

CSCT Minutes

CSCT Meeting for March 24, 2026

Meeting Attendance		
	Attendee	Present
M	Berg, Larry	
EM	Bowen, Doug	X
M	Brooks, Franklin	X
M	Brundage, Kaitlyn	
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	X
M	Hahn, Kevin	
EM	Hayes, David	
M	Marenchin, Thomas	X
M	Moore, Josiah	X
M	Moss, Patrick	
M	Murphy, Katie	
M	Ondara, Johnny	X
M	Petraglia, Jeffrey	X
M	Russell, Paige	
M	Thrasher, David	X
M	Udenta, Gladys	

*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!

- David Colman – Naval Reactors
- Julie Jarvis – DNFSB
- Kevin McElvany – SFO
- Kevin Reynolds – Y-12

Previous items update:

- No previous items for discussion

Items for discussion:

- Josiah Moore (YFO) – NCS Alarms
  - Criticality safety is only a worker protection hazard
  - Safety function of CAAS is to detect an accident and notify workers to evacuate
  - Does not meet requirements in 10 CFR 830
  - Major contributor to Defense in Depth
  - Per 3009-2014 it is a SS SSC
  - CAAS does not prevent a criticality accident, does not mitigate the accident source, does not tell you where the accident is
  - CAAS is Similar to a smoke alarm or CAM alarms – notifies to perform a self-protective action
  - CAAS should be designated as Grade 3 under CM and associated emergency-response training – this for personnel to perform their programmatic evacuation action must be provided - this requires less procurement, maintenance, etc.
  - Done for one facility and plan to do for other facilities
  - Discussion on whether or not CAAS is a Specific Administrative Control – Technically not
  - Y-12 CSP still states which facilities need a CAAS
  - The Criticality Safety SMP is credited as a preventative control at Y-12
  - Please Send follow-on questions to Cris and he will collate and send to Josiah

Open discussion:

- None

Proposed Topics for future meetings

- Actions to terminate a potential reoccurring criticality accident

NNSA Y-12 Field Office



# CRITICALITY ACCIDENT ALARM SYSTEM (CAAS) DOWNGRADE

Josiah Moore

Nuclear Criticality Safety Program Manager, YFO-10

February 2026



## Overview

- An inadvertent nuclear criticality will not typically challenge the evaluation guidelines for maximally-exposed offsite individuals. Therefore, NCS-related controls are, at most, Safety Significant (SS) Structures, Systems, or Component (SSCs) and Specific Administrative Controls (SACs).
- The CAAS safety function is to detect nuclear criticality accidents and provide an immediate notification for evacuation of areas where personnel could be subject to an excessive radiation dose.
- CAAS does not meet the definition of a Safety Class (SC) or Safety Significant (SS) SSC per 10CFR830, *Nuclear Safety Management*, nor does it meet the requirements to designate it as an SS or SC SSC based on the criteria of DOE-STD-3009, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*.

# Federal Requirements

- **10 CFR 830, *Nuclear Safety Management***

- SS SSCs means the SSCs whose preventive or mitigative function is a major contributor to defense in depth and/or worker safety as determined from safety analyses

- **DOE-STD-3009-94**

- Any accidents that have a significant consequence potential to the public or workers, independent of likelihood, must be thoroughly evaluated, including the identification of any appropriate safety SSCs or administrative controls. [Page A-10]

- **DOE-STD-3009-2014, Section 3.3.2, *Safety Significant Controls***

- SS control designation shall be made on the basis of the control's contribution to:
  1. defense-in-depth;
  2. protection of the public from release of hazardous chemicals; .
  3. protection of co-located workers from hazardous chemicals and radioactive materials; and,
  4. protection of in-facility workers from fatality, serious injury, or significant radiological or chemical exposure.

## CAAS - SS SSC

- CAAS is a radiation detection system that measures a signal, and, if a predetermined set point is exceeded, actuates an alarm to notify personnel that an inadvertent nuclear criticality has occurred in support of evacuation actions.
- CAAS is classically designated a SS SSC, because it notifies facility personnel of an adverse condition so that they can perform a self-protective action to mitigate their exposure, thereby *potentially* reducing their exposure to radiation from a continuing criticality, subsequent criticality, or decay of fission products.
- CAAS does not prevent a criticality accident, nor is it an effective mitigation control. The dose received before the CAAS actuates will not be mitigated regardless of specific accident scenario type.

## CAAS – Does it mitigate per 3009

- The consequences from postulated criticality events result in high consequences only for the local facility worker.
- **Mitigative control:** Any structure, system, component, or administrative control that serves to mitigate the consequences of a release of radioactive or other hazardous materials in a hazard or accident scenario. (DOE-STD-3009-2014)
  - CAAS does not limit or reduce the magnitude of the accident or release of radioactive materials.
  - CAAS can contribute to a potential reduction in the dose to individuals; however, CAAS is not capable of alerting facility personnel to the specific location of the criticality accident so this is not guaranteed.
  - Furthermore, any reduction in dose is achieved via prompt evacuation (self-protective actions) and not directly via the CAAS.

## Does it mitigate cont.

- When CAAS is required by the NCS Program, it shall be discussed and carried forward for consideration in the hazard control evaluation per 3009-2014.
- However, consistent with the requirements of 10CFR830 and DOE-STD-3009, the CAAS would only be identified in the hazard evaluation as a safety SSC if it performs a preventative or mitigative function.
- For CAAS to be designated as an SS SSC, it would need to detect the accident and then perform an automated function that would prevent or mitigate the hazard scenario.
- CAAS does not do this. Its notification function is akin to that of a smoke alarm or area Continuous Air Monitor (CAM) alarm (detecting and alerting personnel to airborne radioactive materials); notifying personnel of an adverse condition so that they can perform a self-protective action (evacuation).

## Conclusion

- CAAS does not meet the definition of a Safety Class (SC) or Safety Significant (SS) SSC per 10CFR830, *Nuclear Safety Management*, nor does it meet the requirements to designate it as an SS or SC SSC based on the criteria of DOE-STD-3009, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*.
- It is a radiation detection and annunciation system, required by the NCS program, which provides an indication to personnel that an inadvertent nuclear criticality has occurred such that they can perform a self-protection action.
- This determination that designation of CAAS as not being a safety SSC is consistent with other industry guidance, such as NRC 10CFR70 licensees who perform similar fissile material operations, wherein CAAS is maintained as a regulatory requirement, but not an ISA-derived IROFS.
- CAAS, when required, should be designated as Grade 3 under CM, and associated emergency-response training for personnel to perform their programmatic evacuation action must be provided.