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The Detroit Edison Company  
One Energy Plaza, Detroit, MI 48226-1279



10 CFR 52.79  
10 CFR 2.390  
10 CFR 9.17

September 30, 2011  
NRC3-11-0040

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

References: 1) Fermi 3  
Docket No. 52-033  
2) Letter from Michael Eudy (USNRC) to Jack M. Davis (Detroit Edison),  
"Request for Additional Information Letter No. 67 Related to Sections 10.2.3  
for the Fermi 3 Combined License Application," dated September 2, 2011  
3) Letter from Peter W. Smith (Detroit Edison) to USNRC, "Detroit Edison  
Company Supplemental Response to NRC Request for Additional Information  
Letter No. 53," NRC3-11-0028, dated July 29, 2011

Subject: Detroit Edison Company Response to NRC Request for Additional Information  
Letter No. 67

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In Reference 2, the NRC requested additional information to support the review of certain portions of the Fermi 3 Combined License Application (COLA). Three Requests for Additional Information (RAIs), concerning turbine rotor integrity, were included in Reference 2.

Technical information required to develop the responses to RAIs 10.02.03-17, 10.02.03-18, and 10.02.03-19 will not be available in time to support the requested 30-day response schedule. The responses to these RAIs will be provided no later than October 28, 2011.

In Reference 3, Detroit Edison provided Revision 3 of the GE-Energy Steam Turbines (GE-ST) report ST-56834, "ESBWR Steam Turbine – Low Pressure Rotor Missile Generation Probability Analysis." This report was found to have revision bars that were not representative of the changes made between Revision 2 and Revision 3 of the report. As such, Detroit Edison is resubmitting the report with corrected revision bars. A list of changes between Revision 2 and Revision 3 of the report is provided in Attachment 1. The non-proprietary version of the report, ST-56834/N-P, is provided in Attachment 2. The proprietary version of the report, ST-56834/P, is provided in Attachment 4.

As noted above, Attachment 4 contains GE proprietary information as defined by 10 CFR 2.390. An affidavit is included in Attachment 3 that identifies the information contained in Attachment 4 as proprietary to GE. Detroit Edison and GE request that Attachment 4 be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390 and 10 CFR 9.17.

If you have any questions, or need additional information, please contact me at (313) 235-3341.

I state under penalty of perjury that the foregoing is true and correct. Executed on the 30<sup>th</sup> day of September 2011.

Sincerely,

*AWD*

Peter W. Smith, Director  
Nuclear Development – Licensing and Engineering  
Detroit Edison Company

Attachments:

- 1) ST-56834 Revision 2 to Revision 3 Change List [Public]
- 2) GE-ST "ESBWR Steam Turbine - Low Pressure Rotor Missile Generation Probability Analysis," ST-56834/N-P, Revision 3 [Public Version]
- 3) Affidavit of Damodar Padhi (GE) for ST-56834/P, dated July 25, 2011 [Public]
- 4) GE-ST "ESBWR Steam Turbine - Low Pressure Rotor Missile Generation Probability Analysis," ST-56834/P, Revision 3 [Non-Public Version]

cc: Adrian Muniz, NRC Fermi 3 Project Manager  
Michael Eudy, NRC Fermi 3 Project Manager  
Raj Anand, NRC Fermi 3 Project Manager (w/o attachments)  
Jerry Hale, NRC Fermi 3 Project Manager (w/o attachments)  
Bruce Olson, NRC Fermi 3 Environmental Project Manager (w/o attachments)  
Fermi 2 Resident Inspector (w/o attachments)  
NRC Region III Regional Administrator (w/o attachments)  
NRC Region II Regional Administrator (w/o attachments)  
Supervisor, Electric Operators, Michigan Public Service Commission (w/o attachments)  
Michigan Department of Natural Resources and Environment  
Radiological Protection Section (w/o attachments)

**Attachment 1  
NRC3-11-0040**

**ST-56834 Revision 2 to Revision 3 Change List  
[Public]**

(following 4 pages)

