



ADAMS Accession No. ML20182A429

Jaime H. McCoy  
Site Vice President

June 30, 2020

WO 20-0048

Scott A. Morris  
Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region IV  
1600 East Lamar Boulevard  
Arlington, TX 76011-4511

Subject: Docket No. 50-482: Request for Notice of Enforcement Discretion for  
Technical Specifications 3.8.1, "AC Sources – Operating"

Dear Mr. Morris:

This letter confirms the results of the teleconference that was conducted between Wolf Creek Nuclear Operating Corporation (WCNOC) and Nuclear Regulatory Commission (NRC) Staff representatives at 1000 hours Central Daylight Time (CDT) on June 28, 2020, in which WCNOC requested the NRC to exercise enforcement discretion regarding the requirements of Technical Specification (TS) 3.8.1, "AC Sources - Operating." With the plant operating in MODE 1 at 100% Rated Thermal Power, the request was made in order to provide additional time to complete a replacement of the 'B' emergency diesel generator (EDG) room supply fan and post-maintenance testing.

At 1400 hours CDT on June 25, 2020, the 'B' EDG was declared INOPERABLE permitting WCNOC 72 hours to restore the B EDG to OPERABLE status. However, completing the necessary repairs and post-maintenance testing will result in exceeding the 72-hour COMPLETION TIME of REQUIRED ACTION B.4.1 of TS 3.8.1.

Enforcement discretion is sought to allow additional time for repair and post maintenance testing to restore noncompliance with TS 3.8.1 before a plant shutdown is required. An additional 22 hours was requested to restore the B EDG to OPERABLE status such that the COMPLETION TIME would expire at 1200 CDT hours on June 29, 2020.

The incremental conditional core damage probability (ICCDP) and incremental conditional large early release probability (ICLERP) have been quantified for the requested additional time for restoring 'B' EDG. The results of the quantification are within the guidance threshold in NRC Enforcement Manual Appendix F, "Notices of Enforcement Discretion." It has been determined that there is no net increase in radiological risk.

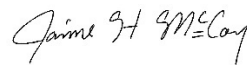
At 1240 hours CDT on June 28, 2020, Mr. Mike Hay, Director Division of Reactor Projects notified WCNOC that after NRC Region IV Office consideration of WCNOC's verbal request for enforcement discretion, and in consultation with the NRR technical staff, the request for a Notice of Enforcement Discretion (NOED) was approved. The approval was effective and would begin at 1400 hours CDT on June 28, 2020, for an additional 22 hours. This letter fulfills the requirement that WCNOC submit a written request for the NOED within 2 working days of the NRC verbal approval. The attachment provides the information documenting WCNOC's earlier verbal request for the NOED.

At 0425 hours CDT on January 29, 2020, the 'B' EDG was restored to operable status after successful replacement and testing of the 'B' EDG room supply fan motor.

WCNOC is now in the process of developing a license amendment request (LAR) to extend the Completion Time of Required Action B.4.1. This could be done in a stand-alone LAR to extend this specific Completion Time or this Completion Time may be included as part of a future submittal for risk informed completion times. This intent has been documented in Condition Report 143454.

This letter contains no commitments. If you have any questions concerning this matter, please contact me at (620) 364-4156, or Ron Benham at (620) 364-4204.

Sincerely,



Jaime H. McCoy

JHM/rit

Attachment: Request for Notice of Enforcement Discretion (NOED) Regarding Technical Specification 3.8.1, "AC Sources – Operating"

cc: S. S. Lee (NRC), w/a  
N. O'Keefe (NRC), w/a  
Senior Resident Inspector (NRC), w/a  
Document Control Desk (NRC), w/a

**Request for Notice of Enforcement Discretion (NOED) Regarding Technical Specification  
3.8.1, “AC Sources – Operating”**

The questions posed in Nuclear Regulatory Commission (NRC) Enforcement Manual Appendix F, Notices of Enforcement Discretion Checklist A are in bold. The information provided by Wolf Creek Nuclear Operating Corporation (WCNOC) is following each question in plain text.

