



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

December 4, 2015

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

SUBJECT: WATTS BAR NUCLEAR PLANT – U.S. NUCLEAR REGULATORY COMMISSION
EMERGENCY PREPAREDNESS INSPECTION REPORT 05000390/2015502 AND
05000391/2015502

Dear Mr. Shea:

On November 20, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Watts Bar Nuclear Plant. The enclosed inspection report (IR) documents the inspection results that were discussed on November 20, 2015, with you and other members of your staff.

No findings were identified during this inspection.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public inspections, exemptions, requests for withholding," of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its Enclosure, and your response if any, will be available electronically for public inspection in the NRC Public Document Room, or from the Publicly Available Records (PARS) component of NRC's Documents Access and Management System (ADAMS); accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA by Adam Nielsen Acting for/

Brian R. Bonser, Chief
Plant Support Branch 1
Division of Reactor Safety

Docket Nos. 50-390 and 50-391
License Nos. NPF-90 and NPF-96

Enclosure:
IR 05000390 and 05000391/2015502
w/Attachment: Supplementary Information

cc: Distribution via Listserv

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ADAMS: Yes ACCESSION NUMBER: ML15338A099 SUNSI REVIEW COMPLETE FORM 665 ATTACHED

OFFICE	RII:DRS/PSB1	RII:DRS/PSB1	RII:DRS/PSB1	RII:DRS/PSB2	RII:DRP/BR6	RII:DRP/BR6	RII:DRS/PSB1
SIGNATURE	SPS	CAF2	WTL	JPT via e-mail	JDH5	AJB3	ADN for BRB1
NAME	S. Sanchez	C. Fontana	W. Loo	J. Tornow	J. Hamman	A. Blamey	B. Bonser
DATE	12/ 2 /2015	12/ 1 /2015	12/ 1 /2015	12/ 1 /2015	12/ 2 /2015	12/ 3 /2015	12/ 4 /2015
E-MAIL COPY	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY

Letter to Joseph W. Shea from Brian R. Bonser dated December 4, 2015

SUBJECT: WATTS BAR NUCLEAR PLANT – U.S. NUCLEAR REGULATORY COMMISSION
EMERGENCY PREPAREDNESS INSPECTION REPORT 05000390/2015502 AND
05000391/2015502

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**U.S. NUCLEAR REGULATORY COMMISSION
REGION II**

Docket No: 05000390 and 05000391

License No: NPF-90 and NPF-96

Report No: 05000390 and 05000391/2015502

Licensee: Tennessee Valley Authority

Facility: Watts Bar Nuclear Plant, Unit 1 and Unit 2

Location: Spring City, TN

Dates: November 16–20, 2015

Inspectors: Steven Sanchez, Senior Emergency Preparedness Inspector
Christopher Fontana, Emergency Preparedness Inspector
Wade Loo, Senior Health Physicist
John Tornow, Physical Security Inspector
Jeff Hamman, Resident Inspector

Approved by: Brian R. Bonser, Chief
Plant Support Branch 1
Division of Reactor Safety

Enclosure

SUMMARY

Inspection Report (IR) 05000390 and 05000391/2015502; 11/16/2015 – 11/20/2015; Watts Bar Nuclear Plant, Unit 1 and Unit 2; Emergency Preparedness Exercise and Baseline Inspection

This report covers an announced inspection by two emergency preparedness inspectors, one physical security inspector, one senior health physicist, and one resident inspector. No findings of significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

No findings were identified during this inspection.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

Since the last NRC inspection of this program area, some revisions were made to the Radiological Emergency Plan and associated implementing procedures. The licensee determined that, in accordance with 10 CFR 50.54(q), the Plan continued to meet the requirements of 10 CFR 50.47(b), and Appendix E to 10 CFR Part 50. The inspectors reviewed the revisions, and sampled implementing procedure changes to evaluate potential reductions in the effectiveness of the Plan. As this review was not documented in a Safety Evaluation Report, and does not constitute formal NRC approval of the changes, these changes remain subject to future NRC inspection in their entirety.

The inspection was conducted in accordance with NRC Inspection Procedure (IP) 71114, Attachment 04, Emergency Action Level and Emergency Plan Changes. The applicable planning standards of 10 CFR 50.47(b), and its related requirements in 10 CFR Part 50, Appendix E, were used as reference criteria.

