

March 25, 2009

TO: Gregory V. Cranston, Branch Chief
Reactor Systems Branch
Division of Safety Systems Analysis
Office of Nuclear Reactor Regulation

FROM: Diane T. Jackson **/RA/**
Reactor Systems Branch
Division of Safety Systems Analysis
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF THE FEBRUARY 26 – 27, 2009, CATEGORY 2 MEETING WITH
NUCLEAR ENERGY INSTITUTE TO DISCUSS SPENT FUEL CRITICALITY
AMENDMENT REQUESTS AND NEUTRON ABSORBER MATERIALS

On February 26 and 27, 2009, the Nuclear Regulatory Commission (NRC) staff held two Category 2 public meetings with representatives of Nuclear Energy Institute (NEI), industry representatives and members of the public at NRC offices in Rockville, MD. The purpose of these meetings was to discuss spent fuel criticality analysis and neutron absorber materials. The staff has found that recent spent fuel pool (SFP) license amendment requests have required significantly more interaction and additional information, not in the original submittal, to be able to reach a reasonable assurance determination for the criticality analysis. The probability of an inadvertent criticality in the SFP has increased due to higher fuel enrichments, higher bundle loading density in the SFP, denser and more complex storage patterns, and unexpected (and potentially unknown) deterioration of SFP neutron absorber material. The goal for the February 26th meeting was to initiate a dialogue with industry on the staff's expectations for spent fuel pool criticality analysis in license amendment requests.

On February 26th the staff presented its position on SFP criticality analysis issues from license amendment requests to the industry. Topics included an overview of regulations and guidance, the use of precedence and references, criticality analysis margin, assumptions, depletion analysis, and burnup credit. Questions were raised and discussed during the course of the presentation. Topics that elicited further discussion included NUREGs that are used for technical guidance, the available margin in the analysis under the regulatory limits, identifying and supporting assumptions, choosing experiments in the validation of codes, choices regarding axial distribution, validation of codes, benchmarking of codes, credible and non-credible events, and information to be included in the technical specifications.

On February 27th, industry presented information on neutron absorbers and monitoring programs, and answered questions from the staff and other participants. Presentation topics included the in-service performance of Boraflex and BORAL, and B₄C plates. New neutron absorber materials, such as metal matrix composites, were also presented.

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301-415-8548

NEI indicated they will be contacting the staff to set up a follow-on meeting regarding spent fuel pool criticality analysis. The meeting was also broadcast via video teleconferencing and through the new webinar 'Go To Meeting' tool.

Enclosures:
As stated

cc w/encl: See next page

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Enclosures:
As Stated

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cc w/encl: See next page

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MEETINGS BETWEEN NUCLEAR REGULATORY COMMISSION (NRC)
AND
NEI, INDUSTRY AND THE PUBLIC

LIST OF ATTENDEES

SPENT FUEL POOL CRITICALITY AND NEUTRON ABSORBER MATERIALS

February 26 – 27, 2009

Thursday February 26, 2009

First Name	Last Name	Affiliation
Bob	Smith	AREVA
Tom	Delorey	AREVA
Gayle	Elliot	AREVA
Linda	Farrell	AREVA
William	Long	Ceradyne
Dennis	Vandeputte	Constellation
Alan	Wells	Consultant
Tom	Schleicher	Dominion
Brian	Kinney	Dominion
Steve	Rowe	Entergy
Laurie	Lahti	Entergy
Albert	Machiels	EPRI
John	Kessler	EPRI
Adam	Levin	Exelon
Pat	Simpson	Exelon
Jill	Fisher	Exelon
Tom	Loomis	Exelon
Jeffrey	Holley	Exelon
Robert	Borland	FENOC
Ed	Knuckles	FPL
Pete	Sharp	FPL
Vernon	Mills	GNF
Walid	Metwally	GNF
Kris	Cummings	Holtec
Stefan	Anton	Holtec
Jimmy	Seawright	Luminant
Tom	Danner	NAC
Holger	Pfeifer	NAC
Everett	Redmond	NEI
Ken	Lindquist	NETCO
Dale	Lancaster	Nuclear Consultant
Dave	Baksa	Progress
Stan	Turner	self
Robin	Jones	Southern