- 1. Why is a formal licensing process not appropriate to address this issue and why the need for a NOED could not reasonably have been avoided. If applicable, this explanation shall address previous instances of the issue and decisions to pursue licensing solutions in the past.**

On June 25, 2020 at 1400 hours Central Daylight Time (CDT), the supply fan to the ‘B’ emergency diesel generator (EDG) room was discovered to be tripped. This caused entry into Technical Specification (TS) 3.8.1 “AC Sources – Operating” Condition B for one EDG inoperable. Troubleshooting was performed and determined that the cause of the fan trip was a fault with the ‘B’ EDG supply fan motor, and that the motor needs to be replaced. It was determined that the corrective actions necessary to restore the supply fan (and therefore the EDG) to operable status could not be completed within the 72-hour Completion Time of Required Action B.4.1 of TS 3.8.1. This sequence of events precluded pursuit of an emergency license amendment.

Wolf Creek Generating Station TS 3.8.1 currently does have an allowance for a 7-day Completion Time to restore one inoperable EDG to operable status. Required Action B.4.2.1 is to verify the required Sharpe Station gensets are available once every 12 hours and Required Action B.4.2.2 is to restore the EDG to operable status with a 7-day Completion Time. However, the Required Actions are modified by a Note which states that these Required Actions are only applicable for planned maintenance and may only be used once per cycle per EDG. The Bases for TS 3.8.1 states certain administrative controls are applied during use of Required Action B.4.2.2 which ensure or require that:

- a. Weather conditions are conducive to an extended EDG Completion Time. The extended EDG Completion Time applies during the period of September 7 through April 5.
- b. The offsite power supply and switchyard condition are conducive to an extended EDG Completion Time, which includes ensuring that switchyard access is restricted and no elective maintenance within the switchyard is performed that would challenge offsite power availability.
- c. Prior to relying on the required Sharpe Station gensets, the gensets are started and proper operation verified (i.e., the gensets reach rated speed and voltage). In addition, within 8 months prior to utilization of Required Action B.4.2.2, a load capability test/verification will be performed on the Sharpe Station gensets. The load capability testing/verification will consist of either 1) crediting a running of the gensets for load for commercial reason for greater than 1 hour, or 2) tested by loading of the gensets for greater than 1 hour to a load equal to or greater than required to supply safety related loads in the event of a station blackout (SBO).

d. No equipment or systems assumed to be available for supporting the extended EDG Completion Time are removed from service. The equipment or systems assumed to be available are as follows:

- Auxiliary Feedwater System (three trains)
- Component Cooling Water System (both trains and all four pumps)
- Essential Service Water System (both trains)
- Emergency Core Cooling System (two trains).

Because the entry into TS 3.8.1 Condition B was not for planned maintenance, did not occur in the applicable period of the year, and the Sharpe Station gensets had not been verified prior, the use of Required Action B.4.2.1 and B.4.2.2 are not allowed.

On January 10, 2013, WCNOC requested the NRC grant a NOED for the 72-hour Completion Time of TS 3.8.1, Required Action B.4.1 due to a broken cylinder head stud on the 'B' EDG. WCNOC determined that replacement and testing of the 'B' EDG to establish operability would result in exceeding the 72-hour Completion Time. An additional 96 hours was verbally granted on January 10, 2013, and WCNOC submitted a written request the following day on January 11, 2013 (Letter WO 13-0002). While the current NOED request is related to the 'B' EDG, it is for a separate cause. In the current situation it is the failure of TS-support equipment (i.e., the 'B' EDG supply fan) which necessitates the request for additional time beyond the TS Completion Time of 72 hours.

WCNOC has not previously submitted a license amendment request (LAR) to extend the Completion Time for Required Action B.4.1 due to the priority of other capital projects and efforts to improve plant performance. WCNOC is now in the process of developing an LAR to extend the Completion Time of Required Action B.4.1. This could be done in a stand-alone LAR to extend this specific Completion Time or this Completion Time may be included as part of a future submittal for risk informed completion times.

**2. A description of the TSs or other license conditions that will be violated. This description shall include the time the condition was entered and when the completion time will expire.**

On June 25, 2020 at 1400 hours CDT, Wolf Creek Generating Station (WCGS) Unit 1 entered TS 3.8.1, Condition B for one EDG inoperable. Required Action B.4.1 is to restore the EDG to operable status with a Completion Time of 72 hours. This time shall expire at 1400 hours CDT on June 28, 2020. If the EDG is not restored to operable status by 1400 hours CDT on June 28, 2020, Condition H of TS 3.8.1 requires a plant shutdown such that Mode 3 is to be entered within 6 hours (i.e., by 2000 hours CDT on June 28, 2020) and Mode 5 to be entered within 36 hours (i.e., by 0200 hours CDT June 30, 2020).

