

November 20, 2018  
L-18-249

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

**SUBJECT:**

Davis-Besse Nuclear Power Station, Unit No. 1  
Docket No. 50-346, License No. NPF-3  
Supplemental Information Regarding License Amendment Request to Adopt National  
Fire Protection Association (NFPA) Standard 805 (CAC No. MF7190, EPID L-2015-  
LLF-0001)

By letter dated December 16, 2015 (ADAMS Accession No. ML15350A314), as supplemented by letters dated March 7, 2016, July 28, 2016, December 16, 2016, January 17, 2017, June 16, 2017, October 9, 2017, April 2, 2018, and September 11, 2018 (Accession Nos. ML16067A195, ML16210A422, ML16351A330, ML17017A504, ML17170A000, ML17284A190, ML18094A798, and ML18254A073 respectively), FirstEnergy Nuclear Operating Company (FENOC) submitted a license amendment request (LAR) to change the Davis-Besse Nuclear Power Station (DBNPS), Unit No. 1 fire protection program to one based on the National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition.

FENOC requests a revised implementation schedule for the plant modifications and specific activities required for implementation of the license amendment. The October 9, 2017 letter requested that the modifications listed in LAR Attachment S, Table S-1 be completed by the startup of the first refueling outage following issuance of the license amendment. It is hereby requested that the single remaining modification be completed within two years following issuance of the license amendment request.

The only remaining modification involves providing fire protection for emergency feedwater system control cables within one of the fire compartments in which they are routed. The probabilistic risk assessment (PRA) model that was used to support the LAR assumed this modification would be installed prior to implementation. A PRA sensitivity study was subsequently performed that conservatively estimated the impact of delaying this modification or removing it entirely from the scope of the model by assuming the control cables fail for any fire scenario originating in this compartment.

The sensitivity study resulted in very small increases in the core damage frequency (CDF) and large event release frequency (LERF) per Regulatory Guide 1.174 "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis." This sensitivity study did not include multiple compartment fire propagation scenarios. Although multiple compartment scenarios that impact this compartment exist in the PRA model, recent refined fire modeling analyses show there are no fire scenarios from any compartment that can propagate and detrimentally impact this compartment. Therefore, the multiple compartment scenarios that impact this compartment will be removed from the PRA. Although, based on the sensitivity study, it is acceptable from a risk perspective to permanently continue to operate with the existing configuration, FENOC intends to complete the modification in accordance with the proposed license conditions.

Furthermore, proposed modification DB-2061 has been removed from Table S-1 in the attached LAR Attachment S. The fire risk evaluation of the variances from deterministic requirements associated with DB-2061 determined that the modification is not necessary and that the risk of not performing the modification is minimal.

The October 9, 2017 letter also requested that the specific activities listed in LAR Attachment S, Table S-2 be completed within one year following issuance of the license amendment. It is hereby requested that the specific activities be completed within two years following issuance of the license amendment request.

Additional time is requested to coordinate with the permanent cessation of power operations at DBNPS that was certified to the Nuclear Regulatory Commission (NRC) in FENOC letter dated April 25, 2018 (ML18115A007).

Section 5.5 of the LAR is hereby changed to:

The following schedule for transitioning DBNPS to the new fire protection licensing basis requires NRC approval of the LAR in accordance with the following schedule:

- Implementation of the new NFPA 805 fire protection program to include procedure changes, process updates, and training to affected plant personnel. This will occur within two years following issuance of the license amendment. LAR Attachment S, Table S-2 has additional detail.
- LAR Attachment S, Table S-1 provides a listing of plant modifications associated with the transition to NFPA 805. Modifications will be completed within two years following issuance of the license amendment. Appropriate compensatory measures will be maintained until modifications are complete.

Finally, FENOC letter dated April 2, 2018 submitted a revised LAR Attachment S that added item DB-2120 to Table S-2. However, subsequent FENOC letter dated

September 11, 2018 submitted a revised LAR Attachment S that inadvertently removed item DB-2120 from the table. This issue has been entered into the FENOC Corrective Action Program. A corrected Attachment S is provided that has added item DB-2120 back into Table S-2.

