

**From:** nobody@www.nrc.gov  
**Sent:** Monday, January 09, 2012 8:37 AM  
**To:** FOIA Resource  
**Subject:** WWW Form Submission

**FOIA/PA REQUEST**

**Case No.:** 2012-0110  
**Date Rec'd:** 1/9/12  
**Specialist:** Y McClellan  
**Related Case:** \_\_\_\_\_

Below is the result of your feedback form. It was submitted by  
( ) on Monday, January 09, 2012 at 08:37:24

---

FirstName: David

LastName: Lochbaum

Company/Affiliation: Union of Concerned Scientists

Address1: PO Box 15316

Address2:

City: Chattanooga

State: TN

Zip: 37415

Country: United\_States

Country-Other:

Email: [dlochbaum@ucsusa.org](mailto:dlochbaum@ucsusa.org)

Phone:

Desc: Shutdown margin calculations and/or evaluations performed for the controlled shutdown event on October 21, 2003, at the Callaway nuclear plant. (Ref: NRC letter to Mr. Criscione dated July 25, 2011, which mentions the calculation.)

FeeCategory: Educational

MediaType:

FeeCategory\_Description:

Expedite\_ImminentThreatText:

Expedite\_UrgencyToInformText:

Waiver\_Purpose: Ms. Jeanette Oxford of the Missouri House of Representatives asked me via email if I'd review the shutdown calculation to determine if it was adequate. I responded that I'd review it if it was available. I did not find the document publicly available in ADAMS, so I am requesting it via FOIA.

Waiver\_ExtentToExtractAnalyze: I have a degree in nuclear engineering and worked as a reactor engineer at Hatch, Browns Ferry, Grand Gulf and Hope Creek where I performed and reviewed shutdown margin calculations. While those are boiling water reactors and Callaway is a pressurized water reactor, the shutdown margin calculation procedures are more alike than dissimilar. My intent is to see how shutdown margin was determined during the October 21, 2003, controlled shut down at Callaway when some, but not all, of the control rods had been inserted.

Waiver\_SpecificActivityQuals: As noted in Question 2, I am a nuclear engineer who has performed/reviewed numerous shutdown margin calculations. The October 21, 2003, event at Callaway involved issues the NRC covered in Info Notice 2011-02 (ADAMS ML101810282). Rep. Jeanette Oxford of Missouri asked me if I'd review the shutdown margin calculation performed during that event. I agreed to do so, but could not find the document in public ADAMS. Upon receiving the shutdown margin calculation, I will review it to see if it accurately and completely evaluated the reactivity conditions existing at Callaway during this event.

Waiver\_ImpactPublicUnderstanding: At issue is whether the operating crew during the controlled shutdown of the reactor on October 21, 2003, determined that the reactor was subcritical with sufficient margin when they suspended control rod insertion for nearly 90 minutes. Other negative reactivity factors (e.g., xenon and temperature coefficient) had reduced the reactor power level but could cause its power level to increase, perhaps to the point of re-establishing a critical condition. The shutdown margin calculation will answer the question of how the operators determined the reactivity state of the reactor and if enough control rods had been inserted to maintain subcriticality despite xenon and temperature effects. I would seek to understand what was done and then to explain it in as plain English as possible to Rep. Oxford, her constituents, and the general public.

Waiver\_NatureOfPublic: The October 21, 2003, event at Callaway has received attention in many arenas. As noted earlier, the NRC issued Info Notice 2011-02 in January 2011 about it. The Professional Reactor Operators Society (PROS) included an article describing it in an issue of their magazine last year. A list serve maintained by Bill Corcoran on Yahoo has discussed the event at some length. The shutdown margin calculation will add to the awareness of this event and its lessons.

Waiver\_MeansOfDissemination: I will review the shutdown margin calculation and provide commentary on it directly to Rep. Oxford of Missouri in response to her request. In addition, I will likely post similar commentary on the review and its results to the UCS blog at [www.allthingsnuclear.com](http://www.allthingsnuclear.com). This blog has a fairly large following and is available/accessible for free.

Waiver\_FreeToPublicOrFee: No fees will be charged.

Waiver\_PrivateCommericalInterest: None.

-----