



Office of Health, Safety and Security

Monthly Analysis of Electrical Safety Occurrences



August 2012

Purpose

This analysis resource provides the Department of Energy's (DOE) electrical safety community with a compilation of, and informal observations on, electrical safety occurrences reported through the Occurrence Reporting and Processing System (ORPS). The topics addressed in this analysis resource are responsive to requests for this information by the electrical safety community, who utilizes this information through monthly conference calls to foster information exchange and continual learning regarding electrical safety occurrences and their prevention across the DOE complex.

Key Observations

The number of electrical safety occurrences decreased from 16 in July to 14 in August, while the number of electrical shocks decreased from 6 occurrences to only one. The number of electrical intrusion occurrences, increased from four in July to five in August, with one excavation and four cutting occurrences. Also, the number of lockout/tagout occurrences increased by one to five July. Hazards identification was impacted by the increase in electrical intrusion occurrences increase in electrical near-miss occurrences, therefore resulting in a larger number of occurrences in which the hazard found the worker.

Electrical Safety Occurrences

The following sections provide a summary of selected occurrences based upon specific areas of concern regarding electrical safety (e.g., bad outcomes or prevention/barrier failures). The complete list and full report of the June occurrence reports is provided in Attachment 2.

Electrical Shock

There was one electrical shock reported in the month of August, which is a decrease from the six shocks reported in July. This shock resulted from faulty equipment. A laboratory worker received a shock while moving a photography lamp in a laboratory. The worker did not notice that part of the lamp had fallen apart, which uncovered wires leading to the 120-volt plug. When the worker reached with their hand to adjust the lamp, they touched across the exposed wires and received the shock. The worker was medically examined and returned to work with no reported injuries. The department manager requested that all laboratory personnel inventory these lamps for replacement.

Figure 1 shows a 3-year trend of electrical shocks for the DOE complex. During this period, the average number of electrical shocks has remained below three shocks per month.

