

CSCT Minutes

CSCT Meeting for March 26, 2024

| Meeting Attendance |                       |         |
|--------------------|-----------------------|---------|
|                    | Attendee              | Present |
| M                  | Arm, Cheryl           |         |
| M                  | Berg, Larry           |         |
| EM                 | Bowen, Doug           | X       |
| M                  | Brooks, Franklin      |         |
| M                  | Bunde, Kermit         | X       |
| M                  | Chambers, Angela      | X       |
| M                  | Collens, Jake         |         |
| M                  | Damba, Darwin         | X       |
| M                  | Dyke, Jimmy           |         |
| M                  | Eberle, Cris          | X       |
| M                  | Ellis, Daniel         |         |
| M                  | Fischahs, Christopher | X       |
| M                  | Gilbertson, Sarah     |         |
| M                  | Hahn, Kevin           |         |
| EM                 | Hayes, David          |         |
| S                  | Henley, Marsha        | X       |
| M                  | Hines, Tom            | X       |
| M                  | Janson, Stephen       |         |
| M                  | Levine, Michael       |         |
| M                  | Ly, Gary              |         |
| M                  | Marenchin, Thomas     | X       |
| M                  | Moore, Josiah         |         |
| M                  | Moss, Patrick         |         |
| M                  | Murphy, Katie         |         |
| M                  | O'Donnell, Valentina  | X       |
| M                  | Ondara, Johnny        | X       |
| M                  | Perry, Christopher    | X       |
| M                  | Petraglia, Jeffrey    | X       |
| M                  | Russell, Paige        |         |
| M                  | Sandgren, Kevin       |         |
| M                  | Thrasher, David       |         |
| M                  | Udenta, Gladys        |         |
| M                  | Vickers, Linda        |         |
| M                  | Wallace, George       |         |
| M                  | Washburn, Peter       |         |
| M                  | Wise, Tammy           | X       |

M – Member; EM – Ex-Officio; S – Scribe

## CSCT Minutes

Virtual Roll call – For those using phone-in, please assist roll call and let us know who you are. Thanks!

- Other attendees included:

Previous items update:

- No previous items

Items for discussion:

- Jeff Petraglia - NNL benchmark work at Sandia
  - A benchmarking activity for a week – March 12 – 14, 2024 to gain a better understanding of the activities. Jeff provided them with an interview on his Sandia Field Office oversight work.
  - The agenda from the meeting was shown so that the meeting participants could see what was discussed, tours, etc. It will be attached to the meeting minutes.
- Kermit Bunde – NTS Workshop and progress on DOE-STD-1173
  - First draft received from NCT and sent for second round of comments. These were incorporated into the document. More review and concurrence are coming.
  - Send Kermit any comments you have.

Open discussion:

- Reminder ANS meeting is moving to June 16 – 19 in Las Vegas.
- Tammy Wise, LLNL, CAD package incorporating Monte Carlo into CAD and neutronics. They have a webinar coming up soon. Cris asked Tammy to send him the link and Cris will send it to the CSCT distribution list.
- The CAD package link was sent to the CSCT distribution

Topics for future meetings?

- Cris asked anyone that has a topic to please send it to him.

*Meeting ended at 11:28 AM ET*

## Agenda for Nuclear Criticality Safety Benchmarking

**Date:** Tuesday March 12<sup>th</sup> to Thursday March 14<sup>th</sup>  
**Venue:** Sandia

### **Background**

Nuclear Criticality Safety (NCS) benchmarking will provide NNL with valuable insight into NCS practices at Sandia. The objective of the benchmarking study is to evaluate NCS improvements, efficiency gains, and determine if there are any unnecessary stresses due to the implementation methods of NCS practices at NNL. The objective is completed through a comparison of risk tolerance, philosophy, organizational structure/interactions, training practices, etc. NNL is interested in benchmarking Sandia due to the similar types of work that occur at each facility, but which may have developed different approaches to their respective NCS programs.

### **Aims and Objectives**

Discuss and Observe:

1. NCS improvements, efficiency gains, and determine if there are any unnecessary stresses to the NCS Program at NNL.
2. Organizational structure, administration, and organizational interactions including management support of workforce-initiated improvement activities.
3. Risk posture, safety, and balance of safety and production.
4. Implementation of training, level of knowledge, and emergency response actions
5. High-level facility safety approach, and the approach to designing new facilities.

