September 30, 2022

To: Angela Chambers, Manager, US DOE Nuclear Criticality Safety Program (NCSP)

From: D. K. Hayes, Chair, US DOE NCSP Criticality Safety Support Group (CSSG)

Subject: CSSG Tasking 2022-02 Response

The CSSG was tasked to perform a self-assessment of its performance and effectiveness within the NCSP. The following topics were included in this self-assessment:
- an evaluation of the organization of the CSSG (i.e., its Charter, Work Instructions and Membership Policy),
- the overall impact of the CSSG and look at proposing metrics for "active CSSG membership" and/or term limits for members to maintain the group's effectiveness,
- a review the roles of Emeritus and Ex-officio membership (e.g., whether the following positions should have defined ex-officio representation on the CSSG: Nuclear Criticality Safety Program (NCSP) Program Execution Manager, NDAG Chair, and CSCT Chair)
- the interface with the NCSP management team,
- the interface, communication, and coordination with other elements of the NCSP (NDAG, CSCT, End-users, etc.),
- the performance of the CSSG relative to established expectations (i.e., Charter and Taskings),
- the performance of the CSSG relative to advising the NCSP Manager and DOE/NNSA relative to the effectiveness of elements of the NCSP and any emergent criticality safety issues/concerns within the DOE.

The self-assessment was tailored to the mission of the CSSG. For each area needing improvements, the CSSG has recommended practical and measurable actions that can be implemented by the NCSP Manager and/or the CSSG to facilitate continuous improvement.

The last documented self-assessment of the CSSG was performed in 2007.

The CSSG subgroup was comprised of the following members:

Mikey Brady (Team Leader)
Thomas McLaughlin (LANL-retired)
Jerry Hicks (retired)

The attached response was developed by the subgroup, reviewed by the entire CSSG and all comments were addressed and incorporated.

cc:
CSSG Members
D. G. Bowen
M. Henley

Attachment: Response to CSSG Tasking 2022-02

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Response to CSSG Tasking 2022-02
CSSG Self-Assessment

September 30, 2022

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EXECUTIVE SUMMARY

This Tasking Response has been prepared by the Criticality Safety Support Group (CSSG) in response to CSSG Tasking 2022-02 (included as Attachment A). The tasking directs the CSSG to consider the following topics in the self-assessment:

- an evaluation of the organization of the CSSG (i.e., its Charter, Work Instructions and Membership Policy),
- the overall impact of the CSSG and look at proposing metrics for "active CSSG membership" and/or term limits for members to maintain the group's effectiveness,
- a review the roles of Emeritus and Ex-officio membership (e.g., whether the following positions should have defined ex-officio representation on the CSSG: Nuclear Criticality Safety Program (NCSP) Program Execution Manager, NDAG Chair, and CSCT Chair)
- the interface with the NCSP management team,
- the interface, communication, and coordination with other elements of the NCSP (NDAG, CSCT, End-users, etc.),
- the performance of the CSSG relative to established expectations (i.e., Charter and Taskings),
- the performance of the CSSG relative to advising the NCSP Manager and DOE/NNSA relative to the effectiveness of elements of the NCSP and any emergent criticality safety issues/concerns within the DOE.

A self-assessment of the CSSG was last performed in 2007 (included as Attachment B). A review of this assessment contributed to the lines of inquiry pursued herein. A detailed review of the eight recommendations from the 2007 SA determined that three were met, three were not met, one was partially met, and one was indeterminate. A discussion and path forward for each of those eight recommendations is included.

A total of 21 recommendations were identified in this SA. Twelve of these relate to revisions to the Charter and Work Instructions, two require Tasking Statements be developed and executed, three will require actions by the NCSP Manager and four involve actions for the CSSG Chair/Deputy Chair. None of these recommendations are the result of a finding that the CSSG is not meeting a requirement in the Charter or Work Instructions. Most represent process improvements and the codifying of current practices of the CSSG into the Charter and Work Instructions. Overall, the CSSG is concerned that it is perceived to have grown stagnant

and its visibility and potential to improve the effectiveness of nuclear criticality safety programs within the Department of Energy (DOE) Complex has been reduced.

The highest priorities for process improvement stem from the lines of inquiry addressing managing CSSG membership more proactively and improving the visibility and effectiveness of CSSG work products and their impact on DOE criticality safety practices and regulations.

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INTRODUCTION

The NCSP and the CSSG, which reports to the NCSP manager, were created in response to Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 97-2 which was a DOE-wide recommendation. Initially both Environmental Management (EM) and the National Nuclear Security Administration (NNSA) provided operational funding and the Office of Science (SC) agreed to provide support by sustaining and operating the Oak Ridge Electron Linear Accelerator, ORELA. After several years the NNSA agreed to pick up total funding responsibility to institutionalize stability of adequate funding and support, a key to closure of Recommendation 97-2 which was issued in 2003.

The last CSSG Self-Assessment (SA) was performed in 2007. The final Tasking Response (TR) from that self-assessment is provided in Attachment B for ease of reference. The primary lines of inquiry pursued in this 2022 SA are based on requirements from the CSSG Charter and Work Instructions addressing CSSG operations, communications within the DOE-wide NCS community and overall performance. The lines of inquiry in this SA also address the effectiveness of the CSSG and its interaction with the other elements of the NCSP as stated in the Tasking objectives (see Attachment A). These additional lines of inquiry are fundamentally related to managing CSSG membership, assessing the impact of CSSG Taskings on the DOE nuclear criticality safety community at-large, identifying activities that the CSSG is doing but are not specified in the Charter/Work Instructions and identifying activities that the CSSG is not doing but perhaps should be. The recommendations made in the 2007 self-assessment were also reviewed and are discussed herein.

CSSG OPERATIONS

The overall organization and the roles and responsibilities of the CSSG are described in the Charter and Work Instructions. The CSSG mission requirements and selected operational requirements from these documents were identified and assessed.

2.1 Mission Requirements Assessed

Given that it has been 25 years since the CSSG was formed, the basic mission and need for a technical advice support group at the level of the CSSG was reviewed. The CSSG continues to provide DOE with access to a diverse and experienced group of criticality safety experts who are unaffected by potential local biases and stressors. As such, the CSSG and its Mission as envisioned in 1997 are still a significant, on-going asset to the DOE. This value is demonstrated in the TRs that are generated at the rate of a few to several reports each year at the request of the DOE and its contractors. This assessment is directed at the operation of the CSSG relative to the mission objectives stated in the current Charter.

- **Provide operational and technical expertise to the DOE through the Nuclear Criticality Safety Program (NCSP) manager.**
  This function is met as requested by the program manager through the tasking process and subsequent CSSG products, and by informal communication such as during in-person meetings and video/telephone meetings.

- **Are the roles and responsibilities of the CSSG clear?**
  Yes. The CSSG performs technical tasks at the direction of the NCSP Manager. The Charter and Work Instructions adequately describe the roles and responsibilities in these activities. The Tasking statements issued by the NCSP Manager identify the responsibility and requirements of the CSSG pursuant to that Tasking. The primary mission of the CSSG is to provide operational and technical "best practice" advice, these are technical assists. The CSSG has also engaged in and will continue to perform "technical assessments" as a DOE resource if solicited by specific DOE Field Offices (FO), or DOE Site Offices (SO). Taskings should clearly identify which of these is the appropriate objective for the individual activity. The Tasking Statement should clearly state if the CSSG is intended to judge compliance or to provide best practice advice. Even in the taskings where we are asked to judge compliance, we will provide a recommended path forward. Providing Technical Assistance is the primary mission priority for the CSSG.

  Recommendation 1: Revise the Charter defining a Technical Assist versus a Technical Assessment.

2.2 Operational Requirements Assessed

The following Operational Requirements were taken directly from the CSSG Charter and Work Instructions and used as lines of inquiry to assess CSSG Operations.

- **The Deputy Chair serves as the Chief Operating Officer of the CSSG and is responsible for tracking deliverables and taskings, developing CSSG funding requests/proposals for the NCSP Manager, documenting meeting results/notes/actions and performing the duties of the Chair when the Chair is absent.**
  This requirement is outdated and requires revision. The only financial activity currently undertaken by the CSSG is the quarterly reporting of expenses by the individual CSSG members. This is addressed in Section 5.3.1. Based on the contractual arrangements of CSSG members, the Deputy Chair would not have access to the resources required to fulfill this function. In practice, funding is managed through the NCSP Execution Manager.

  Also, there is no clear responsibility for onboarding new CSSG members or new Deputy Chair. Assigning responsibility to the Deputy Chair for orientation and onboarding of new members will provide clarification and improve the integration of new members into the group. Assigning responsibility to the Chair for the orientation and onboarding of new Deputy Chairmen will also promote organizational efficiency.