Figure 1 – Three-Year Trend of Electrical Shocks

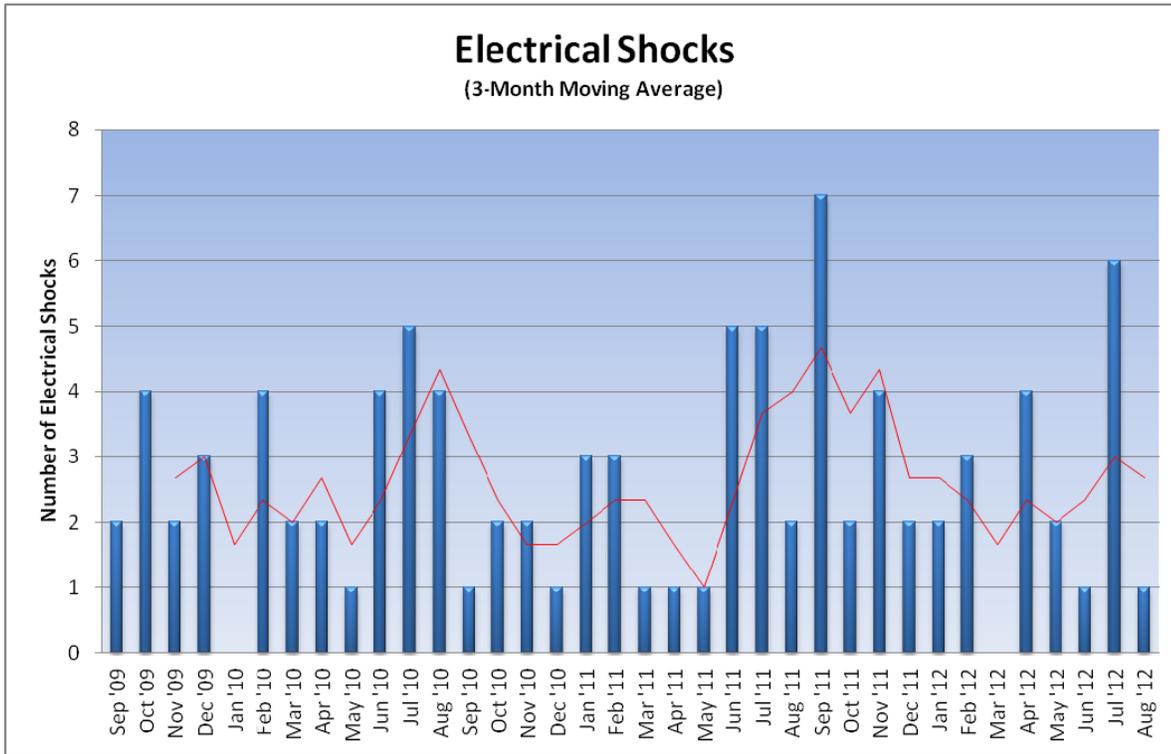


Figure 2 shows electrical shock by worker type. The majority of shocks (about 75 percent) involve non-electrical workers.

Figure 2 - Electrical Shock by Worker Type

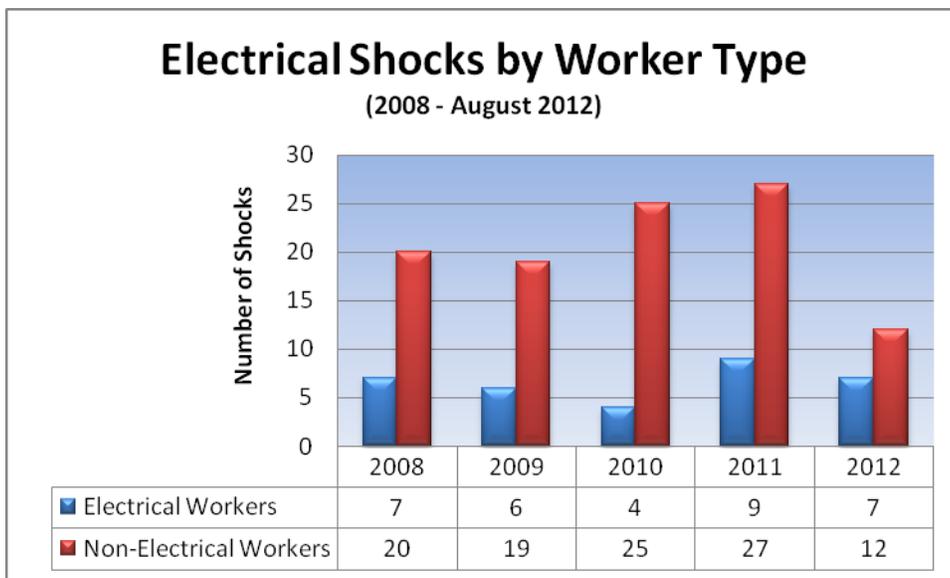
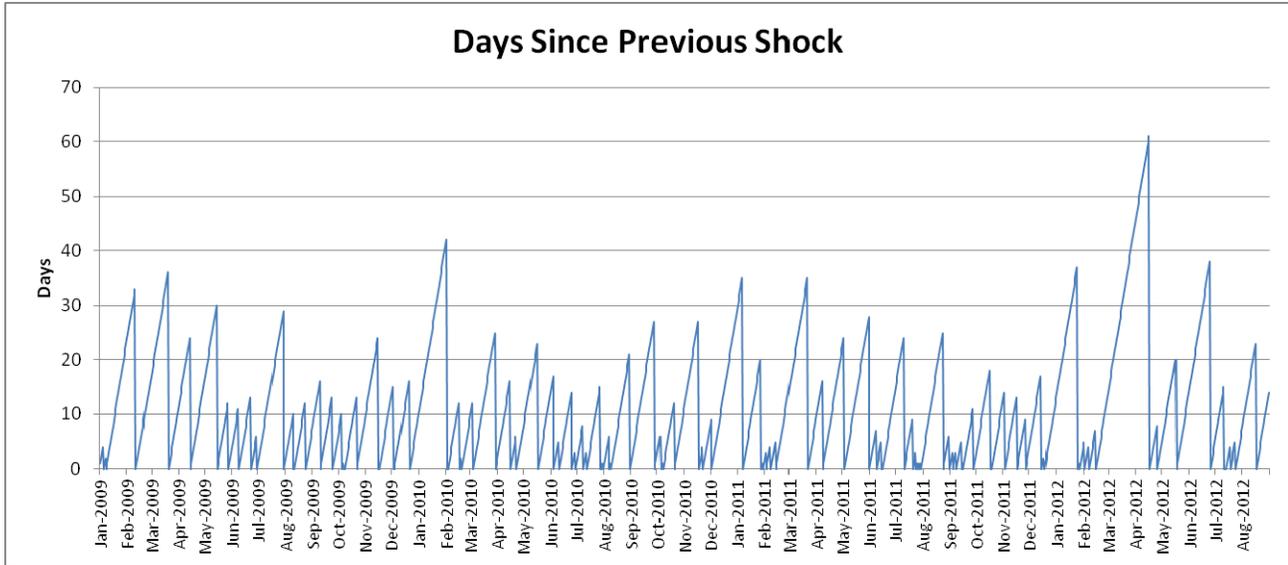


