



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II**

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

October 20, 2016

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

**SUBJECT: NOTICE OF ENFORCEMENT DISCRETION FOR TENNESSEE VALLEY  
AUTHORITY (TAC NUMBER MF8472 and MF8473, NOED NUMBER 16-2-01)**

Dear Mr. Shea:

By letter dated October 18, 2016, (ADAMS Accession No. ML16292A827), Tennessee Valley Authority (TVA) requested the U.S. Nuclear Regulatory Commission (NRC) to exercise discretion for compliance with the actions required in Watts Bar Nuclear Plant (WBN), Units 1 and 2, Technical Specifications (TS) 3.8.1, "AC Sources - Operating," Required Action B.4. When one or more Emergency Diesel Generators (EDG) in either Train A or Train B is inoperable, TS 3.8.1, Limiting Condition for Operation (LCO) Required Action B.4, directs restoring the affected EDG to operable status within 72 hours, or else place the Unit in operational Mode 3 (Hot Standby) within the next 6 hours, and then operational Mode 5 (Cold Shutdown) within the next 36 hours. The subject letter documented information previously discussed between Mr. G. Arent of your staff and the NRC Senior Resident Inspector at WBN on October 13, 2016, and later during a telephone conference with the NRC and Mr. P. Simmons and other members of your staff that began at approximately 8:00 p.m. Eastern Daylight Time (EDT) on October 14, 2016 (All time references below will be in EDT). The principal NRC staff members who participated in the telephone conference on October 14, 2016, are listed in the enclosure. The NRC staff determined that the information in your letter requesting the enforcement discretion was consistent with your verbal request.

Your staff stated that at 6:32 a.m. on October 12, 2016, the operations staff declared the 1A-A EDG inoperable when the output breaker to the 1A shutdown board opened unexpectedly due to phase overcurrent during performance of the load test required by procedure 0-SI-82-13, "24 Hour Load Run- DG 1A-A." Your staff reported that the 1A-A EDG was operating normally prior to the opening of the breaker.

Your staff's initial assessment determined the likely cause of the breaker trip to be operation of the tap changer associated with the offsite power supply transformer. A subsequent 24 hour EDG load test was started at 12:35 a.m. on October 13, 2016. At 6:45 p.m. on October 13, 2016, operations staff noted mega volt amps (reactive) (MVAR) swings. During subsequent troubleshooting activities, your staff determined that the MVAR variance could be consistently reproduced by slight movement of a potentiometer

on the 1A-A EDG voltage regulator. Your staff determined that an issue in the voltage regulation circuit was the most likely cause of the output breaker trip, and made preparations to replace and calibrate the voltage regulator on which the potentiometer was located. Following the output breaker opening on October 12, 2016, at 6:32 a.m., your staff took actions in an attempt to avoid the need for a NOED request including establishment of a dedicated cross-functional response team comprised of maintenance, engineering, and work management to troubleshoot the cause of the issue and to make repairs under a maintenance plan using 24-hour coverage. However, your schedule reflected that the maintenance would require more than 72 hours to complete the removal and replacement of the voltage regulator and post-maintenance testing.

This letter documents the telephone conversation on October 14, 2016, between TVA and NRC staff, during which the NRC verbally issued this NOED. Enforcement discretion was requested to allow WBN, Units 1 and 2, to remain in Mode 1, Power Operations, while completing necessary activities to return the 1A-A EDG to full operability as defined in the plant Technical Specifications. Specifically your staff requested an additional 130 hours of completion time (202 total hours) based on your estimated time needed to complete the remaining tasks required to return the 1A-A EDG to operable status. Those tasks included bench calibration of a new EDG governor voltage regulator, removal of the old voltage regulator, replacement with the new calibrated voltage regulator, and post maintenance testing of the 1A-A EDG, and a 24 hour load run to confirm EDG operability.

During the telephone conference on October 14, 2016, as further elaborated in your October 18, 2016 letter, your staff indicated that maintaining Units 1 and 2 in a stable Mode 1 condition was desirable to prevent unnecessary unit shutdowns without a corresponding public health and safety benefit. Using actual plant conditions on October 14, 2016, your staff estimated quantitatively that for an additional 144 hours of completion time, the estimated Incremental Conditional Core Damage Probability (ICCDP) for Units 1 and 2 was approximately  $1.3\text{E-}07$  and  $2.6\text{E-}08$  respectively; and the Incremental Conditional Large Early Release Probability (ICLERP) was approximately  $2.1\text{E-}08$  and  $2.3\text{E-}09$  respectively. These values are less than the  $5\text{E-}7$  and  $5\text{E-}8$  guidance thresholds, respectively, in Inspection Manual Chapter 0410, "Notices of Enforcement Discretion" (ADAMS ML13071A487).

Your staff implemented compensatory risk management measures during this period of enforcement discretion, including: (1) suspending work that jeopardizes plant operations, such as alignment changes or balance-of-plant testing, or switchyard work; (2) protecting the operable EDGs and associated 480V diesel auxiliary board rooms, 6.9kV shutdown boards, WBN Unit 1 turbine driven auxiliary feedwater pump, and WBN 161kV off-site switchyard; (3) ensuring the shutdown board room HVAC, 480V shutdown transfer room ventilation system, and 480V auxiliary board and battery room HVAC system supply to the Unit 2 480V shutdown board room remain in service or appropriate compensatory measures are taken; (4) ensuring the turbine driven auxiliary feedwater pump, auxiliary feedwater control valves to the steam generator, opposite train residual heat removal pump, and reactor trip breakers A and B will not be removed from service; (5) periodically monitoring the grid condition by checking the stability state of the Offsite Power System; and (6) establishing compensatory fire watches in the areas important to fire risk and suspending hot work for identified fire risk areas. Your staff also stated that the 6.9kV FLEX diesel generator was available as an alternate alternating current (AC) power source.