ENCLOSURE

First Name	Last Name	Affiliation
Duane	Gore	STPNOC
Kord	Smith	Studsvik
Zita	Martin	TVA
Kirk	Van Dyne	TVA
William	Marshall	Westinghouse
Robert	Sisk	Westinghouse
Elliott	Jackson	Westinghouse
William	Slagle	Westinghouse
Maureen	Conley	Platts
Emma	Wong	NRC
Jeffrey	Poehler	NRC
Christian	Farmer	NRC
Diane	Jackson	NRC
Kent	Wood	NRC
Tony	Nakanishi	NRC
Greg	Cranston	NRC
Zhian	Li	NRC
Michael	Call	NRC
Balwant	Singal	NRC
Meraj	Rahimi	NRC
Tony	Attard	NRC
Chris	Van Wert	NRC
Sher	Bahadur	NRC
Kris	Jamgochian	NRC

Thursday by phone or VTC:

First Name	Last Name	Affiliation
Deann	Raleigh	Curtiss Wright
Dominick	Napolitano	NISYS Corp
John	Hannah	GNF
Nancy	Chapman	Bechtel
Tracy	Bishop	Westinghouse
Ted	Ivy	Entergy
Jonathan	Walker	GE
Paul	O'Donnell	System One
Justin	Clarity	Westinghouse
Cody	Lemons	Luminant
Carlyn	Greene	UX Consulting
Sing	Chu	Areva
Anthony	Burger	First Energy
Stan	Jones	Entergy
Richard	Roenigk	Omaha Public Power District

Friday February 27, 2009

First Name	Last Name	Affiliation
Bob	Smith	AREVA
Tom	Delorey	AREVA
Gayle	Elliot	AREVA
Linda	Farrell	AREVA
William	Long	Ceradyne
John	Massari	Constellation
Tom	Schleicher	Dominion
Brian	Kinney	Dominion
Tom	Woody	Entergy
Steve	Rowe	Entergy
Laurie	Lahti	Entergy
Albert	Machiels	EPRI
Ray	Lambert	EPRI
John	Kessler	EPRI
Adam	Levin	Exelon
Pat	Simpson	Exelon
Jill	Fisher	Exelon
Jeffrey	Holley	Exelon
Robert	Borland	FENOC
Ed	Knuckles	FPL
Pete	Sharp	FPL
Vernon	Mills	GNF
Walid	Metwally	GNF
Kris	Cummings	Holtec
Debu	Mitra-Majumda	Holtec
Tom	Danner	NAC
Everett	Redmond	NEI
Ken	Lindquist	NETCO
Dale	Lancaster	Nuclear Consultant
Dave	Baksa	Progress
Stan	Turner	self
Robin	Jones	Southern
Duane	Gore	STPNOC
Kord	Smith	Studsvik
Zita	Martin	TVA
Kirk	Van Dyne	TVA
William	Slagle	Westinghouse
Michael	Fletcher	Progress Energy
Maureen	Conley	Platts
Robert	Sweeney	IBEX
Emma	Wong	NRC
Jeffrey	Poehler	NRC
Christian	Farmer	NRC
Diane	Jackson	NRC
Kent	Wood	NRC

Tony	Nakanishi	NRC
Greg	Cranston	NRC
Greg	Makar	NRC
Zhian	Li	NRC
Bill	Golumbski	NRC
Matthew	Gordon	NRC
Matthew	Yoder	NRC
Michael	Call	NRC

Friday by phone or VTC:

First Name	Last Name	Affiliation
Dominick	Napolitano	NISYS Corp
Nancy	Chapman	Bechtel
Ted	Ivy	Entergy
Jonathan	Walker	GE
Cody	Lemons	Luminant
Carlyn	Greene	UX Consulting
Sing	Chu	Areva
Stan	Jones	Entergy

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