Jefferson Lab
Thomas Jefferson National Accelerator Facility

Notable Event Report
(See ES&H Manual Chapter 5200 Appendix T1 Event Investigation and Causal Analysis for Instructions)

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Notable Event Report

Title of Event			
Event Title:	Breach of a Radiological Area (Contamination and Radiation Area)		
Date and Time of Occurrence:	July 26, 2016 ~ 10:00 am	**Notable Event Number:**	ENG-16-0726
Event Location:	Building 95	**Date Notable Event Report is Due*:**	August 26, 2016

*The Notable Event Report is due to the ESH&Q Reporting Officer with 30 days of the Initial Fact Finding Meeting unless an extension is requested.

Summary of Event and / or Injuries, including Initial Fact Finding Meeting information: determine the chain of events and timeline. Use attachment as necessary.

An EES Associate Coordinator (AC) entered building 95 (hall C beam dump building) and encroached upon the Radiation Area/Contamination Area boundary within the building. The AC moved the radiological boundary in order to position the legs of the ladder and then leaned the ladder against a tank, resulting in the ladder crossing the roped boundary. The AC climbed the ladder, placing himself within the posted area, removed a component from the system within the area, and removed it from the building. The AC was not signed in on the RWP for entry to the roped area, did not receive a radiological briefing, and wore no PPE.

A Radcon technician (RCT) arrived as the EES AC was leaving the building. Noticing the removed component, the RCT questioned the AC, determined that there had been an infraction of the radiological area, performed surveys on all items and areas affected by the breach, and denied the AC further entry. RadCon management and JLab reporting officer were notified.

Additional Information:
The AC arrived at the building while a RadCon staff member happened to be there checking on posted work-area dosimeters. He requested entry and the Radcon rep. called the senior RCT on duty to obtain permission (the building is kept locked although it is not usually strictly required from a radiological point of view). The AC was given permission by the senior RCT via the other Radcon staff member, who then unlocked the door. There was only general information exchanged about the nature of the work, which was understood to be non-invasive installation work. Since there is an area in the building that does not require any special controls, RWP, etc., and the AC did not indicate he needed access to the roped area, the RadCon tech assumed there was no need for RadCon oversight or involvement in the work. Nevertheless, the RCT said he would have an RCT come by and do a routine check on things. The senior RCT subsequently decided to go to the building himself, since he was in the vicinity. That is when he discovered the event.

Specific infractions related to 10 CFR 835 from this event
1) Accessing the posted radiological area (radiation/contamination) without an RWP is an infraction against 10 CFR 835 requirements for "written work authorization" (RWP) for work in both of those areas.

2) Protective clothing is required for access to contamination areas (direct violation of 835).

3) Removing the heater from the posted contamination area is an infraction of 835, but not direct. The regulations do not allow items to be released from such areas if they exceed the contamination limits. The only way to tell that an item doesn't exceed the limit is to survey it. So the regulations imply that anything coming out of a posted contamination area must be either surveyed, or treated as if it is contaminated (neither was done in this case).

4) Personnel have to be monitored appropriately upon exit of contamination areas (direct violation of 835).

Summary of Event and / or Injuries, including Initial Fact Finding Meeting information: determine the chain of events and timeline. Use attachment as necessary.

Note that all the infractions above occurred because the worker was proceeding as if the work was not occurring in a radiological area. Had the work been properly reviewed, discussed and pre-planned, the RWP would have been invoked, there would have been appropriate Radcon oversight, monitoring, PPE, etc.

In addition to the regulatory infractions, a stepladder was used to access the top of the expansion tank by leaning the ladder on the tank. This is an inappropriate use of this type of ladder (see EH&S Manual chapter 6132 T1). This has apparently been a routine practice for some time, as the ladder has been in use in the building for years.

Building conditions and posting

The doors to the beam dump cooling buildings are kept routinely locked even when the conditions in the buildings do not specifically require locked doors. This is done to ensure all work in the buildings receives RadCon oversight, and to minimize potential for inadvertent contamination issues that may occur from undetected leaks, etc.

The posting level to enter the building itself is RCA/RMA. This allows access without being on an RWP. Once inside, there is a roped boundary (posted as a radiation area and contamination area) about six feet into the building that covers about 70 percent of the floor space. Rather than post the radiological areas at the door, the boundary is kept as small as reasonable to allow access for inspections and other non-invasive work, to minimize generation of radwaste from PPE, etc.

Work planning

ATLIS 16173 was written by the EES AC on March 15, 2016 to cover a broad range of work to upgrade the dump diagnostics and controls. The ATLis task description is below.

Major upgrade work on all dump related subsystems, to model Hall A: H2 detection, Facility signals monitoring by FSD, N2 confined space purge, He flow through snout, Diffuser motor and blower control and monitoring, RADCON sampling and telephone ckts. Reterminating and reassigning both 16pr trunk cables between 92 and 95 must be sufficient. Install Beacon 200 instrumentation

An ATLis entry on July 13 by the EES AC provides the following information.

07/13/16 11:59 COMMENT ON by R_Gonzales:

Bldg 95 update.
All electrical EMT installation here is now complete. The gas mixing CC95-2 cabinet was mounted and connected yesterday. The 3 Beacon 200 interface cables were pulled today, One per detector and one for gas valve control and flow monitoring.
The open 1300w element still needs replacement along with identifying the 4 recombiner tank TCs.

The last sentence in the above update speaks to the work that the AC intended to perform on the date of the incident.

Several items in the original ATLis hazard checklist were found to be lacking in detail. These include; no requirement for a walkdown, high noise conditions not noted (though hearing protection was noted in the requirements), and work within radiation areas not noted. There was no mention of need to coordinate with RadCon. The RadCon department does not conduct a formal authorization of ATLis tasks. This ATLis was routed to RadCon, but often (as in this case) the radiological components of the work are not described in sufficient detail (primarily due to large scope of work) to allow radiological review based solely on the ATLis task entry. Follow-up discussion, meetings, RWP briefings, etc. are almost always required.

