

Date: November 17, 2022

Subject: CSSG Meeting held at ANS Winter Meeting with Teams option

Participants: Hayes, Wilson, Alwin, Morman, Reynolds, McLaughlin, Erickson, Bowen, Chambers, Henley, Jiang (DNFSB representative)

Virtual Participants: Trumble, Hopper, Zerkle

Agenda:

- Welcome/Introduction (Hayes)
- Status of Tasking 2022-23 LANL Request for Assistance (Morman)
- DNFSB Complex-Wide Review of NCS (Hayes)
- Proposed Taskings
 - Review of criticality safety infractions across the DOE Complex: Complex-Wide Trends
 - Emeritus Members: Define Emeritus Member Roles
- CSSG Membership
 - Future Changes
 - Potential New Members
- Charter
- Round Table
- Next Meeting

Self-Assessment Actions		
Recommendation Category	Specific Recommendation	Status
Revise Charter and Work Instruction	1, 2a, 2b, 2c, 3, 5, 8, 9, 10, 15, 16, 17, 18, 19	With NCSP Manager for Approval
Proposed Taskings	6 DOE-wide review of criticality safety infractions	
	21 Define emeritus member role	
NCSP Manager Action	7 Improve DNFSB staff interface	
	13 Establish DOE Regulatory Liaison role with CSSG	
	20 Decide if mentoring is in the CSSG scope	
CSSG Chair/Deputy Chair Action	4 Schedule regular calls on 6-week basis	Teams Meeting established through OCT2023
	11 Post CSSG technical presentations on the NCSP website	
	12 Select CSSG member (Current or Emeritus) to function as CSSG Regulatory Liaison	
	14 Post CSSG briefings to DOE at discretion of NCSP Manager on the NCSP website	

Discussion:

Welcome/Introduction (Hayes)

Chair intends to carry a list of action and status every meeting. Revised charter and work instructions have been approved by CSSG and forwarded to Angela Chambers for approval. Will talk about proposed taskings at this meeting. DNFSB member (Jiang) present at this meeting. Microsoft Teams meetings scheduled every 6 weeks.

From DNFSB representative at meeting: DNFSB goal to improve communication, document to try to avoid any misunderstandings, contact Xiaodong Jiang if there are suggestions on how to improve communication.

Status of Tasking 2022-23 LANL Request for Assistance (Morman)

Morman reported that the team received a lot of documents from Chris Fischahs (Los Alamos Field Office) and they are going through them. Intended site visit this year was postponed to January at request of Field Office and LANL. After Thanksgiving will reconvene the team and

lines of inquiry to have 3 teams of 2 each for lines of inquiry and go to LANL week of Jan. 9. LANL Nuclear Criticality Safety Committee (NCSC) helped Field Office craft tasking.

McLaughlin asked: Has information from LANL included any documents having to do with differing professional opinion? No, team does not recall having seen these documents. One area for assessment is adjudicating differing professional opinions. He was asked several years ago to give input on conservatism of limits, a bit over 3 years ago and accepted small part-time tasking and was asked to look at heat source Pu, (60-70% Pu-238), gave opinion that analysis was conservative but did not agree with the LANL NCS technical opinion. Team may want to inquire about final resolution since conservatism could be a factor in assessing achieving new throughput goals.

McLaughlin also pointed out relevance of 2014-02 CSSG recommendation, seems to have been ignored. No integral experiments. Good cross-sections could be used for validation, maybe have $USL = 0.90$. Team agrees they will investigate this during the visit.

Proposed Taskings

DNFSB Complex-Wide Review of NCS (Hayes)

Review of criticality safety infractions across the DOE Complex: Complex-Wide Trends

Hayes asked if this has been proposed and asked McLaughlin to speak about any knowledge where this tasking was previously discussed.

Referring to ORPS reports as well as other reporting mechanisms, we should try to standardize. Different terminology is confusing. There was a tasking on reporting several years ago. Have struggled to make progress on standardizing within ORPS. Need liaison with AU to open 232 to discuss changes, Erickson was involved several months ago and reports it may have gotten stuck needing sponsor in AU.

McLaughlin volunteered to draft tasking.

Erickson found taskings related to infractions that may be helpful: 2006-01 and 2007-02, site review of infractions at site.

We don't know if inconsistency is related to internal process or ORPS categorization, this may be part of the proposed tasking. Report to DNFSB lists how many infractions, but there is no way to compare severity of infractions between sites because criteria is not the same.

