

June 5, 2018

MEMORANDUM TO: Dennis C. Morey, Chief  
Licensing Processes Branch  
Division of Licensing Projects  
Office of Nuclear Reactor Regulation

FROM: J. Andrew Proffitt, Project Manager */RA/*  
Licensing Processes Branch  
Division of Licensing Projects  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MAY 4, 2018, PUBLIC MEETING WITH U.S.  
DEPARTMENT OF ENERGY ON ACCIDENT TOLERANT FUEL

On May 4, 2018, the U.S. Nuclear Regulatory Commission (NRC) staff held a public meeting at Idaho National Laboratory to highlight key interactions of the U.S. Department of Energy (DOE)/NRC Accident Tolerant Fuel (ATF) Coordination Workshop that took place May 1-4, 2018. The workshop, conducted in accordance with the provisions of the NRC/DOE memorandum of understanding, provided NRC staff with a high-level, holistic view of the DOE-sponsored ATF program.

The workshop began with tours of the Idaho National Laboratory (INL) facilities that related to DOE's ATF program. These facilities included the Experimental Fuels Facility (EFF), Hot Fuel Examination Facility (HFEF), Irradiated Materials and Characterization Laboratory (IMCL), Transient Reactor Test (TREAT) facility, and the Advanced Test Reactor (ATR). DOE staff then gave an overview of the Advanced Fuels Campaign program and a background on ATF work at DOE as well as an overview of the Nuclear Energy Advanced Modeling and Simulation (NEAMS) effort.

NRC gave presentations on the ATF project plan, near-term ATF priorities, and initial thoughts on conducting phenomena identification and ranking table (PIRT) exercises for near-term ATF concepts. NRC staff also presented an overview of the vendor inspection program, which is being explored as a possible option for giving lasting regulatory durability to ATF testing programs.

DOE updated the staff on the status of research and development efforts related to advanced cladding and fuels, an overview and status of ATF testing programs, and advanced post irradiation examination capabilities being developed at INL.

CONTACT: J. Andrew Proffitt, NRR/DLP/PLPB  
(301) 415-1418

Finally, DOE presented on several advanced modelling and simulation capabilities that may assist in the development, and potentially the licensing, of ATF concepts. This included analysis of ATF using coupled TRACE – BISON, simulation capabilities of fission gas release in doped UO<sub>2</sub> fuel, and computational fluid dynamics (CFD) simulations of complex geometry fuel.

The following action items from the workshop were noted:

- DOE/NRC: Finalize points of contact list for major ATF areas
- NRC: Develop a strategy for NRC staff to engage DOE on their advanced codes

The public was then given an opportunity to participate in the meeting with questions or comments for the NRC staff. There were no comments or questions from the public.

NRC management concluded the meeting highlighting the clarity brought by the meeting and thanking DOE and INL staff for hosting the workshop.

#### Meeting Participants

Andrew Proffitt, NRC  
Ray Lorson, NRC  
Mirela Gavrilas, NRC  
Jane Marshall, NRC  
Rebecca Karas, NRC  
Shaun Anderson, NRC

Steve Hayes, INL  
Kate Richardson, INL  
Bill McCaughey, DOE  
Frank Goldner, DOE  
Brayton Ford, DOE

SUBJECT: SUMMARY OF MAY 4, 2018, PUBLIC MEETING WITH U.S. DEPARTMENT OF ENERGY ON ACCIDENT TOLERANT FUEL DATE: JUNE 5, 2018

**DISTRIBUTION:**

PUBLIC	RidsNrrDssSnpb	RidsNrrDss	DMorey, NRR
RidsNrrLADHarrison	RidsNrrDlpPlpb	RidsResDSA	AProffitt, NRR
RidsOgcMailCenter	RidsNrrDlp	RidsACRS_MailCTR	JeWhitman, NRR

**ADAMS Accession Nos.: ML18149A641                      \*concurrence via e-mail                      NRC-001**

<b>OFFICE</b>	<b>NRR/DLP/PLPB/PM*</b>	<b>NRR/DLP/PLPB/BC</b>	<b>NRR/DSS/SRXB/BC</b>	<b>NRR/DLP/PLPB/PM</b>
<b>NAME</b>	AProffitt	DMorey	JWhitman	AProffitt
<b>DATE</b>	6/1/2018	6/1/2018	6/1/2018	6/5/2018

**OFFICIAL RECORD COPY**