

**From:** Mohseni, Aby  
**Sent:** Wednesday, October 28, 2015 11:44 AM  
**To:** Mark Leyse  
**Cc:** CHAIRMAN Resource; CMRSVINICKI Resource; CMROSTENDORFF Resource; CMRBARAN Resource; bobleyse@aol.com; shadis@prexar.com; Burnell, Scott; Bladey, Cindy; DeJesus, Anthony; Inverso, Tara; dlochbaum@ucsusa.org; elyman@ucsusa.org; michal\_freedhoff@markey.senate.gov; mmckinzie@nrdc.org; tcochran@nrdc.org; gfettus@nrdc.org; balemayehu@nrdc.org; DBrancato@riverkeeper.org; PGallay@riverkeeper.org; Dean, Bill; Johnson, Michael; jim.riccio@greenpeace.org; william.freebairn@platts.com; bpanko@eenews.net; Doyle, Daniel  
**Subject:** Status of PRM-50-93/95

Mr. Leyse,

As you know and as noted in Press Release No. 11-158, the NRC is following the unique process established to provide increased transparency during its evaluation of PRM-50-93/95. We continue to evaluate the requests in your original petitions and formal comments received during the comment periods. However, due to limited resources and the need to balance time spent responding to your email queries while evaluating the petitions, we may not be able to respond to all of your emails. The NRC staff is providing the responses below to the clarification questions in your email dated 10/16/15.

The NRC does not typically release preliminary conclusions about petitions for rulemaking. However, for the combined review of these petitions, the NRC decided to increase transparency by publicly releasing "draft interim reviews." The four released documents are available at <https://www.regulations.gov> by searching for NRC-2009-0554. The NRC is not soliciting public comments on these interim conclusions and will not provide a formal response to any comments received. The NRC's findings on PRM-50-93/95 issues will not be final until the NRC publishes a notice of final action on this petition for rulemaking in the Federal Register.

#### Responses to your questions

*Were the TRACE results the peak cladding temperature (PCT) at each of the five different elevations?*

The TRACE results presented in the draft interim review are not the peak cladding temperature at the different elevations. TRACE is not a subchannel code and predicts an average temperature at a particular elevation for a fuel rod component which represents multiple actual heater rods. Data at a particular elevation has some variation due to non-uniformity in flow, housing effect, and radial power distribution. In Test 9573, the local power at an elevation did have variations by design in order to mimic an actual fuel bundle. For the results in the draft interim review, the comparison is made between the TRACE "average" rod and the average of the available thermocouples at that elevation. In a licensed Evaluation Model, one would capture the radial power distribution with an appropriate peaking factor or with a specific "hot rod." Note that the TRACE code is not used in any licensing calculations and was used here in order to examine the conservatism in the Baker-Just and Cathcart-Pawel correlations and to demonstrate the adequacy of these models when used for complex thermal-hydraulic calculations.

*Was the value of 1,598.4 K that TRACE predicted (using Baker-Just) the PCT at the six foot elevation?*

As stated above, the TRACE predicted values are the average at a given elevation and not the PCT. For Test 9573, the highest temperature recorded by the three thermocouples at the six foot elevation (during the 18 seconds when the data is considered valid) was 1,544 K. This is bounded by the TRACE "average" temperature predictions when metal-water reaction is accounted for with either the Cathcart-Pawel or Baker-Just models.

Respectfully,

Aby Mohseni

Deputy Director  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission

**From:** Mark Leyse [<mailto:markleyse@gmail.com>]

**Sent:** Wednesday, October 21, 2015 4:10 PM

**To:** Doyle, Daniel

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**Subject:** [External\_Sender] Re: Re: Status of PRM-50-93/95

Dear Mr. Doyle:

With all due respect, I do not understand why you cannot clarify that TRACE predicted the **peak** cladding temperature at each elevation.

The NRC's "Draft Interim Review" (in ADAMS at ML12265A277) states: "Results for the TRACE simulations are listed in Table 1, which shows **the cladding temperatures** at five elevations 18 seconds into the transient."

In TRACE simulations of loss-of-coolant accidents, one is usually concerned with the **peak** cladding temperature. Please clarify that the TRACE simulation did indeed predict the **peak** cladding temperature at each elevation.

Again, with all due respect, I would like to remind you that on August 25, 2011, the NRC issued Press Release No. 11-158, regarding Petition for Rulemaking, PRM-50-93/95. The press release is in ADAMS at ML11237A083.

Press Release No. 11-158 states: "To increase transparency and meet public interest, the NRC will soon begin posting preliminary conclusions and other material related to a petition [PRM-

50-93/95] about NRC regulations for reactor core emergency cooling systems. We are doing so because of...the goal of providing a more transparent review process."

**The NRC states that it has "the goal of providing a more transparent review process."** I believe it would be in the interest of increasing transparency, if you clarified that TRACE predicted the **peak** cladding temperature at each elevation.

Thank you,

Mark Leyse