

July 19, 2012

CCN 227952  
NRC Project #0748

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555

SUBJECT: Contract No. DE-AC07-05ID14517 – Next Generation Nuclear Plant Submittal -Additional Information in Support of NRC Assessment Report Follow-Up Items Regarding Fuel Qualification/Mechanistic Source Terms – NRC Project # 0748

This letter contains web addresses for documents provided in support of resolution of various follow-up items contained in the NRC Assessment Report on the NGNP Fuel Qualification and Mechanistic Source Terms white papers<sup>1</sup>. These items were previously discussed during the April 17, 2012, public meeting at NRC Headquarters<sup>2</sup>.

Additional information for follow-up item FQ/MST-14 is found in three documents containing pretest predictions for AGR-1 and AGR-2:

- EDF-5741, "Advanced Gas Reactor-1 Pre-Test Prediction Analyses Using the PARFUME Code," Rev. 1, May 2007. [https://inlportal.inl.gov/portal/server.pt/directory/year\\_2007/621?DirMode=1](https://inlportal.inl.gov/portal/server.pt/directory/year_2007/621?DirMode=1)
- ECAR-1020, "AGR-2 Pre-Test Prediction Analyses Using the PARFUME Code for the U.S. Fuel Particles," Rev. 2, May 2012. [https://inlportal.inl.gov/portal/server.pt/directory/year\\_2012/2947?DirMode=1](https://inlportal.inl.gov/portal/server.pt/directory/year_2012/2947?DirMode=1)
- INL/EXT-12-26014, *AGR-1 Safety Test Predictions Using the PARFUME Code*, May 2012. [https://inlportal.inl.gov/portal/server.pt/directory/year\\_2012/2947?DirMode=1](https://inlportal.inl.gov/portal/server.pt/directory/year_2012/2947?DirMode=1)

Regarding additional information for follow-up item FQ/MST-15, the reports related to detailed thermal and physics calculations for AGR-1 are:

- ECAR-958, "JMOCUP As-Run Daily Depletion Calculation for the AGR-1 Experiment in ATR B-10 Position," Rev. 1, August 2011. [https://inlportal.inl.gov/portal/server.pt/directory/year\\_2011/2820?DirMode=1](https://inlportal.inl.gov/portal/server.pt/directory/year_2011/2820?DirMode=1)
- ECAR-968, "AGR-1 Daily As-Run Thermal Analyses," Rev. 2, January 2012. [https://inlportal.inl.gov/portal/server.pt/directory/year\\_2012/2947?DirMode=1](https://inlportal.inl.gov/portal/server.pt/directory/year_2012/2947?DirMode=1)

<sup>1</sup> Mayfield, Michael E. "Next Generation Nuclear Plant--Assessment of White Papers on Fuel Qualification, Mechanistic Source Terms, Defense-in-depth Approach, Licensing Basis Event Selection, and Safety Classification of Systems, Structures, and Components." Letter to Mr. Jim Kinsey. 15 Feb. 2012. ML120240651

<sup>2</sup> "ML12104A212 - 04/17/2012 - Assessment Report - First NRC Meeting (7 Page(s), 4/13/2012)." 04/13/12 - Notice of Public Meeting to Discuss NGNP Fuel Qualification and Mechanistic Source Terms. 13 May 2012.

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Regarding additional information for follow-up item FQ/MST-16, the following reports related to thermocouple performance and related uncertainty for AGR-1 are provided:

- INL/EXT-12-24761, *AGR-1 Thermocouple Data Analysis*, May 2012.  
[https://inlportal.inl.gov/portal/server.pt/directory/year\\_2012/2947?DirMode=1](https://inlportal.inl.gov/portal/server.pt/directory/year_2012/2947?DirMode=1)
- INL EXT-12-25169, *Uncertainty Quantification of Calculated Temperatures for the AGR-1 Experiment*, April 2012.  
[https://inlportal.inl.gov/portal/server.pt/directory/year\\_2012/2947?DirMode=1](https://inlportal.inl.gov/portal/server.pt/directory/year_2012/2947?DirMode=1)

Additional information that addresses follow-up items FQ/MST-14, 15, and 16 is also provided in:

- INL-EXT-10-18097 Rev. 1, *AGR-1 Irradiation Test Final As-Run Report*, June 2012.  
[https://inlportal.inl.gov/portal/server.pt/directory/year\\_2012/2947?DirMode=1](https://inlportal.inl.gov/portal/server.pt/directory/year_2012/2947?DirMode=1)

Regarding additional information for follow-up item FQ/MST-17, the results of ORIGEN calculations of short and long-lived fission products can be found in:

- TEV-1543, "Delayed Heatup Testing," Revision 0, May 2012.  
[https://inlportal.inl.gov/portal/server.pt/directory/year\\_2012/2947?DirMode=1](https://inlportal.inl.gov/portal/server.pt/directory/year_2012/2947?DirMode=1)
- TEV-1543, "Delayed Heatup Testing," Revision 1, June 2012.  
[https://inlportal.inl.gov/portal/server.pt/directory/year\\_2012/2947?DirMode=1](https://inlportal.inl.gov/portal/server.pt/directory/year_2012/2947?DirMode=1)

Please note that both Revision 0 and Revision 1 of TEV-1543 are included. Revision 1 of the document provides more extensive detailed information regarding the results of the ORIGEN calculations, in response to previous dialogue with the NRC staff on this topic.

Regarding additional information for follow-up item FQ/MST-28, information about moisture and air ingress effects testing plans is provided in:

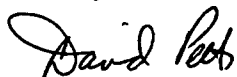
- PLN-4086, "Research Plan for Moisture and Air Ingress Experiments," Rev. 1, May 2012.  
[https://inlportal.inl.gov/portal/server.pt/directory/year\\_2012/2947?DirMode=1](https://inlportal.inl.gov/portal/server.pt/directory/year_2012/2947?DirMode=1)

The information in PLN-4086 is also relevant to the issues raised in follow-up items FQ/MST-26 and FQ/MST-27.

Document Control Desk  
July 19, 2012  
CCN 227952  
Page 3

If you have any questions please contact me at (208) 526-7735 or call Jim Kinsey, Director of Regulatory Affairs, at (208) 569-6751.

Sincerely,



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