### **Required Output**

1. NNL will issue the detail of how the aims and objectives have been met.

### **Proposed Attendees in person:**

#### **NNL:**

**C. Alexis Bennett:** Benchmarking Lead

**Daniel Kammerer:** Knolls Test Programs &  
Engineering Manager

**Dr. Michael Zerkle:** Nuclear Engineering & Physicist

**James Ward:** Advisor New Facility Safety Reports  
(Facility Safety)

**James Miller-Marquez:** Spent Fuel Safety  
Engineering (Engineering)

**Christian Erk:** Criticality Safety Engineering  
(Engineering)

**Dan Harris:** Criticality Custodian of Development  
(Operations)

**Rachel Weckselblatt:** Criticality Safety Engineering  
(Operations)

#### **Sandia:**

**John Miller:** NCS Program Lead

**David Ames:** NCS Program Deputy Lead

**Mac Cook, Shawn Henderson, James Cole:** Qualified  
NCS Engineers

**Jeff Cardoni, Ashley Raster, Elijah Lutz, Andres**

**Morell-Pacheco:** NCS Engineers in-training

**Jeff Petraglia:** Sandia Field Office (Oversight)  
Various Mgmt., and operational staff

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| Day 1 Monday March 11 <sup>th</sup> , 2024: 12:00 – 16:00  |  |  |            |          |          |  |
|--|--|--|------------|----------|----------|--|
| Ident.   | Topic  | Lead                                     | Start Time | Duration | End Time | Notes  |
| A  | Badging and Processing   | John Miller<br>David Ames<br>& NNL team  | 12:00      | 02:00    | 14:00    | <b>**Please note this start time will change based on our arrival time. Subsequent times will change accordingly**</b>   |
| B  | Introductions, Agenda and Objectives   | Miller<br>Alexis Bennett                 | 14:00      | 00:30    | 14:30    | <b>Teams Meeting</b><br>NCS team   |
| C  | <b>Overview of Organizations and Nuclear Work Model – Roles and Responsibilities</b> <ul style="list-style-type: none"> <li>NCS Program Roles (Executive Champion, Owner, Lead &amp; Deputy, Engineers)</li> <li>Operations (Mgmt., Supervisors, Workers)</li> <li>Committees</li> <li>Oversight</li> <li>Interfaces (Engineering, SB, MC&amp;A, EM, etc.)</li> </ul>  | Miller/Ames<br>NNL team                  | 14:30      | 01:30    | 16:00    | A good view of the organizational structure, roles and responsibilities, will provide a good foundation for more detailed follow-on discussions.<br><br>align="right"> <b>Teams Meeting</b><br>NCS team, Mgmt. |
| Day 2 Tuesday March 12 <sup>th</sup> , 2024: 08:00 – 16:00 |  |  |            |          |          |  |
| D  | <b>Margin, controls, and limits</b> <ul style="list-style-type: none"> <li>Fissile limits and area controls.</li> <li>Understand how NCS related safety margin is incorporated into operations.</li> <li>Fuel limits, and NCS controls.</li> <li>CSI Controls</li> <li>Operational margin limits and response when limits are violated.</li> <li>Determination of credible casualties and probability of occurrence.</li> <li>Natural Phenomena Hazard (NPH) and human initiated hazards.</li> <li>Incorporation of key elements of nuclear safety into procedures.</li> </ul> | Ames, Miller<br>Mac Cook<br>Jeff Cardoni | 08:00      | 01:40    | 09:40    |  |

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| <b>Ident.</b>   | <b>Topic</b>   | <b>Lead</b>   | <b>Start Time</b>                 | <b>Duration</b> | <b>End Time</b> | <b>Notes</b>  |
|---|--|---|-----------------------------------|-----------------|-----------------|---|
| <b>Break</b>  |  | -   | 09:40                             | 00:20           | 10:00           |   |
| <b>E</b>  | <ul style="list-style-type: none"> <li>• Criticality Accident Alarm Systems (CAAS) and ANSI standard</li> <li>• Justification for no CAS</li> </ul>  | Miller<br>Cook  | 10:00                             | 00:30           | 10:30           |   |
| <b>F</b>  | <b>Evaluation NCS modeling approaches</b> <ul style="list-style-type: none"> <li>• Overview of how engineering models represent and support operations.</li> <li>• Analytical fuel geometry vs. reality</li> <li>• Analytical approach to NCS (moderation, reflection, etc.)</li> <li>• Approach to evaluations – bounding or operation specific.</li> <li>• Validation</li> </ul> | Shawn<br>Henderson<br>Cardoni<br>Cook<br>Ames   | 10:30                             | 1:00            | 11:30           | <b>Teams Meeting</b>                                |
| <b>Lunch &amp; follow up on any discussion items</b>  |  | -   | 11:30                             | 01:00           | 12:30           | *Bring a lunch or 2 local options*                  |
| <b>G</b>  | <b>Tech Area V (TA-V) Tour (AHCF and SPRF)</b>   | Miller<br>Ames<br>Ashley Raster<br>& NNL team   | 12:30                             | 3:30            | 16:00           |   |
| <b>Day 3                      Wednesday March 13<sup>th</sup>, 2024:                      08:00 – 16:00</b> |  |   |                                   |                 |                 |   |
| <b>H</b>  | <b>DTRA Tour (Q Clearance Required)</b>  | Miller<br>& partial NNL<br>team, others   | 08:00<br>(tour starts at<br>8:30) | 03:00           | 11:30           | Tour will include breaks but will be on feet a lot. |
| <b>I</b>  | <b>Breakout Session – Facility Safety</b> <ul style="list-style-type: none"> <li>• Overview of how facility safety is integrated into operations and NCS.</li> <li>• CCR process (integration of NCS controls, systems).</li> <li>• Expected level of facility safety knowledge for various NCS roles.</li> <li>• Overview of facility safety ownership.</li> </ul>                | Anthony Baca<br>Gil Waldman<br>Cook<br>Raster<br>Elijah Lutz<br>Andres Morell-<br>Pacheco | 8:00                              | 1:30            | 9:30            | <b>Teams Meeting</b>                                |