Hopper reports that historically caused problems and caused management to declare there would be no more infractions. Dwayne Clayton published first attempt to characterize infractions, then SR came up with another method with professional judgment, what kind of

loss of control needed to cause problems, minor infractions are indicator that can help lead to positive changes and understand where corrections are needed.

Define Emeritus Member Roles (Emeritus Members)

Self assessment identified lack of utilization of emeritus members and role of them. Would like to define how CSSG uses these members.

Maybe from emeritus members? Hopper, Kimball, McKamy are very engaged, hoping Trumble remains engaged. Resource that could be better utilized, maybe need to use when specific knowledge gap in a particular CSSG tasking not as well developed in current members. Challenge would be cancelled contracts, need to be reissued to engage emeritus members formally, this could be problematic with respect to timeliness.

Proposed tasking would be good to have emeritus member draft something up. Hayes will send request to emeritus members. Discussion of emeritus category, does it allow experienced members to be helpful while helping bring on new members, segue into next agenda item: membership.

CSSG Membership

Need planning for getting new members on board. Notion of annual cycle of members going to emeritus and bringing new members on. Could probably do this throughout the year so long as quorum is maintained, 10 members (not to exceed) on CSSG since inception, when sub teams working on tasks in parallel potentially using members on multiple tasks.

“Associate” member status bringing group of people in for overlap with members going to emeritus status. This worked with Reilly and Trumble as well as Hans Toffer and Erickson. This seemed a very worthwhile method and kept Erickson and Trumble in the loop for at least a year and split funding with primary member. Chair asks members to consider current status and what they are thinking for future status over the next year for bringing on new members in “apprentice” role and getting they engaged in meeting. Morman proposed potentially taking a list of names for future candidates.

Other items from this week:

Received ANS-8 response relative to 2016-04. Erickson and Bowen report ANS reviewed recommendation to make sure looking at other revised standards to see if they fall out of consensus committee, there is a pathway for Larry Wetzel to be in the loop for other committees developing standards they may affect NCS, watching a few standards closely now from consensus committee. 8.1 and 8.10 have statements regarding risk-based approach, NCSCC was planning to draft statement for overarching principle, but it is believed this did not happen.

Non ANS-8 standards have NCS guidance that has not been vetted, plan to vet this to get consensus committee input prior to issuance. Talked with Jim Baker, believes this was incorporated for 8.23, until overarching principle may impact this. Baker is planning to look to make sure consistency with other upcoming revisions. Bowen believes they have a good path forward. Andy Prichard is in the loop for 8.1. Although this has taken a long time, consensus process has been helpful for resolution. Erickson will forward this letter to Hayes.

Another item from Angela Chambers: tracking pipeline students, how many have been hired and are they still in NCS?

Round Table

DNFSB complex wide review of NCS kickoff meeting at SR in Aug. Erickson forwarded agenda for meeting. Trying to coordinate reviews and shadow other reviews, possibly CSSG LANL review or other DOE EA reviews or site office reviews. Erickson has not heard anything more and can check to see if there is update to status.

From DNFSB: The Board will start with SR other sites LANL would like to shadow CSSG assessment, Y-12 likely to be in March scope, overall program including some technical documents/evaluations, qualification and training, have requested documents from sites and think they have received most of not all documents they need. Might want to know more about recent incidents. Not planning anything out of the ordinary. Will be done by DNFSB staff and resident inspector, not outside members involved at this time.

Hayes: letter written with respect to NCS and NCERC in June, DOE put together response and briefing will occur soon. Letter questions about DOE oversight in NV, how NV and LA site office cover NCS oversight. Maybe need more diligence as there were weaknesses identified, such as seismic issue that was demonstrated not to be a concern. Other related to program not looking like PF-4, lack of NCERC to look like PF-4 cited conduct of ops guidance chapter relative to procedure writing requirement to identify steps important to criticality safety, NCERC does not employ that because entire procedure is important to NCS, LANL asked LA field office to conduct review of procedures to look at effectiveness of using these markings. Other piece related to NCS staffing support, 2018 report lack of staff support, openings have gone unfilled, getting some support from NCS but not as consistent, asked for 1 NCS analyst to observe ops at least once/quarter. Would like to have analysts that are qualified to conduct evaluations for NCERC and observe operations more frequently rather than 1/year. Currently, assigned analyst is contractor travelling to support ops.

