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Title: Learning Team Breach of a Posted Barricade to Connect an Instrument to Power

Author(s): Wilburn, Dianne Williams

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Organization: MST-7, NEN-1, and DESHF-STO	Topic: Learning Team Breach of a Posted Barricade to Connect an Instrument to Power
How did it happen? How did it go?	
<p>On February 15, 2017, a DESHF-STO HPFC (health physics field coordinator) was asked by an NEN-1 employee if they could move an instrument, a radiation dosimetry system, from A166A to another lab at TA-35 Building 2. The HPFC walked the job down and discovered the instrument was connected to power. The instrument had not been connected to power previously. See photo 1. The instrument is located within an RCA (radiological control area). Entry to connect the instrument to power the instrument requires contacting RP. RP personnel had not been contacted as required as stated in the RCA posting. See photo 2.</p>	
<p>Background: In November 2015, two radiation dosimetry systems were located in close proximity to one another in Room A143. Instrument 1 had an alpha/gamma source (241Am) and a beta source (90Sr). Instrument 2 has a beta source (90Sr). Employee 1 contacted Employee 2 and asked to borrow Instrument 1. When Employee 1 removed the alpha/gamma source from the instrument, they noted it was leaking. The leaking source was removed from Instrument 1, it was surveyed, and then Instrument 1 was removed from the area for salvage.</p>	
<p>An RCT then surveyed the outside of Instrument 2 for contamination. However, the inside of Instrument 2 could not be opened for an internal survey because a transformer to supply power was not available. Instrument 2 was moved to room A166A where the RCT barricaded the area as a radiation control area (RCA) and posted a sign. See Photo 1. Employee 2 told the RCT they would order a transformer. The RCT asked to be contacted when the instrument would be ready for survey.</p>	
<p>Employee 2 ordered and received the transformer to supply power to Instrument 2 in late February 2016. Employee 2 assumed, based on their conversation in late 2015, they were authorized and connected the transformer instrument 2. See Photo 3.</p>	

How do we learn from this?

The vast majority of people do not intend to commit an error. When a human performance error occurs, it is the individual that acted incorrectly, however, the real question is what in the system[s] failed to allow that action.

Causal analysis codes can be used to identify how the underlying sources of operational vulnerability combined to produce unintended or undesired results for this event.

A3 Human Performance LTA (Less Than Adequate)

- B1 Skill Based Error
- C06 Wrong action selected based on similarity with other actions
- B2 Rule Based Error
 - C01 Strong rule incorrectly chosen over other rules
 - C04 Previous success in use of rule reinforced continued use of rule

The area was posted as an RCA based on P121 Table 7-2. A strong rule was chosen over other rules. Per Lab policy P121, the instrument could have been posted with a label or tag stating "POTENTIAL INTERNAL CONTAMINATION." The area was posted as an RCA because it is a more common action taken when contamination is discovered and previous success in use of this rule reinforced it continued use.

A3 Human Performance LTA

- B1 Skill Based Error
- C05 Delay in time caused LTA Actions

A3 Human Performance LTA

- B2 Rule Based Error
 - C02 Signs to stop were ignored and steps performed incorrectly
 - C04 Previous success in use of rule reinforced continued use of rule

A5 Communication LTA

- B4 Verbal Communication LTA
- C01 Communication between work groups LTA

There were approximately 3 months between the discussion of the need of a power supply and the receipt of the power supply. When Employee 2 received the new power supply, their recollection of the conversation with the RCT was that Employee 2 would contact the RCT when the instrument had power so the internal survey could then be performed. Additionally, employee 2 has experience working with beta sources. Based on experience, employee 2's work experience with beta sources is that they rarely leak.

A4 Management Problem

- B2 Resource Management LTA
 - C03 Insufficient manpower to support identified goal/objective

RP man power responses are LTA. This leads employees to contact RP only for work they considerate as moderate or high hazard.

Pose the Following Question to Affected Employees:

“What would you do differently in the future to prevent this from happening again”?

E2 – “From my perspective, the RCT followed her procedures and practices correctly. As a worker, it is my responsibility to follow the postings and contact the appropriate personnel. In the future, I will not rely on my knowledge of the situation or past experience with similar issues when deciding upon a course of action. Instead, I will rely upon the safety barriers and practices that are in place to safely conduct my work.”

Recommended Improvement Corrective Actions?

RP Division and DESHF-STO should evaluate if areas are posted commiserate with the risk. A statistical sample of postings in the STO-FOD could be selected and a review of their posting compared to P122 should be conducted. Additionally, analogous to the lockout/tagout program where an actual lock is in place, RP should consider the possibility of engineering controls that might prevent the breach of posted areas.

MST-7 and NEN-1 should prepare a short briefing on this learning team event.

How do we communicate these solutions?

The evaluation of the postings could be shared as a Lessons Learned. The short briefing could be shared on the Laboratory's new OPEX website.

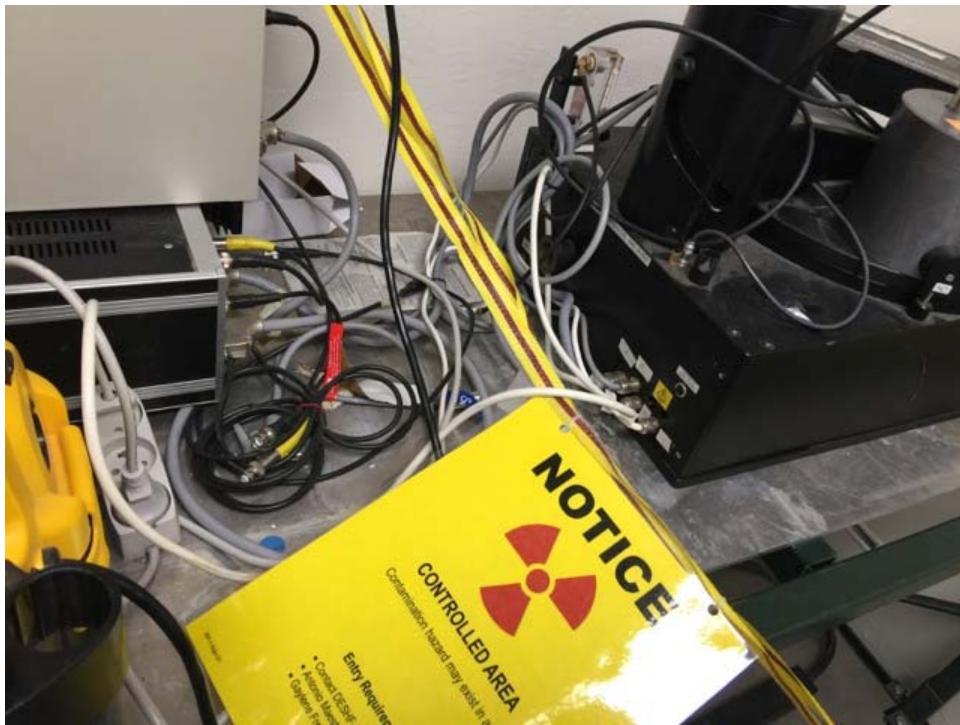


Photo 1



Photo 2

Photo 3



Learning Team Members

Jacque McClory, DESHF-STO
Antonio Maestas, DESHF-STO
Garry Schramm, DESHF-STO
Dianne Wilburn, MST-DO
Michael Blair, MST-7
Jennie Keller, MST-7
Kim Obrey, MST-7
Bill Crooks, NEN-1
Steven Ortiz, NEN-1
Daniel Leyba, NEN-1