

JASON REMER
Senior Project Manager,
Licensing

1201 F Street, NW, Suite 1100
Washington, DC 20004
P: 202.739.8112
sjr@nei.org
nei.org



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January 22, 2015

Ms. Cindy K. Bladey
Chief, Rules, Announcements, and Directives Branch (RADB)
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Industry Comments on Draft Regulatory Guide (DG-1309), "Guidelines for Evaluating the Effects of Light-Water Reactor Coolant Environments in Fatigue Analyses of Metal Components;" Docket ID NRC-2014-0244

Project Number: 689

Dear Ms. Bladey:

On behalf of the nuclear energy industry, the Nuclear Energy Institute (NEI)¹ appreciates the opportunity to provide comments on Draft Regulatory Guide (DG-1309), "Guidelines for Evaluating the Effects of Light-Water Reactor Coolant Environments in Fatigue Analyses of Metal Components" (DG) and respectfully requests that you incorporate industry comments as recommended in the attachment. The DG provides guidance for use in determining the acceptable fatigue lives of components evaluated by a cumulative usage factor calculation in accordance with the fatigue design rules in Section III of the ASME Code, with consideration of LWR coolant environments.

Most of the attached comments are editorial. However, there are comments that recommend additional clarification for the scope of components, the timing of the implementation and the applicability of various NUREG/CR reference documents.

¹ The Nuclear Energy Institute (NEI) is the organization responsible for establishing unified industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations and entities involved in the nuclear energy industry.

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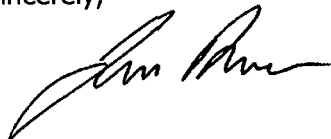
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Ms. Cindy K. Bladey
January 22, 2015
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If you have any questions or require additional information, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Jason Remer", written in a cursive style.

Jason Remer

Attachment

c: Mr. Christopher G. Miller, NRR/DLR, NRC
Mr. Gary L. Stevens, RES/DE/CIB, NRC
NRC Document Control Desk

Number	Location	Description	Justification
1	Generic	DG-1309 refers to NUREG/CR-6909, Revision 1, for the Fen formulas for evaluating environmental fatigue, which has not yet been formally approved and issued. However, the DG does not clarify if the use of NUREG/CR-6909, Revision 0 formulas remains acceptable.	Several LR applicants have used NUREG/CR-6909, Revision 0 methods and formulas for computing Fen values and would not wish to revise them just in order to meet NUREG/CR-6909, Revision 1 criteria.
2	Generic	NUREG-1800 and NUREG-1801 will need to be revised to assure the guidance contained in the revised Reg Guide has been appropriately updated in the NUREG's.	This is necessary to avoid any differences which create inconsistencies between the documents. For example: the Reg Guide specifies using the 2013 Edition of the ASME Code. The current NUREG's are silent.
3	Pg. 2; 5 th Paragraph	The paragraph states the guide "contains information collections."	It is not clear that this is correct because the guide does not appear to be an information request.
4	Pg. 3; 1 st Paragraph	Change "...with the consideration of..." to "...from..."	"From" is an equivalent and much simpler way to say "with the consideration of." Otherwise, could say "with the consideration of risk,...".
5	Pg. 3; 1 st Paragraph	Change "...aging-management..." to "...aging management..."	Unnecessary hyphen should be removed.
6	Pg. 3; 1 st Paragraph	Change "...in ways consistent with existing requirements..." to "...in ways consistent with requirements..."	Eliminate unnecessary word.

Number	Location	Description	Justification
7	Pg. 3; 1 st Paragraph	Change "...findings were captured in the original..." to "...findings were documented in the original..."	Suggested wording enhancement. "Documented" is a more precise term than "captured."
8	Pg. 3; 1 st Paragraph	Change "...cooling environments already forms a part..." to "...cooling environments is part..."	Simplified wording.
9	Pg. 3; 2 nd Paragraph	Change "...ASME Code based on tests conducted in laboratory air environments..." to "...ASME Code based on laboratory tests conducted in air environments..."	Clarification. Laboratory should more appropriately modify "test" than "air."
10	Pg. 3; 2 nd Paragraph	Comment on "...NB-3121, "Corrosion, in Section III of the ASME Codes..."-Beginning with which edition?	It would be useful to identify the applicable edition or editions because wording and paragraph numbers have been known to change over time.
11	Pg. 3; 2 nd Paragraph	Change "More recent fatigue-test data..." to "More recent fatigue test data..."	Hyphen should be eliminated.
12	Pg. 4; 1 st Paragraph	Change "...analyzed existing laboratory data..." to "...analyzed laboratory data..."	"Existing" adds no value. One could not have analyzed nonexistent laboratory data.
13	Pg. 4; 1 st Paragraph	Change "...life in a room-temperature air" to "...life in a room temperature air..."	Hyphen should be eliminated.
14	Pg. 4; 2 nd Paragraph	Change "...generally considered to be conservative..." to "...generally considered conservative..."	Eliminate unnecessary words.

