energy harbor

Davis-Besse Nuclear Power Station
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Terry J. Brown
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December 28, 2022
L-22-284

ATTN: Document Control Desk
United States Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Subject: Davis-Besse Nuclear Power Station, Unit 1
Docket Number 50-346, License Number NPF-3
Request for Notice of Enforcement Discretion for Technical Specification 3.7.9, Ultimate Heat Sink (UHS)

On December 23, 2022, Energy Harbor Nuclear Corporation (Energy Harbor) verbally requested enforcement discretion associated with Technical Specification 3.7.9, "Ultimate Heat Sink (UHS)" for the Davis-Besse Nuclear Power Station Unit No. 1 (DBNPS).

The need for the enforcement discretion occurred on December 23, 2022, when environmental conditions resulted in entry into Technical Specification (TS) Limiting Condition for Operation (LCO) 3.7.9 for Ultimate Heat Sink (UHS), for water level being below minimum requirements of S.R. 3.7.9.1. DBNPS TS LCO 3.7.9 Condition A was entered on December 23, 2022, at 1412 hours when the low-level condition was observed to occur. With the UHS inoperable LCO 3.7.9 Condition A, Required Action A.1 requires the plant to be in MODE 3 within 6 hours.

The requested enforcement discretion was verbally granted by the NRC at 1640 hours on December 23, 2022. In accordance with the guidance provided in Regulatory Information Summary 2005-01, Revision 01, "Changes to Notice of Enforcement Discretion (NOED) Process and Staff Guidance," and Appendix F of the NRC Enforcement Manual, "Notices of Enforcement Discretion," Attachment 1 to this letter provides Energy Harbor's written NOED request for the DBNPS.

The regulatory commitments made during the teleconference and in this submittal are listed in Attachment 2.

If there are any questions or if additional information is required, please contact Mr. Robert W. Oesterle, Manager, Site Regulatory Compliance and Emergency Response, at (419) 321-7462.

Sincerely,

JACKSON - FOR BROWN PER TELECON

Terry J. Brown

GMW

Attachments:
1. Request for Notice of Enforcement Discretion
2. Commitment List

cc: NRC Region III Administrator
NRC Senior Resident Inspector
NRR Project Manager
Utility Radiological Safety Board

Summary of Issue:

On Friday, December 23, 2022, at 1412 hours, with the plant at approximately 100 percent power, the Ultimate Heat Sink level was observed to lower below the minimum level required by S.R. 3.7.9.1. The UHS level was closely monitored throughout a period of high-wind condition from a direction that historically tends to lower the level of water in the western Lake Erie basin with a corresponding rise in the eastern most portions of Lake Erie.

The Ultimate Heat Sink was declared Inoperable at 1412 due to the low-level indication, and Technical Specification Limiting Condition for Operation (LCO) 3.7.9 Condition A was entered.

The Energy Harbor Nuclear Corporation (Energy Harbor) is requesting a notice of enforcement discretion (NOED) for the Davis-Besse Nuclear Power Station Unit No. 1 (DBNPS) to not comply with the required Actions of TS 3.7.9 Condition A Required Action A.1, for an overall extended time of up to 48 hours. The extended time would expire on December 25, 2022, at 1412 hours. The up to 48-hour extension would provide sufficient time for the cessation of westward winds and recovery of the Ultimate Heat Sink level to Operable status. The NOED criterion that applies to this request is a potentially unnecessary shutdown of a reactor without a corresponding health and safety benefit. The basis for determining this criterion has been satisfied is the assured maintenance of four feet of margin to minimum required net positive suction head for Service Water Pumps and established compensatory measures through this short duration event to preclude impact on the 30-day associated mission time.

