



FirstEnergy Nuclear Operating Company

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May 26, 2015  
L-15-153

10 CFR 50.46(a)(3)(ii)

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

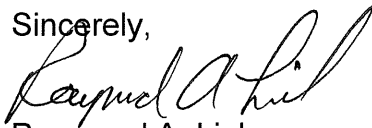
SUBJECT:

Davis-Besse Nuclear Power Station, Unit No. 1  
Docket No. 50-346, License No. NPF-3  
10 CFR 50.46 Report of Changes to or Errors in Emergency Core Cooling System  
Evaluation Models

In accordance with Title 10 of the *Code of Federal Regulations*, Part 50, Section 50.46(a)(3), FirstEnergy Nuclear Operating Company (FENOC) hereby submits the annual report of changes to or errors in an emergency core cooling system (ECCS) evaluation model, or in the application of such a model, for the Davis-Besse Nuclear Power Station, Unit No. 1. The attached report covers the period from January 1, 2014 to December 31, 2014, and includes the significant error and change in the loss-of-coolant accident evaluation model that was communicated to the Nuclear Regulatory Commission (NRC) by FENOC letter dated December 19, 2014, (ML14353A228).

There are no regulatory commitments contained in this letter. If there are any questions or if additional information is required, please contact Mr. Thomas Lentz, Manager – Fleet Licensing at (330) 315-6810.

Sincerely,



Raymond A. Lieb

Attachment:

Annual Report of Changes to or Errors in the 10 CFR 50.46 Emergency Core Cooling System Evaluation Model, or in the Application of Such a Model, for the Davis-Besse Nuclear Power Station, Unit No. 1

cc: NRC Region III Administrator  
Nuclear Reactor Regulation Project Manager  
NRC Resident Inspector  
Utility Radiological Safety Board

Attachment  
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Annual Report of Changes to or Errors in the 10 CFR 50.46 Emergency Core Cooling System Evaluation Model, or in the Application of Such a Model, for the Davis-Besse Nuclear Power Station, Unit No. 1

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Title 10 of the *Code of Federal Regulations*, Part 50, Section 50.46(a)(3) states that each holder of an operating license shall report to the Nuclear Regulatory Commission (NRC), at least annually, each change to or error in an acceptable emergency core cooling system (ECCS) evaluation model (EM), or in the application of such a model, that affects the calculation of peak cladding temperature (PCT). The nature of the change or error and its estimated effect on the limiting ECCS analysis is to be included in the report.

In 2014, a significant error and change that affects the large-break loss-of-coolant accident (LBLOCA) analysis of record for Davis-Besse Nuclear Power Station, Unit No. 1 was communicated to the NRC by FirstEnergy Nuclear Operating Company letter dated December 19, 2014, (ML14353A228); thereby satisfying the 30-day reporting requirement for significant changes or errors. Specifically, the nature of the error involves the modeling of fuel pellet thermal conductivity degradation at high burnups. The change reflects actions taken to compensate for the error. There are no other changes or errors in the ECCS model for this reporting period.

The estimated effects on the peak cladding temperatures for this reporting period are summarized in Table 1.

**Table 1**  
**10 CFR 50.46 Summary for 2014**

<i>Plant Name:</i>		Davis-Besse Nuclear Power Station, Unit No. 1	<i>LOCA Spectrum</i>	
<i>Utility Name:</i>		FirstEnergy	<i>Mk-B-HTP LBLOCA Full-Core</i>	<i>SBLOCA</i>
			<i>PCT or PCT Change (<math>\Delta</math>)</i>	
<i>Licensing Basis at Beginning of 2014</i>			2,119°F Estimated	1,780°F Estimated
<i>2014 Licensing Activity</i>				
<i>Item #</i>	<i>Reporting Category</i>	<i>Description</i>	<i>PCT or PCT Change (<math>\Delta</math>)</i>	
1	EM Error	Change to fuel temperature uncertainty due to inadequate thermal conductivity degradation model at high burnups.	$\Delta = +394^\circ\text{F}$	$\Delta = 0^\circ\text{F}$
2	EM Change	Compensatory measures taken to offset increased PCT from inadequate fuel thermal conductivity degradation model at high burnups	$\Delta = -394^\circ\text{F}$	$\Delta = 0^\circ\text{F}$
<i>Licensing Basis at End of 2014</i>			2,119°F Estimated	1,780°F Estimated