Recommendation 2: Revise the Charter to (a) delete the funding responsibilities of the Deputy Chair, (b) to add the responsibility for onboarding new members, and (c) give the Chair responsibility for onboarding the new Deputy Chair.

- **The Chair shall call CSSG meetings as needed, but no less than two times annually. (This requirement addresses in-person, face-to-face meetings.)**
  This requirement is satisfied. A review of the last five years of minutes posted on the NCSP website verified that this requirement has been met. With the increased availability of virtual platforms available for meetings, it seems prudent to clarify the intent of this requirement is directed at face-to-face meetings. Virtual connection with both live audio and video may be used when practical for members who cannot otherwise attend face-to-face meetings

  Recommendation 3: Revise the Charter to clarify that this requirement is to provide the opportunity for at least two face-to-face meetings annually. The location and timing of these meetings should also provide an opportunity for the CSSG members to interact with criticality safety practitioners from across the DOE and NRC communities (e.g., ANS meetings and NCSP TPR meetings).

- **The CSSG also meets regularly via teleconferences arranged by the CSSG Chair or Deputy and/or by subcommittees appointed by the CSSG Chair.**
  This expectation as stated in the Charter is met. The CSSG also meets via phone calls and teleconferences, but the process could be improved. Teleconferences have been more ad hoc lately. If "regular" phone calls were set up on a periodic basis, members would know in advance and have more opportunity to plan around anticipated calls. As always, phone calls in the conduct of TRs are managed by the Tasking Lead on an as-needed basis.

  Recommendation 4: The CSSG chair should set up remote meetings (phone calls and/or virtual meetings) on a six-week planning basis. All meetings are subject to cancellation if not needed. No change to the Charter is required.

- **Meeting minutes, or other documents generated by the CSSG shall be posted to the NCSP website once approved.**
  This requirement is satisfied. Meeting minutes, final Tasking Statements and Tasking Responses are all posted to the NCSP website.

- **An agenda for each CSSG meeting/telecon shall be issued by the Deputy Chair working with the Chair in advance of a scheduled meeting/telecon and distributed to the members of the CSSG and the NCSP manager together with any materials needed for review of the agenda items.**
  This requirement is met. The final agendas are usually captured in the meeting minutes. Materials are easy to share in virtual meetings which have become the meeting venue of choice. Materials are often sent in advance if early review is needed.

- **The Deputy Chair of the CSSG shall ensure that the minutes of each meeting are formally recorded. The main points of the issues discussed must at least be summarized and decisions clearly delineated.**
  This requirement is met.

- **After review and concurrence by the members of the CSSG, the minutes shall be forwarded to the NCSP manager.**
  This requirement is met but is not formally documented. Materials are not to be posted to the NCSP website without approval from the NCSP Manager. The fact that the minutes are included on the website infers that the NCSP Manager has received and reviewed these documents.

- **The results of any evaluation, review, response to a formal Tasking, or similar activity by the CSSG shall be transmitted to the NCSP manager in a formal report. These reports shall represent the consensus position of the CSSG members.**
  This requirement is satisfied and documented. NCSP Manager approval is included on final Tasking documents prior to posting on the NCSP website.

- **All formal written correspondence on behalf of, or representing, the CSSG individually or collectively, must be reviewed and approved by the NCSP manager prior to making distribution.**
  This requirement is satisfied. There was one assessment performed for a field office by a cadre of CSSG members that raised some controversy. However, that assessment utilized a contracting method with the individuals who performed it and not the NCSP. The fact that they were (or are) CSSG members was known, but it was not executed as a CSSG task. CSSG Members are not proscribed by CSSG requirements from performing "work for others." (Y12, circa 2017)

  Recommendation 5: Revise the Charter to require CSSG members performing work outside the NCSP to clearly document that they do not represent the CSSG.

- **All invitations to external elements (i.e., DNFSB, DNFSB Staff, NRC, etc.) to participate in CSSG and/or NCSP meetings or activities shall be made by the NCSP manager only.**
  This requirement is satisfied.

- **Deliberations of the CSSG and discussion of issues with the NCSP manager must be kept within the CSSG until such time as an official position is reached and the NCSP manager grants approval to disseminate or discuss the information with non-CSSG members.**
  This requirement is satisfied.

- **Discussion topics that the CSSG believes should be vetted with the DNFSB or its Staff must be provided to the NCSP manager.**

This requirement is satisfied. However, DNFSB staff attendance at CSSG meetings has waned in the past few years. The CSSG and DNFSB staff would benefit from additional interaction.

In 2007 a DOE-wide review of Site Criticality Safety Infractions and Deficiencies was attempted, but not successfully completed (CSSG Tasking 2007-02). The CSSG finds the Tasking Statement is closely in line with the CSSG Mission. The CSSG should make another attempt to execute the 2007-02 Tasking with revisions from lessons learned in 2007 to identify trends that could benefit DOE-wide NCS programs. This activity provides a potential link for interaction with the DNFSB staff.

Recommendations:
6. Initiate a Tasking Statement for a review of criticality safety infractions across the DOE Complex. This should be attempted in 2023 looking for Complex-wide trends.
7. Request the NCSP Manager to invite DNFSB staff attendance at CSSG meetings as appropriate.

CSSG COMMUNICATION

A key element in the mission and function of the CSSG is as an advisor to the DOE through the NCSP Manager. Communication between the CSSG and the NCSP manager, the NCSP program elements, the DOE criticality safety technical community, DOE directives and standards activities and the American Nuclear Society (ANS) Standards process is critical to effectively enable the CSSG to achieve its Mission. This section assesses these lines of communication. The Charter, including its Work Instructions, was also reviewed in this regard.

- **Is communication with the NCSP Management team effective?**

The NCSP Manager and the NCSP Execution Manager are ex-officio members of the CSSG and actively participate in its meetings. The Work Instructions acknowledge the role of the NCSP Manager as ex-officio, but not the NCSP Execution Manager. The relationship between the NCSP management team and the CSSG is considered good.

Recommendation 8: Revise the Work Instructions to formally identify the NCSP Execution Manager as an ex-officio member of the CSSG.

- **Is communication between the NCSP Program Elements and the CSSG effective?**

  o **Communication with the Criticality Safety Coordinating Team (CSCT).** The CSCT currently acknowledges the CSSG Chair and Deputy Chair as ex-officio members of the CSCT and actively seeks CSSG participation in their meetings. In recent activities, the CSSG has sought direct CSCT participation (e.g., development of CSO Training and M&O contract transition impacts) to improve communication between the groups. Formally including the CSCT

Chair or an alternate in CSSG meetings should further improve communication.

Recommendation 9: Revise the Work Instructions to identify the CSCT Chair as an ex-officio member of the CSSG.

o **Communication with the NCSP Technical Program management.**
Involvement and communication between the CSSG and the Technical Program management and participants involved in the TPR has improved over the past decade.

The CSSG has been integrated into the NCSP proposal review process. The process itself has been somewhat arduous in the past but has seen major improvements over the last few years. These changes include prioritizing proposals related to ongoing projects (taking into consideration the relative cost-to-benefit ratio). Using the Nuclear Data Advisory Group (NDAG) to provide review comments prior to the CSSG review has improved the review process. CSSG participation in the Technical Program Review (TPR) has permitted the CSSG rankings to include actual progress as well as the researcher's own prognosis for success. Participating in the TPR has also given CSSG members the opportunity to question researchers directly as well as to stay current with research and technical issues. Timely access to the proposals has also been improving. The CSSG has never been engaged to look back at completed NCSP tasks to judge actual duration, cost and benefits. This could be considered in a future Tasking at the discretion of the NCSP Manager.

o **Communication with NCSP Training Courses.**
CSSG members continue to be directly involved in the NCSP Training Courses as instructors and reviewers. Most recently the CSSG was used to develop the Learning Objectives and course content for a Criticality Safety Officers training course. The CSSG has also been used to review and evaluate the course materials for the 2-week hands-on training at the Nuclear Criticality Experiments Research Center (NCERC).

o **Communication with the NDAG.**
The NDAG chairman currently acts as an ex-officio member of the CSSG and actively participates in meetings and as a resource during the TPR proposal review/ranking process.

Recommendation 10: Revise the Work Instructions to formally recognize the NDAG Chair as a CSSG ex-officio member.

- **Is communication of CSSG activities with the DOE Nuclear Criticality Safety (NCS) technical community effective?**

The Tasking Responses are posted to the NCSP website as required, which makes them publicly available. As a means of improving communication with the NCS community, presentations of CSSG activities are periodically made at the ANS Annual or Winter meetings. The CSSG has also made presentations to the criticality safety working group of the DOE's Energy Facility Contractors Group (EFCOG). The CSSG Chair and Deputy Chair participate by invitation on the regularly scheduled phone calls of the EFCOG group and normally participate in this group. Additional CSSG members also participate on the EFCOG virtual meetings. Posting any CSSG presentations made to the EFCOG group on the NCSP website would be a process improvement. The technical community in this assessment is viewed as the NCS technical practitioners generally represented by the ANS NCSD and the EFCOG criticality safety subgroup.

