



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

CNL-15-213

October 7, 2015

10 CFR 50.90

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: Compliance with Three Mile Island (TMI) Action Plan Requirements for an Operating License

- References:
1. NUREG-0737, "Clarification of TMI Action Plan Requirements," dated November 1980 (ML051400209)
 2. NUREG-0737 Supplement 1, "Clarification of TMI Action Plan Requirements," dated January 1983 (ML102560009)
 3. TVA letter to NRC, CNL-15-168, "Watts Bar Nuclear Plant Unit 2 - Notification of Construction Substantially Complete and Request for Operating License," dated August 12, 2015 (ML15224B482)

In response to the Three Mile Island (TMI) Unit 2 accident, the Nuclear Regulatory Commission (NRC) issued the Ref 1 and 2 Technical Reports. As an applicant for an operating license for Watts Bar Nuclear Plant (WBN), Unit 2, the Tennessee Valley Authority (TVA) is required to comply with the requirements of NUREG-0737, Enclosure 2, "TMI Action Plan Requirements for Applicants for an Operating License". (Reference 1)

The purpose of this letter is to document TVA's compliance with the requirements of NUREG-0737, Enclosure 2 for WBN U2. Specifically, Enclosure 1 to this letter provides documentation of closure for the specific Clarification Items listed in NUREG-0737, Enclosure 2, except for Clarification Item II.F.1, installation of the noble gas radiation monitors and containment high range radiation monitors as part of the accident monitoring instrumentation. As provided in Enclosure 2 of the Reference 3 letter, these are the instruments referred to as the TMI Actions Items Key Activities Remaining Open prior to Mode 6. The accident monitoring instrumentation noble gas radiation monitors 2-RE-90-119, -255, -256, -421, -422, -423, and -424, and containment high range radiation monitors 2-RE-90-271, -272, -273, and -274, will be operational prior to initial fuel load of WBN Unit 2.

Enclosure 2 provides the new regulatory commitment contained in this submittal. Please contact Gordon Arent at (423) 365 2004 if there are questions regarding this submittal.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 7th day of October 2015.

Respectfully,

J. W. Shea
Digitally signed by J. W. Shea
DN: cn=J. W. Shea, o=Tennessee Valley
Authority, ou=Nuclear Licensing,
email=jwshea@tva.gov, c=US
Date: 2015.10.07 18:56:13 -04'00'

J. W. Shea
Vice President, Nuclear Licensing

Enclosures

1. Watts Bar Unit 2 Compliance with TMI Action Items for an Operating License
2. List of Commitments

cc (Enclosures):

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

ENCLOSURE 1

**WATTS BAR UNIT 2
COMPLIANCE WITH TMI ACTION ITEMS FOR AN OPERATING LICENSE**

Enclosure 1
Watts Bar Unit 2 Compliance with TMI Action Items for an Operating License

Clarification Item	Shortened Title	Description	Comments
I.A.1.1	Shift Technical Advisor	<ol style="list-style-type: none"> 1. On shift 2. Training 3. Long term program 	Item was closed in Inspection Report (IR) 50-391/95-60
I.A.1.2	Shift supervisor responsibilities	Delegate non-safety duties	Item was closed in IR 50-391/95-37
I.A.1.3	Shift manning	<ol style="list-style-type: none"> 1. Limit overtime 2. Minimum shift crew 	Item was closed in IR 50-391/95-37
I.A.2.1	Immediate upgrade of RO and SRO training and qualifications	<ol style="list-style-type: none"> 1. SRO experience 2. SROs are ROs, 1 yr. 3. 3 month training on shift 4. Modify training 5. Facility certification 	Item was closed in IR 50-391/94-65 and IR 50-391/95-60
I.A.2.3	Administration of training programs	Instructors complete SRO exam	Item was closed in IR 50-391/94-65
I.A.3.1	Revised scope & criteria for licensing exams	<ol style="list-style-type: none"> 1. Increase scope 2. Increase passing grade 3. Simulator exams <ol style="list-style-type: none"> a. Plants with simulators b. All plants 	Item was closed in IR 50-391/94-65
I.B.1.2	Evaluation of organization & management	Organization, resources, training & qualifications for operators & accidents	Safety Evaluation received on August 26, 1999 eliminating ISEG requirement
I.C.1	Short-term accident and procedure review	<ol style="list-style-type: none"> 1. SBLOCA 2. Inadequate Core Cooling 3. Transients & accidents 	Item was closed in IR 05000391/2014604
I.C.2	Shift & relief turnover procedures	Revise procedures to assure plant status known by new shift	Item was closed in IR 050-391/95-41
I.C.3	Shift supervisor responsibility	Corporate directive to establish command duties & revise plant procedures	Item was closed in IR 050-391/95-37
I.C.4	Control room access	Establish authority and limit access	Item was closed in IR 050-391/95-60
I.C.5	Feedback of operating experience	Review & revise procedures	Item was closed in IR 050-391/94-63