Item	Location	Description of Change
1.	General	Changed number of total pages from 56 to 58 and changed the Table of Contents appropriately. In addition, the Table of Contents is changed to address revised subsection numbers and titles in Section 10.
2.	General	Changed date of document from September 14, 2010, to July 22, 2011, and changed the copyright notice date from "2010" to "2011."
3.	General	Changed the revision number from 2 to 3.
4.	General	Reformatted the subsection numbers by indenting.
5.	S1, 2 <sup>nd</sup> ¶	Change "favorable oriented" to "favorably oriented" and "unfavorable oriented" to "un-favorably oriented" to correct grammar. (Note that the NRC made this grammatical change in DG-1217, which is a proposed Revision 2 of RG 1.115. See DG-1217, Page 5.)
6.	S2, 1 <sup>st</sup> and 2 <sup>nd</sup> ¶¶	In first paragraph, for consistency capitalization and use of acronyms, changed "Moisture Separator Reheaters" to "moisture separator reheaters (MSRs)." In second paragraph, deleted "Moisture Separator Reheaters" and inserted "MSRs" for consistency in use of acronyms.
7.	S3.1	Section 3.1, Materials Selection," is rewritten to reflect a change from material specification B50A373B8 to B50A373B12. Additional detail is added to the section and the NRC performed an audit to discuss this information with Detroit Edison and GE. The first sentence of the previous revision is now the beginning of a new first paragraph of the revised Section 3.1. The new second paragraph of this section is the same as the information that was contained in previous Section 3.1 except for the first sentence (i.e., no changes are made to the content that is the new second paragraph). See DTE Letter NRC3-11-0028 (7/29/2011) response to NRC RAI 10.02.03-12.
8.	S3.1.1, 2 <sup>nd</sup> ¶	Based on discussion with NRC, added the new last sentence of this paragraph: "By this definition, the plus 2σ value of FATT is +30°F." See DTE Letter NRC3-11-0028 (7/29/2011) response to NRC RAI 10.02.03-13.
9.	S3.1.1, 3 <sup>rd</sup> ¶ and Figure 3-1	The previous third paragraph of this section is relocated to below Figure 3-1. No changes are made to the content of the third paragraph or to Figure 3-1.
10.	S4.4, eq. 4-6	Changed the font from "UTSRT" to "UTS <sub>RT</sub> " in the equation and in the explanation of the term that follows the equation. This subscript font is more appropriate to reflect that the term is UTS at room temperature.

Item	Location	Description of Change
11.	S5.1.2.1, 2 <sup>nd</sup> ¶	Added to the end of the first sentence: "... used in this evaluation." This clarifies that Rev. 3 uses the combined valve failure data. See DTE Letter NRC3-11-0028 (7/29/2011) response to NRC RAI 10.02.03-16.
12.	S5.1.2.1, Last ¶	Changed "(with the updated failure rates)" to "(with the updated failure rates including 2008 data)" and "with the older failure rates" to "with the pre-2008 failure rates." See DTE Letter NRC3-11-0028 (7/29/2011) response to NRC RAI 10.02.03-16.
13.	S7.1	In some instances of " $K_{IC}$ " the "c" in the subscript was previously not capitalized. This has been corrected in these instances of Section 7.1 for consistency.
14.	S7.1	Added "are" to first sentence after eq. 7-5 as a grammatical change.
15.	S7.3	In the explanation of terms for eq. 7-17, changed "PBMAX(t)" to " $P_{BMAX}(t)$ " and "PBMAX(0)" to " $P_{BMAX}(0)$ " for consistency of terms.
16.	S7.4, footnotes 3 and 4	Corrected the references in footnotes 3 and 4 for Section 7.4, Table 7-2 from "Table 1.5-1" to "Table 5-1" and "Section 1-5" to "Section 5" to correctly refer to items in Section 5 of the report.
17.	S8, 1 <sup>st</sup> and 2 <sup>nd</sup> ¶¶	The previous first paragraph of Section 8 is split into two paragraphs. After the first sentence of the first paragraph, the following is added: "The red curve represents the annual missile probability ( $P_1$ ) assuming a normally distributed FATT and the blue curve represents the annual missile probability ( $P_1$ ) for a fixed bounding FATT value of +30 degrees F as described in subsection 3.1." In the new second paragraph, the information changed is related to the number of years of turbine operation, and the following is added to the end of the paragraph: "found during rotor inspections." See DTE Letter NRC3-11-0028 (7/29/2011) response to NRC RAI 10.02.03-13 and 14.
18.	S8, Figure 8-1	This figure is changed to reflect the information added to Section 8 in the preceding change list item. See DTE Letter NRC3-11-0028 (7/29/2011) response to NRC RAI 10.02.03-13 and 14.
19.	S8, 4 <sup>th</sup> ¶	Proprietary information in the first sentence is changed to discuss changes in Figure 8-1.
20.	S8, 5 <sup>th</sup> ¶	Proprietary information in the first sentence is changed to discuss changes in Figure 8-1.