Recommendation 11: Post CSSG presentations made to NCS technical groups (e.g., ANS and EFCOG subgroup on nuclear criticality safety) to the NCSP website with a separate link specifically for presentations. (No Charter revision needed.)

- **Does the CSSG effectively engage in the development of DOE directives and standards impacting criticality safety?**
  Most of the communication is based on the involvement of individual CSSG members in the revision process for DOE directives and standards. Also, the NCSP Manager routinely monitors these activities to determine if there is some action related to criticality safety. This is somewhat opportunistic. There have previously been discussions with Garrett Smith's office about establishing a formal interface between the CSSG and those within the HQ organizations cognizant of these activities. This formalization would be a definite process improvement and an opportunity for additional CSSG exposure. As a first step, the CSSG should identify a member with knowledge and interest in DOE directives and standards to lead this effort on behalf of the CSSG. That individual in concert with the NCSP Manager would then work to identify an appropriate individual within DOE to establish the interface.

  Recommendations:
  12. The CSSG chair and NCSP Manager should select at least one member (Current or Emeritus) to interface with the DOE as the CSSG Regulatory Liaison.
  13. The CSSG chair, NCSP Manager and the CSSG Regulatory Liaison should follow up on previous communications to identify and engage a specific DOE Regulatory Liaison for criticality safety internal to DOE.
  14. Presentations regarding CSSG advice related to the development of DOE directives and standards shall be posted to the NCSP website at the discretion of the NCSP Manager. No Charter revision is needed.

- **Does the CSSG effectively participate in the development of ANS Standards?**
  At this writing, approximately half of the CSSG members serve on the ANS-8 Subcommittee or on a working group as either a chairman or a member. In addition,

two of the CSSG members (including Emeritus members) serve on the Nuclear Criticality Safety Consensus Committee.

CSSG PERFORMANCE

The primary work products of the CSSG are its completed taskings. Lesser activities include direct feedback to the NCSP Manager on specific issues; participating in NCSP proposal reviews; and individual member involvement with DOE directives and standards as well as ANS standards that include aspects of nuclear criticality safety.

This section addresses the following objectives identified in the Tasking:
- o the performance of the CSSG relative to established expectations (i.e., Charter and Taskings), and
- o the performance of the CSSG relative to advising the NCSP Manager and DOE/NNSA relative to the effectiveness of elements of the NCSP and any emergent criticality safety issues/concerns within the DOE.

- **Have CSSG Taskings and Responses since the 2007 self-assessment been consistent with the Mission, Scope of Activities, and the Work Instructions as detailed in the Charter?**
  Yes. The work of the CSSG since 2007 has involved 55 Taskings (completed to date) and these were roughly evenly split into three categories:
    - general guidance applicable across the DOE,
    - specific guidance originally developed for a single contractor/site, and
    - guidance specific to DOE Orders, Standards and NCSP Proposals.

  A review of the posted documents verified consistency with the CSSG Charter and Work Instructions. However, the CSSG's Tasking Responses appear have had limited impact, particularly on DOE Orders and Standards, compared with what was desired and expected. Additional discussion and specific recommendations regarding cultivating the impact of the CSSG are given in Section 5.2.

- **Has the performance of the CSSG relative to advising the NCSP Manager and DOE/NNSA been effective?**
  The Charter and Work Instructions require the NCSP Manager and the CSSG Chair to assess the individual participation level of members of the CSSG. No specific requirement was identified in the Charter to address the satisfaction of the NCSP Manager with CSSG performance. The NCSP Manager is highly engaged with the routine operations of the CSSG, including the development and execution of Taskings. There is open and on-going communication with the NCSP Manager. The NCSP Manager facilitates CSSG engagement with DOE/NNSA. All indications are that the relationship between the NCSP Manager and the CSSG is harmonious. Recent CSSG briefings to DOE/NNSA have been well-received with positive feedback. No metric other than client satisfaction was identified and evaluated.

Additional lines of inquiry for this section were taken from the 2007 SA.

- **Are the priorities of the CSSG to promote Complex-wide criticality safety or the parochial needs of home organizations?**

  Generally, and even for taskings specific to individual sites, the priorities are aimed at assisting the entire DOE complex. The diversity of the CSSG members discourages a parochial tone being set. The assignment of CSSG members to various Taskings and the selection of new members should recognize and maintain this diversity. CSSG assistance with deficiencies at one site are always valuable to the CSSG and the DOE in the future assistance of other sites.

- **Are the right members assigned to the tasks which correspond to their competence?**

  Yes. The professionalism of the members and the corporate knowledge of their strengths checks misalignments. Consensus of the entire CSSG is required before a tasking response is formally sent to the NCSP Manager for approval and issuance.

- **Are members exercising influence on recommendations outside their area of knowledge and competence?**

  No. The assignments by the CSSG chair have been, as far as possible, to match the right people to the assignment. In addition, there has been a commendable lack of parochial influence in the CSSG's recommendations. Consensus is required before a tasking response is formally issued by the CSSG, providing a check and balance utilizing the diverse expertise of the CSSG at-large.

- **Are CSSG assignments completed in a satisfactory and timely manner, with results that are useful to NCSP and DOE management?**

  When delays in completing CSSG TRs occur they are generally due to scheduling conflicts with either arranging site visits, obtaining prompt access to documents for review, receiving timely review comments, etc. These conflicts are outside the control of the CSSG. The Tasking Statements and schedules should be revised when a conflict occurs. In no instance, in the review of TRs performed since the 2007 SA, did the writing team note any schedule delay that could have potentially impacted the usefulness of the TR. CSSG assignments are completed always to the satisfaction of the CSSG and accepted by the NSCP almost always without the need for changes. While the CSSG and NCSP may judge the TRs to have useful results for the DOE to adopt, this often does not happen, or only after a significant time lapse. More direct action on the part of the NCSP/CSSG to identify and brief appropriate parties is needed. Concerns related to the impact of the CSSG's products are discussed further in Section 5.2.

- **Is there a program/policy in place to formally document various CSSG unanimous or majority, unsolicited thoughts/discussions about concerns, issues, and/or suggestions for general program improvements, regulatory or otherwise?**

  Yes. The CSSG prepares documented responses to taskings from the NCSP manager. Where necessary a formal "minority decision" attachment is provided as part of the tasking response. Other CSSG discussions and concerns are captured in meeting minutes that can trigger communications to management that will result in a formal recommendation or tasking when appropriate. Specific examples can be seen in CSSG Taskings 2016-04 and 2015-05.

- **Is the CSSG adequately aware of regulatory requirements when it provides program recommendations?**

  Yes. CSSG members are cognizant of DOE requirements relevant to the NCS aspects of the work performed and specific program requirements. ANS-8.19 is the standard for NCS program requirements and CSSG members are intimately familiar with this standard. This expectation should be part of the annual review of CSSG members (see Section 5.1).

ADDITIONAL LINES OF INQUIRY

As stated in this tasking there were several specific items that were requested to be addressed:

> -Assess the need and path forward for proactively managing membership,
> -Assess the current impact of CSSG activities
> -Identify and assess current CSSG activities that are not explicitly cited
> in the Work Instructions, and
> -Consider activities that the CSSG is not currently performing, but perhaps should.

These additional lines of inquiry are addressed in this section.

5.1 Managing CSSG Membership

Looking at age demographics, the CSSG should heed the lessons learned with contractor criticality safety programs in the past and recognize that the CSSG membership is showing signs of being on shaky ground and vulnerable to unfortunate events. The recent transition of two prominent members from Current Membership to Emeritus may be another warning sign that there is a need to re-energize the CSSG. Appendix B of the Charter outlines the CSSG Membership Policy (MP). Section 2 of the MP includes the following requirement*: On an annual basis, the NCSP Manager and CSSG Chair assess the participation level of each member and determine whether continued membership is appropriate*. Based on questioning the current and past two CSSG Chairs, this appears to have been done as required but without any notation of having done so in the CSSG minutes. In the interest of transparency, it would be useful to note in the appropriate CSSG minutes that the review was completed as required for the FY.

Given the increased turnover in CSSG membership over the past 5 years, and that anticipated in the future, a more disciplined approach to the review of CSSG membership would benefit the future of the CSSG if the scope were expanded beyond Current Members. Benefits include assuring the CSSG has a membership pipeline, remains current with both the NCS community needs, maintains balanced expertise in support of the NCSP 5-year plan, and keeps a diverse representation of the DOE Complex criticality safety programs represented on the CSSG. This approach would also include seeking opportunities to engage unique candidates early as observers or at-large participants in an on-going TR.

