

Martha Michels <martha@fnal.gov>

May 7, 2015 7:19 AM

To: Terry E Tope <tope@fnal.gov>, Mike Bonkalski <bonkalski@fnal.gov>, Eric D McHugh <emchugh@fnal.gov>, Thomas H Nicol <tnicol@fnal.gov>, Cary L Kendziora <clk@fnal.gov>, John Scott <john.scott@ch.doe.gov>

Cc: esh_management_team <esh_management_team@fnal.gov>, Timothy Meyer <meyertim@fnal.gov>, "Nigel S. Lockyer" <lockyer@fnal.gov>, Michael Weis <michael.weis@science.doe.gov>, Patricia McBride <mcbride@fnal.gov>, Hasan Padamsee <padamsee@fnal.gov>, Joseph Lykken <lykken@fnal.gov>, Del Allspach <allspach@fnal.gov>, Amber M Kenney <tamber@fnal.gov>

Request for assistance: Localized Stop Work - Employee injured while calibrating high pressure relief valve

Dear Terry, Mike, Eric, Tom, and Cary:

With this email I am asking you to be part of the team that will investigate the incident below.

Team:

Team Chair: Terry Tope, Mechanical Safety Subcommittee Chair

Member: Mike Bonkalski, ESHQ Manager, HPI Certified SME

Member: Eric McHugh, Division Safety Officer, HPI Certified SME

Member: Tom Nicol, Engineer

Member: Cary Kendziora, Engineer

Team Observer: John Scott or designee, FSO

Charge:

Please conduct the investigation using the HPI methodology and prepare a report that addresses (at a minimum) the following issues:

- What was the cause of the event?
 - Is there any indication that S/CI are involved?
- What is the extent of condition?
 - is this the only test stand of this type on site?
 - Are there other activities with high hazard and limited frequency that are self-performed by the Lab?
- What is the frequency of these tests and must they be conducted on the FNAL site?
- What is the appropriate PPE/ mechanical enclosure/set back or exclusion zone for this activity?
- Was the hazard analysis and work control procedure in place at the time of the test?
- What are the lessons learned from this event?
- What error precursors existed before this event took place?
- What organizational weaknesses exist that may indicate other areas that are vulnerable?

- What corrective actions do we need to implement to ensure this does not recur

As you may know, this incident did meet the threshold for ORPS reporting, Significance Category 2. David Baird is the ORPS Manager and working this incident with FSO and Eric McHugh. Please keep Dave in the loop while you work through your investigation, as your findings and corrective actions will become part of the final ORPS report.

Timeline:

Initial Report: On or before May 21, 2015

Final Report with recommended corrective actions: On or before June 7, 2015

Please submit the final report into the HPI database and the corrective actions into iTrack.

If you have a conflict with this request or you need additional resources, please let me know and I will address it.

Thank you very much for your help.

Regards,
Martha Michels

From: Martha Michels

Sent: Wednesday, May 06, 2015 5:13 PM

To: 'ESH_DSCHEADS@FNAL.GOV' (ESH_DSCHEADS@FNAL.GOV); senior_safety_officers

Cc: Nigel S. Lockyer; Timothy Meyer; Weis, Michael (Michael.Weis@science.doe.gov);

'esh_management_team@fnal.gov' (esh_management_team@fnal.gov) (esh_management_team@fnal.gov);
John Scott

Subject: Localized Stop Work - Employee injured while calibrating high pressure relief valve

Importance: High

Dear Colleagues,

Earlier today we had an incident where an employee was injured while calibrating a high pressure relief valve. The results of the initial investigation are below.

Effective immediately, there will be no calibrating of pressure relief valves on the Fermilab Site pending the results of the investigation and implementation of corrective actions. This work is primarily done in Particle Physics Division, however, it may be true that additional test stands exist in other divisions, thus the larger distribution.

Initial investigation notes:

An employee was calibrating a high pressure relief valve for another division. The relief valve was mounted to the high pressure test vessel in the Proton Assembly Building Calibration shop with two reducing bushings (1"x3/4" and 3/4"x1/2") made of stainless steel. The test pressure was brought up to 1650psig, at which time the relief valve began to chatter rapidly, approximately 5 times, before it propelled upwards towards the corrugated metal ceiling. The relief valve dented the ceiling and fell, contacting the employee in the back of the head. The contact with the 4.42 lb. (approx. 9"x4") relief valve caused a contusion and laceration requiring

four sutures. The employee was standing approximately 3 feet away from the relief valve and wearing noise reducing ear muffs and prescription safety glasses. The employee secured the gas panel and cylinder, notated what occurred and went to medical.

Observations:

1. The Calibration Shop gas panels used for pressure testing has undergone an engineering review in 1994, there are flow schematics for the operation and procedures for operating the system. All components, upon inspection, appear to be properly rated for the test pressures.
2. The employee conducts high pressure tests (>1000 psig) approximately three times per year. All tests are well documented. (not sure who or where else these are done yet)
3. The threads of the ¾"x ½" reducing bushing appear to be compromised either due to use, installation or the incident. The bushings were stainless steel.
4. The ¾"x ½" bushing appears to only have been engaged in the 1"x ¾" bushing by three threads.
5. The relief valve chattered loudly and vigorously before propelling away from the high pressure test vessel.
6. The test vessel is a code stamped pressure vessel, but is not considered a "pressure vessel" according to the Lab's safety manual due to its size.
7. The calibration test stand has been tagged out until an engineer can verify that the system is sound and documented appropriately.

An investigative team that will include members of the Mechanical Safety Subcommittee will be convened to look at this incident more closely, determine cause, extent of condition and recommend corrective actions.

Regards,
Martha E. Michels
Chief Safety Officer

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