



ANS NCSO

Engineering Calculation Competition Rules

1. The problem is to discover the cause of a nuclear accident based off a real-life criticality event, and to determine the corrective actions that were implemented, and provide your opinion as to whether or not these corrections were sufficient to prevent this accident from reoccurring.
2. The problem is open-book, open-software, open-internet, and open-resource. You may use any references, calculations, or descriptions you deem appropriate.
3. If you have questions, feel free to ask any NCSO member for their guidance or advice, but include the name of anyone who helped you in your submission.
4. Submissions should be small enough to send as a regular email attachment. The judges will not open attachments via Google Drive or other hosting sites
 - a. Submission file names should be formatted as follows:
yourlastname_filetitle.fileextension
 - b. Email your submission to ncsd.competition@gmail.com
5. Your submission must include responses to the 5 tasks described in the problem statement. Judges will decide placement based on a combination of timeliness of submission, correct identification of the accident and description of technical aspects involved, completeness of description of outcomes, and engineering judgement displayed in narrative portion. You will not be judged on length, and you are encouraged to be succinct.
6. You must attend the NCSO awards dinner on Wednesday night when placement is announced. All winners will receive a complimentary ticket (\$90 value). The prizes are as follows:
 - a. First Place: iPad, official ANS award certificate, and complimentary ticket to NCSO awards dinner
 - b. Second Place: One year paid ANS membership, official ANS award certificate, and complimentary ticket to NCSO awards dinner
 - c. Third Place: Official ANS award certificate and complimentary ticket to NCSO awards dinner
 - d. Fourth and Fifth places: complimentary ticket to NCSO awards dinner
7. There will be a wrap-up session during the meeting; plan to attend to discuss the accident, and offer feedback on the competition.



ANS NCSD

Engineering Calculation Competition Problem Statement

You are an investigator on a nuclear accident investigation board. You have been assigned to American National Laboratory to determine the root cause of a recent nuclear accident. The board has assigned you the following tasks:

- Interview the facility manager and write a brief description of the normal process performed in this facility
- Interview the work group manager to determine the planned work on the day of the accident
- Interview a few engineers and nuclear operators assigned to the facility to determine how work process and safety concerns are handled
- Interview the shift manager to get a copy of the log entries leading up to and recorded after the incident
- Write a short page report describing the conditions leading up to the accident, the technical aspects of the accident, the outcome (damage to equipment, etc), and the corrective actions implemented. Provide a short narrative at the end indicating if you feel these corrective actions are sufficient or lacking and why.

NCSD members role playing as the above individuals will have this sticker on their name badges:





ANS NCSO

Engineering Calculation Competition FAQ

Who can compete?

- Current students and young members attending the ANS Winter Meeting

What do I have to do to compete?

- Go to ncsd.ans.org to download the problem statement. Send your solution when it is ready to the provided email.

When is the competition?

- The competition opens on Sunday November 17th
- Solutions should be emailed to ncsd.competition@gmail.com
- The NCSO members playing the roles of nuclear operators, managers, and engineers for this scenario will all be at the NCSO education committee meeting on Sunday evening. This is a great way to find all the players in the same place. We will also be attending various NCSO sessions throughout the rest of the competition time and are available before and after presentations for interviews.

How will the submission be graded?

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How do I know if I win?

- The first through fifth place winners will be invited via the email they used to submit solutions to attend the NCSO awards dinner Wednesday evening. Details will be provided for getting to the venue via email.

- All individuals who place will receive a complimentary ticket to the NCSD awards dinner and an official ANS award certificate. Additional prizes will be awarded at the banquet as follows:
 - First Place: iPad
 - Second Place: One year paid ANS membership