Figure 3 shows the number of days since the previous electrical shock for the DOE complex. The longest interval was 61 days (April 16, 2012) and the present interval is 14 days as of August 31.

Figure 3 - Days since Previous Shock



Electrical Intrusion

In August, the number of electrical intrusion occurrences (i.e., cutting/penetrating, excavating, or vehicle/equipment contact of overhead electrical conductors) increased from four in July to five. These five occurrences are summarized below.

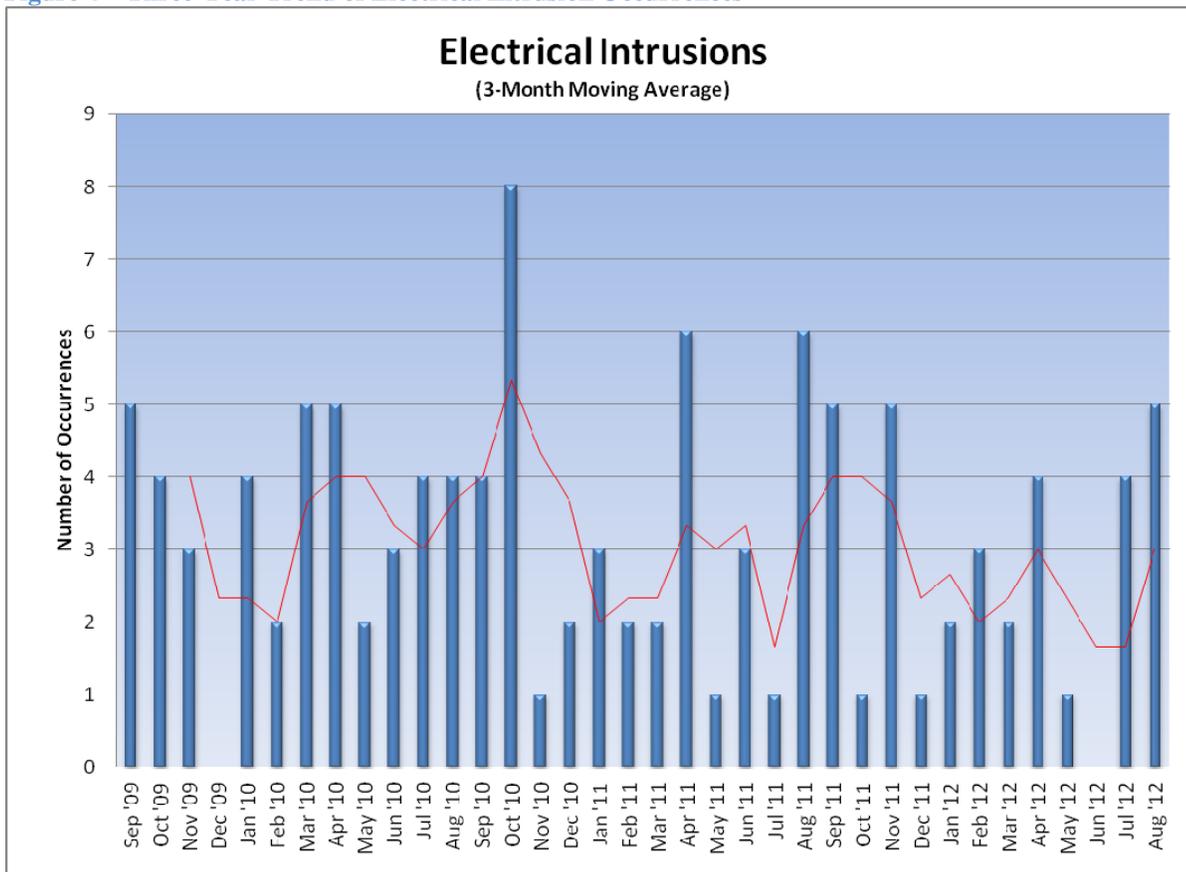
1. While construction contractor operating an electric wet saw made a 3-inch deep cut into a concrete floor slab, and severed an electrical conduit containing a 208-volt circuit. The contractor operating the saw was unaware that an underground conduit had been severed, and continued cutting until the construction superintendent instructed the contractor to stop work immediately after concerns were raised regarding system outages. There were no injuries or electrical shock and no visible arc or sparks. The contractor was wearing electrical safety PPE (600V gloves and boots), hard hat and respirator.
2. A subcontractor struck and severed a buried de-energized lighting circuit cable, labeled at 2,300 volts, at a depth of 4 feet 2 inches, while excavating for the installation of a new precast manhole. The circuit was not energized as the light was controlled by a dusk-to-dawn photocell. There were no injuries and the excavation work was paused.
3. Subcontractor electricians cut energized 120-volt wires that were fed from a panel that had not been locked and tagged out (LOTO). The electricians were to disconnect electrical outlets/receptacles located at the end of five laboratory work benches. Each bench was attached to the wall at one end and open to the room at the other end. The outlets were all located at the open-end of the benches. Four of the five benches had two emergency power receptacles each. One bench had two regular power receptacles and one emergency power receptacle. They knew that the electric panels controlling the lighting

