

Notable Event Worksheet

(See [ES&H Manual Chapter 5200 Appendix T1 Event Investigation and Causal Analysis](#) for Instructions)

Click
For Word Doc

Title of Event			
Event Title:	Potential Electrical Hazard in Building 36		
Date and Time of Occurrence:	June 20, 2012 Approximately 10:30am	<u>Notable Event Number:</u>	ENG-12-0620
Event Location:	Building 36, Room 102	Date Notable Event Report is Due*:	07/20/2012

*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.

Categorization and Reporting			
(To be completed by ESH&Q Reporting Officer within two hours – unless essential information is still pending)			
<u>ORPS Determination:</u>	Date: 06/21/2012	Time: 4:48 pm	
*See attached for details.			
<u>10 CFR 851 Screen:</u>	Date: 06/21/2012	Time: 4:48 pm	
Negative: This event does not meet the NTS voluntary reporting criteria either as a discreet event or as a programmatic weakness. (cc)			

Unless otherwise specified the following is to be completed by the [Lead Investigator](#).

Step 1 Initial Fact-Finding Meeting			
Date:	6/21/12	Time:	9:30 am
Location:		Building 36	
Required Attendees:		Optional Attendees:	√ if Present
Lead Investigator:		Associate Director:	
(Print Name): Ronald Lauze		(Print Name):	
ESH&Q Representative:		<u>TJSO Observer:</u>	
(Print Name): Todd Kujawa		(Print Name): Patty Hunt	✓
Supervisor of involved persons(s):		<u>Subject Matter Expert(s), Facility/Equipment Owner</u> as applicable:	
(Print Name): Andrew Kimber		(Print Name): Barry Shinault	
Involved or impacted person(s):		(Print Name): Henry Robertson (DSO)	✓
(Print Name): Simon Wood		(Print Name):	
(Print Name): Zhe (Vick) Chen (Invited) (cc)		(Print Name):	
Witness(as):		(Print Name):	

Witnesses: (Print Name): Mark Augustine, Simon Wood, Bill Richard	(Print Name):
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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:	X
2. Attendance - Are Required Attendees present.	X
3. Purpose of Initial Fact-Finding meeting.	X
4. Event Reconstruction – Use information to complete Section 3. Summary of Event and/or Injuries below.	X
a. Personnel and organizations involved in the event.	X
b. Conditions and actions preceding the event.	X
c. Chronology (timeline) of the event; and	X
d. Immediate actions taken in response to the event.	X
5. Clarify information – Subject-Matter Expert (SME) confirms work conditions.	X
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.	n/a
8. Records or documentation required to confirm, clarify, or complete information (i.e., work plans, work control documents, photos, etc).	X
9. Other Questions or Concerns: Ask attendees if there are any other questions, concerns, or information that they wish to provide.	X
10. Obtain TJSO Observer feedback on conduct of fact finding meeting and potential improvements.	X

Step 2 Investigation Team:		Date Convened: (Within 24 hours of Fact Finding Meeting.)	
Role	Name	Department/Group	Phone
Lead Investigator	Ronald Lauze	Engineering/EES	7186
Subject Matter Expert	Barry Shinault	Engineering/EES	5025
ESH&Q Representative	Todd Kujawa	ESH&Q	7006
Supervisor of Involved person	Andrew Kimber	Engineering/EES	5145
Division Safety Officer	Henry Robertson	Engineering/EES	7285
TJSO Observer	Patty Hunt	TJSO	7039

Step 3 Summary of Event and / or Injuries, including Initial Fact Finding Meeting information: determine the chain of events and timeline. Use attachment as necessary.

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6/19/12

DC power Engineer looks for advice on how to build a practice 3 phase 208vac 5 wire cable.
 DC power Engineering Support Manager coaches Engineer on how to build the cable and explains that it must be verified by electricians prior to being tested. He also informs the engineer that power cannot be applied to the cable before that.
 Engineering Support Manager left for the day.
 Engineer practices fabrication of a cable. Practice cable assembly has a connector on one end and exposed conductors on the other.
 Engineer plugged the practice cable into one of the unpowered receptacles (Rec. 1) in rack TL05B06 to test for mechanical integrity.
 Engineer leaves for the day and neglects to unplug the cable.