Response to Checklist items on Appendix F of NRC Enforcement Manual, "Notices of Enforcement Discretion":

A.1. **Provide a discussion as to why an emergency license amendment would not be appropriate and why the NOED could not be reasonably avoided. This discussion could include the time remaining for the TS LCO or that the NOED is being used to develop a license amendment. Also address any previous instances of the issue and why licensing solutions were not pursued in the past.**

Energy Harbor is requesting a NOED rather than an emergency license amendment because of the emergent nature of the environmental conditions. The environmental conditions causing the low lake levels are self-correcting and are expected to be short-lived. A NOED could not be avoided in this situation

because of the emergent nature of the environmental conditions and the short duration of TS LCO 3.7.9 Condition A Action A.1 Completion Time (6 hours).

A.2. Provide a description of the TS or other license conditions that will be violated, and, if applicable, state that adhering to the license would cause an unnecessary transient. This description shall include the time remaining before the TS or license condition will be violated. When a basic NOED is requested, it must be shown that granting the NOED request would avoid the specific criteria listed in Item #1.

Energy Harbor is requesting enforcement discretion from TS LCO 3.7.9, "Ultimate Heat Sink (UHS)" which requires "water level of the UHS greater than or equal to 562 ft International Great Lakes Datum" to be operable. DBNPS TS LCO 3.7.9 Condition A Required Action A.1 requires the plant to be in MODE 3 within 6 hours. This action was entered on December 23, 2022, at 1412 hours.

Energy Harbor is requesting permission to not comply with TS 3.7.9 Condition A.1 Required Actions for an additional time of up to 48 hours. There are approximately 3.5 hours remaining until TS 3.7.9 Condition A.1 is violated. Granting of the requested enforcement discretion would avoid a potentially unnecessary shutdown of a reactor without a corresponding health and safety benefit by allowing the unit to remain at power while the Ultimate Heat Sink level is restored to above minimum through recovery of the water level in the western basin of Lake Erie.

A.3. Provide a description of the cause and the extent of condition, including any relevant historical events. The historical events must include as a minimum, any other similar events at the plant, and the last maintenance performed on the equipment or similar equipment.

The station intake of water from Lake Erie is via a submerged intake crib located approximately 3100 feet offshore. Water is conveyed from the intake crib to the shore by a 96-inch diameter intake pipe (conduit). An earthen dike separates the intake canal and Lake Erie; therefore, the only communication between the lake and the intake canal is the intake piping.

A phenomenon observed during strong westward winds is the transfer of water from the westward basin of Lake Erie towards the east. This phenomenon has historically been observed and monitored through available data for a series of Lake Erie monitoring stations on websites such as "tidesandcurrents.noaa.gov". During these conditions, the connection of the Davis-Besse Ultimate Heat Sink via the intake crib allows its level to trend similarly with the level of nearby Lake Erie monitoring stations such as Toledo or Marblehead in the western basin. Concurrently, inverse trends are observed at eastern monitoring stations such as Sturgeon Point or Buffalo, NY. Past observances of these conditions have been observed to be self-correcting.

Since no equipment is failed or unavailable due to this condition, an extent of condition is not necessary.

A.4. Provide information that evaluates all safety and security concerns are fully understood. Include potential challenges to offsite and onsite power sources and forecasted weather conditions.

Davis-Besse is currently operating in Mode 1 at 100 percent rated thermal power.

During the requested period of enforcement discretion, the offsite power source will not be challenged based on Protected Equipment Posting to preclude unauthorized access and verification of no scheduled activities to impact the availability of off-site power sources.

During the requested period of enforcement discretion, the onsite power source will not be challenged based on Protected Equipment Posting to preclude unauthorized access and verification of no scheduled activities to impact the availability of on-site power sources, which includes Emergency Diesel Generators 1 and 2, the Station Blackout Diesel Generator and both trains of High and Low Voltage Switchgear.

During the requested period of enforcement discretion, the weather forecast is as follows:

> A strong low-pressure system will continue to bring snow and strong winds to the region on December 23, 2022, and into the first half of December 24. Snow will continue to spread across portions of the Ohio Valley, Great Lakes, northeastern U.S, and southeastern Canada through the day. Strong winds will also accompany the system through December 23 and into the morning of December 24. Moderate to heavy snowfall accumulations are likely, with the heaviest totals forecast to fall across the Great Lakes region and especially downwind of the lakes.