WCNOC specifically requests enforcement discretion from the 72-hour Completion Time of TS 3.8.1 Required Action B.4.1 to restore the 'B' EDG to operable status by restoring the 'B' EDG supply fan motor to service. The enforcement discretion provides sufficient time to complete repairs and post-maintenance testing on the 'B' EDG supply fan motor.

Enforcement discretion is sought to allow up to an additional 22 hours for restoring the 'B' EDG to operable status such that the Completion Time of Required Action B.4.1 would expire at 1200 hours CDT on June 29, 2020.

**3. Provide sufficient information to demonstrate that the cause of the situation is well understood including extent of condition on other related SSCs (e.g., common cause).**

The diesel generator building ventilation system functions to provide combustion air makeup rate and an environment suitable for the operation of the diesel generators. The system is automatically activated when the room temperature exceeds 90 deg. F, and automatically shuts down when room temperature falls below 85 deg. F. When the ventilation system is in operation, the supply fans take suction from the outside air and supply air directly to their respective diesel generator room for maximum cooling requirements. However, each system is provided with a recirculation mode which is primarily for winter operation to prevent freezing.

At 1348 hours CDT, control room personnel noticed no indicating lights on the panel for the 'B' EDG supply fan. Turbine watch was dispatched and reported that the supply breaker for the 'B' EDG supply fan was open with a red trip lamp lit. Electrical maintenance was contacted to investigate further. The 'B' EDG and supply fan were declared inoperable at 1400 hours CDT. Troubleshooting was conducted and a number of possible causes were analyzed. It was determined that the breaker trip was most likely due to a fault in the motor for the 'B' EDG supply fan, and that the motor will need to be replaced.

The last functional test performed on the 'B' EDG supply fan was completed satisfactorily on March 3, 2020. No excessive vibration was found, and good air flow was demonstrated. The current flow through all three phases of the motor was found to be within the acceptance criteria 120-150 amps. (A phase: 132 amps; B phase: 141.9 amps; C phase: 128.9 amps). A review of periodic testing did not indicate any degrading trends.

At 1843 hours CDT, the 'A' EDG supply fan was verified to be operating as designed with the 'A' EDG in standby. To meet TS B.3.2 requirements and to verify condition does not exist on the 'A' EDG supply fan, the 'A' EDG was started at 0927 hours CDT on June 26, 2020. The 'A' EDG was stopped 9 minutes later at 0936 hours CDT.

**4. Provide an explanation of all safety and security concerns associated with operating outside of the TS or license conditions that demonstrates that the noncompliance will not create undue risk to the public health and safety or involve adverse consequences to the environment. This should include, as appropriate, a description of the condition and operational status of the plant, equipment that is out of service, inoperable, or degraded that may have risk significance, may increase the probability of a plant transient, may complicate the recovery from a transient, or may be used to mitigate the condition. This evaluation shall include potential challenges to offsite and onsite power sources and forecasted weather conditions.**

WCGS Unit 1 is in Mode 1 at 100% power operation. There is no safety related or risk significant non-safety related equipment inoperable which has a bearing on this NOED request.

Based on the successful run of the 'A' EDG room supply fan, there appears to be no common mode failure mechanism that exists on the 'A' EDG supply fan motor. The 'A' EDG is operable.

The offsite power supply and switchyard condition will be maintained in a condition conducive to an extended EDG Completion Time, which includes ensuring that switchyard access is restricted and no elective maintenance within the switchyard is performed that would challenge offsite power availability.

WCGS has three SBO diesels generators which are located in a hardened structure directly west of the Control Building. The SBO diesels can be operated remotely and locally via human machine interfaces. The most recent preventive maintenance activities were performed on the SBO diesels between March and April of 2020. The maintenance was performed satisfactorily on all three SBO diesels.

