

A. 1b
Kusnick, Joshua

From: Csontos, Aladar
Sent: Thursday, September 20, 2012 11:23 AM
To: Gavrilas, Mirela; Case, Michael; Richards, Stuart
Subject: Re: impressions of the LWRS workshops

[REDACTED]
(b)(5)

From: Gavrilas, Mirela
To: Csontos, Aladar; Case, Michael; Richards, Stuart
Sent: Thu Sep 20 11:14:03 2012
Subject: RE: impressions of the LWRS workshops

Thanks for sharing, Al.

DOE prides itself on close working relationship that they have with EPRI in setting research direction for LWRS. Any thoughts why EPRI would support the directions Carol discussed below? Would the eventual success cover some glaring gaps? Would success down the road, i.e., beyond the period that NRC typically is concerned with, save the industry resources?

It is this kind of reasons that EPRI/DOE are giving for their research efforts in advanced materials, like the one Raj presented at the NRC-EPRI meeting a couple of weeks ago. The long term promise of important advances is fully consistent with DOE mission of promoting nuclear energy, and stimulating research.

M.

From: Csontos, Aladar
Sent: Thursday, September 20, 2012 11:03 AM
To: Gavrilas, Mirela; Case, Michael; Richards, Stuart
Subject: Fw: impressions of the LWRS workshops

Fyi. DOE seems to want to find initiation sites which is not a part of our regulatory framework at this time or anywhere in the future.

[REDACTED] (b)(5) [REDACTED]

From: Nove, Carol
To: Csontos, Aladar
Cc: Anderson, Michael T <Michael.Anderson@pnnl.gov>
Sent: Thu Sep 20 10:53:35 2012
Subject: Impressions of the LWRS workshops

Al,

c/sle

Per your request, here is a summary of Mike Anderson's and my impressions of the meeting at LWRS workshops back in August. Also, attached is the summary emails that were sent by the session Chairs.

Carol

The ORNL (DOE) approach appeared to be pre-determined, or at minimum, not very objective. In this regard, there were certain preconceived notions in place for long term degradation mechanisms and characterization methods. For example, core region neutron embrittlement was their number one priority for RPVs, even though they recognized that it would take much greater fluencies to degrade the RPV materials than are expected over the next license periods. We think it is more likely that there will be issues with material anomalies and/or fabrication defects that may become initiation sites for degradation that might affect integrity, such as with PTS. Yet, these are not being addressed. Further, we know from operational experience that fabrication flaws may provide initiation sites for significant degradation. These real-life issues were not on the table at this meeting. The type of issues they are proposing leads them to attempt to develop novel, untried, nontraditional NDE methods to determine the conditions of material at the lattice structure level – not what current NDE is capable of or what we actually do. As you can see from the attached, emerging NDE techniques such as non-linear acoustics were the type of high priority "NDE" methods being proposed for evaluation under ORNL's research program, but these methods are not on target for types of degradation that we expect to have to detect in the projected lifetimes of existing reactors.

Similarly, the workshop on piping was lead by ANL who are being promoted as experts in fatigue. Fatigue in piping in our operating nuclear plants has never been shown to be a problem. Although they acknowledge this, and want to include SCC in the mix, the NDE associated with fatigue may be very different than one would apply for SCC. As with the RPVs, novel, emerging NDE methods were proposed for detecting and characterizing damage/degradation at the microstructural level. Again, this is not what current NDE is capable of, nor is it addressing the issues we have at hand or on the near-horizon.

It seems that there are some political undercurrents driving the promotion of the materials (and subsequent NDE) research for LWRS. These may cause the outcomes to be off-target, with respect to current industry needs.

Carol A. Nove, Materials Engineer
NRC/RES/DE/CIB
301-251-7664
carol.nove@nrc.gov