The inspectors reviewed various documents, which are listed in the Attachment to this report. This inspection activity satisfied one inspection sample for the emergency action level and emergency plan changes on an annual basis.

b. Findings

No findings were identified.

1EP7 Exercise Evaluation – Hostile Action Event

a. Inspection Scope

Title 10 CFR 50, Appendix E, Section IV.F.2.j, requires, in part, that nuclear power reactor licensees, in each 8-calendar-year exercise cycle, provide the opportunity for their emergency response organization (ERO) to demonstrate proficiency in the key skills necessary to respond to a hostile action (HA) directed at the plant site. The licensee designed the November 18, 2015, exercise to satisfy that requirement, and the NRC inspected the HA event exercise to assess the licensee's ability to effectively implement their emergency plan during a HA event, and adequately protect public health and safety.

The exercise evaluation consisted of the following reviews and assessments:

- The adequacy of the licensee's performance in the biennial exercise, conducted on November 18, 2015, was reviewed and assessed regarding the implementation of the Risk-Significant Planning Standards in 10 CFR 50.47(b)(4), (5), (9), and (10),

which address emergency classification, offsite notification, radiological assessment, and protective action recommendations, respectively.

- The overall adequacy of the licensee's emergency response facilities with regard to NUREG-0696, "Functional Criteria for Emergency Response Facilities," and Emergency Plan commitments. The facilities assessed were the Control Room Simulator, the Central Alarm Station cell, the Incident Command Post, the Alternate Facility, and the corporate Emergency Operations Facility.
- A review of other performance areas, such as the ERO recognition of abnormal plant conditions; command and control, including interactions with site security staff, intra- and inter-facility communications; prioritization of mitigation activities; utilization of repair and field monitoring teams; interface with offsite agencies, including local law enforcement agencies; staffing and procedure adequacy; and the overall implementation of the emergency plan and its implementing procedures.
- Past performance issues from NRC inspection reports, and Federal Emergency Management Agency (FEMA)/Department of Homeland Security (DHS) exercise reports, to determine the effectiveness of corrective actions as demonstrated during this exercise to ensure compliance with 10 CFR 50.47(b)(14).
- The adequacy of the licensee's post-exercise critiques, to evaluate licensee self-assessment of its ERO performance during the November 18, 2015, exercise to ensure compliance with 10 CFR Part 50, Appendix E, Subsection IV.F.2.g.

The inspectors reviewed various documents, which are listed in the Attachment. The inspectors also attended the FEMA-sponsored public meeting on November 20, 2015. This inspection activity satisfied one inspection sample for the exercise evaluation on a biennial basis.

b. Findings

No findings were identified.

1EP8 Exercise Evaluation – Scenario Review

a. Inspection Scope

Prior to the inspection activity, the inspectors conducted an in-office review of the exercise objectives and scenario submitted to the NRC using IP 71114.08, "Exercise Evaluation - Scenario Review," to determine if the exercise would test major elements of the emergency plan as required by 10 CFR 50.47(b)(14).

The inspectors reviewed various documents, which are listed in the Attachment to this report. This inspection activity satisfied one inspection sample for the exercise evaluation on a biennial basis.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors sampled licensee submittals relative to the performance indicators (PIs) listed below for the period July 1, 2014, through September 30, 2015. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, was used to confirm the reporting basis for each data element.

Emergency Preparedness Cornerstone

- Drill/Exercise Performance (DEP)
- Emergency Response Organization (ERO) Readiness
- Alert and Notification System (ANS) Reliability

For the specified review period, the inspectors examined data reported to the NRC, procedural guidance for reporting PI information, and records used by the licensee to identify potential PI occurrences. The inspectors verified the accuracy of the PIs for ERO and DEP through review of a sample of drill and event records. The inspectors reviewed selected training records to verify the accuracy of the PI for ERO drill participation for personnel assigned to key positions in the ERO. The inspectors verified the accuracy of the PI for ANS reliability through review of a sample of the licensee's records of periodic system tests. The inspectors also interviewed the licensee personnel who were responsible for collecting and evaluating the PI data. Licensee procedures, records, and other documents reviewed within this inspection area are listed in the Attachment. This inspection satisfied three inspection samples for PI verification on an annual basis.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On November 20, 2015, the inspection team presented the inspection results to Mr. K. Walsh and other members of the plant staff. The inspectors confirmed that no proprietary information was provided during the inspection.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

