

# ***INL Criticality Control Implementation Strategy***

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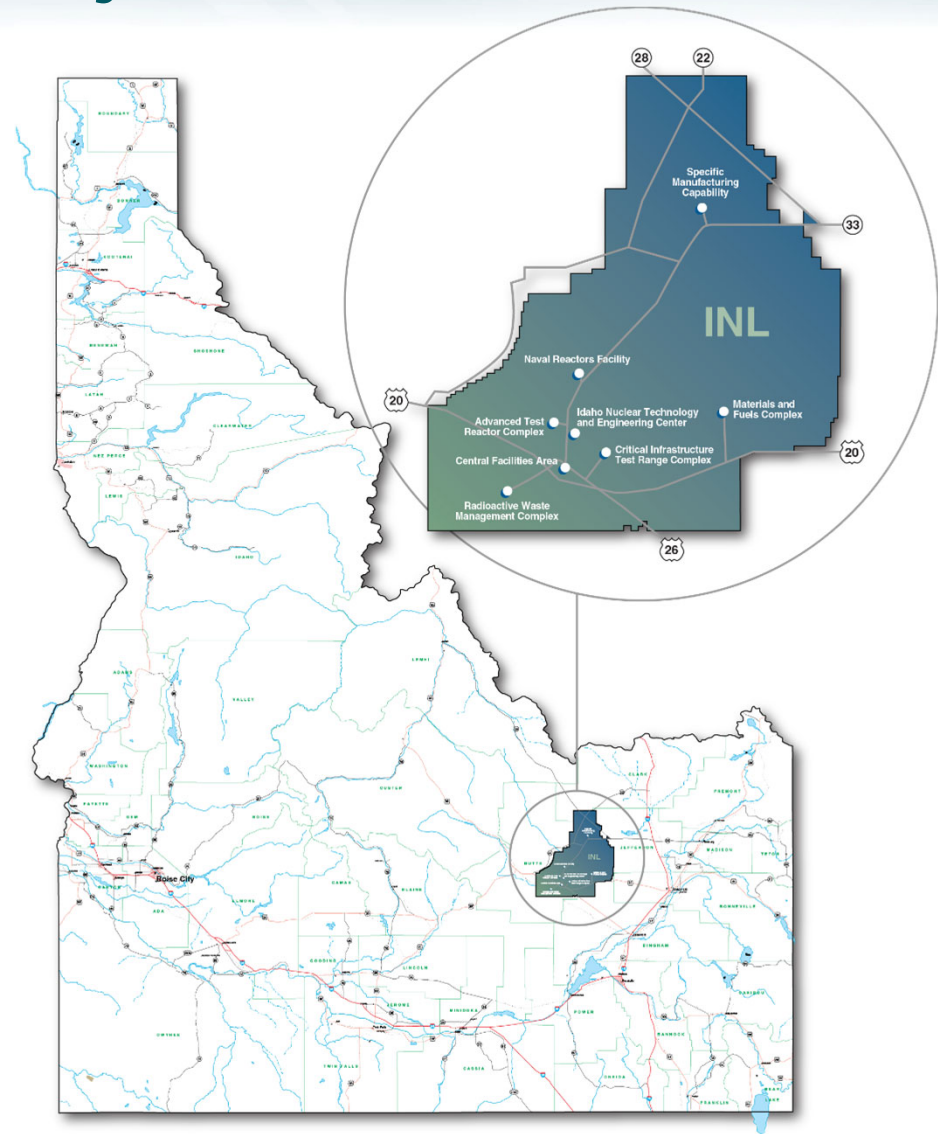
**INL Criticality Safety Engineering**

