



UNREVIEWED SAFETY QUESTION  
SCREENING AND DETERMINATION WORKSHEET

Change Number: Drawing package 29Y87754 Date: 3/29/05

Facility-Specific USQ Number: 53-USQ-1L-05-018

Facility Identification: 1L Target Facility

Change Title: FP-12 hydrogen target vent installation and operation

- Based on the evaluation presented in this report, the:
- Need for routine USQ processing was obvious without performing an Applicability Assessment.
  - Need for a routine USQD is obvious without performing a USQ Screen.  
Complete only General Information Section.
  - Situation involves a PISA.  
Complete only General Information Section.
  - Change has been screened out of the USQ process and does not constitute an Unreviewed Safety Question.
  - Change does not constitute an Unreviewed Safety Question based on a full USQD.
  - Change constitutes an Unreviewed Safety Question and NNSA approval is required prior to implementation.

**CLASSIFICATION**  
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- Unclassified
- Official Use Only (OUO)
- Unclassified Controlled Nuclear Information (UCNI)
- Classified

NOTE: If this document is OUO, UCNI, and/or classified, add the appropriate markings, distribution limitation statement, and guidance data block(s).  
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UCNI Reviewing Official

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 Name (printed or typed) Signature Date

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*Retain original copy per facility records management procedures.*



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Date: 3/29/05

**SIGNATURES**

Trainee (if applicable)

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Name (printed or typed) Signature Date

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Approval Authority

\_\_\_\_\_  
Name (printed or typed) Signature Date

**SECTION 1. INTRODUCTION****SECTION 1.1. DETAILED DESCRIPTION OF CHANGE**

A liquid hydrogen target is to be installed at flight path #12 (FP-12), located in building MPF-30 of the Lujan Neutron Scattering Center, for a nuclear physics experiment. Two vent lines are required by the design of the target; these vent lines will intrude into the 1L Target Nuclear Facility boundary as they exit building 30. No other part of the target or experiment interacts with the Nuclear Facility. One vent stack will serve to vent the target, the other will ventilate the enclosure surrounding the target in the event of a hydrogen leak from the target. A support post will be installed onto the concrete abutment adjacent to building MPF-30; this post will then support the two pipe risers. The taller of the vent pipes will be further supported by guy wires, one of which will extend across the 1L Nuclear Facility and be attached to the support structure of the 1L overhead crane.

Once installed, the target will operate independently of the 1L Target to fulfill the needs of the experiment.

**SECTION 1.2. REFERENCES**

- a) List all documents that describe the situation being considered and any technical evaluations thereof.
  - a.1) P-Division drawing package 29Y87754
- b) List documents in the current safety basis for the facility/process that were used in this USQ processing.
  - b.1) 53-BIO-004, Rev. 2, Basis for Interim Operation (BIO) for the 1L Target 2000-2002 Beam Delivery Periods, March 14, 2000.
  - b.2) Safety Evaluation Report (SER) for LANSCE (TA-53) 1L Target-BIO, Rev. 1; March 22, 2000.
- c) List hazard, safety, or impact analyses related to the situation being considered that were used in this evaluation.
  - c.1) P-Division drawing package 29Y87754
  - c.2) Memo LANSCE-6-05-020, Hazard Analysis: FP12 LH<sub>2</sub> target vent installation and operation
- d) List any other references used in this evaluation:
  - d.1) N/A

NOTE: If applicable and if a hazard (or safety) and impact analysis have not been provided, the change should be returned to change control to develop such an analysis.



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SCREENING AND DETERMINATION WORKSHEET

USQ Number: 53-USQ-1L-05-018

Date: 3/29/05

**SECTION 2. UNREVIEWED SAFETY QUESTION SCREENING**

NOTE: The number in brackets following the questions below is a reference to the corresponding section of the Procedure.

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**SECTION 2.1. SCREENING – PART I [8.3.1]**

This section (Screening – Part I) is:

- APPLICABLE (i.e., this USQ Screening is not in response to a PISA discovery).
- NOT APPLICABLE because this USQ Screening is in response to a PISA discovery.  
Complete only Part II of the Screening (Section 2.2) and continue to the USQD (Section 3).  
Note: Follow all additional steps outlined in the PISA worksheet.

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a) Is this a purely editorial change to a document that does not affect the technical content? [8.3.1.a]  YES  NO

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b) Is the change covered by a NNSA approved categorical exclusion? [8.3.1.b]  YES  NO

If “Yes”, identify the Categorical Exclusion and the NNSA approval date.

Cat. Exclusion No.: \_\_\_\_\_ Approval Date \_\_\_\_\_

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c) Is this change completely enveloped by a previous USQD? [8.3.1.c]  YES  NO

If “Yes”, identify the USQD and the approval date.