The 'B' EDG is currently prevented from auto starting due to foreign material barriers placed over the engine due to the overhead work. Removal of the FME barrier and restoration of the diesel engine could be achieved in approximately 30 minutes if necessary. Opening the south missile door to the room would provide enough air flow to keep the room cool enough to allow the engine to operate in an emergency condition. Engineering has evaluated the possibility of running the 'B' EDG without the presence of its supply fan. While doing this might shorten the life of some of the equipment in the room, it was determined that there is reasonable assurance that the 'B' EDG and the safety related equipment in the room could continue to perform their safety functions while running the 'B' EDG continuously for 7 days without the use of the supply fan.

The Sharpe Station diesel generator sets have been verified to be functional and available to provide an additional source of AC power.

The 'B' EDG feeds the safety-related NB02 bus in the case of a loss of the normal offsite source of power. Our procedure network for energizing a dead NB02 bus would be entry into an off normal procedure OFN NB-030, LOSS OF AC EMERGENCY BUS NB01(02). From there the crew would attempt to energize from preferred off site source if available (normal path). If this is not available they would try to restore that path while continuing to SYS KU-122 ENERGIZING NB02 FROM STATION BLACKOUT DIESELS. Should that not be successful they would continue to work with system operations to energize the bus using SYS SY-120, SHARPE DIESEL OPERATION AND ALIGNMENT TO SITE.

The weather forecast from the National Weather Service for the area is as follows:

- Sunday (6/28/2020): Mostly sunny, with a high near 93° F. South wind 10 to 15 mph, with gusts as high as 25 mph.
- Sunday Night (6/28/2020-6/29/2020): Mostly cloudy, with a low around 72° F. South wind 10 to 15 mph, with gusts as high as 20 mph.

- Monday (6/29/2020) percent chance of showers and thunderstorms. Mostly cloudy, with a high near 90° F. South wind 10 to 15 mph, with gusts as high as 25 mph.
- Monday Night (6/29/2020-6/30/2020): A 20 percent chance of showers and thunderstorms after 1am. Mostly cloudy, with a low around 70° F. South wind 10 to 15 mph, with gusts as high as 20 mph.
- Tuesday (6/30/2020): A 20 percent chance of showers and thunderstorms. Partly sunny, with a high near 92° F. South wind 5 to 10 mph, with gusts as high as 20 mph.

Based on the forecasted weather, there is not a large probability that severe weather could impact offsite power sources. In addition, the 'B' EDG supply fan and motor are located in the diesel generator building so weather should not greatly impact the installation of the new motor.

- 5. Provide a description and timeline of the proposed course of action to resolve the situation (e.g., likely success of repairs) and explain how the resolution will not result in a different or unnecessary transient. This shall include the time period for the requested discretion and demonstrate a high likelihood of completion within the requested period of enforcement discretion. If the proposed course of action necessitates enforcement discretion greater than 5 day, justify why a longer-term solution (e.g., emergency amendment) should not be processed with the duration of a 5 days NOED.**

Troubleshooting performed on June 25, 2020 determined that the 'B' EDG supply fan motor needed to be replaced. To perform the replacement and post-maintenance testing the current schedule shows the 'B' EDG will be returned to operable status at approximately 2200 hours CDT on June 28, 2020. This is 8 hours beyond the existing Completion Time of Required Action B.4.1. To allow for additional points of discovery during the restoration process, WCNO is requesting an extension to the Completion Time of Required Action B.4.1 of 22 hours. By providing the additional time, a plant shutdown can be avoided thus preventing an unnecessary plant transient.

The following is the proposed timeline for returning the 'B' EDG to operable status:

SUNDAY (6/28/2020)

0000-0230 Welders to cut and remove angles

1030-1600 Terminate replacement motor

1000-1700 Welders replace angles

1600-1700 Perform motor rotation check

1700-1900 Complete motor terminations and final resistance check

1900-2000 Remove clearance order

2000-2100 Collect vibration data on fan and motor

2000-2100 PMT Current and Voltage readings

2100-2130 Perform SYS KJ-121, "Diesel Generator NE01 and NE02 Lineup for Automatic Operation"

2200 'B' EDG return to operable status, exit TS 3.8.1 Condition B.