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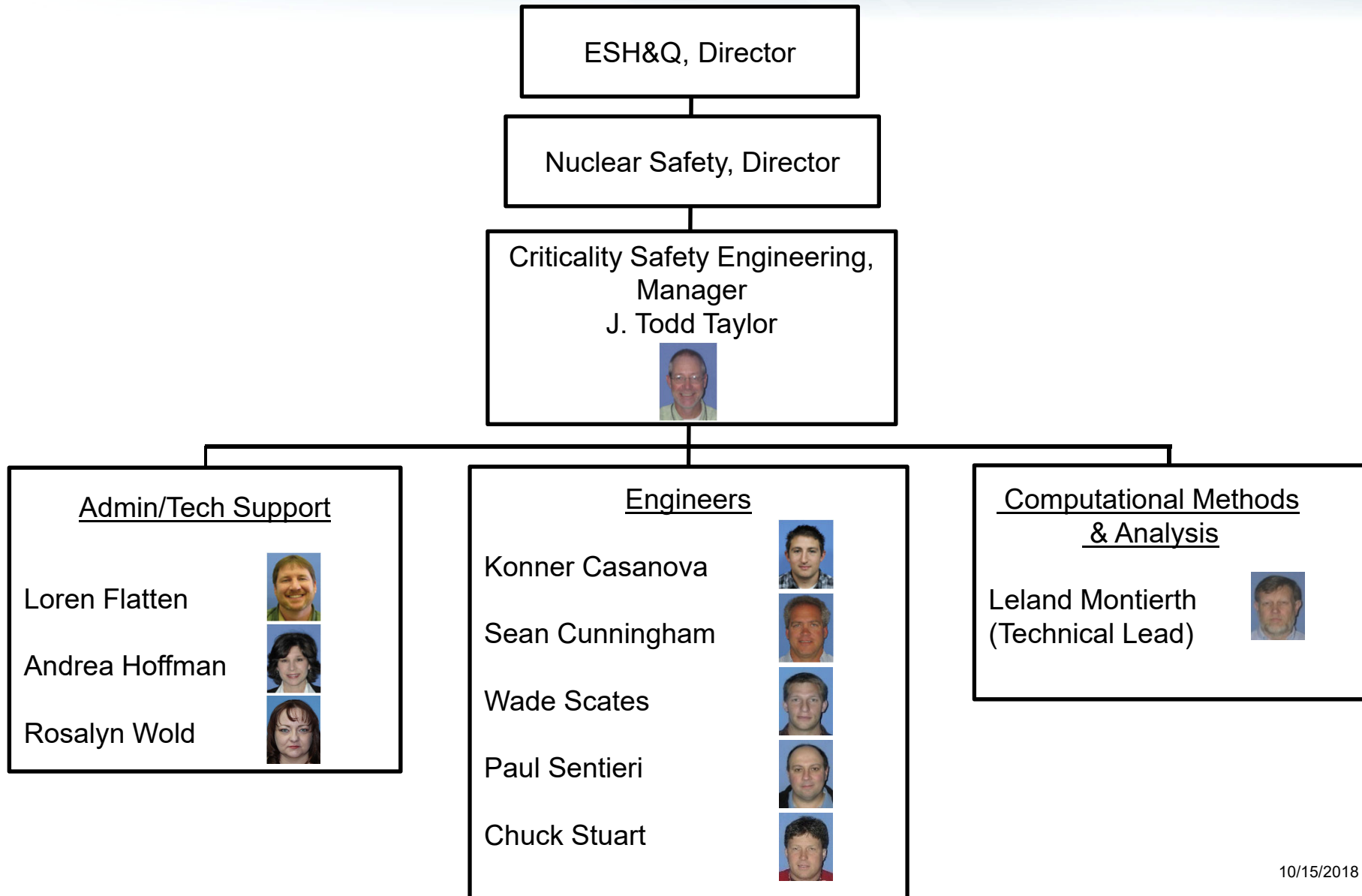


# Idaho National Laboratory

- 890 Square miles
- 17 Nuclear facilities
- 9 Transportation plans
- 43 Radiological facilities



# INL Criticality Safety Organization



## ***INL Criticality Safety Program***

- The INL Criticality Safety Program is based on the first principle of ISMS, “Line management is responsible for safety.” The cornerstone and strength of the INL Criticality Safety Program is that Line Management owns, accepts, and understands the criticality safety of their operations and facilities.
- The effectiveness of criticality safety control implementation depends on Operations (line organization) involvement in the development and ownership of the criticality safety controls.
- The effectiveness of the INL criticality safety program depends upon the engagement of criticality safety personnel with other institutional organizations.