Enclosure 1
Watts Bar Unit 2 Compliance with TMI Action Items for an Operating License

Clarification Item	Shortened Title	Description	Comments
I.C.6	Verify correct performance of operating activities	Revise performance procedures	Item was closed in IR 050-391/95-74
I.C.7	NSSS vendor review of procedures	<ol style="list-style-type: none"> 1. Low-power test program 2. Power ascension & emergency procedures 	Item was closed in IR 05000391/2015604
I.C.8	Pilot monitoring of selected emergency procedures NTOLs	Correct procedure based on NRC sample audit	Item was closed in IR 05000391/2014602
I.D.1	Control room design review	Preliminary assessment & schedule for correcting deficiencies	Item was closed in IR 05000391/2014602 (SSER 22)
I.D.2	Plant safety parameter display console	<ol style="list-style-type: none"> 1. Description 2. Installed 3. Fully implemented 	Item was closed in IR 05000391/2013604
I.G.1	Training during low-power testing	<ol style="list-style-type: none"> 1. Proposed tests 2. Submit analysis and procedures 3. Training & results 	Item was closed in IR 050-391/93-11
II.B.1	Reactor coolant systems vents	<ol style="list-style-type: none"> 1. Design & analysis 2. Install 3. Procedures 	Item was closed in IR 05000391/2014614 (SSER 23)
II.B.2	Plant shielding	<ol style="list-style-type: none"> 1. Radiation & shielding review 2. Corrective actions to assure access 3. Complete mods 4. Equipment qualification 	Item was closed in IR 05000391/2014614 (SSER 24 and SSER 27)
II.B.3	Post-accident sampling	<ol style="list-style-type: none"> 1. Design review 2. Corrective actions 3. Procedures 4. Complete actions 	Item was closed in SSER 24
II.B.4	Training for mitigating core damage	<ol style="list-style-type: none"> 1. Develop training program 2. Complete training 	Item was closed in IR 050-391/95-70
II.D.1	Relief & safety valve test requirements	<ol style="list-style-type: none"> 1. Describe program & schedule 2. RV & SV tests 3. Block valve tests 	PORV test procedure developed and provided to NRC Inspection Team
II.D.3	Valve position indication	Install in control room	Item was closed in IR 05000391/2015604 (SSER 23)

Enclosure 1
Watts Bar Unit 2 Compliance with TMI Action Items for an Operating License

Clarification Item	Shortened Title	Description	Comments
II.E.1.1	Auxiliary Feedwater system evaluation	<ol style="list-style-type: none"> 1. Analysis 2. Modification 	Item was closed in IR 05000391/2012608
II.E.1.2	Auxiliary Feedwater system initiation and flow	<ol style="list-style-type: none"> 1. Initiation <ol style="list-style-type: none"> a. Control grade b. Safety grade 2. Flow indication <ol style="list-style-type: none"> a. Control grade b. Safety grade 	Item was closed in IR 05000391/2015607 (SSER 23 Open Item 75 (Appendix HH), proposed for closure by IPS-526.)
II.E.3.1	Emergency power for pressurizer heaters	Installed capability	Item was closed in IR 05000391/2014604
II.E.4.1	Dedicated hydrogen penetrations	<ol style="list-style-type: none"> 1. Design 2. Review & revise H₂ control procedure 3. Install 	<ol style="list-style-type: none"> 1. N/A 2. SER June 1982 "Hydrogen recombiners are situated inside containment, the requirements of Item II.E.4.1 of NUREG-0737, "Dedicated Hydrogen Penetrations," do not apply; that is, no penetrations are used." 3. By letter dated December 23, 2008, the NRC issued Amendment No. 72 to the WBN Unit 1 Operating License to allow the elimination of the Hydrogen Recombiners. This approach was also applied to Watts Bar Unit 2.
II.E.4.2	Containment isolation dependability	<ol style="list-style-type: none"> 1 – 4. Implement diverse isolation 5. Containment pressure setpoint 6. Containment purge valves 7. Radiation signal on purge valves 	Item was closed in IR 05000391/2011605

Enclosure 1
Watts Bar Unit 2 Compliance with TMI Action Items for an Operating License