A summary of the steps to include in the Annual Membership Review include:
- Discuss the current balance of expertise on the CSSG
- Assess ongoing participation of individual CSSG members (e.g., taskings supported, calls/meeting attended, comments/responses received, etc.)
- Chair to deliver feedback to individual CSSG members including a discussion of any actions required for improvement and any potential for changes in membership status
- Notate in next CSSG meeting minutes that the membership review for the FY has been completed.

The expanded scope of this Annual Membership Review would benefit from formally including the Deputy Chair in the review. The past Chairs interviewed did indicate that the Deputy Chair was usually included in the annual membership review.

Recommendations:
15. Revise the CSSG Work Instructions to add **Section 8) Annual Membership Review** as outlined above to establish expectations.

16. Revise the Charter Membership Policy Section 2 to add the CSSG Deputy Chair as a participant in the Annual Membership Review.

5.2 CSSG Impact
There is a need for increased recognition of CSSG activities, particularly the TRs, within the NCS community, developers of DOE directives and standards, and ANS Standards to more effectively fulfill the CSSG Mission.

Tasking Statements addressed by the CSSG often arise from one or more contractor sites that find a particular issue where adherence to DOE directives and standards pertaining to NCS is contentious due to different interpretations of wordings in regulatory documents or conflicts with established NCS regulations and practices. When the CSSG issues a Tasking Response that has been accepted by the NCSP program manager, the guidance therein will generally not be 100% in accord with current regulatory wording. This may be due to various reasons, but regardless, the difference needs to be expeditiously resolved.

Unfortunately, the desired resolution generally requires the updating of one or more DOE directives and standards which may take years during which time the contractor and the

oversight regulator may disagree on a path forward. This may result in expensive delays of projects or even differing NCS guidance adopted by different sites within the DOE.

Recently, in-person briefings by the CSSG to relevant DOE managers on the results of TRs have been used to improve this situation. Continuing this trend to identify specific organizations such as the CSCT, EFCOG, NCSD membership, and relevant HQ staff and management that could benefit from the content of a TR is important to increasing the visibility of the CSSG and its work. In addition, FO and SO criticality staff may need to be specifically engaged to assure that CSSG TR recommendations are implemented as needed. Recommendations for these next steps in communication should be directly included in the TRs.

Early engagement and inclusion could provide better opportunities for recognition of the CSSG contributions. If a CSSG tasking is likely to result in guidance that conflicts with existing DOE regulations, then the NCSP Manager should include the proposed CSSG Regulatory Liaison (Recommendation 12) on the CSSG subgroup that will be drafting the response. The CSSG Regulatory Liaison will communicate with the DOE Regulatory Liaison (Recommendation 13) on the progress of the TR. This should promote an agreeable and efficient path forward to be identified in the CSSG TR (Recommendation 17 below). Using an inclusive process should encourage a result that the regulatory group can endorse and promote. Likewise, early engagement of the CSCT or EFCOG groups could also be of benefit and enhance the quality of the TR and should be considered in developing the TS.

Recommendations:
17. The Work Instructions should be revised to specifically require the content of a TR to include recommended follow-up activities (including presentations to the technical community (NCSD, EFCOG, CSCT, etc., briefings to DOE Field Office or Headquarters' personnel, updated training recommendations, etc.). Any known disagreements or incompatibilities between the TR and current DOE directives and standards should be clearly delineated.

5.3 CSSG Activities Outside the Work Instructions

The self-assessment team reviewed the actions undertaken by the CSSG this FY (2022) and concluded that there were two items that were not specifically in the Work Instructions.

Quarterly expense reporting: The CSSG members are requested to provide financial data on a quarterly basis to the CSSG Chair who in turn provides a summary report to the NCSP Execution Manager. The process is informal and would appear to be the responsibility of the Deputy Chair under the roles and responsibilities described in the Charter.

Recommendation 18: Revise the CSSG Work Instructions to describe Quarterly expense reporting with appropriate detail.

Self-Assessments: There is no specific requirement for the NCSP Manager to request a CSSG self-assessment. The Charter does specify that the NCSP Manager can issue a Tasking to the

CSSG for any technical support deemed appropriate. A self-assessment is more of a management tool that can and should be used to evaluate and shape the performance of the CSSG. The last CSSG Self-Assessment was performed in 2007 and it is included in Attachment B. Section 6 of this report assesses the CSSG response to the recommendations from that report.

Recommendation 19: The CSSG Self-Assessment should be formally stated as a requirement under the Charter, item <u>IIIC Scope of Activities,</u> to be performed at the request of the NCSP Manager and not less than once every 10 years. Address the selection of assessors in the Work Instructions.

5.4 Potential Activities the CSSG Should Consider - Mentoring

The SA team received one comment from the NCS Technical Community that perhaps the value of the CSSG would be increased if the group were more involved in mentoring, especially with respect to cultivating future CSSG members. This function is not identified in the CSSG Mission Statement or Charter. CSSG members have been actively engaged in the criticality safety training and qualification program element of the NCSP. Engage the NCSP Manager as to their interest in the CSSG undertaking some mentoring activities or developing an NCSP proposal under the (Training & Qualification) T&Q element. It is recognized that mentoring, while laudable, does take time from members' other duties.

Recommendation 20: The NCSP Manager should decide and document if a tasking related to CSSG mentorship activities should be undertaken.

REVIEW RECOMMENDATIONS FROM 2007 SELF-ASSESSMENT

Responses to the eight recommendations made in the 2007 report are assessed in this section of the report.

SA 1: **Are the roles and responsibilities of the CSSG clear?** Recommendation: Consider reverting to the original NCSP interface structure in which the NDAG, CSCT, end-users, and CSSG had direct lines of communication.

A response to this recommendation was not formalized. This recommendation is considered **partially met** because the CSSG chair or deputy chair does attend the CSCT meetings and phone calls and attends the EFCOG working group on criticality safety. (The EFCOG group in effect replaced the user's group in about 2010.) Also, the NDAG chair currently serves as an ex-officio member of the CSSG. This line of inquiry is addressed in this self-assessment in Section 3.3 and no further action is recommended.

SA 2: **Do the CSSG activities reflect their roles and responsibilities?** Recommendation: CSSG activities and taskings should be directed more towards the primary goal of the group as stated in item 1.

The "primary goal of the group as stated in item 1" in this recommendation refers to the mission statement: *The CSSG provides advice and technical support to help meet the needs of DOE missions, including stockpile stewardship, material stabilization, transportation, storage, facilities decommissioning, and waste disposal.*

The CSSG has supported Stockpile Stewardship in a number of Taskings including:
    Several Assist Visits to LANL
    Assist Visits to Y12
    Assist Visit to SR (also materials stabilization)

CSSG activities have also supported the mission of DOE Facilities, Decommissioning and Waste Disposal in that several and repeated reviews of the Hanford solidification and vitrification projects.

This line of inquiry was addressed in Section 2.1 of this report. This recommendation is considered **met**. No additional follow up is necessary.

SA 4: **Does each member of the CSSG have adequate funding for their role and responsibility?** Recommendation: Consideration should be given to making better use of CSSG emeritus members, who with some minimal funding can provide considerable support for reviews. The CSSG will formulate a proposal on the use of emeritus members and forward it to the NCSP manager.

There is no record of implementing this recommendation. This recommendation is considered **not met**. The assessment team considers this to be an important action and be considered as part of managing CSSG membership (see Section 5.1). The CSSG believes this recommendation to have continued value to the group. The format of a Tasking as opposed to a "proposal" is more within the scope of the CSSG. A Tasking to better define the role and potential contribution of Emeritus Members should be pursued. The Tasking should address topics including technical contributions (Taskings, regulatory reviews, T&Q activities, mentoring, etc.), funding concerns, ability to maintain a DOE security clearance, etc.

Clarifying the role of the Emeritus Member could also provide benefit to managing the CSSG membership (see section 5.1).

Recommendation 21: Develop a Tasking, staffed primarily by Emeritus Members, to identify how they can best help the CSSG.

SA 5: **Are the relationships and organizational infrastructures between the NCSP and CSSG conducive to the assigned responsibilities?** Recommendation: Restart the teleconferences between the program element chairs (NDAG, CSCT, end-users) and the CSSG on a monthly or quarterly basis.

This recommendation was **not met**. No change was implemented in the CSSG work instructions towards this goal. If meetings of the chairs happen routinely, they are not

documented. This recommendation does not appear to have been implemented nor is the reason for not doing so documented.

This 2007 recommendation is considered overcome by events by the CSSG. These relationships and lines of communication are assessed in Section 3 of this report and new recommendations are provided to address continued improvement in this area.

SA 7: **Does the CSSG adequately integrate the recommendations of the NDAG into the scope of CSSG activities?** Recommendation: Reestablish the formal lines of information exchange with the NDAG to keep the CSSG apprised of developments and needs in the nuclear data area.

