NRR-PMDAPEm Resource

From: Mark Leyse <markleyse@gmail.com>

Sent: Monday, May 16, 2016 6:59 AM
To: Doyle, Daniel; Mohseni, Aby
Cc: Burnell, Scott; Bladey, Cindy; Dave Lochbaum; Gordon Thompson; Matthew G. McKinzie; Geoffrey Fettus; Thomas B. Cochran; Alemayehu, Bemnet; Ed Lyman; Robert Alvarez; Robert H. Leyse; Paul Gallay; Paul Gunter; Michel Lee; Mary Lampert; CHAIRMAN Resource; Valliere, Nanette; Moore, Johari; Patrick.Castlernan@nrc.gov; Frazier, Alan; Cubbage, Amy; Bloomer, Tamara; Krsek, Robert; michal_freedhoff@markey.senate.gov; Diane Curran
Subject: [External_Sender] Re: Re: Status of PRM-50-108

Dear Mr. Doyle:

Thank you for sending me the PDF.

The NRC's decision to deny PRM-50-108 seems to be based on **dogma**, rather than **science**. Your Federal Resister notice doesn't even mention the April 2000 letter from Dana A. Powers, Chairman of the Advisory Committee on Reactor Safeguards, to Richard A. Meserve, Chairman of the NRC, stating, "that nitrogen from air depleted of oxygen will interact exothermically with zircaloy cladding."

The April 2000 letter says that "The [NRC] staff analysis of the interaction of air with cladding *has relied on relatively geriatric work*. Much more is known now about air interactions with cladding" [emphasis added]. That was 16 years ago! And since then the NRC has done nothing but persist in relying on geriatric work for its analyses of spent fuel pool accidents.

(Please see pages 3 and 4 of the April 2000 letter, available at: http://www.nrc.gov/docs/ML0037/ML003704532.pdf)

I quoted from the the April 2000 letter on page 3 of my cover letter and on pages 5, 25, and 38 of PRM-50-108. (Please see PRM-50-108: http://www.nrc.gov/docs/ML1419/ML14195A388.pdf)

Dogma:

Here is an example of dogma from the NRC's Federal Register notice: "The MELCOR computer code is the NRC's best estimate tool for severe accident analysis. It has been validated against experimental data, and it represents the current state of the art in severe accident analysis."

(Please see page 29764 of the Federal Register notice: https://www.gpo.gov/fdsys/pkg/FR-2016-05-13/pdf/2016-11212.pdf)

The NRC's claim is not supported by facts.

Science:

As I state on page 29 of PRM-50-108, the Paul Scherrer Institute recently assessed MELCOR 1.8.6's ability to predict fuel-cladding behavior in accidents involving air ingress into the reactor vessel—which is pertinent to MELCOR's ability to predict zirconium-air reaction rates in spent fuel pool fires—and "concluded that

development of MELCOR was needed to *capture the accelerated cladding oxidation that can take place under air ingress conditions* (characterized by transition from formation of a protective oxide film to non-protective 'breakaway' oxidation at a significantly higher rate)" [emphasis added].

I request that the NRC reconsider its decision to deny PRM-50-108.

If there is a scientific foundation for denying PRM-50-108, please explain it.

If the ACRS was incorrect in 2000 that the NRC has relied on relatively geriatric work for its analysis of the interaction of air with cladding, please explain why.

In 2000, the ACRS pointed out that the effects of nitrogen were not modeled by the NRC. To this date, MELCOR still does not model how nitrogen would effect fuel cladding in a spent fuel pool fire. That is one of the reasons why I submitted PRM-50-108.

Sincerely,

Mark Leyse

P.S. Please place this letter in ADAMS.

On Fri, May 13, 2016 at 10:13 AM, Doyle, Daniel <Daniel.Doyle@nrc.gov> wrote:

> Mr. Leyse,
>
> Here is the PDF. The notice is also available at the following link:
>
> https://federalregister.gov/a/2016-11212
>
> Sincerely,
>
> Dan Doyle
>
> Project Manager
>
> U.S. Nuclear Regulatory Commission
>
> daniel.doyle@nrc.gov
>
> (301) 415-3748

From: Doyle, Daniel
Sent: Wednesday, May 11, 2016 5:08 PM
To: 'Mark Leyse' <markleyse@gmail.com>
Cc: Burnell, Scott <Scott.Burnell@nrc.gov>; Bladey, Cindy <Cindy.Bladey@nrc.gov>
Subject: RE: Re: Status of PRM-50-108

Mr. Leyse,

Yes. I expect it to be available on Friday.

