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L-16-080

10 CFR 2.202

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-001

SUBJECT:
Davis-Besse Nuclear Power Station
Docket No. 50-346, License No. NPF-3
Request for Schedule Relief/Relaxation from NRC Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) (CAC No. MF0961)

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Order Number EA-12-049 (Reference 1) to FirstEnergy Nuclear Operating Company (FENOC) for the Davis-Besse Nuclear Power Station (DBNPS). Reference 1 was immediately effective and directs FENOC to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event (also known as FLEX strategies).

FENOC submitted its original overall integrated plan for DBNPS, by letter dated February 27, 2013 (Reference 2). In accordance with Reference 1, licensees are required to complete full implementation no later than two refueling cycles after submittal of the overall integrated plan, or December 31, 2016, whichever comes first. In accordance with Reference 1, the first refueling outage for DBNPS occurred in spring 2014. The second refueling outage required date for Reference 1 implementation for DBNPS is prior to startup from the spring 2016 refueling outage. FENOC has experienced logistical issues with the design and installation of the new Emergency Feedwater (EFW) system and construction of the new EFW facility that have impacted the implementation schedule.

Section IV of Reference 1 states that licensees proposing to deviate from requirements contained in NRC Order EA-12-049 may request that the Director, Office of Nuclear Reactor Regulation, relax those requirements. FENOC hereby requests that the Director, Office of Nuclear Reactor Regulation, relax the schedule requirements for completion of full implementation for DBNPS as prescribed in Section IV.A.2 of Reference 1 to August 1, 2016 to allow for completion of plant modifications needed to fully implement the required strategies.

FENOC considers that, upon approval by the NRC, the alternative full implementation date regarding Reference 1 proposed in the attachment will constitute a condition of the NRC Order for DBNPS.

Also, in response to the NRC request pursuant to 10 CFR 50.54(f) (Reference 3), FENOC submitted, by letters dated June 11, 2012 (Reference 4) and October 29, 2012 (Reference 5), the responses to communications requests, the communications assessment, and implementation schedules for planned communications enhancements for DBNPS.

In an NRC letter dated January 23, 2013 (Reference 6), addressed to all power reactor licensees and holders of construction permits in active or deferred status, the NRC staff identified generic technical issues regarding Reference 5 that needed to be resolved in order for the staff to complete its review. By letter dated February 22, 2013 (Reference 7), FENOC provided responses to the NRC's generic technical issues.

The NRC provided a safety assessment of communications for the FENOC nuclear sites, including DBNPS, by letter dated June 27, 2013 (Reference 8). In the safety assessment, the NRC staff determined that (1) FENOC assessments are reasonable, and (2) FENOC interim measures, analyzed existing systems, and proposed enhancements will help to ensure that communications are maintained. The NRC also requested to be informed if there are significant changes to the interim measures, proposed enhancements, or schedules.

As noted herein, the schedule of the completion of communication enhancements have changed and will not be completed in accordance with the original schedule. However, interim measures as described within Reference 7 will continue to remain in place until all enhancements have been fully implemented. Completion of these communication enhancements will be coordinated with the Reference 1 implementation schedule.

This letter contains no new regulatory commitments. If you have any questions regarding this report, please contact Mr. Thomas A. Lentz, Manager – Fleet Licensing, at 330-315-6810.

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 11, 2016.

Sincerely,

Brian D. Boles

Brian D. Boles

Attachment:
Request for Relaxation of NRC Order EA-12-049 Requirement IV.A.2 for Davis-Besse Nuclear Power Station

References:

1. NRC Order Number EA-12-049; Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events; dated March 12, 2012.
2. FENOC Letter; FirstEnergy Nuclear Operating Company's (FENOC's) Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049); dated February 27, 2013.
3. NRC Letter; Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident; dated March 12, 2012.
4. FENOC Letter; Response to NRC Letter, Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, Dated March 12, 2012; dated June 11, 2012.
5. FENOC Letter; Response to NRC Letter, Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident; dated October 29, 2012.
6. NRC Letter; Follow-up Letter on Technical Issues for Resolution Regarding Licensee Communication Submittals Associated with Near-Term Task Force Recommendation 9.3 (TAC No. ME7951); dated January 23, 2013.
7. FENOC Letter; Supplement to Response to NRC Letter, Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident (TAC No. ME7951); dated February 22, 2013.
8. NRC Letter; Davis-Besse Nuclear Power Station, Unit No. 1; Beaver Valley Power Station, Units 1 and 2; and Perry Nuclear Power Plant, Unit No. 1 – Safety Assessment of Communications (TAC Nos. ME9941, ME9942, ME9952, and ME9976); dated June 27, 2013.