and regular receptacles had been previously locked out; however the E-panel (emergency power panel) had not been locked out and was still waiting for an approved LOTO permit. Therefore, the emergency power receptacles were all still energized. There were no injuries.

4. A subcontractor operating a skid steer loader with a grapple attachment struck an unknown energized 480-volt electrical line during demolition. The operator promptly backed away to exit the area safely and notified project management after observing a spark. The operator was not shocked or injured and the equipment was not damaged. The electrical line was subsequently traced to a panel in a test lab basement and locked and tagged out.
5. A subcontract worker accidentally struck an energized 480-volt, 250-amp power temporary electric supply line while removing exposed flexible conduit in a laboratory. The conduit being removed was at ceiling elevation. The subcontractor was wearing appropriate protective equipment for the removal of the exposed flexible conduit and was standing in a scissor lift using a saw. As the flexible conduit was severed, the momentum of the saw caused the blade to continue forward striking a clearly marked energized temporary electric supply line. The power line was 12 inches from the flexible conduit. Work was immediately stopped, the power source was secured. The worker sustained no shock or injury.

Figure 4 shows a 3-year trend of electrical intrusion occurrences for the DOE complex. During this period we have seen an average of 3 occurrences per month.

Figure 4 – Three-Year Trend of Electrical Intrusion Occurrences



Hazardous Energy Control

In August there were six reported occurrences involving lockout/tagout (LOTO), which is an increase from the five occurrences reported in July. Failure to hang locks and tags is the recurring problem with hazardous energy control. There has also been an increase in the reporting of less than adequate administrative controls associated with the implementation of hazardous energy control. These events are summarized in the following sections.