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| Ident.   | Topic   | Lead  | Start Time | Duration | End Time | Notes  |
|--|---|---|------------|----------|----------|--|
| J  | <b>Breakout Session – Modeling Techniques</b> <ul style="list-style-type: none"> <li>• In-depth discussion on validation (SVVR)</li> <li>• Scripts/tools (e.g., WORM)</li> <li>• Other</li> </ul>   | Cook<br>Cardoni<br>Russel Depriest  | 9:30       | 2:00     | 11:30    | <a href="#">Teams Meeting</a>  |
| <b>Lunch &amp; follow up on any discussion items</b> |   | -   | 11:30      | 01:00    | 12:30    | *Bring a lunch or 2 local options*   |
| K  | <b>Overview of and Integration of Safety Documentation</b> <ul style="list-style-type: none"> <li>• NCS Programmatic manuals, procedures</li> <li>• Engineering work</li> <li>• Documented nuclear safety basis</li> </ul>  | Miller  | 12:30      | 01:40    | 14:00    | Understanding if documents are principles based or prescriptive. Understanding document ownership. |
| <b>Break</b>   |   | -   | 14:00      | 00:20    | 14:20    |  |
| L  | <b>Oversight and Technical Reviews</b> <ul style="list-style-type: none"> <li>• Overview of Sandia’s experience building a NCS program from the ground up.</li> <li>• Overview of independent review and oversight. Roles, responsibilities, and organizational placement.</li> <li>• Understand periodicity, scope and depth of surveillances and assessments.</li> <li>• Review training program content, and periodicity</li> <li>• Review exams program – periodicity, applicability to roles</li> <li>• Involvement of oversight in engineering, safety report and procedure development.</li> <li>• Trending issues and links to periodicity.</li> <li>• Role of engineering and operations with regards to maintaining and ensuring production is within bounds of safety manuals and procedures.</li> </ul> | Miller<br>James Cole<br>Morell-Pacheco<br>Raster<br>Cook<br><br>SFO CRITPOC =<br>Jeff Petraglia | 14:20      | 1:40     | 16:00    | <a href="#">Teams Meeting</a>  |

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| <b>Ident.</b>  | <b>Topic</b>   | <b>Lead</b>                                | <b>Start Time</b> | <b>Duration</b> | <b>End Time</b> | <b>Notes</b>                       |
|--|--|--|-------------------|-----------------|-----------------|------------------------------------|
| <b>Day 4 Thursday March 14<sup>th</sup>, 2024: 08:00 – 16:00</b> |  |  |                   |                 |                 |                                    |
| <b>M</b>   | <b>Changes to Operations and Incorporating One-offs</b> <ul style="list-style-type: none"> <li>Describe the process of evaluating changes in operations to the documented safety basis.</li> <li>Walk through of a temporary change or incorporation of a one-off to a process.</li> <li>Description of exceptions or privileges for temporary change implementation process.</li> <li>Description of any built-in margin to allow for flexibility in processes, one-time changes, or one-offs.</li> </ul> | Cardoni<br>Cook<br>Coles<br>Ames<br>Miller | 08:00             | 1:40            | 09:40           |                                    |
| <b>Break</b>   |  | -  | 09:40             | 00:20           | 10:00           |                                    |
| <b>N</b>   | <b>Improvement Initiatives</b> <ul style="list-style-type: none"> <li>Experience with automation, and implementation of nuclear safety with automation.</li> <li>Experience with new technology to help improve NCS.</li> <li>Management support of workforce-initiated improvement activities.</li> <li>Improvement initiative goals, tracking, and reporting.</li> </ul>   | Cole<br>Cook<br>Miller                     | 10:00             | 01:30           | 11:30           |                                    |
| <b>Lunch &amp; follow up on any discussion items</b>             |  | -  | 11:30             | 01:00           | 12:30           | *Bring a lunch or 2 local options* |
| <b>O</b>   | <b>Tour: MCS bunker (CSI storage)</b><br><b>Another external site</b>  | Miller<br>Cole<br>Raster<br>& NNL team     | 12:00             | 4:00            | 16:00           | Tour                               |

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