J. Addison, Drills and Exercises Program Manager
G. Arent, Licensing Director
L. Belvin, Quality Assurance Manager
S. Connors, Plant Manager
T. Detchemendy, Emergency Preparedness Manager
B. Hufsteter, Security Shift Supervisor
W. Lee, Corporate Emergency Preparedness Director
J. Parshall, EP Program Planning and Implementation Manager
A. Phillips, Emergency Preparedness Specialist
G. Pry, Plant Support Director
J. Reidy, Nuclear Plant Projects Director
S. Schiel, Emergency Preparedness Training Program Manager
W. Smith, Nuclear Operations Training Manager
C. Snell, Protective Strategy Program Manager
R. Stroud, Site Licensing Senior Program Manager
K. Walsh, Site Vice President
M. White, Emergency Preparedness Specialist

ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

None

LIST OF DOCUMENTS REVIEWED

1EP4 Emergency Action Levels and Emergency Plan Changes

Procedures

TVA Nuclear Power Radiological Emergency Plan, Appendix C, Watts Bar Nuclear Plant,
Rev. 104, 105, 106, and 107
EPDP-17, NPG Emergency Plan Effectiveness Review [10CFR50.54(q)], Rev. 5

Records and Data

CECC 2014-015, EPDP-17, Attachment 2 Screening Evaluation Form for REP, Appendix C,
Rev 104, dated 7/16/2014
CECC 2014-020, EPDP-17, Attachment 2 Screening Evaluation Form for REP, Appendix C,
Rev. 104, dated 6/16/2014
CECC 2014-021, EPDP-17, Attachment 2 Screening Evaluation Form for REP, Appendix C,
Rev. 104, dated 8/19/2014
CECC 2014-021, EPDP-17, Attachment 2 Effectiveness Evaluation Form for REP, Appendix C,
Rev. 104, dated 8/19/2014

CECC 2015-004, EPDP-17, Attachment 2 Screening Evaluation Form for REP, Appendix C, Rev. 105, dated 2/12/2015
 CECC 2015-004, EPDP-17, Attachment 2 Effectiveness Evaluation Form for REP, Appendix C, Rev. 105, dated 2/12/2015
 CECC 2015-005, EPDP-17, Attachment 2 Screening Evaluation Form for REP, Appendix C, Rev. 105, dated 2/12/2015
 CECC 2015-017, EPDP-17, Attachment 2 Screening Evaluation Form for REP, Appendix C, Rev. 106, dated 5/1/2015
 CECC 2015-017, EPDP-17, Attachment 2 Effectiveness Evaluation Form for REP, Appendix C, Rev. 106, dated 5/1/2015
 CECC 2015-038, EPDP-17, Attachment 2 Screening Evaluation Form for REP, Appendix C, Rev.107, dated 10/13/2015

1EP7 Exercise Evaluation

Procedures

1-AOI-42.01, Security Events, Rev. 9
 1-AOI-39, Rapid Load Reduction, Rev. 1
 1-AOI-30.1, Plant Fire, Rev. 4
 1-ES-0.2, Natural Circulation Cooldown, Rev. 0
 1-FR-H.1, Loss of Secondary Heat Sink, Rev. 4
 EPDP-3, Emergency Plan Exercises and Preparedness Drills, Rev. 13
 EPIP-1, Emergency Plan Classification Logic, Rev. 44
 EPIP-4, Site Area Emergency, Rev. 39
 EPIP-5, General Emergency, Rev. 44
 EPIP-6, Activation and Operation of the Technical Support Center, Rev. 46
 EPIP-8, Personnel Accountability and Evacuation, Rev. 28
 EPIP-12, Emergency Equipment and Supplies, Rev. 37
 NPG-SPP-18.3.7, Alternate Facility Activation and Operation, Rev. 2
 NSDP-22, Security Contingency Events, Rev. 5
 WBN SSI 7.6, Personnel Access Control, Rev. 40
 WBN SSI 19.2, (SGI) Airborne Threat, Rev. 5