During the requested period of enforcement discretion, there are no safety and security concerns.

A review of the LCO Tracking Data base has identified that no equipment is currently 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 plant transient, or may be used to mitigate the condition.

A review of the Physical Security Plan has identified no compensatory measures would be required in current security configuration.

A.5. Detail the proposed course of action to resolve the situation, so enforcement discretion is no longer required. Include justification for any

request greater than 5 days. It must be shown that the requested time for the NOED is directly related to the time to resolve the situation.

The following course of action will be taken to resolve the situation: The existing environmental conditions initiating the lowering level in the western Lake Erie basin are expected to cease and provide a level above the minimum required. Temporary pumps are expected to operate until such time that level is restored to greater than minimum.

The time requested for the NOED is directly related to the time to resolve the situation because the weather forecast is predicting the high wind condition to abate within the requested 48-hour period.

A.6. **Detail and explain the compensatory actions that have been taken or will be taken. For each compensatory action listed, state which of the criteria (reduces the likelihood of initiating events, reduces the likelihood of the unavailability of redundant trains, and/or increases the likelihood of successful operator action in response to initiating events) that it satisfies. All compensatory actions must be in place before the NOED completion time begins.**

An example is a situation in which a motor-driven auxiliary feedwater (AFW) pump has failed and risk insights have established that plant transient initiators may be risk-significant events because the plant has no primary feed-and-bleed capability and only limited secondary feed capability is available. As a compensatory measure during the period of enforcement discretion, the licensee may defer non-essential surveillances or other maintenance activities in which human error contributes to the likelihood of a plant trip and subsequent demand on the remaining AFW pumps. Another example of appropriate compensatory measures would be actions that increase the likelihood of success in the manual alignment or start-up of equipment in response to an initiating event (e.g., positioning operators locally at equipment, just-in-time training, or additional contingency plans).

As compensatory actions, no other safety-related Technical Specification or PRA/on-line risk tool modeled equipment will be intentionally removed from service for surveillances or preventive maintenance activities during this discretion period. Additionally, no discretionary switchyard activities will be allowed during the NOED time period. These actions will reduce the likelihood of any initiating events.

The following additional compensatory actions have been taken: Temporary diesel-driven pumps with direct suction from Lake Erie have been placed in-service to discharge into the Ultimate Heat Sink. This action will reduce the likelihood of any initiating events.

A.7. Demonstrate that the NOED condition, along with any compensatory measures, will not result in more than a minimal increase in radiological risk, either in a quantitative assessment that 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.

Include the safety basis for the request and an evaluation of the safety significance and address the quantitative and qualitative aspects noted below. The numerical guidance for acceptance was established to augment qualitative arguments that continued operation of the plant during the period of enforcement discretion will not cause risk to exceed the level determined acceptable during normal work controls and, therefore, there is no net increase in radiological risk to the public. For licensee provided quantitative risk analysis, the licensee shall provide the effects on core damage frequency (CDF) and large early release frequency (LERF).

Regarding ICCDP for NOED evaluations, the impact of testing and maintenance unavailability for SSCs outside of the ones in question shall be removed (i.e., zero maintenance model should be used to establish the plant's ICCDP, by applying it to both the baseline and the degraded case associated with the period of enforcement discretion. Additionally, for the degraded case, the model shall reflect the out of service equipment under consideration for the NOED request. The ICCDP can therefore be calculated using the formula: ICCDP – [(Zero Maintenance Conditional CDF, taking into account the equipment that is out of service for the NOED request) – (Zero Maintenance Baseline CDF)] X (NOED CT Under Consideration).

