

**CSSG TASKING 2011-03**

Date Issued: April 26, 2011

**Task Title:** *CSSG Response to DNFSB Staff Member on CSSG Position in Regards to Seismic Design*

**Task Statement:**

The CSSG is directed to develop a response from the CSSG to the email from DNFSB staff member Roy Kasdorf dated April 7, 2011. The email is included as Attachment 1 to this tasking statement.

The CSSG should create a small subgroup to respond to the questions and comments by Mr. Kasdorf which are included in his email. His comments are related to the CSSG response to Tasking 2010-1, *Balanced Technical Approaches for Addressing Potential Seismically Induced Criticality Accidents in New Facility Design*, dated November 19, 2010.

**Resources:**

The CSSG chair will create a subgroup (having two to three members) of the CSSG to support the response development. When a draft is ready for review, the CSSG will review the draft and provide comments to the CSSG Deputy Chair, who will address the comments and forward the resulting response to CSSG Chair for transmittal to the NCSP Manager. Contractor CSSG members of the team will use their FY11 NCSP CSSG support funding as appropriate; DOE CSSG members of the team will utilize support from their site offices. CSSG emeritus members may be included in the team on a voluntary basis.

**Task Deliverables:**

1. CSSG response team develops draft response to DNFSB staff questions by April 29, 2011.
2. CSSG to provide comments on the draft response to the CSSG Deputy Chair by May 4th.
3. CSSG Deputy Chair to consolidate comments and provide revised draft to the CSSG for concurrence by May 9th.
4. CSSG Chair briefs the NCSP Manager on the response by May 10, 2011.
5. CSSG Chair transmits the CSSG response to NCSP Manager by May 13, 2011.

**Task Due Date: May 13, 2011**

Signed:   
Jerry N. McKamy, Manager US DOE NCSP

Attachment 1  
Email from Roy Kasdorf to Jerry McKamy

From: Roy Kasdorf [<mailto:ROYK@DNFSB.GOV>]  
Sent: Thursday, April 07, 2011 10:13 AM  
To: McKamy, Jerry  
Cc: Ernest Elliott; Tontodonato, Rich <Alert>; Timothy Dwyer  
Subject: CSSG position on seismic accidents

Jerry

I just read the recent NNSA Tech Bulletin containing your CSSG response to Tasking 2010-01 on seismically induced criticality accidents. While I don't argue with your interpretation of STD-1189 application of dose consequences, I am very concerned that you have missed the fact that there are other design requirements that go beyond O 413.3 and STD-1189.

O420.1 requires that "CSPs must be implemented to ensure that fissionable material operations will be evaluated and documented to demonstrate that operations will be sub-critical under both normal and credible abnormal conditions." I consider a seismic event a credible abnormal condition.

STD-3009 guidance for criticality controls states, "... summarize the safety design limits on engineered controls, either passive or active, and the bases placed on equipment designs or operations to ensure subcritical conditions under all normal, abnormal, and accident conditions." I interpret this mean that a criticality should be prevented under accident (seismic) events.

These design requirements say a criticality event must be precluded. This is regardless of the dose consequences which we understand is typically a localized event. In particular for design of new facilities, if a criticality event can be caused by the seismic event --- lost of configuration, fissile material tanks rolling around, primary confinement rupture, etc --- then is must be precluded. Seismic damage can only be precluded by assigning a seismic design category and limit state that prevents the criticality event. SDC-1 in general doesn't not provide seismic integrity when subjected to a DBE.

I disagree with the papers conclusion that the seismic design category and limit state can be assigned based on dose consequences in this case where there are other design requirements that must be met.

What consideration was given by the CSSG to these other design requirements in reaching the papers conclusion?

Regards  
Roy Kasdorf