

## **NRR-PMDAPEm Resource**

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**From:** Dietrich, Allison  
**Sent:** Thursday, February 11, 2016 1:30 PM  
**To:** hlkish@aep.com  
**Cc:** Terry L Curtiss (tlcurtiss@aep.com); Wrona, David; Palmrose, Donald; Oesterle, Eric  
**Subject:** D.C. COOK UNITS 1 AND 2 - SRXB RAI CONCERNING LAR TO ADOPT TSTF-490 AND IMPLEMENT FULL SCOPE AST (MF5184 MF5185)  
**Attachments:** SRXB RAI 2 regarding Alternate Source Term MF5184 MF5185.pdf

By letter dated November 14, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14324A209), as supplemented by letter dated February 12, 2015 (ADAMS Accession No. ML15050A247), Indiana Michigan Power Company (I&M) submitted a license amendment request for the Donald C. Cook Nuclear Plant, Units 1 and 2. The proposed amendment consists of adoption of Technical Specifications Task Force (TSTF)-490, Revision 0, and implementation of a full scope alternate source term radiological analysis methodology.

The U.S. Nuclear Regulatory Commission (NRC) staff in the Reactor Systems Branch of the Office of Nuclear Reactor Regulation has reviewed your submittal, as supplemented. The staff has determined that additional information is needed in order to complete the review, as described in the attached Request for Additional Information (RAI). The draft RAI was sent to I&M via electronic mail on November 10, 2015. A clarification call was held on November 20, 2015. The licensee has informed the NRC that the response to the RAI will be dependent on revised data that the licensee is currently developing. Therefore, a response to the attached RAI is requested by May 6, 2016.

Please let me know if you have any questions or concerns.

Sincerely,

Allison W. Dietrich, Project Manager  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
301-415-2846

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REQUEST FOR ADDITIONAL INFORMATION REGARDING  
ADOPTION OF TSTF-490, REVISION 0  
AND IMPLEMENTATION OF FULL-SCOPE ALTERNATE SOURCE TERM  
DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2  
DOCKET NOS. 50-315 AND 50-316  
CAC NOS. MF5184 AND MF5185

RAI-SRXB-2

As presented in Section 15.0.1 of NUREG-0800, Standard Review Plan (SRP), Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.67, "Accident source term," allows a holder of an operating license issued prior to January 10, 1997, and holders of renewed licenses under 10 CFR Part 54 whose initial operating license was issued prior to January 10, 1997, to voluntarily revise the accident source term used in design basis radiological consequence analyses. Paragraph 10 CFR 50.67(b) requires that applications under this section contain an evaluation of the consequences of applicable Design-Basis Accidents (DBAs) previously analyzed in the plant's Final Safety Analysis Report (FSAR). Potential changes in consequences could be due to the impact of the characteristics of the Alternative Source Term (AST) itself or from the proposed plant modifications. Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," provides guidance to licensees on performing evaluations and analyses in support of the implementation of an AST.

As discussed in Chapter 15 of the SRP, in order to establish a licensing basis, licensees must analyze transients and accidents in accordance with the requirements of 10 CFR 50.34, 10 CFR 50.46, and where applicable, NUREG-0737, "Clarification of Three Mile Island Action Plan Requirements." These accidents and transients are described in the SRP. Specifically, Section 15.0.2 of the SRP describes the U.S. Nuclear Regulatory Commission (NRC) staff's review process and acceptance criteria for analytical models and computer codes used by licensees to analyze accident and transient behavior. The purpose of the NRC staff review for this SRP section is to verify that the evaluation model is adequate to simulate the accident under consideration. Section 50.34 of 10 CFR specifies the transient and accident events that must be considered in the safety analyses.

Guidance to the industry for the analysis of transient behavior is set forth in RG 1.203, "Transient and Accident Analysis Methods" and, in particular, licensees must include a complete assessment of all code models against applicable experimental data and/or exact solutions, in order to demonstrate that the code is adequate for analyzing the chosen scenario.

RG 1.183 provides guidance to licensees of operating power reactors on acceptable applications of alternative source terms; the scope, nature, and documentation of associated analyses and evaluations; consideration of impacts on analyzed risk; and content of submittals. Appendices A, B, E, F, G, and H of RG 1.183 provide guidance for evaluating the radiological consequences of pressurized water reactor accidents of concern for AST. As specifically cited by RG 1.183, Section 15.0.1 of the SRP applies for the assessment of the AST. This SRP section provides, in

part, guidance to the NRC staff for the review of the models, assumptions, and parameter inputs used by the licensee for the calculation of the AST radiological consequences.

The NRC staff performed an audit at the offices of Indiana Michigan Power Company (the licensee) during the week of September 21, 2015, as documented in an audit report dated January 20, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16007A180). During the audit, the NRC staff reviewed the supporting documentation and calculation files for the AST license amendment request (LAR) for Donald C. Cook Nuclear Plant (CNP). The staff was unable to determine that the computer code which forms the basis for several of the AST inputs from the CNP operator training simulator meets the NRC regulatory requirements for computer codes used by licensees to analyze accident and transient behavior. Therefore, the use of the operator training simulator is inconsistent with Section 15.0.2 of the SRP. Based on its audit review, the staff requests the following additional information.

- Provide revised analyses supporting the AST that are based on an NRC-approved computer code for transient behavior, or based on calculations from a previously NRC-approved license amendment for the same AST transient behavior, and resubmit the affected AST analyses. The licensee must demonstrate that all of the thermal-hydraulic parameter values for a particular AST-related transient (e.g., steam generator tube rupture, main steam line break, etc.) were provided by the same NRC-approved computer code or from the same calculations that supported a prior NRC-approved license amendment for the installed steam generators. Analysis with an NRC-approved computer code for transient behavior should satisfy previously described 10 CFR Part 50 regulations and SRP Chapter 15 guidance when applicable.