Regarding ICLERP for NOED evaluations, the impact of testing and maintenance unavailability for SSCs outside of the ones in question shall be removed (i.e., zero maintenance model0. The zero-maintenance model should be used to establish the plant's ICLERP by applying it to both the baseline and the degraded large early release case associated with the period of enforcement discretion. Additionally, for the degraded case the model shall reflect the out of service equipment under consideration for the NOED request. ICLERP can be calculated using the formula: ICLERP = [(Zero Maintenance Conditional LERF, taking into account the equipment that is out of service for the NOED request) – (Zero Maintenance Baseline LERF)] X (NOED CT Under Consideration).

The NOED condition, including compensatory measures, does not result in more than a minimal increase in radiological risk. The basis for this is as follows: Per UFSAR sections 2.4.11.2 and 2.4.11.6, lake surges cannot reduce the intake canal below 560 feet; this level is above the Service Water Pump requirements of 554 feet to maintain net positive suction head for the pumps. Therefore, the Service Water Pumps will remain available during this condition. However, if during the enforcement discretion period the Ultimate Heat Sink level drops

below 558 feet, a plant shutdown will be performed per TS 3.7.9 Condition A.1 Required Actions to protect the Service Water Pumps.

During a design basis LOCA, it cannot be guaranteed that the forebay would remain at an acceptable level for the 30-day mission time due to evaporative losses from the Ultimate Heat Sink. However, the compensatory action of placing temporary pumps with direct suction from Lake Erie in service to discharge into the Ultimate Heat Sink will mitigate the evaporative losses and will additionally be adding cold water to the system to maintain Ultimate Heat Sink temperature. The pumps are placed in service when forebay level reaches 564 feet to protect against frazil ice effects per procedure DB-OP-06913, "Seasonal Plant Preparation Checklist." In addition to the pumps being placed in service per DB-OP-06913, FLEX pumps would be available if necessary to pump water into the Ultimate Heat Sink. Therefore, with the compensatory action in place, the Ultimate Heat Sink remains available. Any concern regarding evaporative losses is only an issue if the connection from the Ultimate Heat Sink to Lake Erie is lost. In all other cases, it would be expected that the weather conditions causing the low level will have passed prior to the Ultimate Heat Sink lowering to below 554 feet. The Ultimate Heat Sink would then refill with lake water via its normal connection to the lake, so the portable pumps would only be necessary for a small subset of scenarios. Since both the Service Water Pumps and the Ultimate Heat Sink remain available, there is no net increase in risk due to operating in this condition.

As available, the following information should be provided to support this evaluation:

a. **Use the zero maintenance PRA model to establish the plant's baseline risk and the estimated risk increase associated with the period of enforcement discretion. For the plant-specific configuration the plant intends to operate in during the period of enforcement discretion, the incremental conditional core damage probability (ICCDP) and incremental conditional large early release probability (ICLERP) should be quantified and compared with guidance thresholds of less than or equal to an ICCDP of 5E-7 and an ICLERP of 5E-8. These numerical guidance values are not pass-fail criteria. For the degraded case with the subject equipment out of service, the model should reflect, as best as possible, current equipment unavailability states (i.e., if other equipment is unavailable because of T&M, this should also be reflected in the analysis). This risk calculation should not be limited to the specific TS relief in question, but rather, the total risk of continued operation for the specific configuration of the plant.**

   Since no equipment is unavailable due to this condition, no risk calculations are necessary and ICCDP and ICDLERP are zero.

b. **Discuss the dominant risk contributors (cut sets or sequences or both) and summarize the risk insights for the plant-specific configuration the plant intends to operate in during the period of enforcement discretion. This discussion should focus primarily on risk contributors that have changed (increased or decreased) from the baseline model because of the degraded condition and resultant compensatory measures, if any.**

   Since no equipment is unavailable due to this condition, no risk calculations are necessary and dominant risk contributors are unchanged from the baseline model

c. **Discuss how the compensatory measures are accounted for in the PRA. These modeled compensatory measures should be correlated, as applicable, to the dominant PRA sequences identified in items 1 and 2 above. In addition, other measures not directly related to the out-of-service equipment may also be implemented to reduce overall plant risk and, as such, should be explained. Compensatory measures that cannot be modeled in the PRA shall be assessed qualitatively.**