The information provided by this submittal does not invalidate the significant hazards consideration analysis provided in the December 16, 2015 letter.

There are no regulatory commitments included in this submittal. If there are any questions or if additional information is required, please contact Mr. Phil H. Lashley, Acting Manager - Nuclear Licensing and Regulatory Affairs, at (330) 315-6808.

I declare under penalty of perjury that the foregoing is true and correct. Executed on November 20, 2018.

Sincerely,

A handwritten signature in black ink, appearing to read 'DBH', with a long horizontal stroke extending to the right.

Douglas B Huey  
Director, Site Performance Improvement

Attachment S: LAR Attachment S - Modifications and Implementation Items

cc: NRC Regional Administrator - Region III  
NRC Resident Inspector  
NRC Project Manager  
Utility Radiological Safety Board  
Branch Chief, Ohio Emergency Management Agency,  
State of Ohio (NRC Liaison)

**Attachment S**  
**L-18-249**

**LAR Attachment S - Modifications and Implementation Items**  
**(7 pages, excluding this page)**

## **S. Modifications and Implementation Items**

**6 Pages Attached**

Table S-1, Plant Modifications Committed, provided below, include a description of the modifications along with the following information:

- Risk ranking of the modification,
- A problem statement,
- A description of the proposed modification,
- An indication if the modification is currently included in the FPRA,
- A statement if compensatory measure is in place; and
- A risk-informed characterization of the modification and compensatory measure.
- The following legend should be used when reviewing the tables:
  - High = Modification would have an appreciable impact on reducing overall fire CDF.
  - Medium = Modification would have a measurable impact on reducing overall fire CDF.
  - Low = Modification would have either an insignificant or no impact on reducing overall fire CDF.

**Table S-1 Plant Modifications Committed**

Item	Rank	Problem Statement	Proposed Modification	In FPRA	Comp Measure	Risk Informed Characterization
DB-1421	H	Fire damage could result in loss of both steam driven auxiliary feedwater pumps. This could challenge the NSPC for decay heat removal.	ECP 13-0195 installs the emergency water storage tank and facility. This provides emergency power sources and makeup water. ECP 13-0196 installs the diesel-driven emergency feedwater pump and auxiliary equipment. ECP 16-0332 provides fire protection for control cables in the emergency feedwater system	Yes	No	This modification provides an alternate source of feedwater by providing a diesel-driven power source and expanded emergency water storage.

Table S-2, Items provided below are those items (procedure changes, process updates, and training to affected plant personnel) that will be completed prior to the implementation of new NFPA 805 fire protection program.

Table S-2 Implementation Items		
Item	Description	LAR Section/Source
DB-0341 DB-0538 DB-1074 DB-1093 DB-1095	Revise Pre-Fire Plans and Associated Training Modules to Include Action for Radioactive Release Scenarios; Review Pre-Fire Plans Against Safe Shutdown Analysis and Revise as Necessary; Revise Pre-Fire Plans to Include Rooms 330, 317A, 605, and 417A; Develop Pre-Fire Plan for Potential Radioactive Release Areas.	Attachment E and Attachment A1, Sections 3.4.3(a), 3.4.2, and 3.4.2.1
DB-0463	Update DB-OP-02501 to Reference Ammeters for Runout Detection.	Attachment C
DB-0492	Generate an Inspection Procedure for the Ceramic Fiber used in Trays.	Attachment V
DB-0525 DB-1058	Revise DB-FP-00007 for Combustible and Transient Loading Program Requirements and to Include Duration Limits Based on Fire Modeling.	Attachment A1, Sections 3.3.1.2 and 3.3.1.2(4)
DB-0540	Revise Transformer Inspection Procedure for Gravel Bed Drainage.	Attachment A1, Section 3.3.9 FPE RAI 01.02
DB-0541	Revise Fire Brigade Policies and Practices Based on the NFPA 600 Code Review.	Attachment A1, Sections 3.4.1(a), 3.4.3(a), and 3.4.4
DB-0557	Revise Fire Brigade Drills to Include Areas Essential to Plant Operation, Safe Shutdown Areas, and to Control Radioactive Release.	Attachment A1, Sections 3.4.3(b) and 3.4.3(c)
DB-0572	Revise Affected Procedures to Include Credited NFPA 805 Fire Protection Equipment.	Attachment A1, Section 3.2.3(2)
DB-0573 DB-0600	Revise Performance-Based Inspection Requirements to Include NFPA 805 Credited Fire Protection Equipment.	Attachment A1, Sections 3.11.1 and 3.2.3(1)
DB-0582	Assess Current Transformer Fire Effects Due to Open Secondary Circuits.	Attachment B, NEI Section 3.5.2.1
DB-0759	Revise Control Room Fire Alarm Response Procedure DB-OP-02529.	Attachment A1, Section 3.4.1(d)
DB-0779	Revise the DBNPS Fire Protection Program, or equivalent replacement procedure, to List NRC as AHJ.	Attachment A1, Section 3.2.2.4 FPE RAI 01.02