Wilson: debate about calling out NCS steps going on across complex. Historically, ops managers came up with circle CS to identify steps, not NCS. Y-12 does point them out in procedure. Trumble reports this is consistent with identification of authorization basis steps in procedure. SRS trying to ensure appropriate formality of steps and he believes this is a question in 1999 self-assessment questions from McKamy.

Erickson reports the CSSG has not been out to DAF recently, CSSG used to make trips, is it time to visit?

It was suggested with the LANL assist in January we should have at least a month to pull something together for presentation at NCSP TPR. Morman reports that they will try to wrap up into preliminary report before leaving site (LANL) so this is good timing for the NCSP TPR.

Bowen regarding the question on infractions reported that Chambers approved proposal learning from experience database with Working Party on NCS. French have been adding to database for infraction information. Andy Prichard and Bowen working with UK soon, database will be added to NCSP website. Trying to make it root cause, facility agnostic and may be helpful for information on infractions.

Bowen also reports on concerning interactions with NRC, invited to meeting with HALEU fuel and licensing, opinion that since HALEU has higher enrichment they would need to adjust USL down. He tried to explain that k-effective is not safety margin, need to consider normal and credible upset conditions, process analysis of ANS-8.1. Might need to push back on NRC staff. Even though they acknowledged it was a bad idea they thought they needed to do it anyway. DNFSB representative suggested the CSSG write a technical paper to explain.

Hopper would like to know if summary of this discussion could be provided, minutes will be provided. In summary, suggestion made to lower USL to 0.90 because HALEU has higher enrichment. Bowen will share as much information about where this is coming from. McLaughlin points out that this has happened before for transportation evaluations where 0.95 limit was put into documents, DOE did not adopt, but was prompted by NRC. Morman points out 40+ years of experience with HALEU.

Chambers brought up question if the CSSG should look at attrition of NCS staff. Yesterday discussion during ANS meeting (outside of CSSG) regarding attrition, not unique to LANL, but LANL level might be higher than other places. McLaughlin stated concerns with how important it is to be experienced enough to make good decisions, use good judgment as an NCS analyst. Wilson pointed out there is lack of experienced staff across many positions, that DOE seems to have positions to fill. Erickson mentioned how much effort goes into training new hires from NRC.

Seems to be little effort to understand how to retain staff and LANL and Y-12. Wilson mentioned that sometimes there are a great deal of friction between NCS and operations staff. At RF turnover declined when assigning communications and culture utilizing CSO. Bowen queries participants in the NCSP class and seems like at LANL some report that negative interactions with NCS PL assigning work at LANL as well as some operations, possibly lack of mentoring. Reports that he never hears that attrition is due to lack of pay.

Comments from Teams chat window:

[11:54 AM] Fitz (Guest)

all the more reason for the CSSG to serve in an advisory role

[11:55 AM] Fitz (Guest)

maybe look at those sites that are stable - not just those that are losing folks. Look for what works, not try to guess what is not

[11:56 AM] Chambers, Angela (ALBQ) Which NNSA site is stable?

[11:56 AM] Fitz (Guest)

Livermore has been stable, SRS was stable for a very long time (can't speak to now).

[11:57 AM] David Erickson

As best I know, SRS has one 'knowledgeable' staff member for EM and one for NNSA.

[11:58 AM] Fitz (Guest)

I'm referring to the contractor staff (not the Feds). Related to issues at LANL and Y-12 staff.

[12:01 PM] Fitz (Guest)

trouble with LANL and Y-12 is they are losing all their new staff (in addition to the experienced staff). Not much you can do about retirements, but why have younger engineers and mid-career engineers stay at Livermore and SRS but don't last more than 2 years at LANL and Y-12

[12:09 PM] Fitz (Guest)

Many people leave their manager, more than leave their company. Can the attributes of a "good" crit manager be developed that may aid in the selection and training of this position.

[11:27 AM] Calvin (Guest)

As a follow up to my financial arrangement with the CSSG as an Emeritus Member - I do not ask for pay for intellectual participation such as CSSG meetings or contributions. I do ask for support for travel expenses when I am invited to participate off site. Like Tom, I hope to make a useful contribution when

Next Meeting: TPR meeting in Albuquerque in Feb 2023. Chambers would like to have CSSG input on where NCSP is headed with respect to tasking, progress, status reports. Friday slot on calendar, February 24.

Members can register and book a room with Clyde hotel via NCSP TRP registration site.

In future Hayes would like to have CSSG meeting better integrated into ANS meeting schedule to make use of time more efficient.

The meeting was adjourned at 12:18 pm Mountain time.