   The compensatory measures ensure that the Service Water Pumps and the Ultimate Heat Sink remain available per the PRA. With the Service Water Pumps and the Ultimate Heat Sink available, there is no increase in risk and no PRA calculations are necessary.

d. **Discuss the extent of condition of the failed or unavailable component(s) to other trains or divisions of equipment and the adjustments, if any, which were made to the related PRA common cause factors to account for potential increases in their failure probabilities. The method used to determine the extent of condition shall be discussed. It is recognized that a formal root cause or apparent cause is not required because of the limited time available in determining the acceptability of a requested NOED. However, a discussion of the likely cause shall be provided with an associated discussion of the potential for common cause failure.**

   Since no equipment is failed or unavailable due to this condition, an extent of condition is not necessary.

e. **Discuss external event risk for the specified plant configuration. An example of external event risk is a situation in which a reactor core isolation cooling (RCIC) pump has failed and a review of the licensee's Individual Plant Examination of External Events or full-scope PRA model identifies that the RCIC pump is used to mitigate certain fire scenarios. Action may be taken to reduce fire ignition**

frequency in the affected areas and to reduce human error associated with time-critical operator actions in response to such scenarios, and to ensure fire protective and corrective measures have been taken.

Since no equipment is unavailable due to this condition, there is no change to the baseline external event risk due to this condition.

A.8. Include a statement that the facility organization that normally reviews safety issues has approved the request (Plant Onsite Review Committee, or its equivalent).

The DBNPS Plant Operations Review Committee (PORC) reviewed and approved this NOED request at 0930 hours on December 23, 2022.

Because this event also involves a Natural Event, the following additional information is provided:

B.1 List the name, organization, and telephone number of the official in the government or independent entity who made the emergency determination, if applicable. If deemed necessary, the staff may contact the appropriate official to independently verify the information the licensee provided before making a NOED determination.

The emergency situation determination was made by Tenaska Communications of a Cold Weather Alert as provided via email by Adam Cochran, Director, Operations for Tenaska Power Services. Phone: 817-303-3632 Cell: 817-658-2571. The Cold Weather Alert for the PJM-Regional Transmission Organization (RTO) extends through 23:59 hours on December 25, 2022.

The circumstances were expounded upon through communications received from Mr. Paul McGlynn, Exec Dir., System Operations, Operations, PJM Interconnection, 2750 Monroe Blvd., Audubon, PA 19403, (610) 666-4227 | C: (610) 945-7031, during the afternoon of December 23rd to include as follows: "PJM has issued a Cold Weather Alert for the Western Region of PJM which includes FirstEnergy for today, and the entire RTO for tomorrow. Given current and anticipated system conditions, the loss of the capacity from the plant could have an adverse impact on the PJM system. As a result, we are taking preparatory actions to mitigate the impact if the plant were to come offline".

B.2 Include details of the basis and nature of the emergency including, but not limited to, its effect on the following:

(1) On-site and off-site emergency preparedness,
(2) Plant and site ingress and egress,
(3) Off-site and on-site power sources,

(4) Plant security,
(5) Grid stability, and
(6) Actions taken to avert or alleviate the emergency situation (e.g., coordinating with other utilities and the load dispatcher organization for buying additional power or for cycling loads, or shedding interruptible industrial or non-emergency loads).

(1) The weather conditions have not impacted site accessibility or the accessibility or the DBNPS on-site or off-site Emergency Response Facilities. A review of the Physical Security Plan has identified no compensatory measures would be required in current security configuration.

(2) The DBNPS is currently operating in Mode 1 at 100 percent rated thermal power.

(3) During the requested period of enforcement discretion, the offsite power source will not be challenged based on Protected Equipment Posting to preclude unauthorized access and verification of no scheduled activities to impact the availability of off-site power sources.