Sincerely,

Dan Doyle

Project Manager

U.S. Nuclear Regulatory Commission

daniel.doyle@nrc.gov

(301) 415-3748

From: Mark Leyse [mailto:markleyse@gmail.com]
Sent: Wednesday, May 11, 2016 4:57 PM
To: Doyle, Daniel <Daniel.Doyle@nrc.gov>
Cc: Burnell, Scott <Scott.Burnell@nrc.gov>; Bladey, Cindy <Cindy.Bladey@nrc.gov>
Subject: [External_Sender] Re: Status of PRM-50-108

Dear Mr. Doyle:

Would you please send me a PDF copy of the Federal Register notice when it's available?

Thank you,

Mark Leyse

On Tue, May 10, 2016 at 12:34 PM, Doyle, Daniel <Daniel.Doyle@nrc.gov> wrote:

> Mr. Leyse,
>
> The NRC has completed its evaluation of PRM-50-108, and a notice will be published in the *Federal Register* within the next few days. Also, you should receive very soon a letter signed by the Secretary of the Commission.
>
> Sincerely,
>
> Dan Doyle
>
> Project Manager
>
> U.S. Nuclear Regulatory Commission
>
> daniel.doyle@nrc.gov
>
> (301) 415-3748
>
> ---
>
> **From:** Doyle, Daniel
> **Sent:** Friday, January 15, 2016 1:07 PM
> **To:** 'markleyse@gmail.com' (markleyse@gmail.com) <markleyse@gmail.com>
> **Cc:** Burnell, Scott <Scott.Burnell@nrc.gov>; Bladey, Cindy <Cindy.Bladey@nrc.gov>; Inverso, Tara <Tara.Inverso@nrc.gov>
> **Subject:** Status of PRM-50-108
>
> Mr. Leyse,

I am writing to provide an update on your letter dated June 19, 2014, in which you submitted a petition for rulemaking to the U.S. Nuclear Regulatory Commission (NRC). In your letter, you requested that the NRC develop new regulations requiring that (1) spent fuel pool (SFP) accident evaluation models use data from multi-rod bundle (assembly) severe accident experiments for calculating the rates of energy release, hydrogen generation, and fuel cladding oxidation from the zirconium-steam reaction; (2) SFP accident evaluation models use data from multi-rod bundle (assembly) severe accident experiments conducted with pre-oxidized fuel cladding for calculating the rates of energy release (from both fuel cladding oxidation and fuel cladding nitriding), fuel cladding oxidation, and fuel cladding nitriding from the zirconium-air reaction; (3) SFP accident evaluation models be required to conservatively model nitrogen-induced breakaway oxidation behavior; and (4) licensees be required to use conservative SFP accident evaluation models to perform annual SFP safety evaluations of: postulated complete loss-of-coolant accident (LOCA) scenarios, postulated partial LOCA scenarios, and postulated boil-off accident scenarios.

The NRC docketed your letter as petition for rulemaking (PRM) 50-108. A notice of docketing was published in the *Federal Register* on October 7, 2014 (79 FR 60383).

The NRC is evaluating the petition. Once the petition has been resolved, the NRC will publish a notice in the *Federal Register* explaining the NRC's finding. You will also receive a letter at that time notifying you of the action the NRC has taken.

Please contact me at Daniel.Doyle@nrc.gov or (301) 415-3748 if you have any questions.

Sincerely,

Dan Doyle

Project Manager

U.S. Nuclear Regulatory Commission

daniel.doyle@nrc.gov

(301) 415-3748

Hearing Identifier: NRR_PMDA
Email Number: 2847

Mail Envelope Properties (CAGE_aw2qw4iykfXNVMoK4R6FhNAezzybA-8Bo15bvQC0fc23NQ)

Subject: [External_Sender] Re: Re: Status of PRM-50-108
Sent Date: 5/16/2016 6:58:48 AM
Received Date: 5/16/2016 6:58:52 AM
From: Mark Leyse

Created By: markleyse@gmail.com

Recipients:
"Burnell, Scott" <Scott.Burnell@nrc.gov>
Tracking Status: None
"Bladey, Cindy" <Cindy.Bladey@nrc.gov>
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"Dave Lochbaum" <dlochbaum@ucsusa.org>
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"Gordon Thompson" <gthompson@irss-usa.org>
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Tracking Status: None
"Doyle, Daniel" <Daniel.Doyle@nrc.gov>
Tracking Status: None
"Mohseni, Aby" <Aby.Mohseni@nrc.gov>
Tracking Status: None

Post Office: mail.gmail.com

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MESSAGE	7688	5/16/2016 6:58:52 AM

Options
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Sensitivity: Normal
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