



**NUCLEAR CRITICALITY SAFETY PROGRAM (NCSP)
TECHNICAL PROGRAM REVIEW
February 23-25, 2021
Hosted by: Oak Ridge National Laboratory
Virtual Meeting**

AGENDA

| Time (Pacific) | Time (Mountain) | Time (Central) | Time (Eastern) | Time (GMT) | NCSP SITE | TOPIC/PRESENTATION TITLE | PRESENTER | DURATION (Min.) |
|----------------|-----------------|----------------|----------------|------------|-----------|--------------------------|-----------|-----------------|
|----------------|-----------------|----------------|----------------|------------|-----------|--------------------------|-----------|-----------------|

Tuesday, February 23, 2021

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|------|------|------|------|-------|------|--|-----------------|------|
| 6:00 | 7:00 | 8:00 | 9:00 | 14:00 | NCSP | Welcome from NCSP | Angela Chambers | 0:05 |
| 6:05 | 7:05 | 8:05 | 9:05 | 14:05 | NCSP | The NCSP and the Purpose of the Technical Program Review | Doug Bowen | 0:10 |
| 6:15 | 7:15 | 8:15 | 9:15 | 14:15 | NCSP | The DOE CSSG: 2020 the Year in Review | David Hayes | 0:10 |

NCSP MANAGER INVITED SITE REPORTS

| | | | | | | | | |
|------|------|-------|-------|-------|------|--|----------------------|------|
| 6:25 | 7:25 | 8:25 | 9:25 | 14:25 | BNL | | David Brown | 0:15 |
| 6:40 | 7:40 | 8:40 | 9:40 | 14:40 | LANL | | Joetta Goda | 0:15 |
| 6:55 | 7:55 | 8:55 | 9:55 | 14:55 | LLNL | | David Heinrichs | 0:15 |
| 7:10 | 8:10 | 9:10 | 10:10 | 15:10 | MSTS | | Syliva Wright-Reeder | 0:15 |
| 7:25 | 8:25 | 9:25 | 10:25 | 15:25 | ORNL | | Doug Bowen | 0:15 |
| 7:40 | 8:40 | 9:40 | 10:40 | 15:40 | RPI | | Yaron Danon | 0:15 |
| 7:55 | 8:55 | 9:55 | 10:55 | 15:55 | SNL | | Gary Harms | 0:15 |
| 8:10 | 9:10 | 10:10 | 11:10 | 16:10 | SRS | | David Erickson | 0:15 |
| 8:25 | 9:25 | 10:25 | 11:25 | 16:25 | Y-12 | | Kevin Reynolds | 0:15 |

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|------|------|-------|-------|-------|--|--------------|--|------|
| 8:40 | 9:40 | 10:40 | 11:40 | 16:40 | | Break | | 0:15 |
|------|------|-------|-------|-------|--|--------------|--|------|

INTERNATIONAL COLLABORATIONS

| | | | | | | | | |
|-------|-------|-------|-------|-------|-----------|--|--|------|
| 8:55 | 9:55 | 10:55 | 11:55 | 16:55 | AWE | Technical Program Review | Matthew Harker | 0:20 |
| 9:15 | 10:15 | 11:15 | 12:15 | 17:15 | IRSN | IRSN Work in Support of NCSP : status and proposals | Sophie Pignet | 0:20 |
| 9:35 | 10:35 | 11:35 | 12:35 | 17:35 | JRC/GEEL | Nuclear Data at GELINA in support to Criticality Safety | Peter Schillebeeckx | 0:20 |
| 9:55 | 10:55 | 11:55 | 12:55 | 17:55 | CEA | Overview of CEA DES Criticality-Safety Activities | Jean-Christophe Trama, Coralie Carmouze | 0:20 |
| 10:15 | 11:15 | 12:15 | 13:15 | 18:15 | OECD- NEA | Current activities in the NEA Nuclear Science Committee relevant to the NCSP | Julie-Fiona Martin | 0:20 |

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| 10:35 | 11:35 | 12:35 | 13:35 | 18:35 | | Lunch | | 0:55 |
|-------|-------|-------|-------|-------|--|--------------|--|------|