6/20/12

Associate Coordinator and Engineer arrive at about 10:25am and install a power supply to test into rack TL05B06.
 Engineer plugs the power supply into another unpowered receptacle (Rec. 2) in rack TL05B06.
 Associate Coordinator energizes the receptacles by turning on the P2 breaker associated with Rec. 1 and Rec. 2.
 P2 breaker immediately tripped. It was later discovered that the upstream breaker (L4/7,9,11) also tripped.
 Upon investigation of the cause the Associate Coordinator and an Electrical Tech II, who was in the area, discovered the practice cable installed in Rec. 1. This cable had an assembled connector on one end but the other end had bare exposed wires, which shorted, causing the fault.
 Engineer attempted to reach for the cable and was stopped by Tech II.
 Associate Coordinator verified the power was off with a volt meter.
 Associate Coordinator removed the cable and the Engineering Support Manager cut the cable, making certain it could not be used again.
 The Engineer's supervisor was notified. The supervisor scheduled a meeting with the Engineering Support Manager and the Electrical Engineering Department Head.

Notable Event Report

Emergency Notifications Made (Subsequent to the Event):	Date	Time
Fire, Rescue & Emergency Medical: (9-911)	n/a	
Guard Post: x4444; 269-5822	n/a	
Occupational Medicine 269-7539	n/a	
ESH&Q Reporting Officer: 876-1750	6/20/2012	1:30pm
Crew Chief 630-7050	n/a	
Industrial Hygiene: 269-7863:	n/a	
Other:	n/a	

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

Engineering Support Manager Statement:

On June 19, 2012 the Engineer asked the Engineering Support Manager for assistance with how a 3 phase 208VAC cable should be assembled. The Engineering Support Manager spent several hours coaching the Engineer on how to assemble one along with how to select the correct cable and connectors. During that time he also instructed the Engineer that these types of cables need to be looked at by an electrician to verify proper assembly and that it's best practice to turn off the power source prior to plugging in such a cable. He also told the Engineer that the cable was not to be energized before it was looked at. At the time the Engineering Support Manager left for the day, at approximately 1630, the cable had not been fully assembled.

On June 20, 2012 the Engineering Support Manager was alerted to the fact that a P2 breaker in one of his test racks had tripped about 5-10 minutes earlier. The Engineering Support Manager was informed that the cable the Engineer made had been connected to one of the power source cables in rack TL05B06. The Engineering Support Manager said he was upset when he saw the cable and informed the Engineer of the seriousness of what happened. The Engineering Support Manager said that the Engineers explanation of why he had plugged his cable into the rack was unacceptable. The Engineering Support Manager did not state the Engineers exact words only that he didn't say much. The Engineering Support Manager doesn't believe the Engineer has a grasp of how serious this is.

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

The Engineering Support Manager decided to cut the cable from the plug (obviously not connected to a power source at this time) to make it safe and then left the building to think about what had happened. The Engineering Support Manager returned after about 5-10 minutes and after speaking to the Tech II decided to document his observations (we have a copy of this). In addition, the Engineering Support Manager notified the Engineers Supervisor that a situation had occurred. A meeting was scheduled early that afternoon to discuss what had happened.

Associate Coordinator Statement:

On June 20, 2012 at approximately 10:25 the Associate Coordinator and the Engineer installed a power supply into rack TL05B06 for the purpose of testing it. The Engineer went around to the back side of the rack and connected the power supply input power cable to one of the 3 phase 208VAC pigtails. The Associate Coordinator then energized the P2 breaker (15 amp) associated with the power source they connected the power supply to and it immediately tripped. The Associate Coordinator traced out the circuit and noticed a 3 phase 208VAC cable that had open conductors on one end attached to one of the pigtails. The Associate Coordinator removed the cable and tossed it to the side.

Tech II Statement:

The Tech II stated that his first inkling that something was wrong was that he heard an arc and saw a flash of light. The Tech II said he assisted the Associate Coordinator and Engineering Support Manager with trying to understand what had occurred. The Tech II said he was the first to see the open ended power cable installed into one of the power source pigtails. He stated that when he pointed it out, the Engineer started to reach for it and had to be stopped by the Tech II. At that point the Associate Coordinator carefully removed the cable. The Tech II stated that he doesn't believe that the Engineer has an understanding of the potential seriousness of what happened.