This recommendation was **met**. The NDAG chair sits as an ex-officio member of the CSSG and provides valuable input. This recommendation has been implemented but is not formalized in the Charter/Work Instructions. A discussion and formal recommendation to revise the Charter consistent with the 2007 recommendation was addressed in section 2.2 of this assessment. Also, NDAG cross reviews the funding proposals and provides input to the CSSG review of NCSP proposals. No follow up action is necessary.

SA 12: **Are members provided opportunities and encouragement to further their knowledge base and stay current with new developments?**
Recommendation: The NCSP should provide CSSG members support to attend at least two professional society meetings per year, including registration, travel and living costs. These national meetings provide a time and place for numerous meetings among the various NCSP elements and are a beneficial supplement to regular conference calls. Numerous working groups typically meet for breakfast, lunches, or dinner for face-to-face discussion of many issues. In practice most of CSSG members spend considerable time working on CSSG work (some as much as 30%) during the week of ANS meetings in addition to the scheduled official meeting. (See SA 20 and associated recommendation.)

This recommendation was **not met**. Current funding includes support of 2 face-to-face meetings of the CSSG on an annual basis. The group considers this requirement in establishing when and where those meetings are held. The ANS meetings or the NCSP TPR are considered as prime options to hold a co-located CSSG meeting. These face-to-face meetings provide ample opportunity for the CSSG members to stay engaged and current with the NCS community. Due to a plethora of contracting differences amongst the members, direct funding of conferences is not always possible. No follow-up action is recommended.

SA 13: **When assignments and taskings are given to the CSSG, are members' schedules, commitments, and support (in time and money) well accommodated or contained in order to limit impacts on funded work and personal time? Are task deadlines established that take into consideration CSSG members' primary duties or are they unreasonably short?** Recommendation: When circumstances permit, longer lead times should be built into tasking statements. If possible, the NCSP manager should consult with the CSSG to

determine personnel availability before setting deadlines. Consideration should be given to using emeritus members whenever possible, especially for document reviews.

The NCSP Manager, the CSSG Chair and Tasking Lead should agree on timelines in the development of the Tasking Statement. However, deadlines may not be met due to unexpected commitments that arise within the CSSG members, or a task that evolves into a more extensive project than envisioned or there are delays receiving review comments from external organizations. However, the Program manager and the customer, if a specific site request, have always been understanding and accepting of delays. The relationship between the NCSP Program Manager and the CSSG has always been professional and harmonious.

The 2007 recommendation was not specific in expectations of a response and therefore completion is **indeterminate**.   The current Tasking process, if properly executed, incorporates establishing appropriate deadlines. No additional actions are recommended.

SA 20: **Are CSSG meetings called as needed, and are meeting agenda distributed prior to the meetings with information pertinent to agenda items?** Recommendation: The NCSP manager should reconsider the value of having more than two face-to-face meetings per year and schedule enough time at the meetings for CSSG business.

This recommendation has been **met**. The addition of virtual meetings has contributed positively to the management of both information and time during meetings. The meetings usually take less time than allotted.

No additional follow up is needed.

In summary, of the 8 recommendations from the 2007 review, 3 were judged to be met, 3 were not met, 1 was partially met and 1 was indeterminate.

CONCLUSIONS AND RECOMMENDATIONS

A self-assessment (SA) of the CSSG was last performed in 2007 (included as Attachment B). A review of this assessment contributed to the lines of inquiry pursued herein. A detailed review of the 8 recommendations from the 2007 SA determined that 3 were met, 3 were not met, 1 was partially met and 1 was indeterminate. A discussion and path forward, as appropriate, for each of the 8 recommendations is included.

There are a total of 21 recommendations identified in this SA. Twelve of these are revisions to the Charter and Work Instructions, two require Taskings be undertaken, three require actions by the NCSP Manager and four are actions for the CSSG Chair/Deputy Chair. None of these recommendations are the result of a finding that the CSSG is not meeting a requirement in the Charter or Work Instructions. Most are actions for process improvement and codifying current practices of the CSSG into the Charter and Work Instructions. Table 1 is a summary of these recommendations.

The highest priorities for process improvement result from the lines of inquiry addressing managing CSSG membership more proactively and improving the visibility of CSSG work products and their impact on DOE criticality safety practices and regulations.

Proposed revisions to the Charter, Policy and Work Instructions are provided in Attachment C.

Table 1: Categorization of 2022 SA Recommendations

Recommendation Category	Specific Recommendation
Revise Charter and Work Instruction (See Attachment 3)	**1, 2a, 2b, 2c, 3, 5, 8, 9, 10, 15, 16, 17, 18, 19**
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 **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

ATTACHMENT A

CSSG Tasking 2022-02

Task Title: CSSG Self-Assessment

Task Statement:
The CSSG is tasked to perform a self-assessment of the performance and effectiveness of the Group within the NCSP. The assessment should include:

- an evaluation of the organization of the CSSG (i.e., its Charter, Work Instructions and Membership Policy),
- specifically address the overall impact of the CSSG and look at proposing metrics for "active CSSG membership" and/or term limits for members to maintain the group's effectiveness,
- review the roles of Emeritus and Ex-officio membership (e.g., whether the following positions should have defined ex-officio representation on the CSSG: NCSP Program Execution Manager, NDAG Chair, and CSCT Chair)
- the interface with the NCSP management team,
- the interface, communication, and coordination with other elements of the NCSP (NDAG, CSCT, End-users, etc.),
- the performance of the CSSG relative to established expectations (i.e., Charter and Taskings),
- the performance of the CSSG relative to advising the NCSP Manager and DOE/NNSA relative to the effectiveness of elements of the NCSP and any emergent criticality safety issues/concerns within the DOE.

It is recommended that metrics for the self-assessment be documented and appropriately tailored to the mission of the CSSG. In addition to reviewing what the CSSG has been doing, the assessment should also consider what the CSSG has not been doing but should be. Finally, for each area needing improvements, the CSSG should recommend practical and measurable corrective actions that can be implemented by the NCSP Manager and/or the CSSG to facilitate continuous improvement.

Period of Performance:
The tasking should kick off the effort by July 12, 2022, followed by a draft for review by the full CSSG by August 30, with the final version for posting to the NCSP website by September 30, 2022.

Resources:
> CSSG Tasking 2022-02 Task Members
- Mikey Brady, Team Lead
- Tom McLaughlin
- Jerry Hicks

Task Deliverable:

Report to the NCSP Manager on the results of the CSSG Self-Assessment, including the evaluation criteria developed for the review, recommended corrective actions and opportunities for improvement.

Task Completion Date:

September 30, 2022

Signed: _____

Angela S. Chambers
Digitally signed by Angela S. Chambers
Date: 2022.07.13 07:38:52 -05'00'

Angela Chambers

Manager US DOE NCSP

Office of the Chief of Defense Nuclear Safety, NA-511

ATTACHMENT B

2007-06 Tasking Response

October 19, 2007

To: J. N. McKamy   Manager, DOE NCSP

From: A. S. Garcia   Chair, DOE CSSG

Subject: CSSG Self-Assessment Report

Task 2007-06 from the NCSP manager directed the CSSG members to perform a self-assessment of their performance and effectiveness as part of the NCSP. The task statement is:

> The CSSG is tasked to perform a self-assessment of the performance and
> effectiveness of the Group relative to its functions within the NCSP. The
> assessment should include an evaluation of the organization of the CSSG (i.e., its
> charter), the interface with NCSP management, the interface and coordination
> with other elements of the NCSP (NDAG, CSCT, End-users), and the
> performance of the CSSG relative to established expectations (i.e. current charter
> and formal taskings), and the role of the CSSG relative to advising the NCSP
> Manager relative to the NCSP elements and emergent criticality safety issues
> within the DOE. It is recommended that metrics for the self-assessment be
> derived from the ISM principle titled "Organizational Learning for Performance
> Improvement" (see DOE M-450.4-1) and the report should be formatted and
> guided by the Guiding Principles of Integrated Safety Management appropriately
> tailored for the mission of the CSSG. Finally, for each area needing improvement
> the CSSG should recommend practical and measurable corrective actions that can
> be implemented by the NCSP Manager and/or the CSSG to facilitate continuous
> improvement.

The assessment criteria and responses on the following pages represent the consensus opinions of the CSSG. Initial attempts at developing the assessment criteria were based on the ISM principle identified in the task statement. However, because the CSSG is only part of the broader, integrated NCSP, many of the criteria led to assessment of the performance of the managerial aspects of the NCSP. As a result, the final set of criteria is loosely based on the ISM principle plus other criteria developed from the CSSG charter and issues raised by the group over the effectiveness of the CSSG and its interaction with other elements of the NCSP.

