

March 18, 2013

Ms. Sarah Hofmann, Deputy Commissioner  
State of Vermont Department of Public Service  
112 State Street  
Montpelier, VT 05620-2601

SUBJECT: RESPONSE TO THE STATE OF VERMONT DEPARTMENT OF PUBLIC  
SERVICE REGARDING COMMENTS ON DRAFT INTERIM STAFF GUIDANCE  
DOCUMENT JLD-ISG-12-05

Dear Commissioner Hofmann:

The U.S. Nuclear Regulatory Commission (NRC) received your letter dated October 29, 2012, Agencywide Documents Access and Management System (ADAMS) Accession No. ML12313A331 regarding your comments on Docket ID # NRC-2012-0222, "Guidance for Performing the Integrated Assessment for Flooding." The document that you commented on contains the draft interim staff guidance (ISG) document JLD-ISG-12-05 and can be accessed in ADAMS at Accession No. ML12311A214. In your letter, you expressed concern with how the NRC will consider probable maximum precipitation and probable maximum flood, including the effects of climate change, on nuclear power plant flooding hazards analyses. The flood hazard reevaluation is an activity that is performed prior to, and provides input to, the integrated assessment. In the comment resolution matrix associated with the ISG, it was indicated that we would respond to your comments via separate correspondence. The enclosure to this letter contains a detailed response to each comment.

I would like to thank you for your comments and reinforce that we take our safety responsibility to the public seriously. Should you have any questions, please contact Mr. Matthew Mitchell, Chief of the Project Management Branch in the Japan Lessons Learned Directorate by phone at 301-415-3091 or by email at [Matthew.Mitchell@nrc.gov](mailto:Matthew.Mitchell@nrc.gov).

Sincerely,

Richard V. Guzman, Sr. Project Manager  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

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/ra/

Richard V. Guzman, Sr. Project Manager  
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**ADAMS Accession No.: ML13071A694**

\*Concurrence via e-mail

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DATE	3/13/13	3/13/13	3/13/13	3/18/13

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NUCLEAR REGULATORY COMMISSION STAFF RESPONSE TO  
THE STATE OF VERMONT DEPARTMENT OF PUBLIC SERVICE  
REGARDING COMMENTS ON DRAFT INTERIM STAFF GUIDANCE

DOCUMENT JLD-ISG-12-05

DOCKET ID # NRC-2012-0222

**Comment 1**

In section 2.3 of JDL-ISG-2012-05 "Guidance for Performing the Integrated Assessment for External Flooding", the Department finds the guidance needs to be more explicit with respect to the reevaluation of the Probable Maximum Flood (PMF). This section has reference to using present-day regulatory methodologies and present-day standard engineering practice. It is not clear whether these current methods/standards are adequate and valid with respect to the PMF. This is critical because the PMF is highly dependent on the methodologies and assumptions that are used to calculate the Probable Maximum Precipitation (PMP).

**Response 1**

The NRC information request has two stages to gather sufficient information to determine whether regulatory action, such as modifying a site's design basis. In the first stage, licensees will reevaluate the flooding hazard at their site using present-day methodologies and data. Those licensees whose reevaluated flooding hazard is greater than their existing design basis will then perform an integrated assessment to determine the effect the new hazard would have on their site. Although it is separate from the subject guidance document, there is a significant amount of guidance (e.g., see NUREG-0800, "Standard Review Plan," Sections Section 2.4.2 "Floods", 2.4.3 "Probable Maximum Flood (PMF) on Streams and Rivers", 2.4.4 "Potential Dam Failures", including each section's reference section) available to licensees to perform the first-stage flooding hazard analysis.

**Comment 2**

With regard to calculation of the PMP it is not clear whether the PMP methodology and related assumptions consider climate change. Given that the widely held definition of PMP is "*the greatest depth (amount) of precipitation for a given storm duration that is theoretically possible for a particular geographic location*", will "theoretically possible" consider recent data and research related to climate change? Should PMP durations be extended to consider climate change, and is there a need to employ other extreme event characterization techniques, such as paleo-flood reconstruction and analysis?

Enclosure

## **Response 2**

As indicated previously, the integrated assessment guidance document does not describe in detail the methods and assumptions to be used in developing the flood hazard analysis. Please see the response to Question 1 regarding NRC's guidance to the staff for evaluating flooding hazards at a nuclear power plant site, in particular the reference to NUREG-0800.

## **Comment 3**

If current practice regarding estimation of PMP/PMF are robust and this is articulated in NRC technical guidance then reference to these should be included. If not, then more specifics are needed in this section to stress the importance of the hazard reevaluation component, since the value of the *Integrated Assessment Process* hinges what the "current design basis hazard" is and whether it is adequate.

## **Response 3**

Specific details regarding how a licensee should perform the flooding hazard review associated with NRC's March 12, 2012, Information Request (ADAMS Accession No. ML12056A046) are contained in Enclosure 2. In particular, Attachment 1 of Enclosure 2 contains a section titled, "Flood Causing Mechanisms." Present-day methodologies and guidance for performing the hazard review are described in that attachment. The reference section of Enclosure 2 also contains a number of references regarding calculation of the flooding hazard. NRC staff intends to use NUREG-0800, Standard Review Plan, as supplemented by interim staff guidance, to review of the licensee's hazard submittals.