Engineer Statement (via e-mail; elected not to be interviewed):

"On 6/20/2012 4:08 PM, [the Engineer] wrote:

Hi All, thanks for the concern, I have no time for interviews, here's the fact:

I was making some new AC connector yesterday afternoon around 5pm, I tried to test if the new plug was fit and tight enough, and forgot to unplug it before I left work. [Associate Coordinator] turned on the power switch this morning and tripped the circuit breaker, after we reclosed it, the power is back. This is what [the Engineering Support Manager] told [the Associate Coordinator] and me this morning, quote "Nobody is insured [*he meant injured*] and it's not a big incident to report". I apologize if this has caused a problem to any of you.

That's all, thanks.

[Engineer]"

Environmental Aspects

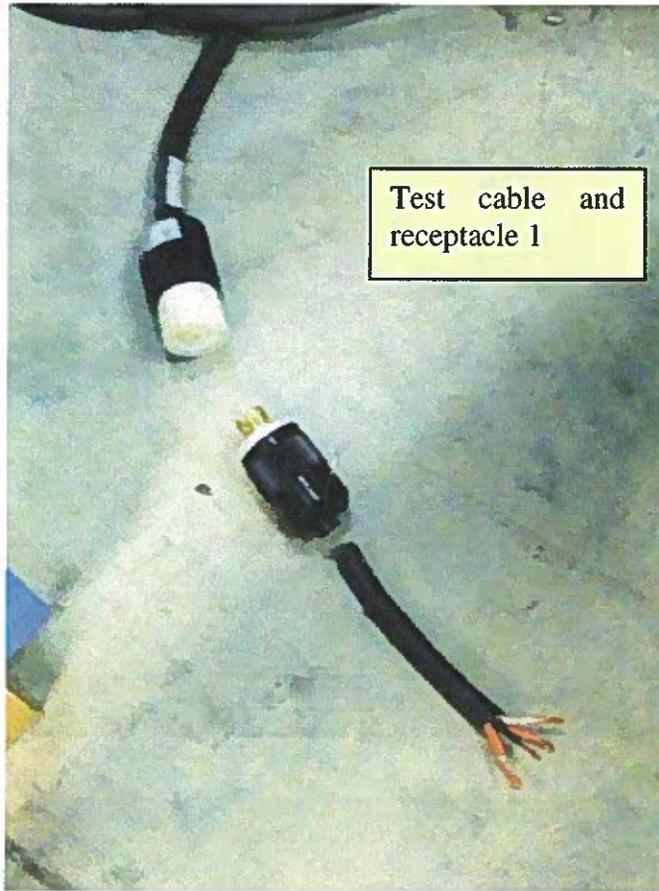
Type of Material Released:	Quantity:
n/a	n/a
Source:	Time Flow was Halted or Controlled:
n/a	n/a

For Investigation Team (✓ All That Apply):

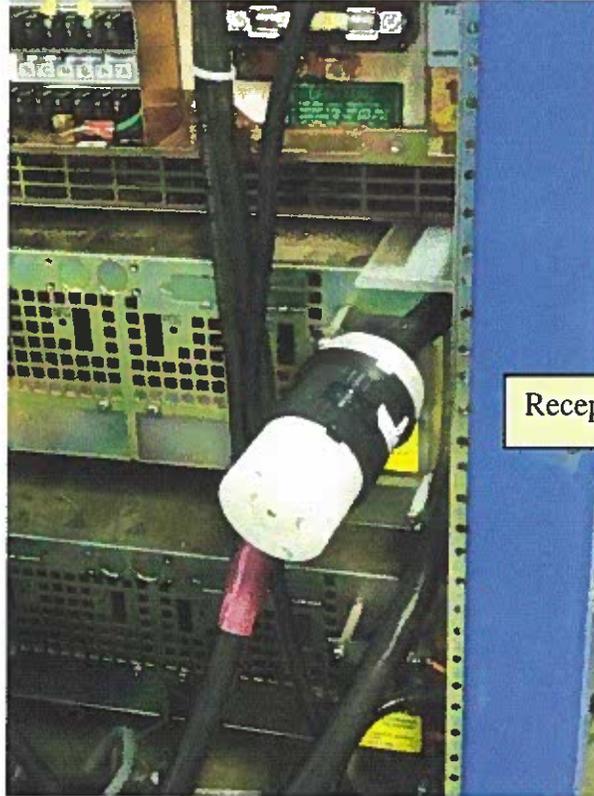
- Reportable Quantity
 Impact Ground/Soil
 Storm Water Channel/Drain
 Sanitary Sewer

Records, Documents, Pictures, and Other References: (Copy and paste, use attachments or document links as necessary)

