

LA-UR-20-25889

Approved for public release; distribution is unlimited.

Title: Subject: Trip Report for ICSBEP/IRSN Meeting/IRPhEP 2019

Author(s): Thompson, Nicholas William

Intended for: Memo

Issued: 2020-08-04

Disclaimer:

Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by Triad National Security, LLC for the National Nuclear Security Administration of U.S. Department of Energy under contract 89233218CNA000001. By approving this article, the publisher recognizes that the U.S. Government retains nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or to allow others to do so, for U.S. Government purposes. Los Alamos National Laboratory requests that the publisher identify this article as work performed under the auspices of the U.S. Department of Energy. Los Alamos National Laboratory strongly supports academic freedom and a researcher's right to publish; as an institution, however, the Laboratory does not endorse the viewpoint of a publication or guarantee its technical correctness.



memorandum

Advanced Nuclear Technology Group NEN-2

To: Johnna Marlow, NEN-2, MS B228
Thru: Joetta Goda, NEN-2, MS B228
From: Nicholas Thompson, NEN-2, MS P363
Phone: 505-667-2417, 505-309-6400
Symbol: NEN-2: 20-019
Date: July 29, 2020

Subject: Trip Report for ICSBEP/IRSN Meeting/IRPhEP 2019

During October of 2019, Jesson Hutchinson, Kelsey Amundson, Geordie McKenzie, Nicholas Thompson, and Alexander McSpaden traveled to Paris, France for the International Benchmarks Annual Technical Review Group Meeting, which took place at the OECD NEA from October 21 – 25. The first two days (October 21st and 22nd) of the meeting were the Technical Review Group Meetings for the International Criticality Safety Benchmark Evaluation Project (ICSBEP). October 24th and 25th were the International Reactor Physics Experiment Evaluation Project (IRPhEP) Technical Review Group meeting. Attached is the Final Agenda for those meetings. On October 23rd, the LANL team met with representatives from the Institut de Radioprotection et de Sûreté Nucléaire (Institute for Radiation Protection and Nuclear Safety, or IRSN).

ICSBEP

During the ICSBEP meetings, the Technical Review Group (including the members of the LANL team) reviewed both revisions of existing evaluations (LEU-COMP-THERM-074) and reviewed the approvals of new evaluations (SUB-LEU-COMP-THERM-003, LEU-COMP-THERM-101, LEU-SOL-THERM-013, PU-SOL-THERM-041, PU-MET-MIXED-002, HEU-MET-FAST-101). HEU-MET-FAST-101 is the designator for the “KRUSTY: Beryllium-Oxide and Stainless-Steel Reflected Cylinder of HEU Metal” (KRUSTY) proposed benchmark from LANL. Although the HEU-MET-FAST-101 benchmark was not approved at the meeting, there was a considerable amount of good feedback that was given to the LANL team so that it could be revised and submitted next meeting. This feedback has been forwarded to the team working on the KRUSTY benchmark and they have been working to address the issues and concerns raised during the meeting.

Geordie McKenzie was also an independent reviewer on the SUB-LEU-COMP-THERM-003 proposed benchmark lead by Adimir dos Santos, which was approved with revisions. The PU-MET-MIXED-002 benchmark, “TEX Plutonium Baseline Assemblies: Plutonium/Aluminum Metal Alloy Plated with Varying Thicknesses of Polyethylene Moderator and a Thin Polyethylene Reflector” lead by Catherine Percher was also discussed at length, and the end, a subgroup was created to review on the benchmark, and Geordie McKenzie and Theresa Cutler volunteered to be on the subgroup.

Additionally, there was general discussion at the end of the meeting covering a range of topics. Two topics of note at the JAEA/LANL – Pb-Void Collaborative Experiments which Kelsey Amundson, Alexander McSpaden, and JAEA’s Oizumi-san jointly gave a presentation on

(presentation is attached). The other topic of note was work being undertaken by WPNCS Subgroup 8 on Review and Classification of Benchmark Quality. Independently of this effort, a team at LANL lead by Denise Neudecker (including some NEN-2 members) have been working on identifying low quality and/or questionable benchmarks using a variety of tools including machine learning techniques. A paper on this effort is currently in review and should be published soon.

ISRN Meeting

NEN-2 historically has not been very involved in the Shielding Integral Benchmark Archive Database (SINBAD) project, so although the SINBAD Technical Review Group Meeting was held on October 23rd, the LANL team opted to set up a meeting with representatives from IRSN. Isabelle Duhamel, Stephane Evo, and Eric Dumonteil. During this meeting, the LANL and IRSN teams discussed potential and ongoing collaborations, including measurements of de-coupled systems, the RPI RCF clustering work, the MUSIC experiment series, and other high priority measurements for IRSN and LANL.

Note: Stephane Evo has since taken a new position at IRSN, leading the Department of Nuclear Security and Malicious Acts and Eric Dumonteil has left IRSN to work at Le Commissariat à l'énergie atomique et aux énergies alternatives (The French Alternative Energies and Atomic Energy Commission, or CEA).

IRPhEP

Similar to the ICSBEP meeting, during the IRPhEP meeting, reviews of new evaluations and revisions or additions to existing benchmarks were discussed, including MSRE-MSR-RESR-001, LR(0)-VVER-RESR-005, LR(0)-FUND-RESR-002, TREAT-FUND-RESR-003, and ZPR-GCFR-EXP-001.

Attachment(s): Final-Agenda-2019.pdf
 Experiment_Overview_ICSBEP_combined.pptx

NT:nt

Copy: Johnna Marlow, NEN-2, jmarlow@lanl.gov
 Joetta Goda, NEN-2, jgoda@lanl.gov
 Nicholas Thompson, NEN-2, nthompson@lanl.gov
 Jesson Hutchinson, NEN-2, jesson@lanl.gov
 Kelsey Amundson, NEN-2, kamundson@lanl.gov
 Geordie McKenzie, NEN-2, gmckenzie@lanl.gov
 Alexander McSpaden, NEN-2, mcspaden@lanl.gov