(4) During the requested period of enforcement discretion, the onsite power source will not be challenged based on Protected Equipment Posting to preclude unauthorized access and verification of no scheduled activities to impact the availability of on-site power sources, which includes Emergency Diesel Generators 1 and 2, the Station Blackout Diesel Generator and both trains of High and Low Voltage Switchgear.

(5) As compensatory actions, no other safety-related Technical Specification or PRA/on-line risk tool modeled equipment will be intentionally removed from service for surveillances or preventive maintenance activities during this discretion period. Additionally, no discretionary switchyard activities will be allowed during the NOED time period. These actions will reduce the likelihood of any initiating events.

(6) The following additional compensatory actions have been taken: Temporary diesel-driven pumps with direct suction from Lake Erie have been placed in-service to discharge into the Ultimate Heat Sink. This action will reduce the likelihood of any initiating events.

(7) Davis-Besse is currently complying with grid operator expectation for a Cold Weather Alert to suspend testing or maintenance that may impact generation. These actions are directed during an abnormal condition to maintain system frequency, or to prevent loss of firm load, equipment damage or tripping of system elements that could adversely affect the reliability of the Transmission System or the safety of persons or property.

B.3 Identify and discuss the potential consequences of compliance with existing license requirements (e.g., plant trip, controlled shutdown).

Commencement of a controlled plant shutdown for compliance with TS LCO 3.7.9 Condition A Required Action A.1 has potential to introduce complications associated the plant transient. The removal of the unit output from the electrical grid also provides an inherent potential for impact to grid capacity or stability.

B.4 Discuss the impact of the emergency on plant safety, including any limitations of the UHS.

As described above in Section A, the compensatory measures established will ensure the Ultimate Heat Sink is maintained during the period of enforcement discretion. No other safety-related Technical Specification or PRA/on-line risk tool modeled equipment will be intentionally removed from service for surveillances or preventive maintenance activities during this discretion period. Additionally, no discretionary switchyard activities will be allowed during the NOED time period.

B.5 Discuss the potential adverse effects on public health and safety from enforcing compliance with specific license requirements during the emergency.

With the Regional Transmission Organization in a Cold Weather Alert, removal of a large generating unit such as the DBNPS could result in shortages of electricity during the winter storm that has resulted in temperatures well below freezing and wind chills well below zero.

Attachment 2
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Regulatory Commitment List
Page 1 of 1

The following list identifies those actions committed to by Energy Harbor Nuclear Corporation (Energy Harbor) for Davis-Besse Nuclear Power Station (DBNPS) Unit No. 1 in this document. Any other actions discussed in the submittal represent intended or planned actions by Energy Harbor. They are described only as information and are not Regulatory Commitments. Please notify Mr. Robert W. Oesterle, Manager, Regulatory Compliance and Emergency Response, at (419) 321-7462 of any questions regarding this document or associated Regulatory Commitments.

Commitment	**Due Date**
1. Submit a written NOED request within 2 working days following the NRC staff's verbal granting of the NOED.	December 28, 2022 (complete with this submittal)
2. The compensatory measures will be implemented during the NOED discretion period include: a) The offsite power source will be posted as Protected Equipment to preclude unauthorized access and verification of no scheduled activities to impact the availability of off-site power sources. b) The onsite power sources will be posted as Protected Equipment to preclude unauthorized access and verification of no scheduled activities to impact the availability of on-site power sources which includes Emergency Diesel Generators 1 and 2, the Station Blackout Diesel Generator and both trains of High and Low Voltage Switchgear. c) No other safety-related Technical Specification or PRA/on-line risk tool modeled equipment will be intentionally removed from service for surveillances or preventive maintenance activities during this discretion period. d) Temporary pumps with direct suction from Lake Erie will be placed in-service to discharge into the Ultimate Heat Sink to maintain Ultimate Heat Sink level. e) If during the enforcement discretion period the Ultimate Heat Sink level drops below 558 feet, a plant shutdown will be performed per TS 3.7.9 Condition A.1 Required Actions.	December 23, 2022, at 1412 hours