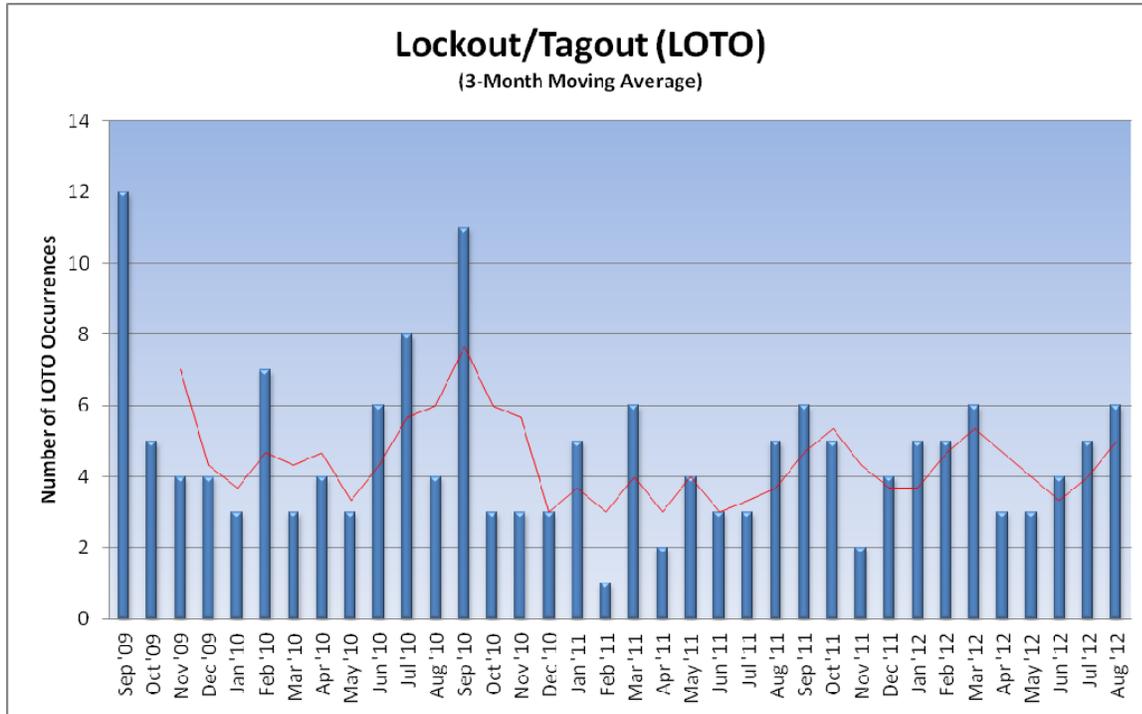
Occurrences Involving Lockout/Tagout

The one of the six LOTO occurrences was reported as occurrence number 3 under the Electrical Intrusion section. The remaining five occurrences are summarized below.

1. An electrician shut off a circuit breaker and installed an outlet in a pre-existing electrical box without a lockout/tagout and outside of the scope of work during planned work to install plug-in emergency lights in a trailer. The work required the lights to be hung on the wall of the trailer and plugged into existing 110-volt outlets. The pre-job briefing instructed the electrician to feed the power cord through a wall opening and plug the unit into a 110-volt outlet located in the adjacent room. Work was stopped and the work area was placed in a safe condition.
2. Millwrights worked on an exhaust fan without installing their Authorized Workers Locks (AWLs) over the established Controlling Organization's lockout/tagout lockbox. Safe Condition Checks and Safe-to-Work Checks were performed and electricians' AWLs were hung during establishment of the Controlling Organization Lockout/Tagout and remained in place during their portion of the work. The field work supervisors had directed the millwrights to perform their portions of the work without hanging their AWLs because the motor had been electrically disconnected and the hazard was believed to be eliminated.
3. Electricians failed to sign a LOTO before testing electrical cables (Hi Pot testing) on circuit breakers. There were several electrical LOTOs and the electricians believed that this LOTO did not apply to their job.
4. During a review of a permitted LOTO energy isolation, one of the isolation component tags was found to be incomplete. The tag contained all of the required information except the actual tag number suffix. The associated work activity had been previously suspended as a part of a site-wide LOTO stand-down and was being reviewed for work resumption when the administrative error was discovered. The omission did not impede the successful isolation of energy.
5. During a walk-down of potential LOTO violations, management determined that a development engineer had removed a circuit board from a control cabinet without applying a LOTO.