In general, the CSSG performance is very good considering the scheduling demands placed upon the members by their primary duties. Improvements are needed in meeting the deadlines assigned to group taskings. Better communication with the NCSP management to identify periods when CSSG members have sufficient time for the taskings would help to solve this problem. Improved information exchange with other elements of the NCSP was identified as a goal to better integrate CSSG activities with the overall NCSP. The CSSG members will use the results of this self-assessment to improve their performance in future years.

Roles and Responsibilities of the CSSG

1. **Are the roles and responsibilities of the CSSG clear?**

   Not always. From the CSSG charter, there is a primary and a secondary role and these are clear.

   > Primary: Provide operational and technical expertise to the Department, which involves providing advice and technical support to help meet the criticality safety needs of DOE missions, including stockpile stewardship, material stabilization, transportation, storage, facilities decommissioning, and waste disposal.

   > Secondary: Makes recommendations for implementation and execution of the DOE Nuclear Criticality Safety Program (NCSP), a program and budget administered by NNSA.

   However, with the proliferation of tasks, it seems at times that the group has been relegated to the status of a low-cost consulting organization. There seems to be a lack of integration of CSSG activities into the overall DOE criticality safety program and as a result the CSSG is often not aware of the broader scope of issues on which it is supposed to be providing advice and support.

   Recommendation: Consider reverting to the original NCSP interface structure in which the NDAG, CSCT, end-users and CSSG had direct lines of communication.

2. **Do the CSSG activities reflect their roles and responsibilities?**

   Only in part. The CSSG activities seem dominated by their secondary role at the expense of the primary role.

   Recommendation: CSSG activities and taskings should be directed more towards the primary goal of the group as stated in No. 1.

3. **a) Do the charters, policies and work instructions for the CSSG reflect the intended responsibilities and functions of the CSSG? b) Are changes to these documents made only after discussions with the CSSG?**

   a) Yes. b) Not always. The CSSG should have more input into such things as charter modifications and work instructions. The charter and work instructions should be reviewed periodically and changes proposed by the NCSP manager should be sent to the CSSG for review and concurrence before being implemented.

4. **Does each member of the CSSG have adequate funding for their role and responsibility?**

   Not always. Members with large program elements can usually supplement CSSG support funds while members with small programs generally have inadequate funding. The CSSG recognizes that the NCSP manager is trying to address this issue within budget constraints.

   Recommendation: Consideration should be given to making better use of CSSG emeritus members, who with some minimal funding can provide considerable support for reviews. The CSSG will formulate a proposal on the use of emeritus members and forward it to the NCSP manager.

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5. **Are the relationships and organizational infrastructures between the NCSP and CSSG conducive to the assigned responsibilities?**

   Generally, but better communication and interaction between NCSP elements would be useful.

   Recommendation: Restart the teleconferences between the program element chairs (NDAG, CSCT, end-users) and the CSSG on a monthly or quarterly basis.

6. **a) Is it clear for which decisions facing the NCSP the CSSG should be consulted?**
   b) Are CSSG recommendations and advice acted on satisfactorily?

   a) It is not always clear to the CSSG. At times this appears to be a decision based on management preference and time constraints. b) In some instances, CSSG members have felt their advice and recommendations were not acted on appropriately.

7. **Does the CSSG adequately integrate the recommendations of the NDAG into the scope of CSSG activities?**

   Not as much as possible. When the NDAG reported to the NCSP manager through the CSSG this was true. With the program reorganization, there is room to improve the interface between the two groups.

   Recommendation: Reestablish the formal lines of information exchange with the NDAG in order to keep the CSSG apprised of developments and needs in the nuclear data area.

8. **Are the priorities of the CSSG to promote complex wide criticality safety or the parochial needs of home organizations?**

   Generally, the priorities are aimed at helping the entire community.

CSSG Membership, Assignments and Support

9. **Is the selection process for membership on the CSSG sufficiently rigorous to meet the mission needs?**

   Yes. The CSSG membership policy procedure (April, 2006) provides a rigorous selection process that should be adequate to meet the mission need. The breadth of CSSG member knowledge and experience results in excellent responses to assigned missions.

10. **Are the right members assigned the tasks which correspond to their competence?**

    Yes. The CSSG is composed of people with limited time for committee assignments. Assignments go to those who can work on the issue at the time. The professionalism of the members and the corporate knowledge of their strengths checks misalignments. Consensus is required before a tasking response is formally issued by the CSSG.

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11. **Are members exercising influence on recommendations outside their area of knowledge and competence?**

No. The assignments by the CSSG chair have been, as far as possible, to match the right people to the assignment. In addition, there has been a commendable lack of parochial influence in the committee's recommendations.

12. **Are members provided opportunities and encouragement to further their knowledge base and stay current with new developments?**

As a group, no, but some individuals are able to use CSSG support funds for this purpose.

Recommendation: The NCSP should provide CSSG members support to attend at least two professional society meetings per year, including registration, travel and living costs. These national meetings provide a time and place for numerous meetings among the various NCSP elements and are a beneficial supplement to regular conference calls. Numerous working groups typically meet for breakfast, lunches or dinner for face-to-face discussion of many issues. In practice most of CSSG members spend considerable time working on CSSG work (some as much as 30%) during the week of ANS meetings in addition to the scheduled official meeting. (See No. 20 and associated recommendation.)

13. **When assignments and taskings are given to the CSSG, are members' schedules, commitments and support (in time and money) well accommodated or contained in order to limit impacts on funded work and personal time? Are task deadlines established that take into consideration CSSG members' primary duties or are they unreasonably short?**

No. This is an ongoing problem with no clear solution. Taskings often arrive with deadlines and work scopes that are not compatible with members' primary commitments. As a result, many members spend their personal time to complete CSSG assignments.

Recommendation: When circumstances permit, longer lead times should be built into tasking statements. If possible, the NCSP manager should consult with the CSSG to determine personnel availability before setting deadlines. Consideration should be given to using emeritus members whenever possible, especially for document reviews.

14. **Are CSSG assignments completed in a satisfactory and timely manner, with results that are useful to NCSP and DOE management?**

Assignments are completed satisfactorily but often well past the deadline. (See No. 13 and associated recommendation.)

15. **Is the process to initiate CSSG activity clear and unambiguous?**

Yes. Formal taskings are issued by the NCSP manager. Issues raised by CSSG members are sent to the NCSP manager who in turn issues a tasking when appropriate.

16. **Is there a program/policy in place to formally document various CSSG unanimous or majority, unsolicited thoughts/discussions about concerns, issues, and/or suggestions for general program improvements, regulatory or otherwise?**

Yes. The CSSG prepares documented responses to taskings from the NCSP manager. Other CSSG discussions and concerns are captured in meeting minutes that can trigger

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communications to management that will result in a formal recommendation or tasking when appropriate. This methodology continues to work without a formal program.

17. **Is the CSSG adequately aware of regulatory requirements when it provides programs recommendations?**

    The CSSG is primarily a technical body and is primarily aware of technical requirements. To the extent required for assigned reviews, CSSG members are cognizant of DOE requirements.

18. **Are CSSG members sufficiently aware of the specific applications of criticality safety at DOE sites to perform the reviews and assessments assigned to the group?**

    Yes, especially for high-level reviews. For in-depth reviews or site assessments, members are provided site-specific documents to study before the review.

CSSG Interactions and Charter Commitments

19. **Are open communications between CSSG members and other elements of the NCSP the norm?** .

    Yes. Meetings are supplemented with frequent conference calls, email exchanges and one-on-one phone calls.

20. **Are CSSG meetings called as needed, and are meeting agenda distributed prior to the meetings with information pertinent to agenda items?**

    Yes. However, some CSSG members question the reduction in mandatory meetings from four to two per year.

    Recommendation: The NCSP manager should reconsider the value of having more than two face-to-face meetings per year and schedule enough time at the meetings for CSSG business. (For example, the one-half day scheduled at the 2007 Vegas meeting was inadequate to cover all CSSG agenda items.) Usually a majority of CSSG members attend the two national ANS meetings that provide an ideal opportunity for meetings of the NCSP elements. The CSSG will formulate a proposal on the reinstatement of CSSG meetings in conjunction with the ANS meetings. NCSP support to CSSG members will be addressed on an individual needs basis. A suggestion for sharing the costs of the meetings will be included in the CSSG proposal. (See No. 12 and associated recommendation.)

21. **Are meetings conducted according to a pre-planned schedule so that all agenda items are covered, irrelevant discussions/debates are minimized, and the group is directly focused on the conclusions/positions related to the agenda items?**

    Yes. However, since an open exchange of ideas is encouraged, meetings often depart from agendas, but always cover the intended items in the meeting or in subsequent discussions.