Summary of Event and / or Injuries, including Initial Fact Finding Meeting information: determine the chain of events and timeline. Use attachment as necessary.

Because the ATLis was written to cover a large scope of work, many individual accesses to do parts of the job needed to be conducted. Each of these events should have been coordinated in advance with RadCon, including discussions of the nature of the work at the time. On Monday, 7/25, the AC had indicated a need to access the building that week, but had provided no detailed information about the work. Since Facilities had requested building access to conduct pump vibration testing in both dump cooling water buildings, RadCon was preparing to cover their work, and had conducted the surveys necessary to allow access. Therefore the RCT informed the AC that the building would be accessible for work, but no further discussion of the tasks occurred at that time.

The Facilities work was covered by an ATLis also but the work was a relatively brief, well-defined task, the Facilities engineer had contacted the RadCon Field Ops supervisor to plan the work, so this work had priority from RadCon.

The following day (the date of the incident), RCTs were covering the work by Facilities. The EES AC arrived at building 95 while Facilities and RadCon were working in building 91. The AC arrived at the work site apparently expecting the building to be already accessible. When he found it locked, he asked the Radcon staff member present if they could unlock it. That Radcon staff member was not an RCT and did not have knowledge of the radiological conditions inside, so she called the senior RCT. The AC had given her only a brief description of needing to access the building to "install some equipment". When she relayed the information to the senior RCT, her description of the activity was understood as "bring in a part". There was no direct conversation between the AC and the RCT about the work.

See the individual statements from the workers for more details.

Other factors affecting the event

There is "mixed" work in Building 95 for this employee. Some of the work done in this building would not require entry to the contamination/radiation area or the need for RWP. Also, the work to be done in building 95 mirrors the upgrade project that had recently been completed in building 91. The conditions in the buildings are similar but not identical. Access to the tank in building 91 did not require crossing a radiation/contamination area boundary.

In can be seen in the AC's statement that he made judgments about the movement of the boundary and the work on and around the tank based on previous similar tasks, rather than discussing the situation and getting confirmation to proceed from an RCT. Prior work on the tank in building 91 did not require crossing a boundary. It was later confirmed that any previous movement of a rope boundary to place a ladder by the tank was done with RCT concurrence and prompted surveys. This was not taken into account by the AC in his decision to independently move or cross the boundary.

Additional follow-up
The nature of the AC's remarks in his initial description of the event and during fact-finding indicated what appeared to be a lax approach to the radiological control requirements associated with work in the dump cooling water buildings. This led to further discussions and interviews. A follow-up discussion with the RadCon Field Operations Supervisor is included below in the statements section.

Causal Analysis: (Use attachment as necessary)

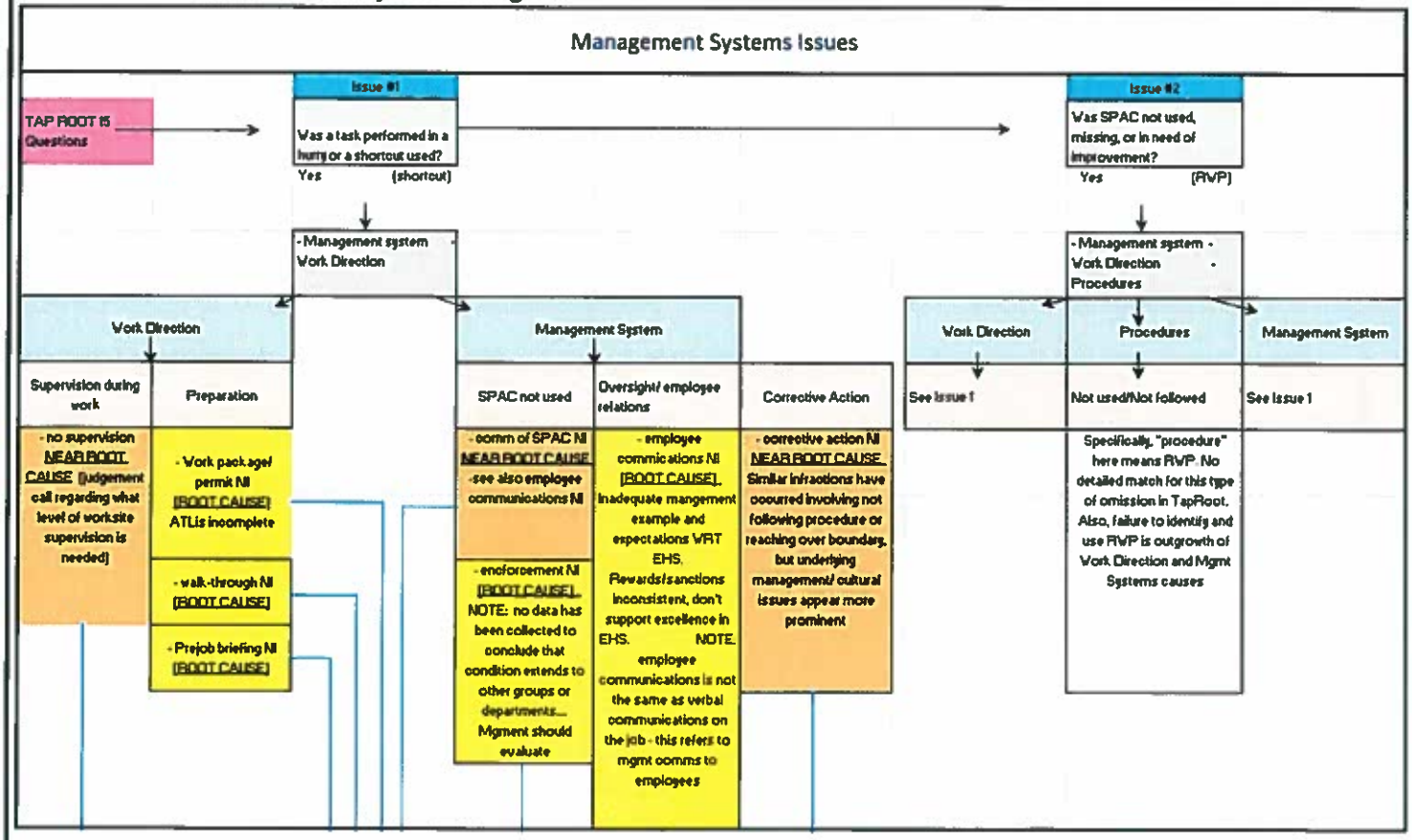
Causal analysis was conducted using the Taproot process, as well as DOE STD-1197-2011 and other relevant guidance. The Taproot "15 questions" answers are shown in the graphics below for the Management Systems, Team Performance and Individual Performance areas. Eventually, the potential root causes were isolated to Management Systems issues (also shown in the accompanying graphics). The grouping of the root causes suggests that the issues may be confined to the