Figure 5 shows a 3-year trend of LOTO occurrences for the DOE complex. Although there was a small increase from last month, we can see a general decrease since March in the number of occurrences involving the implementation of lockout/tagout for electrical work during this period. The monthly average is 4.6 occurrences.

Figure 5 – Three-Year Trend of Lockout/Tagout Occurrences



Occurrences Involving the Discovery of Uncontrolled Hazardous Energy

There were six occurrences involving the discovery of uncontrolled hazardous energy. Three of them were covered in the Electrical Intrusion section (occurrences 1, 4 and 5) and LOTO occurrence 5 above. The other two occurrences are summarized below.

1. During a maintenance pre-job walk down, exposed 120-volt contacts located in the upper left hand corner of a stack monitoring instrument cabinet were found. The identification of the exposed electrical contacts and a worker question on the required controls to access the cabinet led facility management to perform an extent of condition on who accesses the panel. Management determined that this cabinet is routinely accessed by other facility personnel working under approved procedures that do not address the exposed electrical hazard. Work within the cabinet was stopped and notifications were made.
2. While working on an electrical panel interior replacement project, a contractor electrician noticed a small spark coming from a neutral conductor when he went to secure it to the neutral bus bar of the panel. After discovering the unexpected and uncontrolled 120-volt energy source, the electrician immediately stopped work and appropriate notifications were made. The electrician had prepared a correct LOTO and was wearing appropriate PPE at the time of the incident. Apparently, a previous contractor had left the panel in a condition that the neutral conductor somehow became energized when it was removed from the older panel's neutral bus bar.

Electrical Near Miss

In August, there were seven occurrences that were considered to be an electrical near miss, which is an increase from the two occurrences last month. Four of these near-miss occurrences were discussed in the Electrical Intrusion section (occurrences 1, 2, 4 and 5) and two were Discovery of Uncontrolled Hazardous Energy events. The seventh occurred when a mechanic's metal retractable tape measure inadvertently touched the crane electrical feed rail causing a 480-volt circuit breaker to trip. The mechanic was in an open crane cab and was taking a measurement to determine the clearance for a new lifting fixture. After the mechanic extended the tape measure 3 feet upward and took the measurement, the tape bent. When the mechanic attempted to straighten the tape measure, it flipped into the feed rail, which was 3 feet away and a small portion of the tape measure melted on each side where it touched the feed rail housing.

Monthly Occurrences Tables

Table 1 shows a breakdown of the outcomes, performance issues, and worker types associated with the electrical safety occurrences for August 2012.

Table 1 - Breakdown of Electrical Occurrences

Number of Occurrences	Involving:	Last Month
1	Electrical Shocks	6
0	Electrical Burns	0
6	Hazardous Energy Control (LOTO)	5
2	Inadequate Job Planning	2
4	Inadvertent Drilling/Cutting of Electrical Conductors	2
1	Excavation of Electrical Conductors	2
0	Vehicle Intrusion of Electrical Conductors or Equipment	0
7	Electrical Near Misses	2
5	Electrical Workers	9
9	Non-Electrical Workers	7
7	Subcontractors	6

NOTE: The numbers in the left-hand column are not intended to total the number of occurrences for the month and are only associated with the items in the center column.

In compiling the monthly totals, the search initially looked for occurrence discovery dates in this month [excluding Significance Category R (Recurring) reports] and for the following ORPS HQ keywords:

01K – Lockout/Tagout Electrical, 01M – Inadequate Job Planning (Electrical),
08A – Electrical Shock, 08J – Near Miss (Electrical), 12C – Electrical Safety

The search produced 14 reports.

