reorganization, the following actions were taken.
 - a. Superintendent was removed from position, and ultimately terminated from project.
 - b. Manager was reassigned to another position.
 - c. Pulsings were performed to gauge effects on work environment.
 - d. Performed independent investigation.
 - e. Senior management conducted briefings encouraging the freedom to express concerns without the fear of retaliation.
 - f. Senior manager held meeting with craft personnel to explain actions to improve morale.

Information regarding the potential chilled work environment within the electrical group was provided to the NRC as part of a request for information (RFI) investigation conducted in late 2013. The NRC referred to this in its 2013 annual allegation report (page 11) which stated:

“Three allegations of a chilled work environment were raised, one of which, for a specific department, was substantiated by the licensee in the fourth quarter. The licensee’s corrective actions, including personnel changes, appear to have been appropriate.”

C-2 NRC Question:

- Have pulsing surveys indicated progress in this area of the organization?

C-2 TVA Response:

Progress has been made in the electrical craft area. The following electrical craft trailer responses are summarized below.

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Responses to NRC Questions from August 18, 2014 Public Meeting Related to Tennessee Valley Authority Nuclear Safety Culture Assessment for Watts Bar Nuclear Plant Unit 2

October 2013 – Initial Survey

Trailer 18

89% agreed they would report a nuclear safety question (NSQ) problem if identified and 8% somewhat agreed for a total of 97%.

Trailer 33

87% agreed they would report a NSQ problem if identified and 4% somewhat agreed for a total of 91%.

March 2014 – Follow-Up Survey

Trailer 18

91% agreed they would report a NSQ problem if identified and 9% somewhat agreed for a total of 100%.

Trailer 33

89% agreed they would report a NSQ problem if identified and 7% somewhat agreed for a total of 96%.

C-3 NRC Question:

- Have pulsing surveys in other areas of the organization indicated concerns of this nature?

C-3 TVA Response:

The Employee Concerns Program (ECP) identified a similar potential chilled environment within the WBN Unit 2 facilities organization using both pulsing surveys and identified concern trends. The ECP identified the trend to site senior management. In response to slow corrective actions by contractor corporate management to address the situation, WBN Unit 2 ECP entered the procedural process to initiate a "Chilling Effect Letter." The Tennessee Valley Authority senior management contacted the contractor executive organization, which then conducted their own investigation and substantiated the concerns that were identified by ECP, resulting in the termination of the laborer craft general foreman.

Subsequent pulsing surveys in this area indicated 99% of personnel pulsed would report a NSQ issue if they identified one.

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D. OTHER

D-1 NRC Question:

- What percentage of staff who exited the site completed the exit surveys?

D-1 TVA Response:

From January 2010 to May 2014, a total of 6,307 exit surveys were performed by the TVA (1,140) and Bechtel (5,167) Employee Concerns organizations. The approximate number of individuals leaving the site during this time frame was 7,000, resulting in an exit survey completion rate of approximately 90%. Of those surveyed, 99% stated they would report a nuclear safety or quality concern.

D-2 NRC Question:

- Which of the assessments included methods other than interviews (i.e., observations and document reviews)?

D-2 TVA Response:

Quarterly ECP reports utilized various information tools to identify trends such as concern trends, anonymous PER trends, and NRC allegations.

The WBN Unit 2 external SCWE assessment conducted by industry peers in April 2011 utilized the following.

The external SCWE assessment team attended a number of meetings and events to observe WBN Unit 2 actions and behaviors, including Plan of the Day (POD)/Construction Completion Management Review Committee (CCMRC) Meetings, Weekly Safety Meetings for Craft and Foremen/General Foremen, and SCWE for Managers Training. Additionally, the team conducted interviews with TVA, Bechtel, and Day & Zimmermann (D&Z) managers and impromptu interviews in the field with employees at various locations. The team reviewed documents relating to SCWE, ECP, and CAP.

McKinsey & Company (McKinsey) also performed assessments for TVA senior management over a four week period. The McKinsey independent project review consisted of interviews, observations of meetings, review of key documents and tours of the construction project.

In October of 2011, a gap analysis assessment that compared current construction performance with potential performance was performed for each of the nine principles found in the Institute of Nuclear Power (INPO) document INPO 09-007, "Principles for Excellence in Nuclear Project Construction." The assessment was performed using document reviews and interviews. The assessment defined an end state of excellence based on the attributes of INPO 09-007.

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The Nuclear Construction Review Board (NCRB) conducted document reviews, observed various meetings, and performed interviews.

Beginning in January 2011, the Construction Safety Review Board (CSR), conducted bi-annual assessments to provide senior-level oversight of TVA's major nuclear construction projects in accordance with INPO 09-007, industrial safety, quality, and safety culture.

D-3 NRC Question:

- Are quarterly reports required by the Order available for review?

D-3 TVA Response:

The ECP quarterly reports are available for NRC review upon request. The reports are sensitive in nature and controlled as such. Of note, these reports are discussed in a quarterly detailed meeting with the NRC resident inspectors.

D-4 NRC Question:

- Were the WBN Unit 2 TVA employees included in the most recent Synergy[®] Survey conducted?

D-4 TVA Response:

No, WBN Unit 2 TVA employees were not included in the most recent Synergy[®] Survey.

D-5 NRC Question:

- Are pulsing surveys for critical evolutions (i.e., cold hydro, hot functional, etc.) and transition activities at WBN Unit 2 being conducted?

D-5 TVA Response:

Yes, but the decision of what organizations to survey is not solely based upon critical activities. The TVA Employee Concerns Program utilizes a targeted approach to the sample pulsing that is done with an attempt to sample every organization on an annual basis. This is done in conjunction with the annual pulse survey conducted by Bechtel ECP which encompasses 100% of the Bechtel contract and sub-contracted employees. Organizations are selected for pulse surveys using a variety of factors such as concern trend identification, both anonymous PER and non-anonymous PER reviews, external identification factors such as NRC allegation or NCRB input, and work input stressors such as potential work load pressure as identified in the daily POD and project schedule which includes critical evolutions.