Causal Analysis: (Use attachment as necessary)

particular group, department or division in which this event occurred. The investigation team could not find evidence suggesting the causes relate to lab-wide systemic failures, however, some work-planning system improvements and other broader enhancements to training may help reduce the potential for recurrence. These are noted in the recommended corrective actions. The primary corrective actions should be focused within the department/division involved.
Several root and near-root causes were identified. As noted, the grouping and nature of these causes indicated to the investigation team that the management system failures in this case were probably limited to the specific group or department involved. Almost all the root and near root causes were related in some way to the "employee communications NI" causal factor. It should be noted that this factor does not refer to the communications between the employee and other workers (this was also less than adequate), but deals with the communications of expectations, requirements and protocols to be followed.

The team concluded that the *primary* root cause for this event was inadequate communication and reinforcement of expectations and inadequate supervisory involvement and oversight concerning the work planning and implementation of safety practices. These weaknesses translated into a failure of the employee to adequately plan, coordinate and communicate with the RadCon staff.

Management system causal analysis tree is shown below. Two issues were identified from the 15 taproot questions. Root and Near-root Causes shown in yellow/orange.



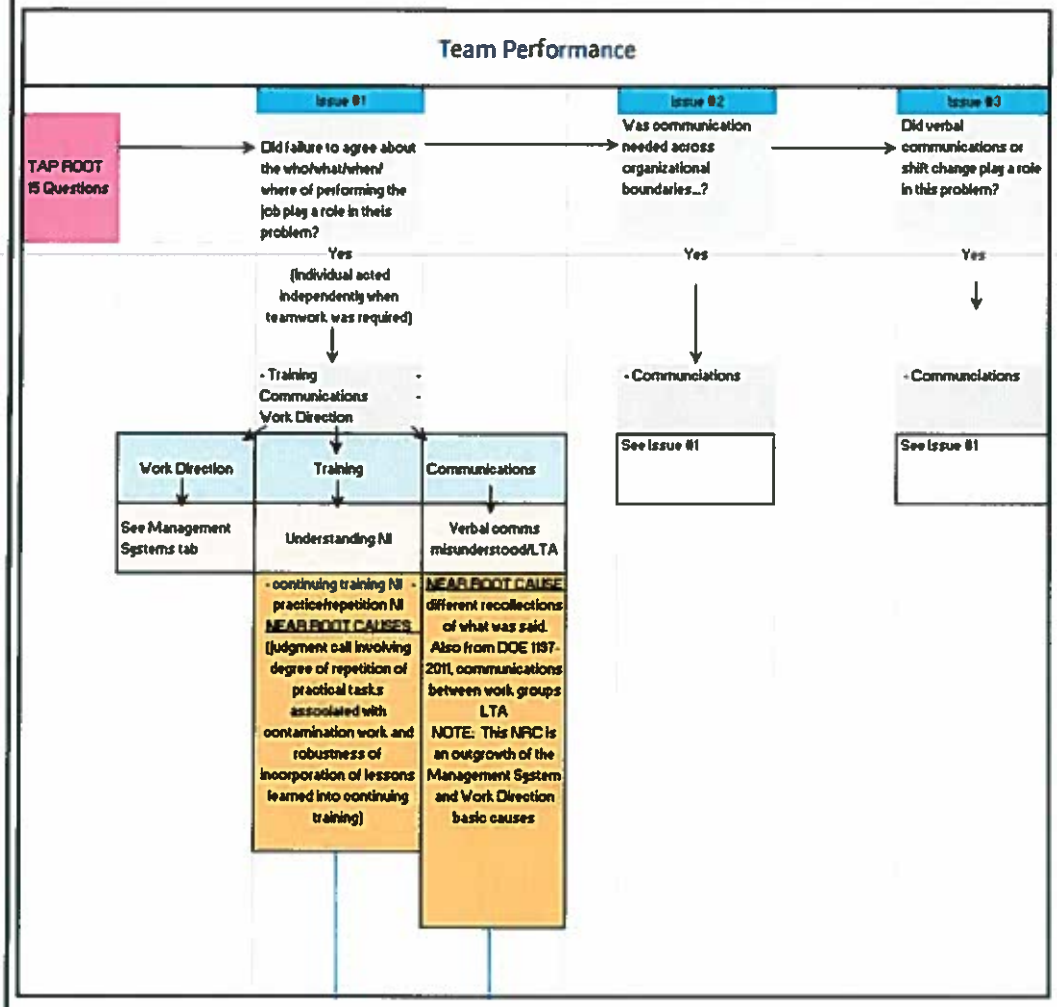
Causal Analysis: (Use attachment as necessary)

Recommended corrective actions are shown below. Causes from the table above are shown in the leftmost column below. Resulting corrective actions are shown in green.