Corrective Action Program Documents

CR 1095906, EAL setpoint change calculation
 CR 1104898, WBN-EP-F-15-001 NRC Prep SA incomplete administrative form
 CR 1106227, The decision process used to declare a GE during the 2015 graded exercise should be reviewed
 CR 1106230, During the 2015 graded exercise the loss of the TDAFWP occurred earlier than planned
 CR 1106235, Review the NRC communications requirements
 CR 1106239, Evaluate procedure addition to CECC EPIP-2 for ODS to activate ERDS
 CR 1106242, The CECC was not made aware that the REP vans were ready to be dispatched once they were moved to the Alternate Facility
 CR 1106249, One craft support responder arrived at the Alternate Facility well before TEENS notification occurred
 CR 1106258, TEENS notification message resulted in confusion among several responders
 CR 1106261, There was some uncertainty regarding who should be performing PA announcements when conducting rapid evacuation of the protected area

- CR 1106263, There was some difficulty in contacting the ICP during the initial stages of the drill
- CR 1106266, Review State Notification Forms in use throughout the fleet
- CR 1106268, Review AOI and SSI procedure steps that enforce continuing actions taken for security events
- CR 1106269, Radiation monitor readings in the drill package did not agree with the simulation indication
- CR 1106354, Review use of security specific hotwash criteria and debriefs
- CR 1106358, Review & evaluate ability of security personnel to understand, identify, and appropriately report gaps during security involved events
- CR 1106362, Identified knowledge gap with security staff regarding threat level classifications
- CR 1106363, The Rhea County notification was delegated by the SM to the Alternate Facility
- CR 1106367, Evaluate additional personnel designated to respond to the MCR in security type events
- CR 1106370, 3 copies of NPG-SPP-18.3.7 in the Alternate Facility were Rev. 1 vice Rev. 2
- CR 1106373, Lessons learned from 2015 graded exercise
- CR 1106395, Omission in REP Appendix C did not result in initiation of a CR
- CR 1106464, Plan drill schedule to allow more time for Simulator Ops crew to debrief without feeling rushed
- CR 1106467, Comments from facility debriefs not all presented at the combined site debrief
- CR 1106468, Possible procedure enhancement in AOI-42.01 for 911 call
- CR 1106470, No discussion was observed in CAS cell regarding any potential continued threat for the downed aircraft after impact
- CR 1106471, Not all participants attended a post drill critique
- CR 1106472, ICP liaison performance was not consistent
- CR 1106473, EPIP-2, 3, & 4, NRC Notification Forms did not indicate event was applicable to both units
- CR 1106474, CECC Security Manager called the site CAS directly vice the CAS cell

1EP8 Exercise Evaluation – Scenario Review

Procedures

EPDP-3, Emergency Plan Exercises and Preparedness Drills, Rev. 13

Section 4OA1: Performance Indicator Verification

Procedures

EPDP-11, Emergency Preparedness Performance Indicators, Rev. 7

NPG-SPP-02.2, Performance Indicator Program, Rev. 7

NPG-SPP-22.300, Corrective Action Program, Rev. 5

NPG-SPP-22.302, Corrective Action Program Screening, Rev. 7

Records and Data

DEP opportunities documentation for third and fourth quarters 2014; first, second, and third quarters 2015

Siren test data for third and fourth quarters 2014; first, second, and third quarters 2015

Drill and exercise participation records of ERO personnel for third and fourth quarters 2014; first, second, and third quarters 2015

Corrective Action Program Documents

CR 0842955, Unsuccessful classification of the Radiological E-Plan declaration during training

CR 0886873, 2014 May Quarterly Training Drill - missed notification

CR 0933536, WBN REP drill September 2014 – failed Objective DEP

CR 0975475, SR to document LOR 2014 annual operating exam failures

CR 0998276, Failed DEP opportunity during LOR cycle 1502 training scenario

CR 1018203, April 2015 WBN REP Drill- Failed DEP opportunity

CR 1049749, Drill participation data

CR 1095906, EAL setpoint change calculation

LIST OF ACRONYMS

ANS	Alert and Notification System
DEP	Drill and Exercise Performance
DHS	Department of Homeland Security
ERO	Emergency Response Organization
FEMA	Federal Emergency Management Agency
HA	Hostile Action
IP	Inspection Procedure
PIs	Performance Indicators