

Readiness Review Summary NPDG Functional Testing of LH Target in TA53-MPF35

The proposed functional testing of the NPDG liquid hydrogen target at TA53-MPF35 was reviewed on March 9, 2006. The readiness review committee was comprised of :Paul Lewis, LANSCE-LC (Chair); Kurt Schoenborn, LANSCE-DO; James Knudson, LANSCE-OPS; Gus Sinnis, P-23; and Jane Lataille, FIRE. NPDG plans were presented by Seppo Penttila, P-23.

James Knudson summarized the recommendations and final actions actions from the internal/external safety review committee that had independently reviewed the safety aspects of the target on four occasions (May 99, Dec 01, Dec 04, Nov 05) during the course of its design and constructions.

Seppo Penttila summarized the safety-related features of the target and provided the following documents to the committee for review:

Draft IWD-0003501-00 for shed operation

Draft procedures for operating in the shed (Main and Auxiliary)

Draft training procedures (Senior and Junior Operators)

Reports of the final two internal/external safety reviews (Dec 04, Nov 05)

The committee reviewed the operations document, inspected the hardware setup in MPF-35, and walked down the IWD.

Findings and actions from this review are as follows:

1. Recommendation 1.h from the final (Nov 2005) safety committee review has not yet been implemented. This recommendation was to “create a development plan for the target that tests various fault situations.” While it is recognized that any such plan will be dynamic, a starting plan is needed before the functional tests commence. Action: P-23/NPDG Team – Develop an initial target test plan addressing fault situations.
2. Functional testing in MPF-35 is the only opportunity to test and time the emergency venting of the hydrogen target due to loss of vacuum before the target installed is installed in ER2. The committee felt it was advisable to conduct this test prior to target installation in ER2. Action: P-23/NPDG Team – Add this to planned testing and ensure it is covered in the IWD.
3. The vehicle barrier in front of the outside hydrogen cylinder rack is insufficient and several of the cylinder straps are incorrectly sized. Action: P-23/NPDG Team – Correct these deficiencies.
4. Upload the two operating procedures documents (Main and Auxiliary) into the JHA tool so that they can be easily accessed. Action: P-23/NPDG Team – Upload final versions of procedures.
5. IWD step 7 dealing with response to alarms needs to be expanded to include 1) notification of both the Lujan EAM and P-23 Management in the event of an

alarm, and 2) steps to clear the alarms, e.g. what steps does the senior operator take to deal with the alarm and return the situation to normal. Action: P-23/NPDG Team – Modify the IWD to address these issues.

6. The committee made the following requests for revisions of the IWD.
 - a. Document in step 1 the requirement that the target cryostat be manned 24 hours a day when it contains hydrogen.
 - b. Clarify that “supervision” by the senior operator means on site supervision.
 - c. Correct step 3 so that the procedure names called out in the controls/requirements section match the procedure names in the procedures document.
 - d. Clarify in the IWD that two persons are required to perform the evacuation and filling operations in Steps 3 and 4.
 - e. IWD step 6 Replace - "This task has to be performed by an Target Operator" with "This task has to be performed by either a Junior or Senior Target Operator".
 - f. IWD step 7. Under "If an alarm goes off:" Add "Manually close the Hydrogen gas valve located at the back of MPF-35 if it is safe to do so."

Action: P-23/NPDG Team – Revise the IWD to incorporate these changes

Path Forward for Approval of Functional Testing

- 1) Action: P. Lewis - Enter these results and actions in the MWA system.
- 2) Action: P-23/NPDG Team - Take the actions specified above.
- 3) Action: P. Lewis - Complete the MSA Checklist from 53 FIR 300-00-05.1.
- 4) Action: P-23/LANSCE-DO – Approve MSA checklist and IWD