				Broader scope items
Correct. Action NI	Though not a root cause, investigation has identified some enhancements that can be added to training.	Conduct advanced training for the population working in 9/93. [RADCON]	Communicate boundary extent to wide audience using weekly briefs, etc. [RADCON]	Work with QA/IC to evaluate need for conducting Management Self-assessment in EE Dept to look at work preparation, execution, work observations, etc. [EES]
Employee comms NI	Affected organization (EES) hold documented briefing session to stress expectations and importance of following work standards and administrative controls. [EES]	Should define specific expectations for supervisors and job leads, including pre-job reviews, walk downs, etc.		
Enforcement NI	Does not appear to be organization-wide deficiency			
Comm of SPAC NI	See employee comm. NI			
Work Pagagelpermit NI	See employee comms NI		Though not a root cause, investigation has identified potential enhancements to work planning tools.	
Walk through NI	Counsel worker on importance of identifying and complying with all EHS issues in area and proper interaction with SME/EHS reps based on nature of work [EES]		Consider modification to ATLis to enhance review: RCD approval for some pre-identified thresholds, [like EHS review, this would show unreviewed status until RadCon reviews) Applicable to Other EHS items? IH? [ATLis owner/RCD]	
Prejob Briefing NI				
No Supervision	See employee comms NI			

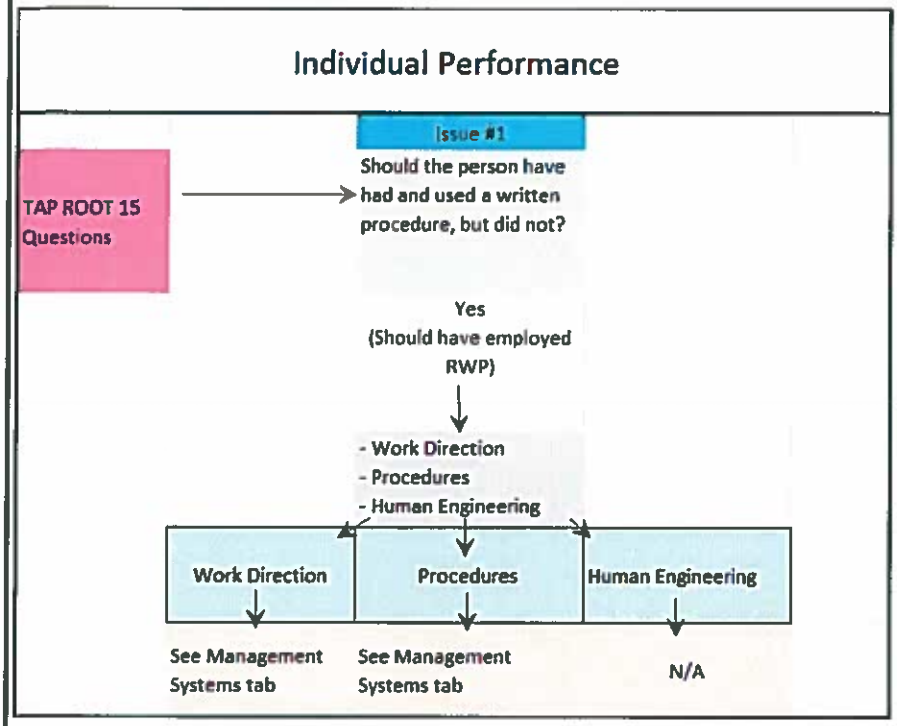
Causal Analysis: (Use attachment as necessary)

Causal analysis tree for the Team Performance issues is shown below. Three issues were identified from the 15 questions. The two near-root causes are referred back to Management Systems and Work Direction basic causes.



Causal Analysis: (Use attachment as necessary)

Causal analysis tree for Individual Performance is below. Causal factors all referred back to Management Systems issues.



In addition to corrective actions based on the root causes, the team is recommending several corrective actions related to conditions identified during the investigation that are "continuous improvement" in nature. These involve enhanced training, evaluation/self-assessment of work planning practices, and a feasibility evaluation for a work platform for accessing the top of the expansion tank.

Root Cause:	Communication of expectations from management/supervision to work teams less than adequate. NE-2016
Contributing Causes: (List as many as apply.)	1. Prejob walkdown was not performed or was inadequate (did not identify boundary issue). 2. Prejob briefing/communications with RadCon was inadequate (no work details discussed). 3. Recent communication efforts stemming from similar event did not prevent this event.

Extent of Condition Check		**JLab CATS Number**	**Target Date**	**Action Owner**
N/A				
Does this event involve failed equipment?	N	Is there similar equipment in other areas?	N/A	** If yes, assign extent of condition check to the appropriate DSO(s).

Corrective Action(s)	JLab CATS Number	Target Date	Action Owner
Employee's RadWorker I and RadWorker II training was revoked and his supervisor(s) were notified of the same. Evidence of completion: Email to the employee from the RadCon manager	NE-2016-16-01	07/27/2016	Vashek Vylet
Hold documented briefing session (department wide) to stress expectations of supervisors and work leads, importance of following work planning standards, admin controls, etc. (prejob reviews, walkdowns, etc). Evidence of completion- copy of briefing materials/attendance record	NE-2016-16-01	10/31/16	Andrew Kimber
Counsel worker on importance of identifying and complying with all EHS issues and proper interactions with SME/EHS reps based on nature of work. Evidence of completion – memo/email from department head to Reporting Manager	NE-2016-16-01	9/30/16	Andrew Kimber
Conduct advanced RW training for population of workers who routinely work in 91/95. [continuous improvement action] Evidence of completion – copy of course outline/attendance rosters	NE-2016-16-01	3/31/17	Keith Welch
Issue site-wide communications regarding extent of boundaries in a JLab weekly brief. Evidence of completion - Copy of weekly brief	NE-2016-16-01	10/31/16	Keith Welch
Evaluate work preparation/planning, execution, etc. within EES. Consider tools such as Management Self-Assessments, Work Observations, etc. Suggest obtaining assistance from QA/CI to tailor the approach to fit the conditions. [continuous improvement action] Evidence of completion – CATS assessment record with summary of findings and any recommended corrective actions	NE-2016-16-01	3/31/17	Andrew Kimber
Evaluate the feasibility of installing an engineered system for accessing the upper portions of the expansion tanks in buildings 91 and 95. If feasible, develop estimate of project cost, present to Acc. Division as safety improvement project. [continuous improvement action]	NE-2016-16-01	3/31/17	Tim Michalski

