



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
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LISLE, ILLINOIS 60532-4352

May 4, 2023

MEMORANDUM TO: Thomas Hartman, Senior Project Engineer
Engineering and Reactor Projects Branch
Division of Operating Reactor Safety

FROM: Jason Kozal, Deputy Director */RA/*
Division of Operating Reactor Safety

SUBJECT: SPECIAL INSPECTION TEAM CHARTERS TO EVALUATE THE
CIRCUMSTANCES SURROUNDING THE GROUND SETTLING
AT THE DAVIS-BESSE NUCLEAR POWER STATION

On October 9, 2022, the licensee identified an approximately 6 feet wide and 3 feet deep ground depression while addressing a firewater line break that resulted in the loss of fire protection function for about 1 hour. Davis-Besse has identified several ground settling zones around the plant. In the mid-2010s, a degraded underground rainwater pipe caused a ground depression outside the turbine building in the same area as the failed firewater pipe. Additionally, nearly 4 years ago, the licensee determined that a portion of the nearby turbine building had experienced ground floor settling. The licensee has initiated at least 126 corrective action documents associated with ground settling phenomena since 2010.

On February 27, 2023, while reviewing the 2022 firewater pipe failure, U.S. Nuclear Regulatory Commission (NRC) inspectors discovered information regarding over 100 ground settling indications around the plant. It was unclear to the NRC inspectors that the licensee had thoroughly characterized these indications and their locations relative to risk-important structures, systems, and components (SSCs). Currently, the full extent of the condition is unknown.

The NRC completed an evaluation of the condition using Management Directive (MD) 8.3, "NRC Incident Investigation Program." The condition met MD 8.3 criterion (d) because ground settlement caused a firewater line break resulting in the loss of fire protection wet suppression function for about 1 hour. The wet pipe fire suppression system is a risk-significant plant system that is important to safety. The condition also met MD 8.3 criterion (f) because the ground settlement phenomenon allowed a rainwater drain system failure to create a failure of the firewater system unexpectedly. NRC staff performed a risk assessment and determined that follow-up was warranted to assess if ground settlement represents a broader concern to structures, systems, and components important to the initiating event or mitigating systems safety cornerstones. The assessment concluded that the risk of the degraded condition involving the wet pipe fire suppression system could support a special inspection.

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Accordingly, based on the deterministic and risk criteria in MD 8.3 and as provided in Regional Procedure 8.31, "Special Inspections at Licensed Facility," a Special Inspection Team (SIT) will commence an inspection on April 24, 2023. The SIT will be led by you and will include Matthew Domke from the Region III office, Weijun Wang and Thomas Weaver from the Office of Nuclear Reactor Research, and Laurel Bauer from the Office of Nuclear Reactor Regulations.

The SIT will evaluate the facts, circumstances, and the licensee's actions surrounding the ground settling phenomena. Enclosed are both the original charter (ML23129A254) and a modified version. The modified charter was developed after the Team gained a better understanding of the circumstances surrounding the ground settling occurrences and the nature and quantity of available licensee documentation. The Team should evaluate daily the need for increasing the inspection scope if conditions warrant.

Enclosures:

1. Modified Charter
2. Original Charter

Memorandum to Thomas Hartman from Jason Kozal dated May 4, 2023.

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DAVIS-BESSE NUCLEAR POWER STATION, SPECIAL INSPECTION MODIFIED CHARTER

This SIT is chartered to assess the licensee's current performance at understanding the ground settling phenomenon around the site and its potential effect on risk-important SSCs. The Special Inspection will be conducted in accordance with Inspection Procedure 93812, "Special Inspection," and will include, but not be limited to, the items listed below. This charter may be revised based on the results and findings of the inspection.

1. Establish a historical sequence of events related to ground settling occurrences since the construction phase of the Davis-Besse Nuclear Power Station. The objective is to provide a comprehensive understanding of the ground settling activity at the site, its effect to risk-important SSCs, and the licensee's actions taken associated with ground settling.
2. Review the licensee's evaluations of the ground settling occurrences and their potential impact to risk-important SSCs. This includes reviewing ongoing and planned monitoring and mitigation activities.
3. Review the reasonableness of the licensee's corrective action program at addressing internal and external operating experiences involving ground settling phenomena, including determining how the licensee considered any relevant plant-specific operating experience related to ground settling phenomena in support of their License Renewal Application.

DAVIS-BESSE NUCLEAR POWER STATION, SPECIAL INSPECTION ORIGINAL CHARTER

This SIT is chartered to assess the licensee's current performance at understanding the ground settling phenomenon around the site and its potential effect on risk-important SSCs. The Special Inspection will be conducted in accordance with Inspection Procedure 93812, "Special Inspection," and will include, but not be limited to, the items listed below. This charter may be revised based on the results and findings of the inspection.

1. Establish a historical sequence of events related to the ground settling zones since the construction phase of the Davis-Besse Nuclear Power Station. This information will include (if the information can be made available), for each zone, dates of identification, dates of notable characteristic changes, location, nearby risk-important SSCs and any observations of SSC settlement or distortion, nearby underground structures that could contribute to ground settling, including the history of underground pipe leaks, and any actions taken by the licensee to evaluate, monitor, or mitigate the ground settling phenomenon.
2. Review the licensee's evaluations of the ground settling occurrences and their potential impact to risk-important SSCs. This includes reviewing ongoing and planned monitoring and mitigation activities.
3. Review the reasonableness of the licensee's corrective action program at addressing internal and external operating experiences involving ground settling phenomena, including determining how the licensee considered any relevant plant-specific operating experience related to ground settling phenomena in support of their License Renewal Application.