Table S-2 Implementation Items

Item	Description	LAR Section/Source
DB-1147 DB-1744 DB-1949	Develop a Monitoring Program as Required by NFPA 805.	4.6.2, Attachment E, and Attachment V
DB-1591	Revise Documents to Include Fire Protection Water System Connections.	Attachment A1, Section 3.5.16
DB-1603	Review of MOVs for Crediting CPT.	Attachment V
DB-1695	Revise PRA to reflect the transitioning plant: If the resulting risk estimates exceed RG 1.174 criteria, then model refinements, plant modifications, and/or procedure changes will be made as necessary prior to the use of the model.	Attachment V PRA RAI 02.d.01
DB-1696 DB-2013 DB-2014	Update the Ignition Frequency Calculation and Fire Modeling for the following: Implementation of the DAFW System and FLEX, Add the Satellite phone Equipment That Will be Added to the EFWF and MCR per ECP-14-0465; Evaluate for Impacts on the Implementation of NFPA 805E for CP 14-0646 that Adds New Sound Powered Phone Equipment.	Attachment V
DB-1810	Revise Interior Finish Procurement Specifications to Include Radiant Heat Flux.	Attachment A1, Section 3.3.3
DB-1812	Revise Procedures to Trip RCPs During a Serious Fire Event.	Attachment C
DB-1825	Revise DBNPS EEEEs including NPE-98-00081 or its replacement (to remove credit for sprinklers).	4.2.2 FPE RAI 01 FPE RAI 06
DB-1838 DB-2041	Create a NFPA 13 and NFPA 72 Code Compliance Review for SBO Diesel Generator Building.	Attachment A2, Fire Compartment OS FPE RAI 01.02 SSA RAI 01
DB-1878	Verification of Fire Damper Rating.	Attachment A2, Fire Compartment II-04
DB-1900	Update Combustible Loading Analysis to include SBO Diesel Building and Review SBO DG Day Tank to NFPA 30.	Attachment A1, Section 3.3.8 FPE RAI 01.02
DB-1908	Revise Procedures and Conduct Training to Implement NPO Requirements for NFPA 805.	Attachment D
DB-1912	Include inspection of Dampers 1203 and 1204 in Fire Damper Inspection Procedure.	Attachment A2, Fire Compartments BG-01 and II-01 FPE RAI 01.02