**6. Detail and explain the compensatory actions the plant has taken and will take to reduce risk(s), focusing on both event mitigation and initiating event likelihood. This shall include how each compensatory measure achieves one or more of the following:**

- a. Reduces the likelihood of initiating events;**
- b. Reduces the likelihood of the unavailability of redundant trains, during the period of enforcement discretion; and**
- c. Increases the likelihood of successful operator actions in response to initiating events.**

The following compensatory measures are being taken to reduce the risk during the NOED period:

- The full response team will remain in place throughout the evolution and the remaining maintenance activities will be completed utilizing 24-hour coverage.
- The offsite power supply and switchyard condition will be maintained in a condition conducive to an extended EDG Completion Time, which includes ensuring that switchyard access is restricted and no elective maintenance within the switchyard is performed that would challenge offsite power availability. This will reduce the likelihood of an SBO or loss of offsite power occurring.
- Enhanced operator sensitivity to safety bus electrical power supplies to recognize and respond expeditiously to an SBO or loss of offsite power. This will increase the likelihood of successful operator actions in response to an SBO or loss of offsite power.
- The following 'A' Train safety-related equipment and systems will be protected in accordance with station procedures and no surveillances or maintenance activities will be allowed except for emergent issues to reduce the likelihood of the unavailability of redundant trains during the period of enforcement discretion:
  - EDG and its supporting equipment
  - Essential Service Water
  - Auxiliary Feedwater
  - Component Cooling Water (both trains)
  - Centrifugal Charging Pump
  - Residual Heat Removal
  - Safety Injection
  - 125 Volt DC System

The 'B' EDG is currently prevented from auto starting due to foreign material barriers placed over the engine due to the overhead work. Removal of the FME barrier and restoration of the diesel engine could be achieved in approximately 30 minutes if necessary. Opening the south missile door to the room would provide enough air flow to keep the room cool enough to allow the engine to operate in an emergency condition. Engineering has evaluated the possibility of running the 'B' EDG without the presence of its supply fan. While doing this might shorten the life of some of the equipment in the room, it was determined that there is reasonable assurance that the 'B' EDG and the safety



related equipment in the room could continue to perform their safety functions while running the 'B' EDG continuously for 7 days without the use of the supply fan.

Should the station experience a loss of all AC power for greater than 4 hours, FLEX generators would be deployed per FSG-05 INITIAL ASSESSMENT AND FLEX EQUIPMENT STAGING and FSG-04 ELAP DC LOAD SHED/MANAGEMENT to restore power to essential instrument and control power buses.

7. **Demonstrate that the NOED condition, including compensatory measures will not result in more than a minimal increase in radiological risk, either in quantitative assessment that the risk will be within the normal work control levels (ICCDP less than or equal to 5E-7 and/or ICLERP less than or equal to 5E-8) or in a defensible qualitative manner.**

#### **ICCDP and ICLERP Determination**

The WCGS Zero Maintenance Revision 9 Probabilistic Risk Assessment (PRA) model was used to quantify the impact on risk of extending the allowed outage time per this request. Core Damage Frequency (CDF), Large Early Release Frequency (LERF), Incremental Conditional Core Damage Probability (ICCDP), and Incremental Conditional Large Early Release Probability (ICLERP) factors are listed below.

The 'B' EDG has been out of service for 72 hours for unplanned maintenance activities. This evaluation considers the risk impact of the keeping the 'B' EDG out of service an additional 22 hours to complete the repair.

Numerical results of two cases for the risk evaluation are provided below. The first is the Base Case. It uses the Zero Test and Maintenance model reflecting the current configuration of the plant (i.e., with the plant aligned to the 'A' CCW Train). The second case added the non-functional 'B' EDG. Both cases are quantified at a truncation limit of 1E-12.

	CDF/yr	LERF/yr
Base Zero T&M	3.84E-06	5.13E-08
Base with 'B' EDG OOS	5.22E-06	5.80E-08

The ICCDP and ICLERP were calculated using Equations 1 and 2 below.

Equation 1:  $ICCDP = (DCDF) \times \text{Duration in years}$

Equation 2:  $ICLERP = (DLERF) \times \text{Duration in years}$

The Duration in years is defined as the additional time for the 'B' EDG to be out of service beyond the 72 hours allowed by TS. This request is for an additional 22 hours. The ICCDP and ICLERP are calculated for 22 hours.

$ICCDP = (5.22E-06 - 3.84E-06) \times (22\text{hrs} \div 8760\text{hrs/yr}) = 3.47E-09$

$ICLERP = (5.80E-08 - 5.13E-08) \times (22\text{hrs} \div 8760\text{hrs/yr}) = 1.68E-11$

The ICCDP shown above fits into Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," as an activity that merits risk management

considerations and activities. The calculated value for ICCDP and ICLERP meets the NRC Enforcement Manual Appendix F guidance threshold of less than or equal to 5.0E-07 ICCDP and 5E-08 ICLERP.