Corrective Action(s)	JLab CATS Number	Target Date	Action Owner
Evidence of completion – engineering report of feasibility. If feasible, project estimate and proposal.			

Lessons Learned (Confer with Lessons Learned Coordinator) (Use attachment as necessary)	Lessons Learned Number
Employees that have conducted their work in the same manner for a long period of time should consider having another work group observe their work to ensure they are following the most current procedures and good work practices.	974

Witness Accounts: (Use attachments as necessary. Box will expand as necessary)

RadCon Personnel:

On July 26, 2016, I went to Building 95 to change the environmental dosimeter that is staged by the front gate to this building. I pulled up and got my supplies out and saw Rick. He asked me if I could let him into Bldg. 95 so he could install some new equipment. I told him I had to ask Bob Danforth and proceeded to call Bob on his cell phone, to make sure it was ok. Bob told me yes it was ok to let Rick in so I unlocked the door. I proceeded to replace my dosimeter and the box it is sitting in. As I was ready to leave, I called Bob Danforth and asked him if I should stay while Rick was in Bldg. 95 working or was it ok to leave. Bob said it was ok to leave because Adam Hartberger would be there in a few minutes, so I left. When I passed by Bldg. 91, I saw Bob in the golf cart and told him I was leaving to do other work. He said that was fine and he was going to Bldg. 95 to check on Rick. That is when he found Rick had moved the ropes to accommodate his ladder and also found that Rick taken equipment out of the the building that had not been checked.

RadCon Tech:

On 26 July 2016 I received a call from Becky Mosbrucker asking about the weekly survey in bldg..95. I informed her that it had been done. She asked if it was OK to let Rick Gonzalez into the building to bring a part in. I had spoken with him the day before and he stated he would be going in and out during the week. No specific job was discussed at that time. We ask questions about the work prior to letting anyone in. Since I was told he was just bringing something into the building I told her she could. I stopped by on my way to Bldg 91 and spoke to Becky and Rick was still inside. I then returned to Bldg 95 and saw Rick with the heater element in the outside enclosure (gate area). I questioned him about it and informed him that he had crossed the boundary of the Contamination Area and that the whole H2 recombiner tank was in the posted area. He stated he had not seen the rope. It was also noted that the ladder used to access the tank had pushed the boundary rope further into the area. The area effected by and the area entered were surveyed for contamination and none was found. Rick had left to get parts but I closed and locked the gate and door to prevent anyone from entering. I called Becky to check if Rick was on the RWP and was told he was not. I called Keith Welch and informed him of the events.

Employee

Witness Accounts: (Use attachments as necessary. Box will expand as necessary)

Recollection of July 26th RADCON event

Aug 3 2016

Around 9AM Rick Gonzales arrived at building 95 chain link RADCON gate to perform routine corrective maintenance. The primary task was to replace a 1300W heater element assembly. The heater is within dry air space (not pressurized vessel head space) atop of the recombiner tank. One of two assemblies, this one is the closer of the two nearest to the door. Shortly after arriving at bldg 95, the door to the building was found to be locked. Becky Mosbrucker arrived to hang dosimetry. She informed me that she had a door lock key. Becky then called Bob Danforth for details (I think). I entered, positioned the ladder against the tank like I have done dozens of times before. The RADCON rope was pushed by me 10" or so into the restricted area to make room for the wide ladder as we have done in the past. Within a few minutes the heater was removed and brought out onto the sidewalk for element replacement, like I have done many times in the past.Within minutes, Adam Hartberger, Bob Danforth, and facilities personnel arrived. Bob asked me what was going on. I told him, assured him, that the system had not been breached and was doing something we have done previously. Bob pointed out the rope that went snugly around the belly of the tank (waist height around 270 deg of circumference. This is unlike, but similar to bldg 91. Belly rope clearly puts the entire tank within the radiation controlled area, requiring permission to reach over. I did not notice rope and therefore did not ask Becky for permission. I told Bob that I pushed the rope to allow for the ladder to go to left of the vertical sight glass like always. I informed Bob that I needed an allen wrench and will return after facilities work was done (uncomfortably crowded).I returned around 2PM. Gate was locked. I Phoned Bob who then told me the work was "Stopped" and we can talk about it tomorrow.

Afterthought:
By precedence, knowing that previously, I have broached the pressurized head space within hours of running high power beam to replace hydrogen sensors which were found to be contaminant free, the thought of there being contamination many feet above the floor on top of the tank, outside the vessel, did not cross my mind. Primary possible particulate concerns have always been on the floor and a fair distance within the roped perimeter.

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On August 30, 2016, the RadCon Field Operations Supervisor (FOS) held a follow-up meeting with the ICN AC associated with this event. There were several questions that were revisited for clarification, of which the details are as follows:

-The first question asked was, "Why did you cross the contamination boundary?"