Your staff further stated that the noncompliance would not create undue risk to public health and safety, in that (1) it did not involve a significant increase in the probability or consequences of a previously evaluated accident scenario; (2) it did not create the possibility of a new or different kind of accident from those previously evaluated; (3) it did not involve a significant reduction in a margin of safety; and (4) it would not result in any significant changes in the types or quantities of effluents released from the facility. The WBN Plant Operations Review Committee (PORC) and WBN Plant Manager approved submission of the NOED request at 1:45 p.m. on October 14, 2016, prior to the verbal request for an NOED.

In consultation with the NRC Resident Inspection staff on site at the Watts Bar Nuclear Plant, the NRC verified your staff's oral assertions, including the likely cause and compensatory measures. NRC staff also independently evaluated your staff's estimates for ICCDP and ICLERP.

Based on the NRC staff's evaluation of TVA's request, we concluded that granting this NOED is consistent with the NRC's Enforcement Policy and staff guidance and would have no adverse impact on public health and safety. Therefore, as communicated orally to your staff at 9:30 p.m. on October 14, 2016, the Director, Division of Reactor Projects, NRC Region II, granted enforcement discretion to Watts Bar Nuclear Plant, Units 1 and 2 to extend the completion time for Technical Specification 3.8.1, required Action B.4, to restore the 1A-A EDG to operable status from 72 hours to 202 hours. The additional period of 130 hours provided by the NOED expires at 4:32 p.m. on October 20, 2016.

Your staff subsequently informed the NRC that TVA completed the repairs to the 1A-A EDG voltage regulator and testing of the 1A-A EDG such that the condition causing the need for this NOED was corrected (i.e. the 1A-A EDG was returned to operable status), allowing Units 1 and 2 to exit TS LCO 3.8.1, Required Action B.4 and this NOED, at 4:35 a.m. on October 17, 2016. Therefore TVA utilized 46 hours and 3 minutes of the 130 hours of enforcement discretion that was granted.

In addition, as discussed during the telephone conference on October 14, 2016, the NRC staff agreed with your determination that a follow-up Technical Specification amendment was not necessary. The staff concluded that no follow-up amendment request is needed because an amendment requesting a permanent allowable outage time extension was already under staff review, but was unable to be completed in time to support the current need.

As stated in the NRC Enforcement Policy, enforcement action may be taken to the extent that violations were involved for the root cause that led to the noncompliance for which this NOED was necessary.

Sincerely,

/RA/

Joel T. Munday, Director  
Division of Reactor Projects

Docket: 50-390, 391  
License: NPF-90, NPF-96

Enclosure: List of Participants

cc: Distribution via ListServ

Your staff further stated that the noncompliance would not create undue risk to public health and safety, in that (1) it did not involve a significant increase in the probability or consequences of a previously evaluated accident scenario; (2) it did not create the possibility of a new or different kind of accident from those previously evaluated; (3) it did not involve a significant reduction in a margin of safety; and (4) it would not result in any significant changes in the types or quantities of effluents released from the facility. The WBN Plant Operations Review Committee (PORC) and WBN Plant Manager approved submission of the NOED request at 1:45 p.m. on October 14, 2016, prior to the verbal request for an NOED.

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Your staff subsequently informed the NRC that TVA completed the repairs to the 1A-A EDG voltage regulator and testing of the 1A-A EDG such that the condition causing the need for this NOED was corrected (i.e. the 1A-A EDG was returned to operable status), allowing Units 1 and 2 to exit TS LCO 3.8.1, Required Action B.4 and this NOED, at 4:35 a.m. on October 17, 2016. Therefore TVA utilized 46 hours and 3 minutes of the 130 hours of enforcement discretion that was granted.

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License: NPF-90, NPF-96

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\*See previous concurrence

☒ PUBLICLY AVAABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE ☒ NON-SENSITIVE

ADAMS: ☒ Yes ACCESSION NUMBER: ML16294A328 ☒ SUNSI REVIEW COMPLETE ☒ FORM 665 ATTACHED

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NAME	JSeat	CKontz	SSparks	ABlamey	EBenner	JMunday
DATE	10/20/2016	10/20/2016	10/20/2016	10/20/2016	10/20/2016	10/20/2016
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: G:\DRPI\RPB6\WATTS BAR\NOEDS\NOED 16-2-01 EMERGENCY DIESEL GENERATOR.DOCX

Letter to Joseph Shea from Joel Monday dated October 20, 2016

SUBJECT: NOTICE OF ENFORCEMENT DISCRETION FOR TENNESSEE VALLEY  
AUTHORITY (TAC NUMBER MF8472 and MF8473, NOED NUMBER 16-2-01)

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## **List of Key NRC Personnel**

### Region II

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Jerry Purciarello, Sr Reactor Systems Engineer (and acting BC), Balance of Plant Branch

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Ed Miller, NOED Process Lead (DORL)

Taylor Lamb, NOED Process Support (DORL)