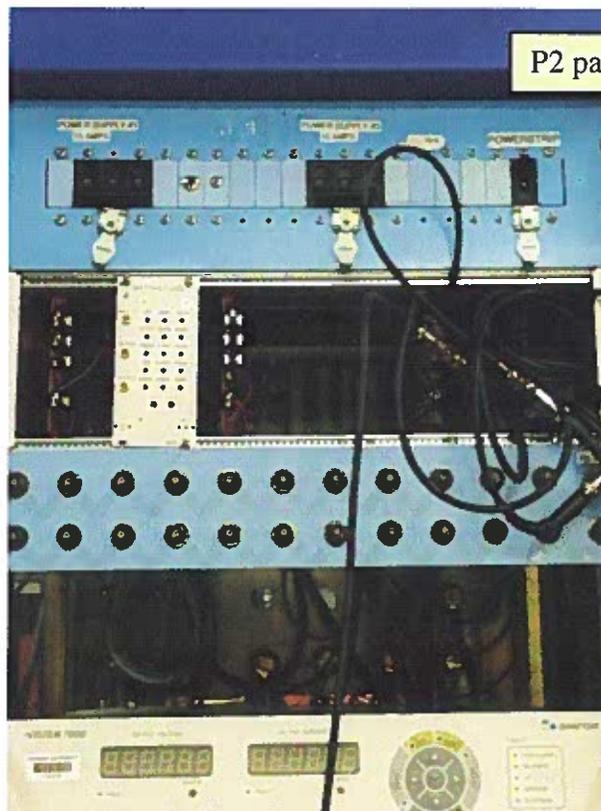
Records, Documents, Pictures, and Other References: (Copy and paste, use attachments or document links as necessary)



Records, Documents, Pictures, and Other References: (Copy and paste, use attachments or document links as necessary)



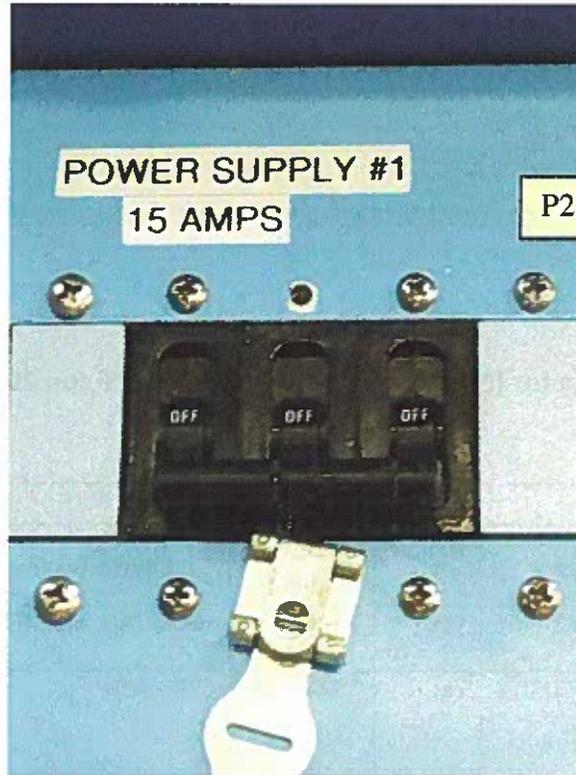
Receptacle 2



P2 panel

For questions or comments regarding this form contact the Technical Point-of-Contact [Tina Johnson](#)

Records, Documents, Pictures, and Other References: (Copy and paste, use attachments or document links as necessary)



Records, Documents, Pictures, and Other References: (Copy and paste, use attachments or document links as necessary)

Individual was current in all the required training for Electrical Worker:

- SAF104 (LT&T)
- SAF105 (CPR/AED Use)
- SAF603A (Electrical Safety Awareness)
- SAF603N (NFPA-70E Basic Electrical Safety)

Due to this incident all electrical worker privileges have been suspended by his supervisor.

