

**From:** [Neurauter, James](#) \  
**To:** [Jessup, William](#)  
**Cc:** [Hoang, Dan](#); [Murphy, Martin](#)  
**Subject:** RE: Davis-Besse Functionality Review Criteria Summary  
**Date:** Thursday, December 15, 2011 12:30:38 PM

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Billy

Thank you very much !!

Jim

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**From:** Jessup, William  
**Sent:** Thursday, December 15, 2011 9:13 AM  
**To:** Neurauter, James  
**Cc:** Hoang, Dan; Murphy, Martin  
**Subject:** RE: Davis-Besse Functionality Review Criteria Summary

Jim,

I concur with Dan regarding the removal of the RG 1.76 non-conservatism. This may be better placed in a set of notes which are used for reference purposes only. This is a very good summary of the review and I only have one minor "comment" regarding your bullet on the finite element analyses:

- o Finite element model reflects degraded condition
  - Chosen eElements used in analyses reflect degraded condition  
(~~Outside rebar~~ no bending stiffness assumed where outer rebar is considered ineffective)

Just to add a little more context/specificity (may not be necessary, depending on the level of depth you are looking for).

Thanks.

William T. "Billy" Jessup Jr.  
NRR/DE/EMCB  
Office: (301) 415-2972

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**From:** Hoang, Dan  
**Sent:** Thursday, December 15, 2011 8:30 AM  
**To:** Neurauter, James; Jessup, William; Manoly, Kamal; Sheikh, Abdul  
**Cc:** Hills, David; Murphy, Martin  
**Subject:** RE: Davis-Besse Functionality Review Criteria Summary

Jim,

Under Analysis and Modeling:

D / (29)

Suggest to delete the "Load path through SB structure is established" this could lead to the confusion for some. Also, delete the following (but, keep it for your personal note):

• "Note: Regulatory Guide 1.76 Non-conservatism

- FSAR tornado driven missile: 4000 lb automobile @ 50 mph (73.33 ft/s) up to 25 feet above ground
  - Reg Guide 1.76: 4000 lb automobile @ 135 ft/s (198 mph) up to 30 feet above ground
    - Approximately 4 times FSAR missile impact energy
    - 135 ft/s missile speed evaluated in Attachment C of Calculation C-CSS-099.20-045; Evaluation of Shield Building for the Construction Opening – SGR-RVCH Replacement; Revision 000. dated August 4, 2011
      - Did not consider effect of laminar cracking – predated identification by licensee"

Thanks,

Dan

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**From:** Neurauter, James  
**Sent:** Wednesday, December 14, 2011 5:04 PM  
**To:** Jessup, William; Hoang, Dan; Manoly, Kamal; Sheikh, Abdul  
**Cc:** Hills, David  
**Subject:** Davis-Besse Functionality Review Criteria Summary

To All:

Based on our discussions during review of Davis-Besse functionality calculations December 1 & 2, 2011, I put together a summary of criteria that reviewers may have used in the determination that the shield building was functional with the currently identified cracking.

Please review and provide any additions or items that should be deleted.

Please identify if other information provided by licensee factored into your decision process (such as):

- Identified cracks were tight (< 0.010" thick)
- Cracks did not penetrate inside outer rebar mat
- Opinions of professors Darwin and Sozen that rebar splices in cracked concrete will develop some tensile stress
- Condition of exterior surface – no evidence cracks propagated to outside surface

This summary may be discussed during upcoming public meeting to describe the decision process used to conclude the shield building is functional.

Please respond by Wednesday, 21 December 2011, with or without comments.

Thanks for all your help,

Jim

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