



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

December 30, 2013

MEMORANDUM TO: Bo M. Pham, Chief  
Subsequent Renewal, Guidance,  
and Operations Branch  
Division of License Renewal  
Office of Nuclear Reactor Regulation

FROM: Evelyn H. Gettys, Project Manager */RA/*  
Subsequent Renewal, Guidance,  
and Operations Branch  
Division of License Renewal  
Office of Nuclear Reactor Regulation

SUBJECT: MEETING BETWEEN THE U.S. NUCLEAR REGULATORY  
COMMISSION STAFF AND INDUSTRY TO DISCUSS  
SUBSEQUENT LICENSE RENEWAL GUIDANCE

The U.S. Nuclear Regulatory Commission (NRC) staff and representatives of the Electric Power Research Institute (EPRI) and Nuclear Energy Institute (NEI) met on December 5, 2013, to discuss subsequent license renewal (SLR) and long-term operation (LTO) topics. The agenda and slide presentations are available in the NRC's Agencywide Documents Access and Management System (ADAMS) under Accession No. ML13353A617. Enclosed is a list of the meeting participants.

The purpose of the meeting was for the staff to better understand the research that the industry will be completing to support an SLR application. This is the second of three planned work group meetings. The focus of this meeting was on concrete and LTO.

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A summary of the meeting is as follows:

EPRI presented several presentations on the research and studies being performed on the degradation and aging effects of concrete. The industry is seeking to provide the technical basis for understanding and predicting the long-term degradation of containments and concrete structures in nuclear power plants and the data and methods to assess their long-term performance. Three degradation mechanisms discussed in their presentations were irradiation of concrete, alkali silica reaction (ASR), and concrete creep. It is the goal of these studies to understand these and other degradation mechanisms and to determine at what rate degradation is occurring and thus provide a technical basis for operation from 60 to 80 years.

The NRC questioned if vibrational cumulative effects, like earthquakes, were being studied. Industry responded that at this time high-cycle vibrations are not part of the studies. The NRC was also interested if acceptance criteria have been developed for determining concrete degradation from such aging mechanisms as boric acid corrosion (for spent fuel pools) and ASR. Industry responded that their research is first focused on understanding the fundamentals of the aging mechanism and its progression and then on developing tools to measure and manage the degradation. The NRC expressed concern that the timeline for industry's research as shown in the EPRI aging management programs gap analysis will not support the development of NRC license renewal guidance documents in 2016 and the submittal of an SLR application in the 2018 timeframe as industry discussed at the meeting.

Enclosure:  
As stated

cc w/encl: Listserv

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**ADAMS ACCESSION No: ML13351A027**

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Memorandum to B. Pham from E. Gettys dated December 30, 2013

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**Meeting between the U.S. Nuclear Regulatory Commission Staff and the  
Nuclear Energy Institute to Subsequent License Renewal**

December 5, 2013

**Attendance List**

<b>PARTICIPANT</b>	<b>AFFILIATION</b>
Melanie Galloway	Nuclear Regulatory Commission (NRC)
Michael Marshall	NRC
Evelyn Gettys	NRC
Albert Wong	NRC
Butch Burton	NRC
Araceli Billoch-Colon	NRC
Bennett Brady	NRC
George Thomas	NRC
Jeff Mitchell	NRC
Madhumita Sircar	NRC
Makuteswara Srinivasan	NRC
Michael Fallin	CENG
Richard Tilley	EPRI
Lynne Godman	DTE Energy
John Twomey	Energy Northwest
Cliff Custer	FENOC
Eric Blocher	STARS
Rich Reister	DOE
Edward Carley	NextEra Energy - Seabrook
James Platte	NEI
Jon Hornbuckle	SNC
Massoud Tafazzoli	AREVA
Kathryn McCarthy	INL

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**PARTICIPANT**

Jason Remer  
Donald Williams  
Yann Le Pape  
Jeremy Busby  
Shannon Rafferty-Czinilce  
Bob Kalinowski  
Tina Taylor  
Dave Gerber  
Jennifer Correa  
Fred Polaski  
Abdolreza Ahrabli  
Mike Franklin  
Jacob Philip  
Herb Massic  
John Lindberg  
Sherry Bernhoft  
John O'Rourke  
David Kunsemiller  
Tony Harris

**AFFILIATION**

Nuclear Energy Institute (NEI)  
Oak Ridge National Lab  
ORNL  
ORNL  
Exelon  
AEP/ DC Cook  
EPRI  
Structural Integrity  
Structural Integrity  
Polaski Consulting LLC  
Entergy  
Duke Energy  
NRC/RES  
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