Ferrante, Fernando

From: Melanie Galloway
Sent: Monday, January 26, 2009 9:12 AM
To: Ferrante, Fernando; See, Kenneth; Raman Pichumani
Cc: Mitman, Jeffrey
Subject: FW: Oconee NRC Reply to Duke 50 54(f) Response Rev 2 (2).doc

FYI

From: Allen Howe
Sent: Monday, January 26, 2009 8:55 AM
To: Melanie Galloway; David Skeen
Subject: FW: Oconee NRC Reply to Duke 50 54(f) Response Rev 2 (2).doc

Here are the answers from Rex.

Allen

From: Rex Wescott
Sent: Friday, January 23, 2009 2:23 PM
To: Allen Howe
Cc: Jon Thompson; John Stang; Joseph Giitter
Subject: RE: Oconee NRC Reply to Duke 50 54(f) Response Rev 2 (2).doc

Section 5.5 refers to hydrologic failures which is an overtopping failure - so the understanding is correct

Section 6.2 refers to seismic dam failures and 9.2.1.2 refers to combined events for seiemic dam failures - I would interpret these two sections to imply SSE is okay provided epicenter is located for maximum seismic loads on dam and seismic loads should be assumed coincident with 25 yr flood (probably full pool with water over emergency spillway)

In regard to other failure causes, the licensee should address the likelihood for other causes as listed in section 6.3.2. A relatively modern dam with adequate stability, seepage and other analyses, monitoring and maintenance should be able to write off these causes.

Hope that this helps,

Rex

From: Allen Howe
Sent: Friday, January 23, 2009 1:59 PM
To: Rex Wescott
Cc: Jon Thompson; John Stang
Subject: RE: Oconee NRC Reply to Duke 50 54(f) Response Rev 2 (2).doc

Rex - I have pasted a message from Bradley Davis below. From your perspective what is needed to meet the RG and ANS standard if:

1. As per section 5.5.1 and section 5.5.4.2.3 of this standard, "if overtopping does not occur for an earth or rockfill dam a breach analysis is not required". Is this a correct understanding?

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2. If the dam is designed to withstand the seismic event up to the safe shutdown earthquake for the site, does a dam failure/flood analysis need to be done for a seismically induced failure? Apparently section 6 indicates that this is not needed.

3. What applies for failures from other causes e.g. if the dam is not subject to overtopping or a seismic failure, does a dam failure/flood analysis need to be done for these other failure modes?

Joe Giitter and I would like to hear back from you before you head to the inspection if possible.

Thanks - Allen

From: Bradley Davis
Sent: Wednesday, January 14, 2009 6:46 AM
To: Melanie Galloway; Robert Carroll; Robert Schaaf; Jeff Circle; James Vail; Fernando J Ferrante; Goutam Bagchi; Raman Pichumani; Eric Riggs; Kamal Manoly; Kenneth See
Subject: Oconee - Jocasee Dam Failure Discussion

While researching regulatory guidelines for determining breach sizes and time to failure for dams, I found a standard produced by the American Nuclear Society (ANS 2.8 Determining design basis flooding at power reactor sites). According to section 5.5.1 and section 5.5.4.2.3 of this standard, "if overtopping does not occur for an earth or rockfill dam a breach analysis is not required". This section covers hydrologic dam failures. By this standard the licensee also has to demonstrate seismic adequacy. Section 6 of this standard states that stability and seismic issues should be considered and if found not likely then a dam breach analysis is not required.

I did a quick search and found that Regulatory Guide 1.59 endorses this standard. Regulatory Gide 1.59 states {The material previously contained in Appendix A, "Probable Maximum and Seismicaly Induced Floods on Streams," has been replaced by American National Standards Institue (ANSI) Standard N1-170-1976, "Standards for Determining Design Basis Flooding at Power Reactor Sites," which has been endorsed as acceptable by the NRC staff with the exception noted in Appendix A.}

ANSI Standard N!-170-1976 was updated by ANS 2.8.1992.

Do any of you know if Oconee's FSAR ties them to Regulatory Guide 1.59 or if Duke could use this standard as an out anyway?

Thanks,

Bradley

From: Jon Thompson
Sent: Friday, January 23, 2009 11:04 AM
To: Rex Wescott; John Stang; Jeff Circle; James Vail
Cc: Allen Howe; Melanie Wong
Subject: RE: Oconee NRC Reply to Duke 50 54(f) Response Rev 2 (2).doc

Rex,

Thanks for the timely response. John Stang will see about rescheduling

Jon

From: Rex Wescott
Sent: Friday, January 23, 2009 11:02 AM
To: Jon Thompson; John Stang; Jeff Circle; James Vail
Subject: RE: Oconee NRC Reply to Duke 50 54(f) Response Rev 2 (2).doc

Unfortunately, I will be out of the office on an inspection at LES from Jan 26 - Jan 30.

Rex

From: Jon Thompson
Sent: Friday, January 23, 2009 10:59 AM
To: John Stang; Jeff Circle; James Vail; Rex Wescott
Subject: FW: Oconee NRC Reply to Duke 50 54(f) Response Rev 2 (2).doc

Dear Sirs,

Joe Giitter has asked that the principles for this issue meet early next week with Rex in order to get his insight into the regulatory bases for the analysis of dam failures.

I have tenatively scheduled a meeting for Monday 3pm in O-6-B6 for this purpose.

Jon