Table S-2 Implementation Items

Item	Description	LAR Section/Source
DB-1915	Revise Pre-Fire Plans and Training Materials to Address Radioactive Release.	Attachment E
DB-1941	Revise Procedures Including Fire Brigade Training and Drills to Incorporate Recovery Actions.	Attachment G
DB-1943	Review and Revise Fire PRA Human Reliability Analysis Upon Completion of Procedure Updates, Modifications, and Training.	Attachment G
DB-1964	Revise Cable Specifications.	Attachment A1, Sections 3.3.5.1 and 3.3.5.3 FPE RAI 01
DB-1988	Update SAFE to Document ECP 13-0406 Fuse Protection for DB Ammeters.	Attachment C
DB-2005	Perform NFPA 58 Code Review of the Permanent Propane Tanks Installation.	Attachment A1, Section 3.3.7.1
DB-2015	Revise the Level 1 Failure Reports to Reflect Where Normal Control Power is Available.	Attachment C and Attachment V
DB-2020	Resolve the Non-enclosed Power Wiring for the Emergency Backup Lighting in Fire Compartment CC-01.	Attachment A1, Section 3.3.5.1
DB-2029	Create Analysis Assessment to create the Data Set and Testing Criteria due to Modification of EFW and FLEX.	Attachment V
DB-2031	Update documentation due to addition of power converters for the Auxiliary Feedwater and Motor Driven Feedwater target rock valves.	Attachment C and Attachment V
DB-2035 DB-2036	Update documentation such as SAFE for Containment Spray Modifications and Instrumentation.	Attachment C
DB-2037	Develop Fire Modeling Qualification Guides and Procedures.	Attachment V
DB-2049	Develop the DBNPS NFPA 805 Design Basis Document.	4.7.1 FPE RAI 01
DB-2050	Develop New NFPA 805 Control Procedures and Processes.	4.7.2 FPE RAI 01
DB-2053	The NFPA 20 Code of Record Compliance Review will be updated to be in the format of an EEEE.	Attachment A1, Section 3.5.3 FPE RAI 05

Table S-2 Implementation Items		
Item	Description	LAR Section/Source
DB-2054	The NFPA 10 Code of Record Compliance Review will be updated to be in the format of an EEEE.	Attachment A1, Section 3.7 FPE RAI 05
DB-2055	The NFPA 72E Code of Record Compliance Review will be updated to be in the format of an EEEE.	Attachment A1, Section 3.8.2 FPE RAI 05
DB-2056	The NFPA 13 and NFPA 15 Code of Record Compliance Review will be updated to be in the format of an EEEE.	Attachment A1, Section 3.9.1 FPE RAI 05
DB-2057	The NFPA 80 and NFPA 90A Code of Record Compliance Review will be updated to be in the format of an EEEE.	Attachment A1, Section 3.11.3 FPE RAI 05
DB-2062	Update the Conduct of Operations procedure to provide clarification required for fire brigade qualifications necessary to meet NFPA 805 Section 3.4.1(c).	Attachment A1, Section 3.4.1(c) FPE RAI 02
DB-2063	Perform a review of the performance-based methods described in EPRI TR-1006756 for establishing the appropriate frequencies for inspection, testing, and maintenance procedures, and adjust the site program to address and differences identified.	Attachment A1, Section 3.2.3(1); Attachment L FPE RAI 03
DB-2120	Update PRA to address weaknesses identified in PRA RAI 03(d) response: Conservatism related to Multiple Compartment Scenarios impacting the Cable Spreading Room, overly conservative PORV cable mapping, missing Makeup System logic. Include model enhancements using NRC approved methods to maintain risk within acceptable limits. Re-perform Risk and Transition Change in Risk calculations to ensure RG 1.205 risk acceptance guidelines continue to be met with the revised model.	PRA RAI 03
DB-2128	Implement a means to obtain steam generator level locally during fire scenarios that include Control Room evacuations.	PRA RAI 03.01.c

Table S-3, Plant Modifications Completed, provided below, include a description of the modifications along with the following information:

- Risk ranking of the modification,
- A problem statement,
- A description of the proposed modification,
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- A statement if compensatory measure is in place; and
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**Table S-3 Plant Modifications Completed**

Item	Rank	Problem Statement	Proposed Modification	In FPRA	Comp Measure	Risk Informed Characterization
DB-1983	H	FLEX RCS Charging Modification	ECP 13-0463 adds the FLEX RCS Makeup and Boration System. This includes the two FLEX RCS charging pumps that are credited in the fire PRA model.	Yes	No	This modification will help mitigate RCP seal LOCAs should seal cooling and seal injection or seal return be lost through the use of 2 FLEX RCS charging pumps.
DB-2010	H	Install Oil Containment Systems	Install oil containment systems for the unit sub transformers in compartments X-01 and Y-01.	Yes	No	The oil collection system is currently credited in the FPRA and is used to help prevent the creation of a hot gas layer in fire compartments X-01 and Y-01.