



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION III  
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July 3, 2019

MEMORANDUM TO: Néstor J. Félix Adorno, Senior Reactor Inspector  
Division of Reactor Safety, Region III

FROM: Mohammed Shuaibi, Acting Director */RA/*  
Division of Reactor Safety, Region III

SUBJECT: SPECIAL INSPECTION TEAM CHARTER FOR FERMI  
NUCLEAR POWER PLANT, UNIT 2, POTENTIAL TORUS  
STRAINER BLOCKAGE

On May 29, 2019, the U.S. Nuclear Regulatory Commission (NRC) Design Bases Assurance Inspection Team discovered information regarding the condition of torus coatings at Fermi, Unit 2, which called into question the licensee's ability to ensure adequate net positive suction head (NPSH) to multiple safety pumps (e.g., emergency core cooling and torus cooling systems) following a postulated design basis accident (DBA). The licensee's underwater coating inspections have found evidence the torus coatings have progressively degraded since approximately 2012. Specifically, the licensee has documented the discovery of new coating blisters, enlargement of existing blisters, coating delamination, and coating embrittlement. The Design Bases Assurance Inspection Team had concerns with whether the licensee had sufficiently evaluated these discoveries to ensure the torus coating would not block the torus suction strainers. Currently, the full extent of condition is unknown. The licensee is completing additional analyses to evaluate this condition.

Based on the deterministic criteria provided in Management Directive (MD) 8.3, "NRC Incident Investigation Program," the incident met MD 8.3 criterion (a) because the current strainer debris loading margin is small when compared to the total coating area in question. The incident also met MD 8.3 criterion (g) because a previous engineering inspection (i.e., the 2016 Component Design Basis Inspection) identified three non-cited violations related to the licensee's efforts to ensure the strainers functionality support the NPSH of safety systems during a DBA. Some of the issues described in the previous non-cited violations remain unresolved and may further challenge the current strainer debris loading margin. Lastly, the incident met MD 8.3 criterion (h) because of questions regarding the licensee's effectiveness at addressing torus suction strainer blockage issues and ensuring the strainers would remain functional to support the NPSH of safety systems during a DBA. The risk assessment resulted in an Incremental Conditional Core Damage Probability of approximately 1E-6 to 1E-5 assuming the most likely scenarios to result in strainer blockage are medium and large break loss of coolant accidents.

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Accordingly, based on the deterministic criteria and risk criteria in MD 8.3, and as provided in Regional Procedure 8.31, "Special Inspections at Licensed Facility," a Special Inspection Team will commence an inspection on July 10, 2019. The Special Inspection Team will be led by you and will include Michael Jones from the Region III office, and Matthew Yoder, Stephen Smith, and James Gavula from the Office of Nuclear Reactor Regulation.

The special inspection will evaluate the facts, circumstances, and the licensee's actions surrounding the recent torus coating inspection results and the potential for torus suction strainer blockage issues. On a daily basis, the Team should evaluate the need for changing the scope of the inspection if conditions warrant.

The team's charter is enclosed.

Docket No: 50-341  
License No: NPF-43

Enclosure:  
Fermi Special Inspection Team Charter

## FERMI NUCLEAR POWER PLANT, UNIT 2, SPECIAL INSPECTION CHARTER

This Special Inspection Team is chartered to assess the licensee's analysis and current performance related to ensuring the torus strainers will remain functional to support the net positive suction head of safety systems during a postulated design basis accident (DBA). Emphasis should be placed on assessing the torus coating degradation identified by the 2019 Design Bases Assurance Inspection Team. 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. The results will be documented in NRC Inspection Report 05000341/2019050.

1. Establish a sequence of events related to the installation, monitoring, evaluation, and repair of torus coatings since the construction of Fermi Nuclear Power Plant, Unit 2. This would include dates and, when relevant, times for the installation and acceptance of the initial torus coating and recoating, subsequent coating inspections, disposition of coating inspection issues including repairs, and any occurrence having the potential to challenge the suction strainer debris loading. This would also include dates for submittals to the NRC involving torus coatings as it relates to suction strainer performance or license renewal.
2. Review the licensee's evaluations of the potential degraded torus coating impact to the functionality of safety systems. This would include the licensee's acceptance of the degraded torus coating areas identified during coating inspections and the licensee's recent evaluations performed in response to the associated 2019 Design Bases Assurance Inspection Team questions. This review would also consider the aggregate effects of other unresolved challenges to the suction strainers such as the issues identified by the 2016 Component Design Basis Inspection Team, which were documented in Inspection Report 05000341/2016007.
3. Review the licensee's maintenance of the torus coating condition. This may include procedures and practices used during coating monitoring, evaluation, and repair. This may also include a review of vendor and/or manufacturer literature.
4. Review the effectiveness of the licensee's Corrective Action Program at addressing internal and recent (since 2010) external operating experience involving torus coatings and suction strainer blockage issues.
5. Continually evaluate the complexity and significance of the circumstances to determine whether they warrant escalation of the inspection to an augmented inspection team.

### Charter Approval

          /RA/  07/03/19          

K. Stoedter, Chief, Engineering Branch 2, DRS

          /RA/  07/03/19          

J. Lara, Director, Division of Reactor Projects

          /RA/  07/03/19          

M. Shuaibi, Director, Division of Reactor Safety