

## SAFETY OF THE NPDGamma LIQUID HYDROGEN TARGET AT LANSCE OVERVIEW

The target system, its design parameters, calculations, sizing, safety analysis, and other engineering results were collected to the “NPDGamma Liquid Hydrogen Target Engineering Document”. The target design, engineering, and final product were reviewed by three different committees consisting of hydrogen target expert from outside and inside of the laboratory. This part of the process created a safe and reliable hydrogen target that met also the physics requirements.

Local reviews, interpretation of codes and requirements, and monitoring that the requests of the safety review committees were carried out and a local target safety advisory board was formed. The board reported to the Director of the Lujan Center, Alan Hurd. The main results of the board were a flow chart; Approval path of the LH2 target”, vent stack review, H2 supply system review, the target Readiness Review. The board consisted of individual from the experiment, from LANSCE and invited subject matter experts as needed.

Because the Lujan 1L target system is “Nuclear facility,” the DOE area office was involved through the BIO for the category III facility. This included a determination of whether the installation and use of the planned liquid hydrogen target required a USI analysis against the ISAD. The USQ was made against the Actinide Bio as some of the flight paths will use actinide targets and the USQ was made against the 1L target BIO.

The target is operated under an IWD (Integrated Work Document) that defines the safety envelope for the operation with all its attachments