## ***INL Criticality Safety Program (cont.)***

- Strong engagement with other INL organizations including Operations, Nuclear Safety, Emergency Management, Engineering, Radiation Safety, Safeguards and Security, Training, Fire Department, and Program Management.
- Strong tie between facility Documented Safety Analysis (DSA) and Criticality Safety Program.
- All of the facility specific controls are listed in a single document.
- Criticality Control Area (CCA) and Criticality Safety Officer (CSO) programs are integral to line organization involvement and ownership.





## ***Criticality Control Area (CCA) Program***

- The CCA Program is an essential element of the overall INL Criticality Safety Program. Areas or processes that require criticality safety controls are designated as CCAs.
- The purpose of the CCA program is to identify: (1) areas where criticality safety controls are needed, (2) the types of controls required to prevent and mitigate an accident, (3) the personnel responsible for the area(s), and (4) the training required for these personnel to accept their criticality safety roles and responsibilities.
- Each CCA is required to have a CSO. The CSO is appointed by, and reports to line management and is the facility advocate for criticality safety. CSOs are knowledgeable of criticality safety and serve as the liaison between facility (line) management and Criticality Safety Engineering.
- CSOs are integral to the effective implementation of the CCA program and the success of the criticality safety program.

## ***Safety Analysis Reports (SARs)***

- Facility SARs derive a contractor approved criticality control list.
- A Technical Safety Requirement (TSR) requires a Criticality Safety Evaluation (CSE) to derive the control, and that operations be conducted in accordance with the list.
- Engineered controls that by themselves prevent criticality are elevated to safety significant SSCs.
- The criticality control lists are owned by facility management, but revised by Criticality Safety Engineering.



## ***Criticality Safety Evaluations (CSEs)***

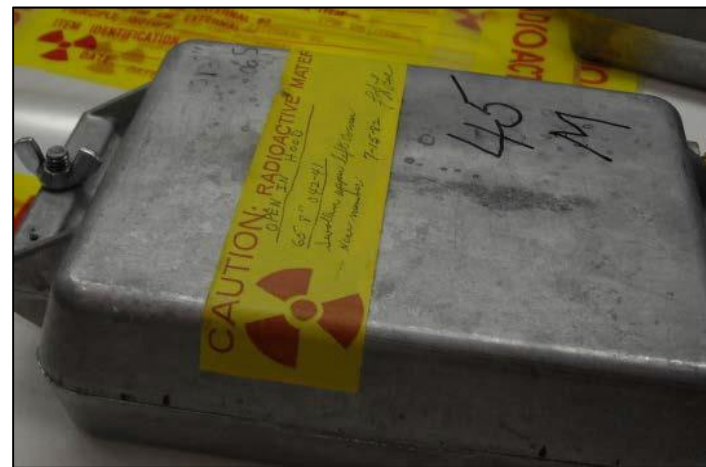
- Reviewed by the entire criticality safety group, the CSO, and a safety analyst in a peer review called a “roundtable”.
- Face-to-face review allows collective knowledge of the group to be applied to the evaluation.
- Everyone gains experience from the review and learns something new.





## Criticality Control Implementation

- Controls are incorporated into the criticality control list by the criticality safety engineer.
- Criticality Safety Officer (CSO) reviews the list.
- Training is given to operations staff by criticality safety (assumptions, how and why the limit was derived).
- Training sessions provide feedback and buy-in.
- Formal review of the control list includes criticality safety, CSO, safety analyst and facility manager.
- Facility specific procedures and forms implement the controls.



## Criticality Control Implementation

- Within the last three years INL has only had two limit infractions. This can be contributed to the support and engagement from other organizations with the lab and their strong working relationship with Criticality Safety.