* The AC's answer was initially that he did not see the rope. He went on to say that he did move the rope ~10 inches to be able to place the ladder against the recombiner tank. The FOS followed-up with, "in order to move the rope, you had to recognize the existence of the boundary", to which the AC responded, "it was really low". *The rope boundary delineating the radiation/contamination area was posted at the standard height (~36-42").*

- The FOS then asked if the AC understood how many infractions he committed, and the potential impacts?

* The AC identified the crossing of radiation/contamination area boundary, as well as the breach of the H-recombiner tank, but did not fully grasp the removing of the heater elements from the radiological area. The FOS reiterated the how moving items from radiological areas (specifically contamination areas) could spread contamination to uncontrolled areas.

Witness Accounts: (Use attachments as necessary. Box will expand as necessary)

- The FOS asked the AC to elaborate on his statement in the fact-finding meeting, "I move rad barriers all of the time".

* The technician responded by saying he does not move rope boundaries all of the time; he meant with the assistance of the RCTs (job coverage), he is allowed to go beyond the barriers to perform work.

- The FOS questioned if moving of radiation boundaries is something that the AC commonly observed other workers doing?

* The AC replied with an emphatic "No". This is not a typical practice witnessed throughout the Lab community.

- The FOS then asked the AC what he felt RadCon could have done to prevent this infraction?

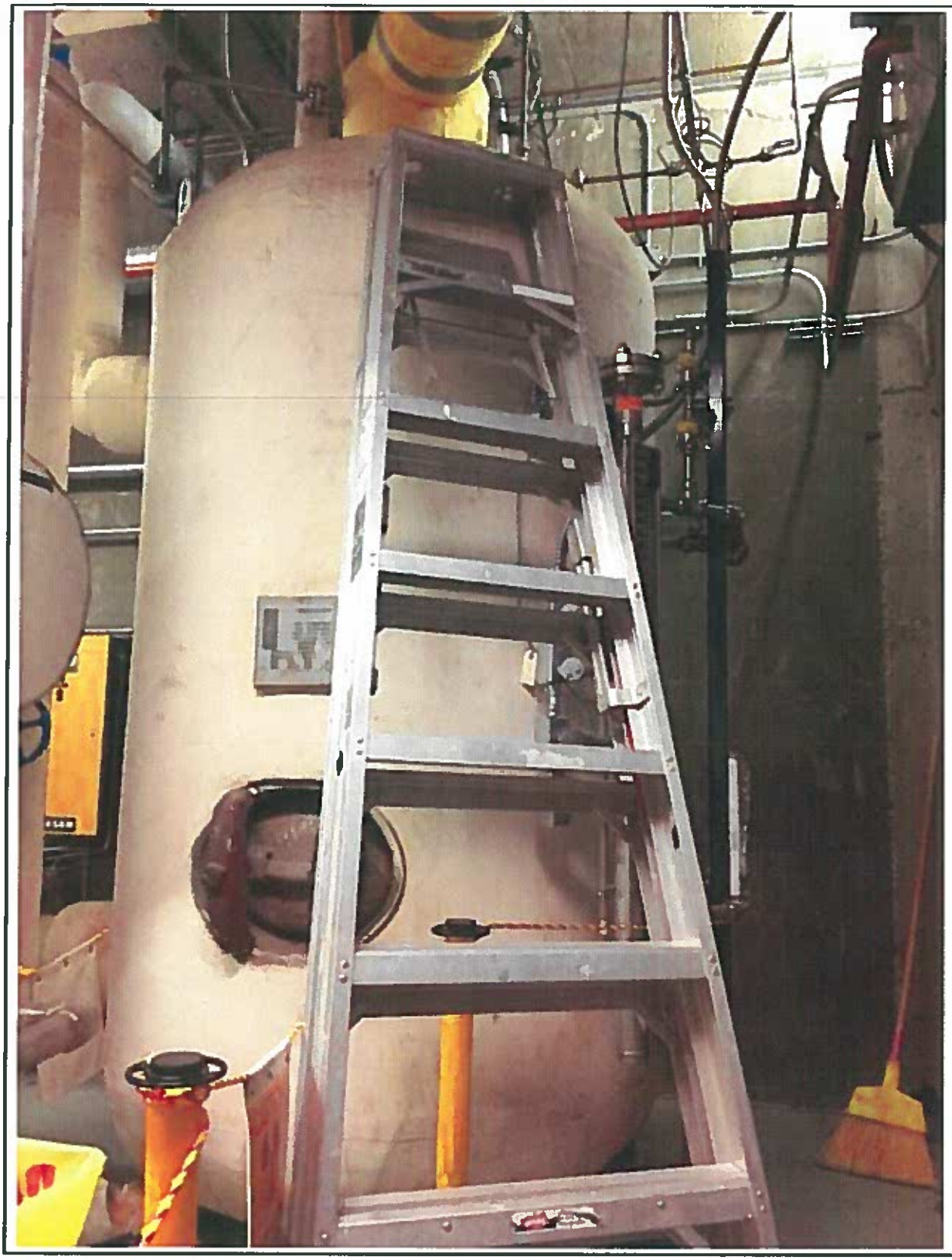
* The AC mentioned that the signage/ropes could have been more obvious, with possibly a large sign on recombiner tank. He also mentioned that he could have communicated better with an RCT, as opposed to the Dosimetry coordinator.