ATTACHMENT C

Proposed Charter Revisions

<div align="center">

**CHARTER OF THE
DEPARTMENT OF ENERGY
CRITICALITY SAFETY SUPPORT GROUP**

Revised: September 2022

</div>

Approved	
	Angela Chambers, Nuclear Criticality Safety Program Manager

I.   BACKGROUND

On July 14, 1997, the Department of Energy (DOE) accepted Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 97-2, Criticality Safety. Subrecommendation 8, within Recommendation 97-2 states:

> *Identify a core group of criticality experts experienced in the theoretical and experimental aspects of neutron chain reaction to advise on the above steps and assist in resolving future technical issues.*

The Criticality Safety Support Group (CSSG) was formed in response to Subrecommendation 8 and is composed of persons from DOE staff and contractors having collective knowledge in a broad spectrum of nuclear criticality technology and safety areas. CSSG Work Instructions are attached as Appendix A. The CSSG Membership Policy is attached as Appendix B.

II.   MISSION

The primary function of the CSSG is to provide operational and technical expertise to the DOE through the Nuclear Criticality Safety Program (NCSP) manager. The CSSG provides advice and technical support to help meet the criticality safety needs of DOE missions, including stockpile stewardship, materials stabilization, transportation, storage, facilities decommissioning, and waste disposal. The CSSG also makes recommendations for the implementation and execution of the coherent, efficient NCSP administered for the DOE by the National Nuclear Safety Administration (NNSA).

The collective CSSG expertise encompasses critical and subcritical integral experiments, differential nuclear physics measurements, nuclear data evaluation, calculational methods, criticality safety training and qualification, management of criticality safety programs, criticality safety evaluations, and criticality safety consensus standards.

III.   OPERATION OF THE CSSG

A.   <u>Organization</u>

The Chair of the CSSG is appointed by the NCSP manager and serves a 1-year renewable term not to exceed three consecutive years. The Chair is responsible for coordinating the activities of the CSSG with the NCSP manager and for reporting these activities to the NCSP Manager.

The Deputy Chair of the CSSG is nominated by the membership of the CSSG and appointed by the NCSP Manager. The Deputy Chair serves a 1-year renewable term not to exceed three consecutive years. The Deputy Chair serves as the Chief Operating Officer of the CSSG and is responsible for tracking deliverables and taskings, documenting meeting results/notes/actions and performing the duties of the Chair when the Chair is absent. The Deputy Chair has responsibility for orientation and onboarding of new members. The Chair has responsibility for onboarding the incoming Deputy Chair.

Terms for both the Chair and Deputy Chair begin on the first day of the fiscal year. Either the Chair or Deputy Chair, but (preferably) not both, may elect to not renew their position at the end of their current term. When the Chair vacates that position, the Deputy Chair automatically assumes the position of Chair. Both the Chair and Deputy Chair shall provide notice to the NCSP Manager sufficiently in advance of leaving that position to allow for a replacement to be appointed.

The NCSP Manager shall document the reaffirmation of the Chair and Deputy Chair appointments each year.

The CSSG Chair may appoint subcommittees from the CSSG membership to review, report, or act on any matter of concern that comes before the CSSG.

In addition, to supplement the expertise of the CSSG members, the CSSG Chair, with the approval of the NCSP manager, may request other qualified individuals to provide the CSSG with technical expertise for specific tasks. Whenever practical, Emeritus Members should be considered for these roles.

B.   Meetings

The Chair shall provide opportunities for face-to-face CSSG meetings as needed but no less than two times annually. These face-to-face meetings should also provide the CSSG members with access to NCS practitioners across the DOE Complex to stay current with their needs. Virtual attendance is accepted if both audio and video is activated. The presence of the Chair or Deputy Chair standing in for the Chair is mandatory at CSSG meetings. In addition to the two mandatory CSSG meetings conducted each year, additional meetings may be called by the Chair as necessary. The CSSG also meets regularly via teleconferences arranged by the CSSG Chair or Deputy and/or by subcommittees appointed by the CSSG Chair.

C.   Scope of Activities

All tasks and initiatives that require expenditure of NCSP funds by any CSSG member (other than participation in meetings as discussed above) shall be undertaken only after a formal tasking directive from the NCSP Manager has been issued to the CSSG Chair. Work performed by individual CSSG members outside the auspices of the NCSP and not directly approved by the NCSP Manager do not represent the opinion of the CSSG.

The CSSG provides technical support to the NCSP manager for the performance of activities supporting the development and execution of the NCSP. Additionally, the scope of CSSG activities also includes the following reviews:

- Activities or conditions that have the potential for serious degradation of nuclear criticality safety at DOE facilities.
- New nuclear facility designs where criticality is a credible hazard.
- New or revised DOE Directives, Standards, and Guides related to criticality safety.
- Contractor nuclear criticality safety programs at DOE facilities in support of DOE Line Management.
- Perform self-assessments at the request of the NCSP Manager not less than once every five years.

Reviews can be performed as either Technical Assessments (compliance assessments) or as a Technical Assist to provide technical advice and develop complex-wide best practices. The latter is a priority of the CSSG. All reviews or assessments will provide recommendations for improvement for any problem areas found.

APPENDIX A

CSSG WORK INSTRUCTIONS

These work instructions are provided by the NCSP Manager to set performance expectations for the CSSG. The NCSP Manager may modify the CSSG Work Instructions from time to time as deemed necessary. Revisions to these instructions will be promulgated promptly to the CSSG through the Deputy Chair.

1) CSSG Meetings/Telecons

- An agenda for each CSSG meeting/telecon shall be issued by the Deputy Chair working with the Chair in advance of a scheduled meeting/telecon and distributed to the members of the CSSG and the NCSP manager together with any materials needed for review of the agenda items.
- The Deputy Chair of the CSSG shall ensure that the minutes of each meeting are formally recorded. Verbatim minutes of the meetings are not required, but the main points of the issues discussed must at least be summarized and decisions clearly delineated.
- After review and concurrence by the members of the CSSG, the minutes shall be forwarded to the NCSP manager.
- Meeting minutes shall be posted to the NCSP website once approved

2) CSSG Reports/Work Products

- Formal tasking directives are required and should identify (a) the objective of the review as either a technical assessment or technical assist, (b) CSSG members assigned responsibility to develop the Tasking, and (c) the schedule for completion.
- The results of any evaluation, review, response to a formal Tasking, or similar activity by the CSSG shall be transmitted to the NCSP Manager in a formal report. These reports shall represent the consensus position of the CSSG members and identify any follow-on expectations.
- All formal written correspondence on behalf of, or representing, the CSSG individually or collectively, must be reviewed and approved by the NCSP manager prior to making distribution.
- CSSG members performing work as individuals outside the NCSP on tasks other than those directly approved by the NCSP Manager are not representing the CSSG and should clearly state their opinions are their own.
- In the event of serious disagreement with the content of any such report, CSSG members, either individually or with other members, may submit a minority report to the NCSP manager. The NCSP manager will take actions as needed to resolve the issues raised by any minority report and inform the authors of that report of the resolution.
- Reports and work products (including presentations) shall be posted to the NCSP website once approved. Documents and products deemed OUO or otherwise sensitive by the NCSP Manager may be referenced but not directly posted with access provided upon request to, and approval from, the NCSP Manager.

3) CSSG Communications

- CSSG members as part of their duties with the CSSG and the NCSP may answer any informal query (voice or email) from any Departmental element or the DNFSB or its Staff. The NCSP manager should be kept informed of all such communication as appropriate.
- All invitations to external elements (i.e., DNFSB, DNFSB Staff, NRC, etc.) to participate in CSSG and/or NCSP meetings or activities shall be made by the NCSP manager only.
- Deliberations of the CSSG and discussion of issues with the NCSP manager must be kept within the CSSG until such time as an official position is reached and the NCSP manager grants approval to disseminate or discuss the information with non-CSSG members. The CSSG may discuss such issues with NCSP task element managers and/or the Chair of the Nuclear Data Advisory Group as appropriate.
- Discussion topics that the CSSG believes should be vetted with the DNFSB or its Staff must be provided to the NCSP manager who will make the arrangements through appropriate channels. CSSG members are not authorized to unilaterally engage external parties on CSSG or NCSP matters in their capacity as CSSG members.
- The Chair and Deputy Chair shall interface with the CSCT and EFCOG on behalf of the CSSG.
- CSSG members should maintain a close relationship with the ANS Nuclear Criticality Safety Division (NCSD), ANS standards, and the EFCOG criticality subgroup. CSSG members should contribute to ANS technical sessions and participate in ANS standards as appropriate.
- The CSSG Chair should utilize existing tools such as the NCSP Newsletters and DOE Safety Bulletins, to communicate their activities amongst the NCS technical community.