cc: Director, Office of Nuclear Reactor Regulation (NRR)
NRC Region III Administrator
NRC Resident Inspector
NRC Project Manager
Ms. Jessica A. Kratchman, NRR/JLD/PMB, NRC
Utility Radiological Safety Board

Relaxation Request:

Pursuant to the procedure specified in Section IV of Nuclear Regulatory Commission (NRC) Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (Reference 1), FirstEnergy Nuclear Operating Company (FENOC) hereby submits a request for schedule relaxation for the Davis-Besse Nuclear Power Station (DBNPS) from the Order requirements for completion of full implementation. Implementation is currently required to be no later than two refueling cycles after submittal of the overall integrated plan (OIP), as required in Condition C.1.a of the Order, or December 31, 2016, whichever comes first.

Order requirement from which relaxation is requested:

Section IV.A.2 of Reference 1 requires completion of full implementation of the Order requirements either no later than two refueling cycles after submittal of the OIP, as required in Condition C.1.a, or December 31, 2016, whichever comes first. In accordance with the requirements of Reference 1, FENOC submitted the OIP for DBNPS (Reference 2) by letter dated February 27, 2013. Additionally, pursuant to Section IV, Condition C.2, of Reference 1, six-month status reports were submitted, including any changes to the compliance method, schedule, or need for relief and basis, if any. The second refueling outage required date for Reference 1 implementation for DBNPS is prior to startup from the spring 2016 refueling outage.

FENOC has experienced unanticipated logistical issues that have delayed the completion of plant modifications such that completion prior to startup from the spring 2016 refueling outage is challenged. The requested schedule relaxation would enable FENOC to complete installation of the equipment and modifications needed to implement mitigation strategies required by Reference 1.

Justification for relaxation request:

Reference 1 requires the development, implementation, and maintenance of guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event (BDBEE). FENOC submitted the OIP for DBNPS (Reference 2) that included use of a new Emergency Feedwater (EFW) system in Phase 1 and a newly constructed equipment storage building to house the portable equipment used in the coping strategies (also referred to as FLEX). By letter dated August 27, 2015, FENOC reported that the construction of a new FLEX storage building was removed from the strategies. Instead, the N equipment would be stored in other robust structures (the auxiliary building or the EFW facility) constructed to withstand design basis high wind, missile (airborne object), seismic, flooding and ambient temperature/snow ice events or stored in diverse

locations consistent with the requirements of NEI 12-06. At the time, no change in the DBNPS implementation schedule was anticipated because the design and installation of the new EFW system and construction of the new EFW facility (EFWF) was already part of scheduled activities. However, as detailed design and implementation work has proceeded with the EFW system, unanticipated consequences to overall project resources and schedules, both direct and indirect, have resulted, such as the following:

- Issues with part lead times and delivery dates coupled with constructability issues requiring redesign continue to impact construction and installation of the EFW system. These impacts have resulted in some on-line work activities moving into the refueling outage window. Delivery dates of some critical EFW system parts has absorbed all margin for schedule challenges associated with startup of the new EFW system. These potential startup schedule challenges include component inadequate performance, equipment alignment and vibration issues and integrated system performance. Although additional resources were applied to expedite procurement activities and resolve constructability issues, the cascading effect on work planning and field installation has impacted the schedule for completion of the EFW system.

- Ongoing work on the EFW system prohibits staging of applicable N FLEX equipment in the EFWF. The space in which the equipment would be staged is needed during the installation of the EFW system.

- Some activities will be completed after equipment is installed or staged, such as FSG Verification and Validation and Operations gap training.

Consequently, final implementation of the mitigation strategies in accordance with the implementation schedule requirements of Reference 1 is challenged. This issue has been documented in the FENOC Corrective Action Program. FENOC continues to pursue final implementation of the Order commensurate with the significance of the Order while maintaining shutdown safety during the DBNPS spring 2016 refueling outage. However, FENOC requests a schedule relaxation following the currently scheduled startup from the spring 2016 refueling outage to allow for completion of plant modifications to fully implement the required mitigation strategies for DBNPS. Full compliance with the order would be achieved by August 1, 2016. FENOC will complete plant modifications in a manner such that no additional plant outage will be required for compliance with Reference 1. The requested schedule relaxation for DBNPS does not exceed the bounding December 31, 2016 deadline established in Section IV.A.2 of Reference 1.