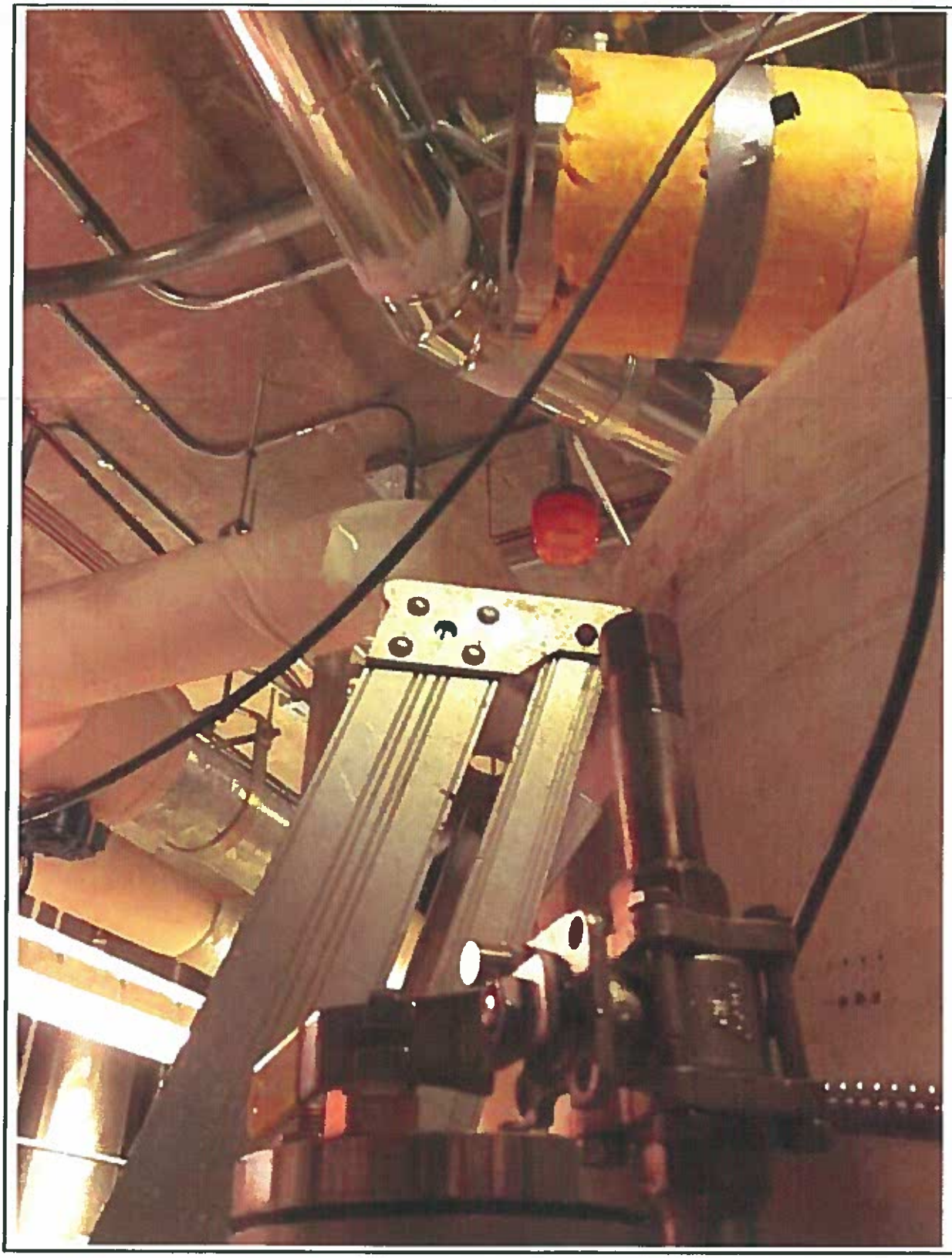
This discussion clarified some areas that were previously a bit puzzling. It also gave the FOS the opportunity to reemphasize/retrain the AC on proper communication, radiation protection coordination, radworker protocol.

Witness Accounts: (Use attachments as necessary. Box will expand as necessary)

Records, Documents, Pictures, and Other References: (Copy and paste, us

e attachments or document links as necessary)





Witness Accounts: (Use attachments as necessary. Box will expand as necessary)

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Notable Event Report

Emergency Notifications Made (Subsequent to the Event):	Date	Time
Fire, Rescue & Emergency Medical: (9-911)		
Guard Post: x5822; 269-5822		
Occupational Medicine 269-7539		
ESH&Q Reporting Officer: 876-1750	07/26/2016	~ 1000
Crew Chief 630-7050		
Industrial Hygiene: 269-7863:		
Other: TJSO	07/26/2016	~ 0900

Confirmation Review Distribution:	
Investigation Team Members Affected Division Managers ESH&Q Reporting Officer	It is asked that you review and provide comments to this document to the Lead Investigator (denoted on Page 1) within ____ days. Your comments will be reviewed and incorporated as appropriate. Thank you for your consideration in this matter.

Investigation Team Confirmation:
The below signees, confirm to the best of their knowledge, that the information presented in this document is accurate and complete.

Role	Print	Signature	Date
Lead Investigator	Ken Baggett		10/18/2016
Co- lead	Keith Welch		10/19/16
SME	Dave Hamlette		10/17/16
SME	Chris Whatley		10/19/16
DSO	Paul Collins	Paul A. Collins	10/18/16

Acceptance/Acknowledgement of Facts

	Print	Signature	Date:
Associate Director/ Department Manger	Will Oren	Will Oren	10/19/16

Upon confirmation submit document to the ES&H Reporting Officer for completion and distribution.

Documentation of Findings: (To be Completed by ESH&Q Reporting Officer)

Notable Event Number:	ENG-16-0723
CATS Number:	NE-2016-16-01
Lessons Learned Number:	974
ORPS Number:	N/A
NTS Number:	N/A

CAIRS Entry:	N/A
DOE Cause Code:	A4 Mgmt. Prob., B1 Mgmt. Methods LTA, C01, Mgmt. policy guidance /expectations not well defined, understood or enforced, A5 Comm. LTA, B4 Verbal Comm. LTA, C01 Comm. Between work groups LTA
ISM Code:	Perform Work Within Controls

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Notable Event Worksheet

Unless otherwise specified the following is to be completed by the Lead Investigator.