USQD Number: \_\_\_\_\_ Approval Date \_\_\_\_\_

If “Yes”, explain how the current issue is covered by the prior USQD.

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*If any answer to any question in Section 2.1 above is “Yes”, the change does not require a USQ Determination; proceed to the USQ Screening Summary at the end of Section 2. Otherwise continue with Part II of the Screening (Section 2.2).*



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USQ Number: 53-USQ-1L-05-018

Date: 3/29/05

SECTION 2.2. SCREENING – PART II [8.3.2]

- a) Is this a temporary or permanent change in the facility as described anywhere in the existing DSA? [8.3.2a].  YES  NO  
If NO, explain your answer below and list pertinent reference documents.  
Note: Increases in facility chemical or radioactive inventories beyond those described in the DSA or EM&R screening values, whichever is lower, constitute a change to the facility as described in the DSA.

- b) Is this a temporary or permanent change in the procedures as described anywhere in the existing DSA? [8.3.2.b]  YES  NO  
If NO, explain your answer below and list pertinent reference documents.  
No 1L Target Facility procedures are affected as a result of the proposed change.

- c) Is this a test or experiment not described anywhere in the existing DSA? [8.3.2.c]  YES  NO  
If NO, explain your answer below and list pertinent reference documents.  
This is not a test or experiment related to the operation of the 1L Target Facility. See P-Division drawing package 29Y87754.

*If the answer to any question in Section 2.2 above is "Yes", a USQ Determination must be performed. Continue to Section 3 after completing the Summary section below.*

USQ SCREENING SUMMARY

Based on answers to the screening questions above:

- This change screens out and hence does not require a USQ Determination.  
Complete the cover sheet summary.
- This change screens in and hence does require a USQ Determination.  
Complete Section 3.

**SECTION 3. UNREVIEWED SAFETY QUESTION DETERMINATION (USQD) [8.4]**

NOTE: The number in brackets above is a reference to the corresponding section of the Procedure.

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1. Could the proposed change increase the probability of occurrence of an accident previously evaluated in the DSA?  YES  NO  
Explain your answer below and list pertinent reference documents.

The proposed change brings vent structures into the Nuclear Facility space, but does not otherwise interact with the 1L target in any way. There is no mechanism for the proposed change to influence any of the accidents evaluated in the DSA.

See P-Division drawing package 29Y87754.

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2. Could the proposed change increase the consequences of an accident previously evaluated in the DSA?  YES  NO  
Explain your answer below and list pertinent reference documents.

The proposed change does not introduce any physical mechanism to interact with the 1L target. The consequences of the accidents evaluated in the DSA can not be affected, and therefore are not increased.

See P-Division drawing package 29Y87754.

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3. Could the proposed change increase the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the DSA?  YES  NO  
Explain your answer below and list pertinent reference documents.

No physical mechanism connects the proposed change to any of the equipment important to the safety of the 1L target. The proposed change cannot affect this equipment or how often it might malfunction.

See P-Division drawing package 29Y87754.

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4. Could the proposed change increase the consequence of a malfunction of equipment important to safety previously evaluated in the DSA?  YES  NO  
Explain your answer below and list pertinent reference documents.

No physical mechanism connects the proposed change to any of the equipment important to the safety of the 1L target. The proposed change cannot affect this equipment or the results of any malfunction.

See P-Division drawing package 29Y87754.



UNREVIEWED SAFETY QUESTION  
SCREENING AND DETERMINATION WORKSHEET

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Date: 3/29/05

5. Could the proposed change create the possibility of an accident of a different type than any previously evaluated in the DSA?  YES  NO  
Explain your answer below and list pertinent reference documents.

The proposed change involves operating a hydrogen system whose primary accident scenarios include releases of hydrogen gas. Such releases would occur either well outside the 1L Nuclear Facility or at the top of the vent stacks. In neither case is there a mechanism to transport this hydrogen into close proximity with the 1L target. Therefore no interaction would be created that would cause an new type of accident for the 1L target facility.

See P-Division drawing package 29Y87754.

6. Could the proposed change create the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the DSA?  YES  NO  
Explain your answer below and list pertinent reference documents.

The proposed change does not include any interaction with or connection to any of he equipment import to safety for the 1L target.

See P-Division drawing package 29Y87754.

7. Does the proposed change reduce a margin of safety?  YES  NO  
Explain your answer below and list pertinent reference documents.

The proposed change does not presume any interaction with the 1L target or affect any of its operations. There is no change to the 1L target margin of safety.

See P-Division drawing package 29Y87754.

USQ DETERMINATION SUMMARY

If the answer to any question in Section 3 above is “Yes”, the proposed change involves an Unreviewed Safety Question. Based on the evaluation above:

- This change does not constitute an Unreviewed Safety Question.
- This change does constitute an Unreviewed Safety Question and NNSA approval is required prior to implementation.

*Complete the cover sheet summary.*