

NuMI ES&H/QA Review Committee Charter

5/21/03

Overview:

The NuMI Project is a Beams Division Project. Beams Division is the landlord for the project through project completion. After project completion, Beams Division (BD) and Particle Physics Division (PPD) will each be landlords of parts of the NuMI Facility. As such, the NuMI ES&H/QA Review Committee is a joint PPD/BD oversight committee appointed by the Beams and Particle Physics Divisions heads to ensure that all necessary safety reviews have occurred and that their recommendations are appropriately addressed before allowing operation of NuMI Project systems. This committee shall review all NuMI Project activities at Fermilab in PPD and BD to ensure that the hazards listed as potentially present for each WBS item have been appropriately addressed.

Background:

Many reviews have already occurred within the NuMI Project. These reviews were of several types. “Internal” NuMI Design Reviews for the technical components often included ES&H Personnel. Typically there were at least 2 of these reviews – one at the conceptual level and one near the completion of the design, but before drawings were complete. Other reviews occur within the department in which the item is designed. Each department, whether in BD or PPD or elsewhere, has its own “internal” design review guidelines. Often these reviews included detailed checking of calculations and/or Engineering Notes. The third type of review was performed by either the PPD and BD ESH/QA Review committee. These varied in detail, depending on the item being reviewed. These reviews always cover some of the “ESH/QA” issues, but not necessary all of them.

The Project maintains a NuMI Reviews Table¹. This table contains a list of items that the Project, based on the review criteria in [NuMI Project Guidance for ES&H Reviews: Triggers & Scope](#)¹, determined requires reviews at some level for ES&H. For these items, the Project has determined:

1. The potential hazards
2. Which reviews the Project believes have been sufficiently completed and where the documentation is for those reviews (paper copies can be provided to the committee if the documentation is not easily obtainable electronically)
3. When the item(s) are to be installed
4. What engineering notes have been completed

This table will be updated regularly by the Project.

¹ http://www-numi.fnal.gov/numwork/safety_docs/index.html

Scope:

Typically for ES&H/QA, two reviews occur: a “design review” and an “operation review”. Usually the "design review" is performed at or near the conclusion of the design stage of each system. A system or item is ready for the design review when the calculations and schematic diagrams are complete. Fabrication drawings may be required for the design review. An "operation review" is performed prior to initial operation of each system. The ES&H/QA Review Committee may elect to perform additional reviews (such as checking approved fabrication drawings with the calculations) for particularly complex or hazardous systems. The results of these reviews shall be communicated to the Division Heads in a report as described in Appendix A.

The NuMI Project Manager has appointed the NuMI Project ESH Coordinator as the NuMI ES&H/QA Review Coordinator who will monitor the design and construction phases of the Project and contact the Committee chair at least two weeks prior to any needed review. The Committee shall submit a report no more than two weeks after completing a review. The Committee may request supplemental assistance from the Division to complete these reviews in a timely fashion.

The NuMI Project ESH/QA Review Committee will:

1. Review the list of items to be reviewed and the reviews needed for the items to see if it appears both necessary and sufficient.
 - It is primarily the responsibility of NuMI Project to understand the integration issues. The Committee would serve as an independent set of eyes.
 - Of concern to the Project are installation or integration type reviews that might span several items, the concern being that these reviews are sufficiently included in the review task table.
2. Review that the reviews considered complete by the NuMI Project appear sufficient and complete.
 - Of concern to the Project are areas where a review covers several areas of expertise, the concern being that the reviewers had sufficient expertise to evaluate all these areas.

Steps 1 & 2 clearly are an ongoing process, as the committee becomes more familiar with various aspects of the project. In performing steps 1 and 2, the Committee will have reviewed the NuMI Project for hazards listed as potentially present for each WBS item. In this process:

- Committee members (or their designees) may informally meet with design originators to discuss technical aspects of the design and documentation
- The results of these reviews shall be communicated to the Division Heads in a report. This report shall include a recommendation(s) to the Divisions (see Appendix A for more information on the Committee Report):
 1. Indicating that the system has had an ESH design review.
 2. Indicating that the system has had an ESH operating review and to approve the system for operation.

Appendix A: Committee Reports

The summary report should include references to the applicable standards and will be retained together with the appropriate supporting documentation in the Division Office NuMI files. Supporting documentation includes checklists, calculations and notes originated by either the NuMI ES&H/QA Review Committee or by others on behalf of the NuMI project.

Satisfactory completion of the design review process shall be defined as a notification to the Division Heads that the system has been reviewed. This notification should indicate which items were reviewed and the outcomes of each review. Specifically, the notification shall indicate that:

1. the design did or did not comply with appropriate FESHM sections;
2. calculations met or did not meet satisfactory engineering practice, referenced or did not reference, followed or did not follow appropriate standards and codes
3. the design presents or does not present minimal occupational hazards.

The notification can include recommendations from the committee addressing steps required to correct deficiencies.

Satisfactory completion of the operating review shall be defined as a notification to the Division Head that the system has been reviewed. This notification should indicate which items were reviewed and the outcomes of each review. Specifically, the notification shall indicate that:

1. the installed device or system complied or did not comply with appropriate FESHM sections
2. was built or was not built consistent with the design as reviewed
3. presents or does not present minimal occupational hazards

The notification can include recommendations from the committee addressing steps required to correct deficiencies.

1. Achieve a uniform level of documentation during the review process so that a complete and accurate record exists at the project completion.
2. Identify Quality assurance (QA) aspects of the project design, procurement, fabrication, or assembly, which do not, in the opinion of the NuMI ES&H/QA Review Committee, meet the NuMI Quality Assurance Plan guidelines¹.