Number	Location	Description	Justification
15	Page 4; 2nd paragraph	The draft Reg Guide remains silent relative to the application and use of NUREG/CR-6583 and NUREG/CR-5704. Likewise NUREG/CR-6909, Revision 1, provides no discussion. Therefore, for License Renewal, the Reg Guide should recognize the use of these NUREG's per NUREG's 1800 and 1801 as acceptable.	Currently NUREG-1800 and 1801 permit the use of NUREG/CR-6583, and NUREG/CR-5704 to determine the effects of LWR environment on the fatigue calculation. This will allow continued use of design basis CUF's to compute the CUFen using the appropriate Fen values. Otherwise, based on the guidance of the Reg Guide new values would have to be computed using the ASME 2013 edition of the Code.
16	Pg. 4; 3 rd Paragraph	Change "...additional available fatigue data..." to "...additional fatigue data..."	"Available" is unnecessary.
17	Pg. 4; 4 th Paragraph	Change "...coolant environments in fatigue life..." to "...coolant environments on fatigue life..."	Suggested clarification. More common and correct English usage is to say effect on fatigue life rather than effect in fatigue life.
18	Pg. 4; 4 th Paragraph	Explain the expected effect of the changes to the Fen equations provided in NUREG/CR-6909, Rev. 1, from those in NUREG/CR-6909, Rev. 0. Will the changes result in higher or lower Fen values?	This guidance is needed in order to determine if environmental fatigue calculations prepared in accordance with the Fen equations from NUREG/CR-6909, Revision 0, remain bounding of environmental fatigue calculations that would be prepared using the Fen equations from NUREG/CR-6909, Rev. 1.

Number	Location	Description	Justification
19	Pg. 4; 4 th Paragraph	"Revision 1 of RG 1.207 maintains" should say "This Reg Guide revision..."	Provides clarity.
20	Pg. 5; 1 st Paragraph	Comment on "The NRC staff deems this criterion acceptable because the NRC staff bases the fatigue design curves on crack initiation, rather than component failure or through-wall crack leakage..."	It's not clear how this is valid since the NRC is not the organization that developed the curves. It would be clearer if it said the NRC deems it acceptable because ANL based the fatigue design curves on crack initiation rather than component failure or through-wall cracking.
21	Pg. 5; 2 nd Paragraph	Change "...the current ASME Code procedure..." to "...the ASME Code procedure..."	Eliminate unnecessary word. "Current" adds no value because it does not define a time at which the procedure was "current." The procedure that was current at the time of the simulations will not necessarily be the same procedure that is in effect when the user reads the regulatory guide.
22	Pg. 5; Last Paragraph	Change "The NRC staff searched for available guidance..." to "The NRC staff searched for guidance..."	It is understood that the NRC would not search for unavailable guidance.
23	Pg. 6; Section C, 1st paragraph	Section C states: "These methods apply to those components exposed to reactor coolant that are required by regulation to have a fatigue CUF evaluation or have an existing CLB fatigue CUF calculation." Imposing the methods to all locations which have a fatigue CUF evaluation goes beyond the Reactor Coolant Pressure Boundary. In some cases, this would include reactor vessel internals, heat exchangers in auxiliary systems, etc., which may include non safety-related components. Suggest the scope of the Reg	From a safety perspective, the application of more conservative requirements above those of the ASME code should be focused on the Reactor Coolant Pressure Boundary rather than imposing it on other systems and components which may not have a safety function.

Number	Location	Description	Justification
		Guide be applicable to Class 1 safety related components within the Reactor Coolant Pressure Boundary having existing fatigue CUF evaluations.	
24	Pg. 7; Sections 2.1 and 3.1	Will "(proposed design curve)" be deleted after this Reg Guide is approved? Provide clarification of what "(proposed design curve)" means.	Clarification requested
25	Pg. 8; 2nd Paragraph	"Current licensees may continue to use guidance found acceptable for complying with the identified regulations as long as their current licensing basis remains unchanged." Need to clarify that current licensees approved for License Renewal and have entered in the Period of Extended Operation (PEO) are considered to be acceptable for complying with regulation.	Clarification requested
26	Pg. 8; 2 nd Paragraph	Comment on "...with underlying NRC regulations."- It would be useful to define the "underlying regulations."	The background mentions 54.21, but that would only apply to renewed license applicants. In addition, 54.21 addresses license renewal aging management reviews and TLAA evaluations in general, rather than addressing anything that is the basis for environmentally adjusted CUF analysis.
27	Pg. 8; 2 nd Paragraph	Change "Methods or solutions that..." to "Methods that..."	The regulatory guide appears to address acceptable methods, but not acceptable solutions.
28	Pg. 8; 2 nd Paragraph	Comment on "...the identified regulations..."	It would be beneficial to identify the regulations because it does not appear that they have been identified.

Number	Location	Description	Justification
29	Pg. 8; 3 rd Paragraph	Change "...regulatory guide or applicable parts to resolve regulatory..." to "...regulatory guide to resolve regulatory..."	The phrase "applicable parts" is redundant to "information in this regulatory guide" unless it is meant to refer to applicable parts of federal regulations. It should be deleted or clarified depending on which is the case.
30	Page 9; 1st paragraph	Section D page 9 states: "(2) the specific subject matter of this regulatory guide is an essential consideration in the staff's determination of the acceptability of the licensee's request, the staff may request that the licensee either follow the guidance in this regulatory guide or provide an equivalent alternative process that demonstrates compliance with the underlying NRC regulatory requirements." By making this statement, the Regulatory Guide seems to infer that since NUREG-1800 and NUREG-1801 offer an "equivalent alternative process" with NUREG/CR-6583 and NUREG/CR-5704, these alternate processes are acceptable to determine the effects of LWR environment on fatigue. This needs to be confirmed.	This clarification is required to confirm acceptability of using NUREG/CR-6583 and NUREG/CR-5704.