February 1, 2011

TO: Anthony P. Ulses, Branch Chief
Reactor Systems Branch
Division of Safety Systems Analysis
Office of Nuclear Reactor Regulation

FROM: Kent A. L. Wood ***/RA/***
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SUBJECT: SUMMARY OF THE SEPTEMBER 21, 2010, CATEGORY 2 MEETING WITH ELECTRIC POWER RESEARCH INSTITUTE TO DISCUSS BURNUP CREDIT BIAS AND UNCERTAINTY METHODOLOGY AS A RESULT OF DEPLETION CALCULATIONS

On September 21, 2010, the U.S. Nuclear Regulatory Commission (NRC) staff held a Category 2 public meeting with representatives of Electric Power Research Institute (EPRI), industry representatives and members of the public at NRC offices in Rockville, MD. The purpose of these meetings was to conduct a public workshop with EPRI, NRC, and Oak Ridge National Laboratory (ORNL) representatives to discuss proposed methodologies used to propagate the bias and uncertainty associated with spent fuel to the k_{eff} in a burnup credit analysis. The staff has found that a need exists to establish a consistent technical basis for validation of commercial spent nuclear fuel criticality safety evaluations.

EPRI and industry representatives first presented their position on burnup credit methodology. Topics included a spent fuel pool regulatory document review, a proposed method to quantify reactivity decrement uncertainty, a preliminary analysis for a 3-loop pressurized water reactor (PWR), and plans to use TSUNAMI and CASMO to determine assembly reactivity uncertainty in a cold condition as well as draft a benchmark assembly reactivity report. The NRC with ORNL then presented their position on burnup credit methodology. This methodology discussed the path taken to determine fuel composition (Isotopic) calculation validation as well as the criticality calculation validation. Included in these validations are the use of the Depletion Computational Method, implementation of the Monte Carlo Uncertainty Sampling Method, and the use of critical experiment data. Questions on the basis of both proposed methodologies were raised and discussed during the course of the presentation.

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The meeting was also broadcast via video teleconferencing and through the webinar ‘Go to Meeting’ tool.

Enclosures:
List of Attendees & Meeting Slides

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NAME	D Cunanan	K Wood	A Ulses
DATE	02/01/11	02/01/11	02/01/11

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

LIST OF ATTENDEES

SPENT FUEL POOL CRITICALITY

September 21, 2010

Attended in Person

First Name	Last Name	Affiliation
Kent	Wood	NRC
Dale	Lancaster	Nuclear Consultants
Albert	Machiels	EPRI
Everett	Redmond	NEI
Meraj	Rahimi	NRC
Eli	Goldfeiz	NRC
Zhian	Li	NRC
Linda	Farrell	Areva
John	Kessler	EPRI
April	Pulvirenti	NRC
Veronica	Wilson	NRC
Tony	Attard	NRC
Amrit	Patel	NRC
Thomas	Morgan	NRC
Andrew	Proffitt	NRC
Vernon	Mills	GNF
Walid	Metwally	GNF
Vefa	Kucukboyaci	Westinghouse
Kris	Cummings	Westinghouse
Jim	Eller	Duke Energy
Robert	St. Clair	Duke Energy
Brian	Gutherman	ACI/NEI
Prakash	Narayanan	Transnuclear
Andrew	Gerlach	Transnuclear
Michel	Call	NRC
Daniel	Forsyth	NRC
Davida	Cunanan	NRC
Robb	Borland	FENOC
Anthony	Ulses	NRC
Andrew	Bielen	NRC
Chris	Van Wert	NRC
Tony	Nakanishi	NRC
Hodger	Pfeifer	NAC Intl
Georgeta	Radulescu	ORNL

ENCLOSURE

Ian	Gauld	ORNL
Richard	Lee	NRC
Tao	He	Holtec
P. Stefan	Anton	Holtec
John	Wagner	ORNL

Attended by phone or VTC:

First Name	Last Name	Affiliation
Kord	Smith	Studsvic
Don	Algama	NRC
Drew	Barto	NRC
Mourad	Aissa	NRC
Don	Mueller	ORNL