Step 1 Initial Fact-Finding Meeting (To be held as soon as reasonably possible following event(within 24 hours))					
Date:	07/27/2016	**Time:**	11:00-12:00	**Location:**	ARC 728

Required Attendees: (Print Name)		**Optional Attendees:** (Print Name)		**Present**
Lead Investigator:	Ken Baggett	**Associate Director:**	Will Oren	Notified
ESH&Q Representative:	Tina Johnson	**TJSO Observer:**	Patty Hunt	Present
Supervisor of involved persons(s):	Omar Garza Andrew Kimber	**Subject Matter Expert(s), Facility/Equipment Owner as applicable:**		
Involved or impacted person(s):	Rick Gonzales	Keith Welch		
Witness(es):	Bob Danforth			
	Becky Mosbrucker			

Agenda ***(Ensure the pace of the meeting allows time for accurate note taking.)***	**√ if Complete**
1. Introduction – Provide Event Title, Date and Time of Occurrence, and Location:	√
2. Attendance - Are Required Attendees present.	√
3. Purpose of Initial Fact-Finding meeting.	√
4. Event Reconstruction – Use information to complete Section 3. Summary of Event and/or Injuries below.	√
a. Personnel and organizations involved in the event.	√
b. Conditions and actions preceding the event.	√
c. Chronology (timeline) of the event; and	√
d. Immediate actions taken in response to the event.	√
5. Clarify information – Subject-Matter Expert (SME) confirms work conditions.	√
6. Stop Work or the Tag Out Required? If "Yes" – establish the restart criteria and inform the affected Management chain.	n/a
7. Compensatory Actions Required? If "Yes" determine responsibility and include confirmation documentation.	√
8. Records or documentation required to confirm, clarify, or complete information (i.e., work plans, work control documents, photos, etc).	√
9. Other Questions or Concerns: Ask attendees if there are any other questions, concerns, or information that they wish to provide.	√
10. Obtain TJSO Observer feedback on conduct of fact finding meeting and potential improvements.	√

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Notable Event Worksheet

Step 2 Investigation Team:	Date Convened: (Within 24 hours of Fact Finding Meeting.)	07/28/206	
Role	**Name**	**Department/Group**	**Phone**
Lead Investigator	Ken Baggett	ENG	6088
Causal Analysis Lead	Keith Welch	ESH&Q RadCon	7212
Team Member	Chris Whatley	ESH&Q RadCon	5841
Backup to Causal Anal. Lead	David Hamlette	ESH&Q RadCon	7219
Backup to Lead Investigator	Paul Collins	Eng. DSO	5981
Team Member	Tina Johnson	Reporting Officer	7611
TJSO Observer		TJSO	

Environmental Aspects		
Type of Material Released:		**Quantity:**
N/A		
Source:		**Time Flow was Halted or Controlled:**
N/A		

For Investigation Team (√ All That Apply):

☐ **Reportable Quantity** ☐ **Impact Ground/Soil** ☐ **Storm Water Channel/Drain** ☐ **Sanitary Sewer**

Categorization and Reporting
(To be completed by ESH&Q Reporting Officer within two hours – unless essential information is still pending)

ORPS Determination:	Date:	07/28/2016	Time:	1533

ORPS/NTS Determination: ENG-16-0726 Employee Breached Radiation Area and Contamination Area Boundary Jul 28

From: Tina Johnson

To: Patty Hunt

Cc: Tina Johnson, Paul Collins, Keith Welch, Ken Baggett

Patty,

As you know on July 26, 2016, an EES technician (tech) entered building 95 (hall C beam dump building) and breached the Radiation Area/Contamination Area boundary within the building. This was done by moving the rope, leaning a ladder against a tank, resulting in the ladder crossing the roped boundary. The EES tech
climbed the ladder, placing himself within the posted area, removed a component from the system within the area, and proceeded to remove it from the building. The technician was not on the RWP for entry to the roped area, did not receive a radiological briefing, and did not wear the appropriate PPE.

A Radcon technician (RCT) arrived as the EES tech was leaving the building and noticed the removed component. The RCT questioned the EES tech, and determined that there had been an infraction of the radiological area, performed surveys on all items and areas affected by the breach, and denied the EES tech further entry.

The Lab has determined that is not ORPS/NTS reportable however we will process this is a notable event.

In the meantime if you have any questions or concerns, feel free to contact me.

Regards,

Tina

10 CFR 851 Screen:	Date:	07/28/2016	Time:	1533

Negative: This event does not meet the voluntary criteria as a discreet programmatic weakness.

Jefferson Lab
Thomas Jefferson National Accelerator Facility

Notable Event Worksheet

Final Distribution:

ES&H Reporting Officer (Original)
Associate Director/Department Manager
Division Safety Officer
Investigation Team Members
ESH&Q Liaisons

Form Revision Summary

Revision 1.6 – 02/22/16 – Updated form to reflect extent of condition ensuring it covers failed equipment per MOA
Revision 1.5 – 10/04/13 – Changed COE to Lessons Learned; updated links.
Revision 1.4 – 09/06/12 – Qualifying Periodic Review. Clarification of content only.
Revision 1.3 – 01/31/12 – Updated ESH&Q Reporting Officer assignment from S.Smith to C.Johnson per M.Logue Edited to clarify process steps.
Revision 1.2 – 10/20/11 – Updated ESH&Q Reporting Officer assignment from J.Kelly to S.Smith per M.Logue.
Revision 1.1 – 05/24/11 – Edited to clarify process steps.
Revision 1.0 – 11/23/10 – Updated to reflect current laboratory operations.

ISSUING AUTHORITY	FORM TECHNICAL POINT-OF-CONTACT	APPROVAL DATE	REVIEW DATE	REV.
ESH&Q Division	Tina Johnson	02/22/16	02/22/19	1.6

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