FY20 ANALYTICAL METHODS TECHNICAL PRESENTATIONS

| | | | | | | | | |
|-------|-------|-------|-------|-------|------|---|---------------|------|
| 11:30 | 12:30 | 13:30 | 14:30 | 19:30 | LANL | Verification of the Re-Released ENDF/B-VIII.0 Based Thermal Scattering Libraries | Kent Parsons | 0:20 |
| 11:50 | 12:50 | 13:50 | 14:50 | 19:50 | LANL | Physics Improvements for Criticality Calculations with MCNP6.3 | Forrest Brown | 0:20 |
| 12:10 | 13:10 | 14:10 | 15:10 | 20:10 | LANL | Analytic Insights into the Neutronic Characteristics of Neutron Moderators from MCNP Calculations | Kent Parsons | 0:20 |
| 12:30 | 13:30 | 14:30 | 15:30 | 20:30 | LANL | NJOY21 Release: RECONR, THERMR, and LEAPR | Jeremy Conlin | 0:20 |



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|----------------|-----------------|----------------|----------------|------------|---|---|---------------------|-----------------|
| 12:50 | 13:50 | 14:50 | 15:50 | 20:50 | LANL / University of Michigan | Uniformly Ordered Binary Decision Algorithm for Benchmark Experiment Correlations in Whisper Validation | Brian Kiedrowski | 0:20 |
| 13:10 | 14:10 | 15:10 | 16:10 | 21:10 | LANL | MCNP6® Recent Updates on Modernization, R&D, and Release Plans | Mike Rising | 0:20 |
| 13:30 | 14:30 | 15:30 | 16:30 | 21:30 | Break | | | 0:15 |
| 13:45 | 14:45 | 15:45 | 16:45 | 21:45 | ORNL | AMPX Development | Andrew Holcomb | 0:20 |
| 14:05 | 15:05 | 16:05 | 17:05 | 22:05 | ORNL | Radiation Safety Information Computational Center (RSICC) | Tim Valentine | 0:20 |
| 14:25 | 15:25 | 16:25 | 17:25 | 22:25 | ORNL | Nuclear Data and Cross Section Testing Using ENDF/B-VIII.0 | Travis Greene | 0:20 |
| 14:45 | 15:45 | 16:45 | 17:45 | 22:45 | ORNL/MIT | Preliminary Results for Temperature-Dependent Propagation of Resonance Parameter Uncertainty | Isaac Meyer | 0:20 |
| 15:05 | 16:05 | 17:05 | 18:05 | 23:05 | ORNL | Overview of SCALE Activities during FY20 | William Wieselquist | 0:20 |
| 15:25 | 16:25 | 17:25 | 18:25 | 23:25 | END OF TUESDAY TPR PRESENTATIONS | | | |

Wednesday, February 24, 2021

FY20 INFORMATION PRESERVATION AND DISSEMINATION TECHNICAL PRESENTATIONS

| | | | | | | | | |
|------|------|------|------|-------|------|--|----------------|------|
| 6:00 | 7:00 | 8:00 | 9:00 | 14:00 | ORNL | FY20 ORNL IPD7 - Howard Dyer Library Preservation Task - Status Report | Doug Bowen | 0:20 |
| 6:20 | 7:20 | 8:20 | 9:20 | 14:20 | ORNL | Oak Ridge Health Physics Research Reactor CAAS Benchmark Evaluation | Mathieu Dupont | 0:20 |
| 6:40 | 7:40 | 8:40 | 9:40 | 14:40 | SRS | CritView – Version 1.04 – Public Release | Scott Finrock | 0:20 |

