

Team Presentations

Team presentations will be split into two separate activities: a Preliminary Design Review (PDR) and a Critical Design Review (CDR). Design reviews are a critical part of the Systems Engineering Process (SEP), designed to provide a program with technical and programmatic accountability. Although the DoD has several reviews in this process, two of the most important are the PDR and CDR. The Greater Philadelphia SeaPerch and SeaGlide Challenge aims to simulate these and provide an opportunity for teams to gain support and guidance ahead of the competition date as part of this requirement.

Preliminary Design Review (PDR)

The PDR is a preliminary review of the SeaPerch remotely operated vehicle (ROV) design(s). During this review, students will provide an informal 5 minute presentation on their preliminary design to one or more Navy scientists or engineers. Preliminary designs should meet all system and mission requirements and establish a schedule for activities to be accomplished between the time of the PDR and CDR. Preliminary designs do not need to be “complete”, but should be more mature than just a concept design. Final models and pseudocode are not required during the PDR. Teams will receive feedback from Navy scientists or engineers on their designs. If the designs meet the functional requirements, teams will receive approval to continue with a detailed design or will be provided with a recommendation to revise their preliminary designs. (These recommendations are provided for the benefit of the teams and will not count negatively towards their overall presentation score.)

PDRs will be scheduled for the week of March 8 - March 12, 2021. Teams may schedule their PDR by reaching out to nswcpdstem@gmail.com by March 1, 2021 (teams should propose a time that works best for them). The PDR is optional, but participation in the PDR is scored (i.e. you'll get a bonus to your final presentation score by participating in the PDR).

Critical Design Review (CDR)

Each team will make a maximum 10-minute presentation to a panel of judges on the day of the competition. This presentation will act as the team's CDR and is the bulk of the presentation score. The team should present as though they are the sales team of the company that designed their SeaPerch ROV. The U.S. Navy (panel of judges) is screening possible companies to determine which SeaPerch model would be right for them. It is the sales teams' responsibility to prove to the clients that their product is the best. The CDR is a technical review to ensure that the system design is mature enough to proceed into the fabrication process.

The formal presentation will be followed by an informal 5-minute question, answer, and discussion period. Teams should discuss the entire process and results of their design and any modifications made following the PDR. At the conclusion of the question, answer, and discussion period, judges should have a clear understanding of how students implemented their basic knowledge of engineering and naval architecture.

Presentation Rules

- a. All teams must include the following in their CDR presentation:
 - Company Overview
 - Company name, size, and demographics
 - Mission/Vision statement with an emphasis on naval engineering
 - Organization of the company explained
 - Recruiting Methods
 - How did the company recruit new members?
 - Budget information and implementation
 - Identify additions and modifications to the SeaPerch
 - Explain any trade-offs of the modifications
 - Design and Manufacturing Process & Engineering Process
 - Identify the steps taken to achieve the design
 - Design research (naval engineering research)
 - Identify technical calculations or testing conducted and design priorities
 - Integrated lessons learned
 - Charts/Drawings/Pictures
 - Application and use of technology
- b. High School Teams ONLY must:
 - Hand out a corporate brochure to the clients which must include
 - Mission/Vision statement of the company
 - Overview of the types of engineers involved in the process
 - Organizational Chart
 - Each member of the sales team must have a resume to distribute
Resume may be fictitious; can include real life activities
 - Team members should include their role and responsibility in the company
 - Students should use a fictitious name and address

The format for the presentation should be an on screen presentation, open to creative interpretation. Teams are encouraged to use technology in their presentations. Physical models, or other items can be used by a team to supplement their presentation and may be displayed and modeled on camera. All presentations will be conducted via Zoom. For the CDR only:

1. A maximum of eight (8) students per team will be allowed in the presentation room in addition to an advisor.
2. Each team member must participate in giving the presentation. Teams may elect if they wish to have their presentations recorded.
3. Each team member is required to answer questions from the judges.

A schedule of presentation times will be posted prior to the competition. Teams are advised to arrive in the main presentation room 10-minutes prior to their scheduled start time. Teams will be broken out from the main room into the judging room during their scheduled presentation times. Teams who are more than 5-minutes late will not be allowed to present.

2021 SeaPerch Challenge Presentation Rubric

I. PRESENTATION OF THE COMPANY (30%)

Company Information and Objectives

- Company Description
- Mission/Vision statement and purpose that includes naval engineering focus
- Organization/structure of company explained
- Recruiting methods for new company members

Budget Management

- Identified and itemized modifications
- Explained tradeoffs for various modifications

II. KNOWLEDGE OF DESIGN, MANUFACTURING/ENGINEERING PROCESS (35%)

Design Process

- Identified steps to achieve design modifications/alternatives
- Demonstrated design research as part of their process, (naval engineering research)
- Identified steps to select and optimize design
- Lessons learned from modeling process were present and specific
- CAD modeling effort was appropriate and met the system & mission requirements
- Pseudocode programming effort was appropriate and met the system & mission requirements

Engineering Process and Roles

- Discusses naval engineering field and roles
- Demonstrates knowledge of design process: problem definition, tradeoffs, and testing.
- Identifies naval engineering design considerations.

III. PRESENTATION CONTENT (15%)

- Organization & Flow
- Objectives & Main Points/Summary

Presentation Skills

- Focus on naval engineering
- Fluent, clear, audible delivery. Correct grammar and language use
- Non-verbal skills: Posture; practiced
- Overall confident, direct, and animated.
- Presenters and teamwork (at least 2 presenters and less than 9)

IV. INNOVATIVE DESIGN INTERVIEW Q and A (5 MIN) (20%)

Clarification of System Designs

- Team response to judges questions