The calculated ICCDP and ICLERP values reported above do not account for various conservatisms in place including, but not limited to, the following:

- Reduction in risk by the avoidance of shutting down the plant with only one available diesel generator
- Enhanced awareness of operations staff for OFN NB-030 and SYS KU-122 for aligning the SBO diesels
- Enhanced awareness of operations staff for SYS SY-120, Sharpe Station Diesel Operation and Alignment to Site
- Consideration of risk of just 'B' EDG supply fan out-of-service and the 'B' EDG considered available

Numerical risk reductions for avoidance of Transition and Shutdown Risk are not included in the above results. Wolf Creek developed a Shutdown PRA in 1999. It utilized the same methodologies for fault tree development as the At-Power model. While it was not fully approved, insights from its use showed a notable risk increase transitioning in Mode 4 due to the defeat of automatic actuations for Safety Injection. This caused a higher reliance on the success of Operator Actions. By simple qualitative evaluation, the numerical insight was reasonable.

### **Dominant Risk Contributors**

The following lists the top 6 CDF initiating event contributors:

- Steam Line Break Outside Containment contributes a total of (11.9%)
- Loss of Service Water (11.5%)
- Steam Generator Tube Rupture (9.3%)
- Weather Induced Loss of Offsite Power (7.9%)
- Loss of 4kV Bus SL-31 (7.4%)
- Loss of 4kV Bus SL-41 (7.4%)

LERF is dominated by Interfacing System LOCA (60.7% combined). ISLOCA when added to Loss of 4kV Power (25.4% combined) and Steam Generator Tube Rupture (3.5%) contribute nearly 90% of all LERF.

### **Compensatory Risk Management Measures**

Qualitative risk insight indicates that compensatory measures to limit the possibility of experiencing an SBO have significant impact on the risk to the plant. Compensatory measures are:

- Ensure no planned switchyard work is allowed. This includes XMR01, No. 4, 5, and 7 transformers,

- Enhanced operator sensitivity to safety bus electrical power supply issues to recognize and respond expeditiously to an SBO or loss of offsite power event, and
- Avoidance of testing and maintenance impacting availability of the 'A' train safety bus, including but not limited to, the Essential Service Water (ESW), Motor Driven Auxiliary Feedwater Pump (MDAFP), Turbine Driven Auxiliary Feedwater Pump (TDAFP), Component Cooling Water (CCW), Residual Heat Removal (RHR), Air Conditioning Units, and all 125 Volt DC System (NK) Batteries and the associated DG to maximize the mitigative response to a Station Blackout Event (SBO).

### **Seismic Event**

Seismic considerations are treated as follows. The seismically induced LOOP is taken from Risk Assessment of Operational Events Volume 2 – External Events Revision 1.02 – November 2017, Appendix 1 Frequencies of Seismically-Induced LOOP Events for SPAR Models, Table A-0-1. Frequencies of Seismically-Induced LOOP Events (Based on hazard vectors in NTTF 2.1 submittals)

1.18E-03 Seismic Initiating Event Frequency  
6.09E-02 Conditional Loss of Offsite Power  
7.18E-05 Seismic Induced Loss of Offsite Power

The relevant Emergency Diesel Generator basic events are:

NE-EDG-FLR-NE01	1.74E-03	DIESEL GENERATOR NE01 FAILS TO LOAD AND RUN 1 HR
NE-EDG-FLR-NE02	1.74E-03	DIESEL GENERATOR NE02 FAILS TO LOAD AND RUN 1 HR
NE-EDG-FTR-NE01	2.95E-02	DIESEL GENERATOR NE01 FAILS TO RUN GREATER THAN ONE HOUR
NE-EDG-FTR-NE02	2.95E-02	DIESEL GENERATOR NE02 FAILS TO RUN GREATER THAN ONE HOUR
NE-EDG-FTS-NE01	2.73E-03	DIESEL GENERATOR NE01 FAILS TO START
NE-EDG-FTS-NE02	2.73E-03	DIESEL GENERATOR NE02 FAILS TO START

By simple inspection, additional failures of Emergency Diesel Generators to run quickly takes the sequence below a value of 5.32E-09.