4) CSSG Emeritus Activities

- Emeritus members may receive NCSP funding for support of CSSG Taskings subject to a case-by-case approval of the NCSP Manager. In all such cases, the CSSG Chair should propose to the NCSP Manager that such support is desirable during consultation with the NCSP Manager on the details of the Tasking. The CSSG Deputy Chair will provide an estimate of NCSP funding required and advise the NCSP Manager on the impacts of re-directing NCSP funding to Emeritus members.
- Emeritus members may take on tasks that are outside the scope of the CSSG Charter as requested by the NCSP Manager in consultation with the CSSG Chair as part of their continued support to the CSSG. This is subject to the condition that funding for such activities is provided by the requesting organization and do not require expenditure of NCSP funds. Reports of such work would still receive CSSG peer review and review of the NCSP Manager prior to being issued to the requestor.

APPENDIX B

CSSG MEMBERSHIP POLICY

1) <u>**Size and Composition of the CSSG**</u>

   CSSG membership categories are: a) Current, b) Emeritus, c) Past and d) Ex-officio.

   a) Current membership shall be limited to ten members (except during new member transition periods when this number may be exceeded) having a collective balance of expertise that encompasses critical and sub-critical integral experiments, differential nuclear physics measurement, nuclear data evaluation, calculational methods, criticality safety training and qualification, management of criticality safety programs, criticality safety evaluations, and criticality safety consensus standards. Members may receive funding support from the NCSP as appropriate to their specific tasks and roles in the CSSG. Current members are the only voting members of the CSSG.
   b) Emeritus status is comprised of formerly Current members (see Section 5 of this Appendix).
   c) Past members are those who have resigned from the CSSG and no longer participate in CSSG activities
   d) Ex-officio members are appointed to the CSSG because of their positions related to the NCSP or their expertise in some area of criticality safety.

   All members are appointed by and serve with the approval of the NCSP Manager.

   The CSSG may form subcommittees, working groups or mentoring relationships that can include ad hoc members as needed. However, these ad hoc participants are not voting members of the CSSG nor are they funded directly by the NCSP.

2) <u>**Current CSSG Member Qualifications**</u>

   The following are minimum qualification requirements for Current members.

   a) At least 15 years of experience as a criticality safety practitioner.
   b) Hold an advanced degree in a technical discipline. An additional 5 years of professional criticality safety experience may be substituted for an advanced degree.
   c) Demonstrated leadership and expertise in criticality safety that will ensure the balance of expertise as outlined in Size and Composition of the CSSG. This is typically achieved by a combination of technical publications, leadership in the Nuclear Criticality Safety Division (NCSD) of the American Nuclear Society, teaching criticality safety related courses or participation on ANSI/ANS-8 Standards working groups.
   d) Hold an active DOE Q Clearance.
   e) Have their management concurrence for membership service.

   Once appointed as a Current member, this status is maintained by ongoing participation in CSSG activities.

   The NCSP Manager and CSSG Chair and Deputy Chair shall conduct an Annual Membership Review based on Section 8 of this Appendix.

At their earliest convenience, Current Members should indicate to the NCSP Manager and/or the CSSG Chair their intent to discontinue as a Current CSSG Member and either transition to Emeritus Member status or resign from the CSSG (become a Past Member).

3) Selection of New Members

From time-to-time it will be necessary to replace Current members. In order to facilitate training of new members and provide a seamless transition, the following process should be used.

a) A candidate shall be identified for each vacancy as soon as practicable using the Protocol for Selecting a New Member (Section 4).
b) When filling an anticipated vacancy, the CSSG Chair shall provide the NCSP Manager with the name of the member planning to leave and the estimated departure date. If possible, the successor should be appointed at least one year before the departing member leaves the CSSG. During any overlap period, both the outgoing member and his/her successor will be voting members. This situation may temporarily raise the number of Current members above ten.
c) In the case of an unanticipated vacancy, the new Current member candidate should be selected as soon as practicable using the Protocol for Selecting a New Member (Section 4).
d) The successor is appointed as a Current member of the CSSG by the NCSP Manager on a date agreed to by the CSSG Chair and the NCSP Manager. At that time the outgoing member relinquishes his/her Current status and either transitions to Emeritus Member status or resigns from the CSSG. Whenever possible, this transition should occur on the first day of the fiscal year.

4) Protocol for Selecting a New Member

a) The CSSG Chair shall form a nominating committee comprised of at least three Current members including the CSSG Deputy Chair as committee lead. The CSSG Chair functions as an ex-officio member of the nominating committee.
b) The CSSG Deputy Chair shall solicit the Current and Emeritus members for names and qualification packages for nominees.
c) The nominating committee shall identify the expertise needed to maintain/achieve the collective balance of expertise of the CSSG.
d) The nominating committee shall vet the nominee qualification packages based on the need and their qualifications and disseminate packages for all qualified nominees to the full CSSG.
e) The CSSG Deputy Chair shall convene a meeting (face-to-face or telecom) of the full CSSG to discuss qualified nominees. The need to maintain the collective balance of expertise of the CSSG shall be discussed.
f) The nominating committee shall select, and present to the Current membership, at least two candidates who meet or exceed the qualification requirements and who will maintain a collective balance of expertise among Current members.
g) Candidates shall have their management concurrence for membership service prior to the CSSG initiating the balloting process.
h) In the event of simultaneous vacancies requiring the selection of more than one new member, the nomination and balloting processes are to be separate and independent in time.
i) The Current members vote on the candidates presented by the nominating committee. A majority of votes is required for selection of a new member. The name and qualification package for the selected new member shall be forwarded to the NCSP Manager for review and

approval.

1. In the case of more than two nominees, multiple votes may be necessary to obtain a majority vote.
2. In the case where the CSSG is deadlocked and cannot develop a majority vote, the names of the candidates and their qualification packages, along with the final vote result, shall be provided to the NCSP Manager for breaking the tie/deadlock.

j. The NCSP Manager appoints the new member and notifies the candidate of their selection.

k. The Deputy Chair shall inform the other nominees of the final result of the selection process.

5) Emeritus CSSG Member Status

Emeritus members are encouraged to continue to participate in CSSG activities (teleconference calls, assessments, reviews, meetings, etc.) but will not receive programmatic (i.e. level of effort) financial support from the NCSP. NCSP funding may be provided to Emeritus members for specific technical contributions on a case-by-case basis. Emeritus members are also free to solicit funds to support their participation in reviews, assessments, etc. from the organization (other than the NCSP) that has requested CSSG assistance.

6) Past Member Status

At some point CSSG Members, or Emeritus Members, may become unable to, or may choose to no longer, be 'actively' associated with the CSSG. At that time their name will be moved to the Past Member portion of the CSSG Member listing on the NCSP website, their contact information will be removed, and they will be removed from ongoing CSSG related communications.

7) Ex-Officio Members

Ex-Officio members of the CSSG are:
- the NCSP Manager,
- the NCSP Execution Manager,
- the NDAG Chair, and
- the CSCT Chairman

Ex-officio members are appointed to the CSSG by the NCSP Manager. Ex‑officio members are appointed based on current CSSG requirements for their expertise, for NCSP management support, or as representatives of specific organizations within the DOE. Ex-officio members are invited to participate, as non-voting participants, in CSSG meetings and telecons as appropriate. On an annual basis, the NCSP Manager reviews the participation of each ex-officio member to determine whether continued membership is appropriate.

8) Annual Membership Review

The CSSG Chair and Deputy Chair shall perform an Annual Membership Review to discuss with the NCSP Manager.

The steps to consider in the Annual Membership Review should include:

- Review the current balance of expertise among the Current members of the CSSG.

- Assess ongoing participation of individual CSSG members (e.g., taskings supported, calls/meeting attended, comments/responses received, etc.).
- Chair to deliver feedback to individual CSSG members including a discussion of any actions required for improvement and any potential for changes in membership status
- Notate in the next CSSG meeting minutes that the membership review for the FY has been completed.

9) Quarterly Reporting

The CSSG Chair acts as the Task Manager for CSSG activities under the NCSP. As such, the Chair provides CSSG input to the NCSP Quarterly Progress Report (QPR) process. This input requires expenditure reporting for the quarter for both labor and travel. The Chair solicits individual CSSG members or the appropriate management point-of-contact from each member's funding organization to obtain information about expenditures. Publications and accomplishments are also included in the QPR format and submitted to NCSP management. The CSSG Chair participates in the QPR meetings.

10) Self-Assessments

At a frequency not less than once every five years, the CSSG should undertake a self-assessment.

- The self-assessment should be executed as a specific Tasking so that relevant objectives and lines of inquiry can be established.
- The mission and need for the CSSG should be reviewed to determine if still relevant.
- The previous self-assessment should be included in the review to determine if there are trends.
- When forming the review team, newer members should be given consideration for participating.
- Including an Emeritus member is highly recommended.
- The potential to engage an independent member on the review team should also be considered.