FY20 INTEGRAL EXPERIMENTS TECHNICAL PRESENTATIONS

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|-------|-------|-------|-------|-------|--------------|--|----------------------------------|-------------|
| 7:00 | 8:00 | 9:00 | 10:00 | 15:00 | LANL | Benchmark Updates: KRUSTY, Class Foils, CURIE, and JAEA Collaborations | Jesson Hutchinson | 0:20 |
| 7:20 | 8:20 | 9:20 | 10:20 | 15:20 | LANL | Godiva Experiments in FY20: Multiphysics (IER 268) and CAAS Testing (IER 497) | Joetta Goda | 0:20 |
| 7:40 | 8:40 | 9:40 | 10:40 | 15:40 | Break | | | 0:15 |
| 7:55 | 8:55 | 9:55 | 10:55 | 15:55 | LANL | Copper Critical Experiment CED-1 Progress | Kelsey Amundson | 0:20 |
| 8:15 | 9:15 | 10:15 | 11:15 | 16:15 | LANL | MUSIC: Measurement of Uranium Subcritical and Critical (IER 488) | Rob Weldon/Geordie McKenzie | 0:20 |
| 8:35 | 9:35 | 10:35 | 11:35 | 16:35 | LANL | CURIE: Critical Unresolved Region Integral Experiment (IER 489) | Travis Grove | 0:20 |
| 8:55 | 9:55 | 10:55 | 11:55 | 16:55 | LANL | Hypatia: YH ₂ Critical Experiment | Theresa Cutler | 0:20 |
| 9:15 | 10:15 | 11:15 | 12:15 | 17:15 | LLNL | Final Design for IER 480: Thermal Epithermal eXperiments (TEX) Plutonium Experiments to Test New Thermal Scattering Laws | Catherine Percher | 0:20 |
| 9:35 | 10:35 | 11:35 | 12:35 | 17:35 | LLNL | PU-MET-MIXED-003: New Thermal Epithermal eXperiments (TEX) Plutonium Benchmarks with Tantalum | Catherine Percher | 0:20 |
| 9:55 | 10:55 | 11:55 | 12:55 | 17:55 | Lunch | | | 1:00 |
| 10:55 | 11:55 | 12:55 | 13:55 | 18:55 | LLNL | IER 519: Final Design of a Plutonium TEX Variant to with Iron and Manganese Absorbers to Provide NCS Validation Benchmarks to Hanford Tank Farms | Daniel Siefman | 0:20 |
| 11:15 | 12:15 | 13:15 | 14:15 | 19:15 | LLNL | IER 297: Update on TEX with Highly Enriched Uranium and Polyethylene | Jesse Norris | 0:20 |
| 11:35 | 12:35 | 13:35 | 14:35 | 19:35 | LLNL | IER 479: Preliminary Design for a Unique Low-Temperature HEU TEX Variant | Jesse Norris / Catherine Percher | 0:20 |
| 11:55 | 12:55 | 13:55 | 14:55 | 19:55 | LLNL | IER 268: PDV and Gamma/Neutron Yield Measurements of Godiva Critical Assembly | Lucas Snyder | 0:20 |
| 12:15 | 13:15 | 14:15 | 15:15 | 20:15 | ORNL | IER 304: Temperature Dependent Experiments using SPR/CX CED-2 | Justin Clarity | 0:20 |



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| 12:35 | 13:35 | 14:35 | 15:35 | 20:35 | SNL | Sandia 7uPCX Fuel Rod Pitch Variation Experiments | David Ames | 0:20 |

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|-------|-------|-------|-------|-------|--------------|--|--|------|
| 12:55 | 13:55 | 14:55 | 15:55 | 20:55 | Break | | | 0:15 |
|-------|-------|-------|-------|-------|--------------|--|--|------|

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|-------|-------|-------|-------|-------|-----|--|-------------|------|
| 13:10 | 14:10 | 15:10 | 16:10 | 21:10 | SNL | Measuring the Inversion Point of the Isothermal Reactivity Coefficient in a Water-Moderated Pin-Fueled Critical Assembly | Gary Harms | 0:20 |
| 13:30 | 14:30 | 15:30 | 16:30 | 21:30 | SNL | Developing a Benchmark Evaluation from Experiments Performed on the Space Nuclear Thermal Propulsion Zero-Power Critical Assembly (SNT-P-CX) | Elijah Lutz | 0:20 |

FY20 NUCLEAR DATA TECHNICAL PRESENTATIONS

| | | | | | | | | |
|-------|-------|-------|-------|-------|---|---|----------------|------|
| 13:50 | 14:50 | 15:50 | 16:50 | 21:50 | BNL | Machine Learning for Neutron Resonance Evaluations | Gustavo Nobre | 0:20 |
| 14:10 | 15:10 | 16:10 | 17:10 | 22:10 | BNL | Alternate approach for calculating URR PDFs | Matteo Vorabbi | 0:20 |
| 14:30 | 15:30 | 16:30 | 17:30 | 22:30 | LANL | Optimal Experiment Design and Nuclear Data Validation with Diverse Benchmarks | Alex Clark | 0:20 |
| 14:50 | 15:50 | 16:50 | 17:50 | 22:50 | LANL | Towards a Consistent Evaluation of Fission Observables | Amy Lovell | 0:20 |
| 15:10 | 16:10 | 17:10 | 18:10 | 23:10 | END OF WEDNESDAY TPR PRESENTATIONS | | | |