For example:

Seismic Induced Loss of Offsite Power	NE-EDG-FTR-NE01	NE-EDG-FTR-NE02	Core Damage Frequency/Rx-yr
7.18E-05*(22/8760)	2.95E-02	1.0 (not available)	5.32E-09

### **Common Cause Consideration**

To account for a potential increase in a failure of the 'A' train EDG due to common cause, the common cause failure to run basic event for the EDGs was adjusted. Using the 2015 Edition NRC CCF Parameter Estimations document the  $\alpha_2$  factor Mean value as reported in section 2.11.1.3 for a common cause grouping of two was selected. Replacing the value of basic event CCF-EDG-FTR-02-01\_1\_2 with the value described resulted in an increased CDF and LERF values to 5.76E-06 and 5.90E-08, respectively.

Using equations 1 and 2 from above provided the following results for 22 hours:

$$\begin{aligned}\text{ICCDP} &= 4.82\text{E-}09 \\ \text{ICLERP} &= 1.93\text{E-}11\end{aligned}$$

### **External Events**

A review of WCNOC-PSA-050, "Other External Hazard: Screening Assessment" revealed no significant increase to external event risk as presented by the current plant configuration. Further, WCGS maintains additional equipment for the mitigation of extended loss of AC power that are not currently modeled in the PRA nor credited in any way for risk assessment. This gives further confidence that a possible increase in risk from external hazards is sufficiently minimal.

A review of the Fire Protection Impairment Control Permit log and of the Breach Authorization Permit log did not identify any additional challenges from fire or flood. There are no known degraded conditions within the plant that could appreciably impact this assessment.

### **Control Room Fire**

Based on the Wolf Creek Individual Plant Examination for External Events analysis, no control room scenarios are postulated to result in loss of offsite power (LOOP) event. It is recognized that Wolf Creek's Post-Fire Safe Shutdown (PFSSD) deterministic analysis does consider fires that result in a loss of offsite power. For some PFSSD scenarios, the 'B' EDG is credited to mitigate the event.

For the current configuration, while CGM01B is out-of-service, the 'B' EDG is expected to be functional if needed (as previously stated). Additionally, the SBO can be utilized if the 'B' EDG is not available. Actions to restore AC power would follow established procedures to align the SBO diesels to the NB02 bus. Therefore, qualitatively, CGM01B being out-of-service does not represent a significant increase to plant risk.

The concept of defense in depth for the Fire Protection Program, including the control room follows:

- Prevent fires from starting;
- Detect rapidly, control, and extinguish promptly those fires that do occur; and,
- Provide protection of structures, systems, and components (SSCs) important to safety so that a fire that is not promptly extinguished by fire suppression activities will not prevent safe shutdown of the plant.

### **Sensitivity**

#### **Severe Weather**

During summer months there is regularly the potential for thunderstorms and rain, therefore the environmental factor for severe weather threat was set to High. This increases SVRWTHR factor to a value of 1.43 times normal. The 'B' EDG out of service

with the severe weather threat results in a CDF and LERF of 5.40E-06 and 5.85E-08, respectively.

Using equations 1 and 2 from above provided the following results for 22 hours:

$$\text{ICCDP} = 3.92\text{E-}09$$

$$\text{ICLERP} = 1.81\text{E-}11$$

**PB00509**

An additional run using EOOS provides further assurance should the ability of the Station Blackout Diesels' capability to supply power to the NB02 bus via breaker PB00509 be questioned. In addition to the configuration described above, breaker PB00509 was removed from service for a re-run in EOOS. The resulting CDF and LERF are 5.23E-06 and 5.80E-08, respectively.

Using equations 1 and 2 from above provided the following results for 22 hours:

$$\text{ICCDP} = 3.49\text{E-}09$$

$$\text{ICLERP} = 1.68\text{E-}11$$

These sensitivities still meet the criteria of NRC Enforcement Manual Appendix F.

- 8. Confirm that the facility organization that normally reviews safety issues has reviewed and approved this request and that a written NOED request will be submitted within 2 days of the NRC staff's decision regarding the NOED.**

The Plant Safety Review Committee reviewed and approved this request on June 28, 2020. This letter fulfills the requirement that a written NOED request be submitted by WCNOC within 2 days of the NRC staff's decision.