Data for [Engineer] as of 14:53:20 on 26 Jun 2012

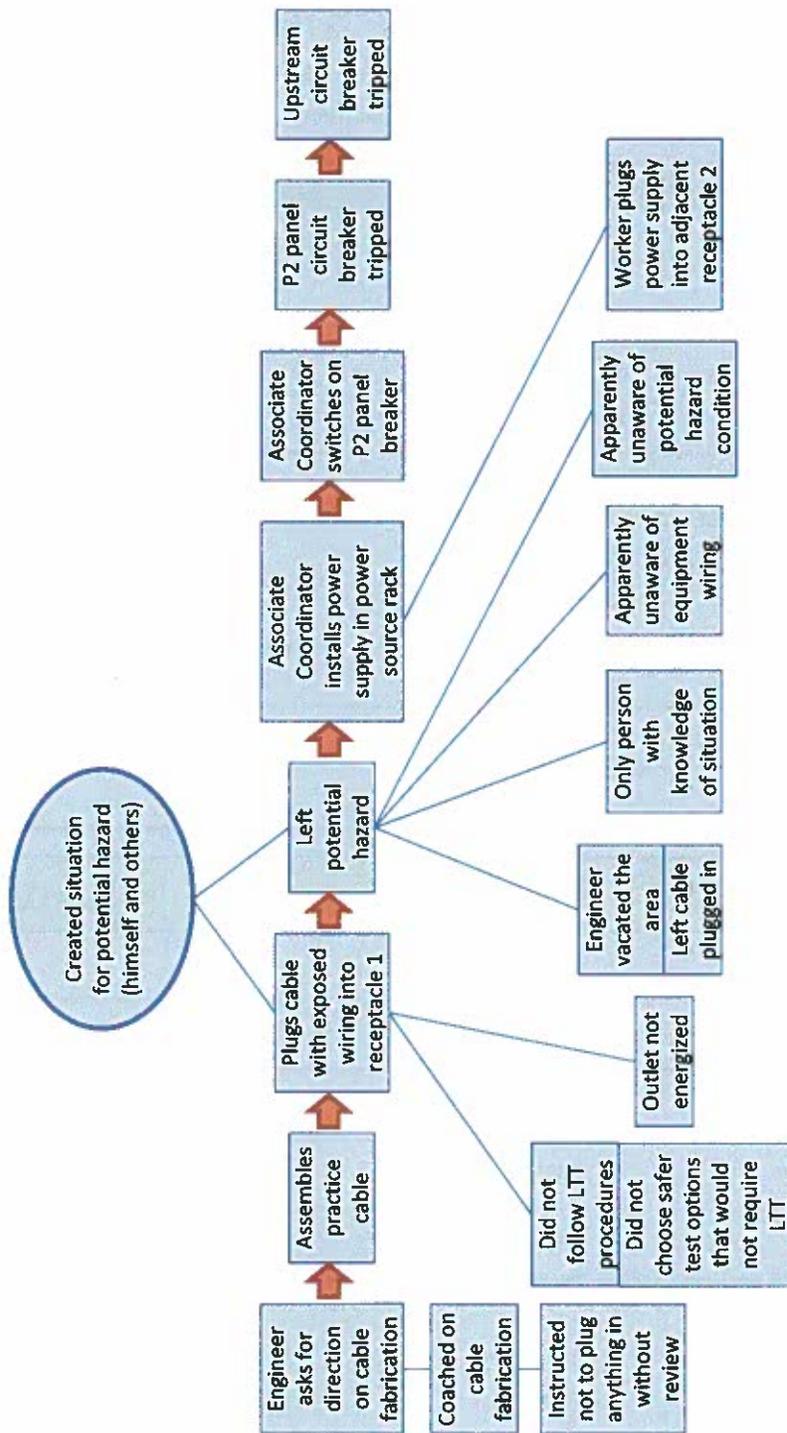
[Build SRL in JTA](#)

Required Skills

Skill	Code	Category	Required?	Last Acquired	Course Taken	Months Since	Expiration	Status
LOCK, TAG, AND TRY	SAF104	ESHQ/SECURITY	Yes	14-Jul-10	LOCK, TAG, AND TRY	23	N/A	Current
CPR/AED USE	SAF105	ESHQ/SECURITY	Yes	15-Sep-10	CPR + AED	21	Sep 15, 2012 12:00 AM	Current
ELECTRICAL SAFETY AWARENESS	SAF603A	ESHQ/SECURITY	Yes	6-Jul-10	ELECTRICAL SAFETY AWARENESS	23	N/A	Current
NFPA-70E BASIC ELECTRICAL SAFETY	SAF603N	ESHQ/SECURITY	Yes	6-Jul-10	NFPA-70E BASIC ELECTRICAL SAFETY	23	Jul 6, 2015 12:00 AM	Current

Records, Documents, Pictures, and Other References: (Copy and paste, use attachments or document links as necessary)

Building 36 Electrical Incident Causal Analysis
06/22/2012



Causal Analysis: (Use attachment as necessary)