Clarification Item	Shortened Title	Description	Comments
II.F.1	Accident monitoring instrumentation	<ol style="list-style-type: none"> 1. Procedures 2. Install instrumentation <ol style="list-style-type: none"> a. Noble gas monitor b. Iodine/particulate sampling c. Containment high range monitor d. Containment pressure e. Containment water level f. Containment hydrogen 	<ol style="list-style-type: none"> 1. Procedures provided to NRC Inspection Team 2.a Operational prior to Fuel Load 2.b Closed in IR 05000391/2013607 2.c Operational prior to Fuel Load 2.d Closed in IR 05000391/2011604 2.e Closed in IR 05000391/2011605 2.f Closed in IR 05000391/2011604
II.F.2	Instrumentation for detection of inadequate core cooling	<ol style="list-style-type: none"> 1. Procedures instruments 2. Sub-cooling meter 3. Describe other instrumentation 4. Install additional instrumentation 	Item was closed in IR 05000391/2011608 (SSER 28)
II.G.1	Power supplies for pressurizer relief valves, block valves and level indicators	Power supply from emergency busses	Item was closed in IR 05000391/2012608
II.K.1	IE Bulletins	<ol style="list-style-type: none"> 5. Review ESF valves 10. Operability status 17. Trip per low-level B/S 	<ol style="list-style-type: none"> 5. Closed in IR 05000391/2012603 10. Closed in IR 05000391/2014602 17. Closed in SSER 16, App EE
II.K.2	Orders on B&W Plants	<ol style="list-style-type: none"> 13. Thermal-Mechanical Report 17. Voiding in RCS 19. Benchmark analysis sequential AFW flow 	<ol style="list-style-type: none"> 13. Closed in SSER 24 17. Closed in SSER 24 19. Closed in SSER 16, App EE

Enclosure 1
Watts Bar Unit 2 Compliance with TMI Action Items for an Operating License

Clarification Item	Shortened Title	Description	Comments
II.K.3	Final Recommendation B&O taskforce	<ol style="list-style-type: none"> 1. Auto PORV Isolation 2. Report on PORV failures 3. Reporting SV & RV failures and challenges 5. Auto trip of RCPS <ol style="list-style-type: none"> a. Propose mods b. Modification 9. PID Controller 10. Applicants propose anticipatory trip at high power 12. Confirm anticipatory trip <ol style="list-style-type: none"> a. Propose modification b. Modify 17. ECCS outages 25. Power on pump seals <ol style="list-style-type: none"> a. Propose modifications b. Modifications 30. SB LOCA methods <ol style="list-style-type: none"> a. Schedule outline b. Model c. New analysis 31. Plant-specific analysis Short-term improvements	<ol style="list-style-type: none"> 1. Closed in SSER 5 2. Closed in SSER 5 3. Closed in SSER 22 5. Closed in IR 05000391/2013608 (SSER 24) 9. Closed in IR 05000391/2011605 (SSER 23 Open Item 76 (Appendix HH).") 10. Closed in IR 05000391/2014603 (SSER 23) 12. Closed in SSER 23 17. Closed in IR 05000391/2012603 (SSER 22) 25. Closed in IR 05000391/2010605 30. Closed in IR 05000391/2011603 31. Closed in IR 05000391/2011603
III.A.1.1	Emergency preparedness short term		Item was closed in SSER 13, Section 13.3.3
III.A.1.2	Upgrade emergency support facilities	<ol style="list-style-type: none"> 1. Establish TSC, OSC, EOF (interim basis) 2. Design 3. Modifications 	Item was closed in: <ul style="list-style-type: none"> • SSER 13, Section 13.3.2.8 • SSER 22, Section 13.3.2.8 • SSER 28, Section 13.3.2.8

Enclosure 1
Watts Bar Unit 2 Compliance with TMI Action Items for an Operating License

Clarification Item	Shortened Title	Description	Comments
III.A.2	Emergency Preparedness	<ol style="list-style-type: none"> 1. Upgrade emergency plans to App E, 10 CFR 50 2. Meteorological data 	Item was closed in: <ul style="list-style-type: none"> • SSER 22, Section 13.3.2.1 & 13.3.2.10 • SSER 28, Section 13.3.2.10 • IR 05000391/2011609 • IR 05000391/2014614 • IR 05000391/2015603
III.D.1.1	Primary coolant outside containment	Measure leak rates & establish program to keep leakage ALARA	Full power requirement TS 5.2.7.4 "Primary Coolant Sources Outside Containment" submitted September 23, 2015 (ML15267A183)
III.D.3.3	In-plant I ₂ radiation monitoring	<ol style="list-style-type: none"> 1. Provide means to determine presence of radioiodine 2. Modifications to accurately measure radioiodine 	Item was closed in IR 05000391/2012605
III.D.3.4	Control room habitability	<ol style="list-style-type: none"> 1. Identify and evaluate potential hazards 2. Schedule for modifications 3. Modifications. 	Item was closed in IR 05000391/2012607 (SSER 22)

ENCLOSURE 2

LIST OF COMMITMENTS

1. The accident monitoring instrumentation noble gas radiation monitors 2-RE-90-119, -255, -256, -421, -422, -423, and -424, and containment high range radiation monitors 2-RE-90-271, -272, -273, and -274, will be operational prior to initial fuel load of WBN Unit 2.