Thursday, February 25, 2021

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|------|------|------|------|-------|------|--|-------------------------|------|
| 6:00 | 7:00 | 8:00 | 9:00 | 14:00 | LANL | Evaluations of the ²³⁹ Pu Fission Source Term | Denise Neudecker | 0:20 |
| 6:20 | 7:20 | 8:20 | 9:20 | 14:20 | LANL | Measurements of ²³³ U(n,y) with DANCE | Esther Leal Cidoncha | 0:20 |
| 6:40 | 7:40 | 8:40 | 9:40 | 14:40 | LANL | LANL Evaluation Progress in FY 2020 | Ionel Stetcu/Mark Paris | 0:20 |

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|------|------|------|-------|-------|-------------|--|---------------|------|
| 7:00 | 8:00 | 9:00 | 10:00 | 15:00 | LLNL / NCSU | Accomplishments of Thermal Neutron Scattering Research at NCSU | Ayman Hawari | 0:20 |
| 7:20 | 8:20 | 9:20 | 10:20 | 15:20 | ORNL | Resolved Resonance Region Evaluation Update of ^{140,142} Ce | Chris Chapman | 0:20 |

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|------|------|------|-------|-------|--------------|--|--|------|
| 7:40 | 8:40 | 9:40 | 10:40 | 15:40 | Break | | | 0:15 |
|------|------|------|-------|-------|--------------|--|--|------|

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|------|-------|-------|-------|-------|------|---|------------------|------|
| 7:55 | 8:55 | 9:55 | 10:55 | 15:55 | ORNL | Thermal Neutron Scattering Measurements & Evaluations at ORNL | Chris Chapman | 0:20 |
| 8:15 | 9:15 | 10:15 | 11:15 | 16:15 | ORNL | SAMMY Modernization Efforts | Doro Wiarda | 0:20 |
| 8:35 | 9:35 | 10:35 | 11:35 | 16:35 | ORNL | Bayesian MC Evaluation for Differential and Integral Benchmark Data | Jesse Brown | 0:20 |
| 8:55 | 9:55 | 10:55 | 11:55 | 16:55 | ORNL | Activation Analysis for Enriched Isotopes | Jesse Brown | 0:20 |
| 9:15 | 10:15 | 11:15 | 12:15 | 17:15 | ORNL | Updates to the n+ ^{63,65} Cu RRR+URR Evaluations | Jordan McDonnell | 0:20 |
| 9:35 | 10:35 | 11:35 | 12:35 | 17:35 | ORNL | ORNL Neutron Cross Section Measurements on Zr for NCSP ND-1 Task | Klaus Guber | 0:20 |

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|------|-------|-------|-------|-------|--------------|--|--|------|
| 9:55 | 10:55 | 11:55 | 12:55 | 17:55 | Lunch | | | 0:45 |
|------|-------|-------|-------|-------|--------------|--|--|------|

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|-------|-------|-------|-------|-------|------|---|-------------------------------|------|
| 10:40 | 11:40 | 12:40 | 13:40 | 18:40 | ORNL | The re-evaluation and validation of the n+233U neutron cross sections | Marco Pigni | 0:20 |
| 11:00 | 12:00 | 13:00 | 14:00 | 19:00 | RPI | Thermal Neutron Target Development | Dominik Fritz | 0:20 |
| 11:20 | 12:20 | 13:20 | 14:20 | 19:20 | RPI | Kev capture measurements and preliminary results for Cr. | Sukhjinder Singh | 0:20 |
| 11:40 | 12:40 | 13:40 | 14:40 | 19:40 | RPI | Update on RPI LINAC refurbishment | Yaron Danon | 0:20 |
| 12:00 | 13:00 | 14:00 | 15:00 | 20:00 | Y-12 | Y-12 NSC Status of Metallic Fuel Projects & Capabilities | Chris Robinson / Lloyd Jollay | 0:20 |

FY20 TRAINING AND EDUCATION TECHNICAL PRESENTATIONS

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|-------|-------|-------|-------|-------|------|---|------------|------|
| 12:20 | 13:20 | 14:20 | 15:20 | 20:20 | ORNL | ORNL NCSP Training and Education Support for FY20 | Doug Bowen | 0:20 |
|-------|-------|-------|-------|-------|------|---|------------|------|



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|----------------|-----------------|----------------|----------------|------------|--|-----------------------------------|------------------|-----------------|
| 12:40 | 13:40 | 14:40 | 15:40 | 20:40 | ORNL | IER 498: Godiva-IV CAAS Benchmark | Riley Cumberland | 0:20 |
| 13:00 | 14:00 | 15:00 | 16:00 | 21:00 | | Final Remarks | Angela Chambers | 0:05 |
| 13:05 | 14:05 | 15:05 | 16:05 | 21:05 | END OF THURSDAY TPR PRESENTATIONS | | | |