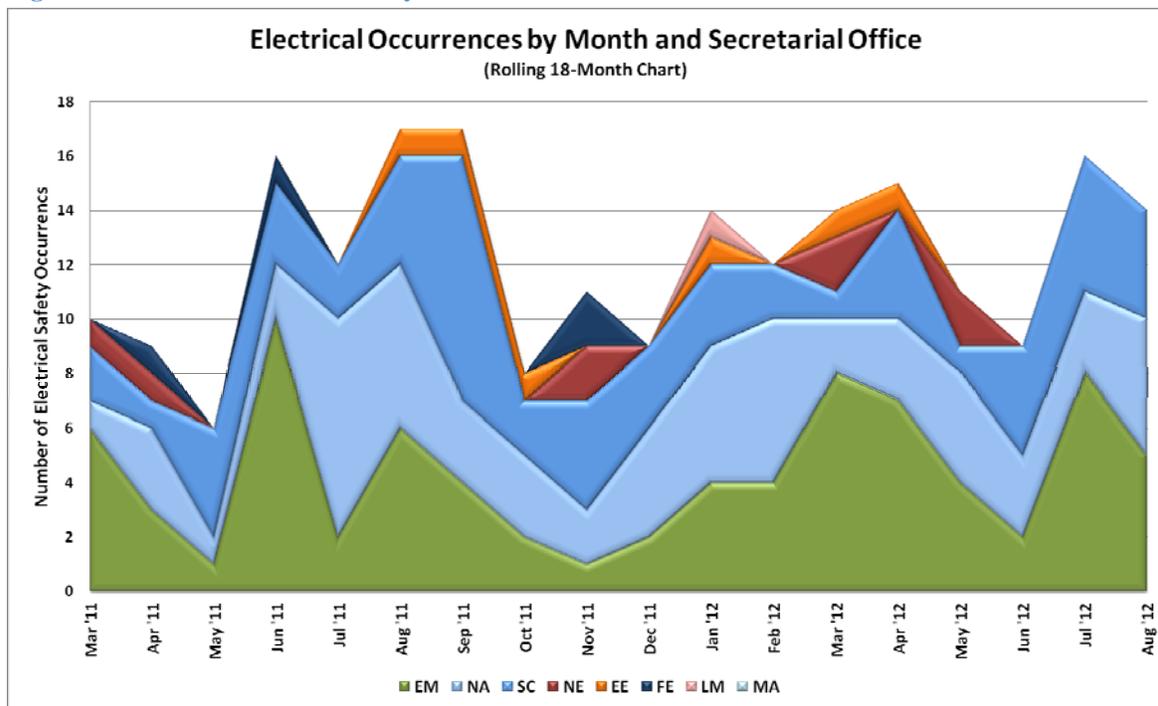
Table 2 provides a summary of the electrical safety occurrences for CY 2012. The present monthly average has not changed much from last month's value of 13.0/month. The average number of occurrences a year ago (August 2011) was 11.3/month.

Table 2 - Summary of Electrical Occurrences

Period	Electrical Safety Occurrences	Shocks	Burns	Fatalities
August	14	1	0	0
July	16	6	0	0
June	9	1	0	0
May	11	2	1	0
April	15	4	0	0
March	14	0	0	0
February	12	3	0	0
January	14	2	0	0
2012 total	105 (avg. 13.1/month)	19	1	0
2011 total	136 (avg. 11.3/month)	36	5	0
2010 total	155 (avg. 12.9/month)	28	2	0
2009 total	128 (avg. 10.7/month)	25	3	0
2008 total	113 (avg. 9.4/month)	26	1	0
2007 total	140 (avg. 11.7/month)	25	2	0
2006 total	166 (avg. 13.8/month)	26	3	0
2005 total	165 (avg. 13.8/month)	39	5	0
2004 total	149 (avg. 12.4/month)	25	3	1

Figure 6 shows the distribution of electrical safety occurrences by Secretarial Office

Figure 6 - Electrical Occurrences by Month and Secretarial Office



Electrical Severity

The electrical severity of an electrical occurrence is based on an evaluation of electrical factors that include: electrical hazard, environment, shock proximity, arc flash proximity, thermal proximity and any resulting injury(s) to affected personnel. Calculating an electrical severity for an occurrence provides a metric that can be consistently applied to evaluate electrical occurrences across the DOE complex.

