

System/Critical Subsystem Design Review (weeks 2 and 3 of Fall Quarter)

The goal of the System/Critical Subsystem Design Review is to prove:

- The overall device concept is valid (doesn't violate any physical laws and is technologically realizable at an acceptable cost).
- All innovative/high risk aspects of the design are achievable (reality checks/proof of concept).
- Alternatives are being considered throughout the design process and decisions made based on objective analysis and/or data.
- A valid set of functional specifications have been systematically developed based on input from all stakeholders (this should have been done prior to the start of any design work, but it often evolves a bit as the project proceeds).
- A valid hazard analysis of the device and its design is well underway.
- That progress is being made (that the project is reasonably on time and on budget).

The design process will be allowed to proceed without restriction only if these criteria are satisfied.

System/Critical Subsystem Design Review Briefing Document Outline (Due Monday of Week 2 of Fall Quarter)

Abstract – starting with a succinct project statement and continuing to summaries the rest of the document.

Table of Contents

Market Summary – A brief market summary and background. Just enough to show the need for the device being design.

Regulatory and Standards Summary – A brief summary of the regulatory and standards context for the design.

Functional Specifications – A brief description/summary how the specifications were developed, followed by a complete listing of the specifications themselves.

Level 0/1 Block Diagrams – Level 0 and Level 1 block diagrams with enough text to explain them.

Technical Background – Enough technical background to prepare the reader for what follows in the report.

Design Summary – A summary in some detail of what has actually been considered, analyzed and designed. At this stage only the innovative, highest risk, most critical aspects of the design need be addressed and these can be in preliminary form. Much of this can be done on a theoretical basis to prove that no physical laws must be broken in order to accomplish the design. Some comparison of alternatives must be made. This section should describe the implementation of various parts of the block diagrams using technologies described in the background and in order to meet the listed specifications so as to address the market need. Complete and specific details of the entire design are not expected or even appropriate.

Safety and Hazard Analysis – A partial safety and hazard analysis for the device. Only the highest risk, most critical areas need to be covered at this stage.

Tests and Test Results – Summaries of all testing done and the results obtained. These tests should be designed in a systematic way to address a reasonable subset of the listed functional specifications.

Plans and Schedule – A description of what is left to complete on the project, who will be doing what and the schedule for doing it.

Budget – A summary of money spent and the expected cost of completing the design with some indication of how this money will be obtained.

Recommendations – State if you believe the project should continue. Also, make recommendations regarding the need for more (or less) resources (people, money, equipment, time, etc.). If your recommendation is that the project not be continued, suggest an alternative project to be completed in its place or state that your team should be disbanded.

Appendices

Data sheets for any commercial devices to be used in the design.

Product literature for any commercial subsystems to be used in the design.

Detailed test procedures and results.

Other detailed information relevant to the topic.