Item	Location	Description of Change
21.	S8, 6 <sup>th</sup> ¶	Changed “non shot-peened” to “non-shot-peened” in the last sentence of this paragraph.
22.	S8, 7 <sup>th</sup> and 8 <sup>th</sup> ¶¶	The previous last paragraph is replaced with two new paragraphs. See DTE Letter NRC3-11-0028 (7/29/2011) response to NRC RAI 10.02.03-13 and 14.
23.	S9, 1 <sup>st</sup> and 2 <sup>nd</sup> ¶¶	The previous first paragraph of Section 9 is split into two paragraphs. After the first sentence of the first paragraph, the following is added: “The red curve represents the annual missile probability ( $P_1$ ) assuming a normally distributed FATT and the blue curve represents the annual missile probability ( $P_1$ ) for a fixed bounding FATT value of +30 degrees F as described in subsection 3.1.” In the new second paragraph, the information changed is related to the number of years of turbine operation, and the following is added to the end of the paragraph: “found during rotor inspections.” See DTE Letter NRC3-11-0028 (7/29/2011) response to NRC RAI 10.02.03-13 and 14.
24.	S9, Figure 9-1	This figure is changed to reflect the information added to Section 9 in the preceding change list item. See DTE Letter NRC3-11-0028 (7/29/2011) response to NRC RAI 10.02.03-13 and 14.
25.	S9, 4 <sup>th</sup> ¶	Proprietary information in the first sentence is changed to discuss changes in Figure 9-1.
26.	S9, 5 <sup>th</sup> ¶	Proprietary information in the first sentence is changed to discuss changes in Figure 9-1 and a correction was made as follows: changed “Figure 8-1” to “Figure 9-1” in the 4 <sup>th</sup> sentence.
27.	S9, 5 <sup>th</sup> ¶	Changed “non shot-peened” to “non-shot-peened” in the last sentence of this paragraph.
28.	S9, 6 <sup>th</sup> , 7 <sup>th</sup> , and 8 <sup>th</sup> ¶¶	These new paragraphs in Section 9 replace the previous two paragraphs just prior to Figure 9-2 in their entirety. See DTE Letter NRC3-11-0028 (7/29/2011) response to NRC RAI 10.02.03-13 and 14.
29.	S9, last ¶	Added “rotor” to the first sentence.
30.	S10.1.1	Section 10.1.1 has changed in its entirety to discuss inservice rotor inspections. See DTE Letter NRC3-11-0028 (7/29/2011) response to NRC RAI 10.02.03-14 and 15.

Item	Location	Description of Change
31.	S10.1.2	<p>Previous Section 10.1.2 is renumbered as Section 10.2. New Section 10.1.2 is the information that was in previous Section 10.1.1 regarding rotor dovetail inspections. The content is the same with the following exceptions:</p> <ul style="list-style-type: none"> <li>• Changed "(Stages 1 thru 5)" to "(Stages 1 thru 4)" in 2<sup>nd</sup> paragraph, first sentence.</li> <li>• Changed "and/or" to "or" in 3<sup>rd</sup> paragraph, last sentence.</li> </ul> <p>See DTE Letter NRC3-11-0028 (7/29/2011) response to NRC RAI 10.02.03-12, 14, and 15.</p>
32.	S10.2	<p>New Section 10.2 replaced previous Section 10.1.2 for in-service inspection of turbine valves. The content is the same with the following exceptions:</p> <ul style="list-style-type: none"> <li>• Added a new 3<sup>rd</sup> paragraph to address extraction non-return valves.</li> <li>• In the last paragraph, (1) added "and extraction non-return valves" to the first sentence; (2) changed "all of the valve" to "all of the valves" in the first sentence; and (3) changed "be performed" to "is performed" in the second sentence.</li> </ul> <p>These changes were added to address NRC questions regarding non-return valve inspections and intervals.</p>