Root Cause(s):	Employee plugged exposed wiring device into outlet Employee left a potential hazard
Contributing Causes: (List as many as apply.)	Employee did not follow LT&T procedures Employee vacated the area and left exposed wiring device plugged in Employee only person with knowledge of situation Employee apparently unaware of equipment wiring Employee apparently unaware of potential hazard condition

Extent of Condition Check	Responsible Person(s)	JLab CATS Number	Target Date
n/a			

Corrective Action(s)	JLab CATS Number	Target Date
Engineer must re-qualify as an Electrical Worker	NE-2012-15-01	8/31/2012

Lessons Learned (Confer with Division/Department Lessons-Learned Coordinator) (Use attachment as necessary)	JLab COE Number
When working on unfamiliar tasks, build time into your plan for additional support from your more experienced co-workers.	-
Be sure to perform your work within the appropriate controls and analyze all potential hazards.	-

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	Ronald Lauze		6/28/12
SME	Barry Shinault		6/28/12
ESH&Q	Todd Kujawa		6/28/12
DSO	Henry Robertson		6/28/12
Supervisor of Involved Person	Andrew Kimber		6/28/12

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)

<u>Notable Event Number:</u>	ENG-12-0620
<u>CATS Number:</u>	NE-2012-15-01
<u>JLab COE Number:</u>	-
<u>ORPS Number:</u>	SC--TJSO--JSA--TJNAF--2012--0008
<u>NTS Number:</u>	N/A
<u>CAIRS Entry:</u>	N/A
<u>DOE Cause Code:</u>	A3Human Performance LTA, B1Rule Based Error, C05 Situation incorrectly identified.
<u>ISM Code:</u>	Perform Work Within Controls; Analyze the hazards.

Acceptance/Acknowledgement of Facts

	Print	Signature	Date:
Associate Director/ Department Manger	Will [Name]		7/2/12

Distribution:

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

Form Revision Summary

- Revision 1.3 – 01/31/12** – Updated ESH&Q Reporting Officer assignment from SSmith to CJohnson per MLogue Edited to clarify process steps.
- Revision 1.2 – 10/20/11** – Updated ESH&Q Reporting Officer assignment from JKelly to SSmith per MLogue.
- Revision 1.1 – 05/24/11** - Edited to clarify process steps.
- Revision 1 – 11/23/10** – Updated to reflect current laboratory operations.

ISSUING AUTHORITY	FORM TECHNICAL	APPROVAL DATE	EXPIRATION DATE	REV.

For questions or comments regarding this form contact the Technical Point-of-Contact [Tina Johnson](#)

	POINT-OF-CONTACT			
ESH&Q Division	Tina Johnson	10/19/09	10/09/12	1.3

This document is controlled as an on line file. It may be printed but the print copy is not a controlled document. It is the user's responsibility to ensure that the document is the same revision as the current on line file. This copy was printed on 6/28/2012.

Subject: ORPS Determination for ENG-12-0620 Electrical Incident in Building 36
From: Tina Johnson <cjohnson@jlab.org>
Date: 6/21/2012 4:48 PM
To: Patty Hunt <phunt@jlab.org>, Steve Neilson <sneilson@jlab.org>
CC: Mary Logue <logue@jlab.org>, Ron Lauze <lauze@jlab.org>

Patty/Steve,

Good Afternoon! As a follow-up to my phone call, there was an electrical incident that occurred on June 20, 2012 in Building 36. An unauthorized 208 volt, 30 Amp 4 wire cable with a male plug at one end and exposed wires (pigtail) at the other end, had been left plugged into a de-energized power supply on the evening of June 19, 2012. The employee did not apply Lock Tag & Try to the power supply before leaving for the evening.

At approximately 10:00 am the following morning, an operator turned on the power supply, and the exposed wires arced and shorted, opening the breaker to the power supply and the electrical panel that fed it.

This is an ORPS reportable event:

- (3) 4 Any failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout, hazardous energy control program).

Immediate actions that were taken to address the incident included suspension of electrical work authorization for the employee who left the cable connected to the power supply system.

We will enter the ORPS notification report into the system in a timely manner (2 days), as well as follow the JLab Notable Event process. If you have any questions or concerns, feel free to contact me.

Thank you, Tina

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Tina Johnson
Reporting Officer/
Administrative Assistant
JSA/Jefferson Lab
12050 Jefferson Ave
Suite 602
Newport News, VA 23606
757-269-7611