DBNPS mitigating strategies rely heavily on the Phase 1 EFW system and components. Full FLEX capabilities to support the strategies (Phase 1 and 2) are not realized until the EFW system is functional. However, the following FLEX capabilities will exist following the startup from the DBNPS spring 2016 refueling outage.

- For events other than BDBEE seismic or tornado/high winds, steam generator (SG) inventory may be provided by either or both trains of the turbine driven auxiliary

feedwater (TDAFW) pumps, if available. The suction source would be the condensate storage tank (CST). The credited strategy for all events is to use the diesel-driven EFW pump and EFW tank to add inventory to the SGs.

- N and N+1 FLEX reactor coolant system (RCS) charging pumps will be staged in robust storage in the auxiliary building. Plant tie-ins for suction, discharge, and electrical power for both N and N+1 will be available. Capability will exist to obtain borated water from the clean waste receiver tank (CWRT), a robust source. Electrical and mechanical connections, hose, cable, and tools will be staged and ready for deployment. However, capability is limited without the diesel-driven EFW pump providing inventory to the SGs.
- Capability to deploy the balance of the N+1 FLEX equipment from its permanent storage location.
- Capability will exist for N FLEX spent fuel pool (SFP) spray and makeup for events other than BDBEE tornado/high winds.
- Capability will exist for adding inventory to the EFW tank with the N FLEX replenishment pump for events other than BDBEE tornado/high winds.
- Capability will exist to provide 480 volt (V) power with the N FLEX 480V generator for events other than BDBEE tornado/high winds.
- Capability will exist to connect the N FLEX alternate low pressure EFW pump (Alt LP EFW) to its alternate flow path. However, this capability is limited.
- Debris removal vehicles will be located in diverse locations and available to support debris removal and movement of Phase 2 portable equipment as required.
- Capability will exist to refuel FLEX equipment using the emergency diesel generator (EDG) day tanks.
- Capability will exist to obtain alternate monitoring of the critical plant parameters using hand held instruments as close to the transmitter as possible.
- Capability will exist to provide lighting in accordance with the lighting strategy to support deployment of equipment.
- EFWF will be functional to protect FLEX equipment from BDBEEs. As stated previously, ongoing work on the EFW system prohibits staging of applicable N FLEX equipment in the EFWF.
- Enhanced communications with the installation of sound powered and satellite phone systems.
- Phase 3 strategy capabilities are provided with Phase 3 plant connections completed and National SAFER Response Plan operational.

FENOC is proceeding with other activities to the extent possible based on equipment availability to support implementation of DBNPS mitigation strategies. These activities include the following:

- Completing FLEX support guidelines (FSGs) and other procedures to support compliance with Reference 1.
- Scheduling of FLEX equipment preventative maintenance (PMs) due within one year, in accordance with the developed maintenance strategy.
- Completing FSG Verification and Validation.
- Completing Phase 2 FLEX and FLEX support equipment functional testing.

- Training of support groups, with the exception of Operations gap training.
- Completing open items from the NRC FLEX site audit.
- Completing strategy basis analyses, modeling, and calculations.

Based on the current assessment of engineering design, equipment procurement, field installation, equipment testing, plant procedures, and personnel training activities, the requested schedule relaxation to August 1, 2016 is sufficient to achieve full compliance with Reference 1. The report of full compliance, as required in Section IV.C.3 of Reference 1, would be provided within 60 days following the compliance date.

The mitigation strategy requirements imposed by NRC Order EA-12-049 provide additional defense-in-depth measures for mitigating consequences of a BDBEE. A sequence of events such as the Fukushima Dai-ichi accident is unlikely to occur in the United States based on current regulatory requirements and existing plant capabilities. These strategies provide enhanced plant capability to mitigate beyond-design-basis external events. Therefore, the requested schedule relaxation does not reduce nuclear safety or impact safe plant operations.

Conclusion:

As described above, compliance with the current NRC Order EA-12-049 schedule requirement to complete full implementation of mitigation strategies will result in hardship or unusual difficulty without a compensating increase in the level of safety. Therefore, in accordance with the provisions of Section IV of the Order, FENOC requests relaxation of the requirement described in Section IV.A.2, as explained above.

References:

1. NRC Order Number EA-12-049; Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events; dated March 12, 2012.
2. FENOC Letter; FirstEnergy Nuclear Operating Company's (FENOC's) Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049); dated February 27, 2013.