Electrical Severity Scores

The electrical severity scores (ES) are calculated using Revision 2 of the Electrical Severity Measurement Tool, which can be found on the EFCOG website at http://www.efcog.org/wg/esh_es/docs/Electrical_Severity_Measurement_Tool.pdf. Three of the electrical occurrences did not have an ES score. The other eleven occurrences are classified as shown in Table 3. The actual score for each occurrence is provided in Attachment 1.

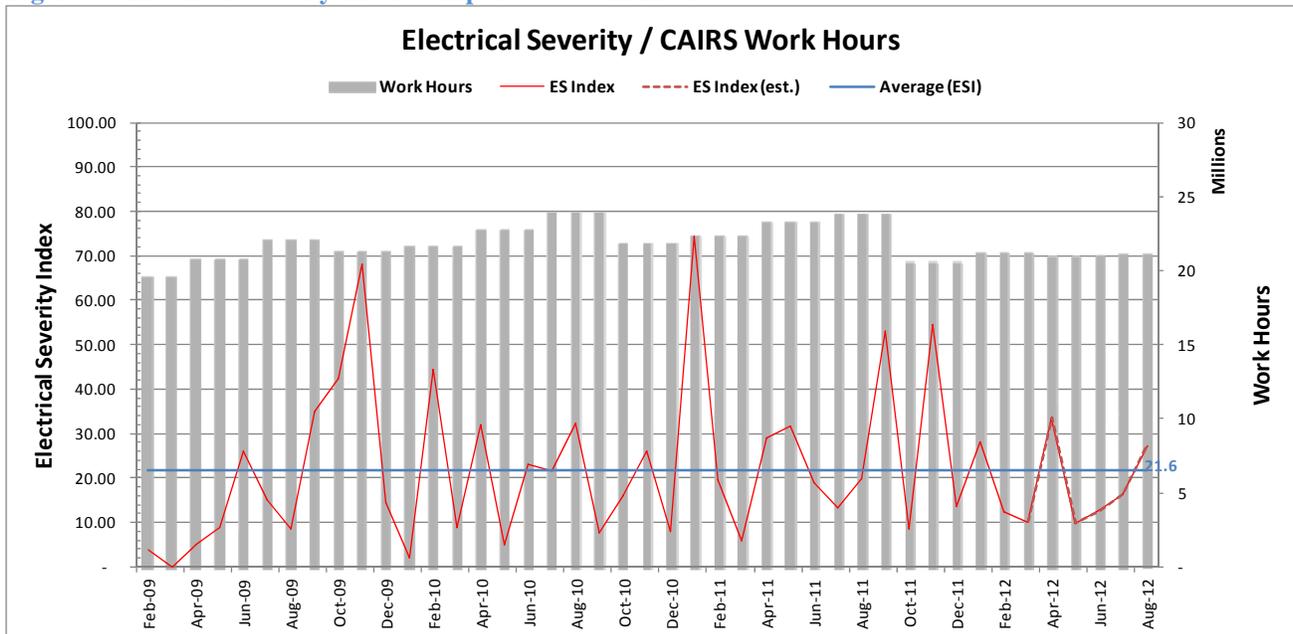
Table 3 – Classification of Electrical Safety Occurrences by ES Score

Occurrence Classification	Electrical Severity Score	Number of Occurrences
HIGH	≥ 1750	0
MEDIUM	31-1749	6
LOW	1-30	5

Electrical Severity Index

The Electrical Severity Index (ESI) is a performance metric that was developed to normalize events against organizational work hours. The ESI is calculated monthly and trended. Figure 7 shows a calculated ESI for the DOE complex and Table 4 shows the ESI and how it has changed from the previous month.

Figure 7 - Electrical Severity Index Compared to Work Hours



Note: An estimated ESI is calculated until accurate CAIRS man-hours are available. The chart is updated monthly.

Table 4 - Electrical Severity Index

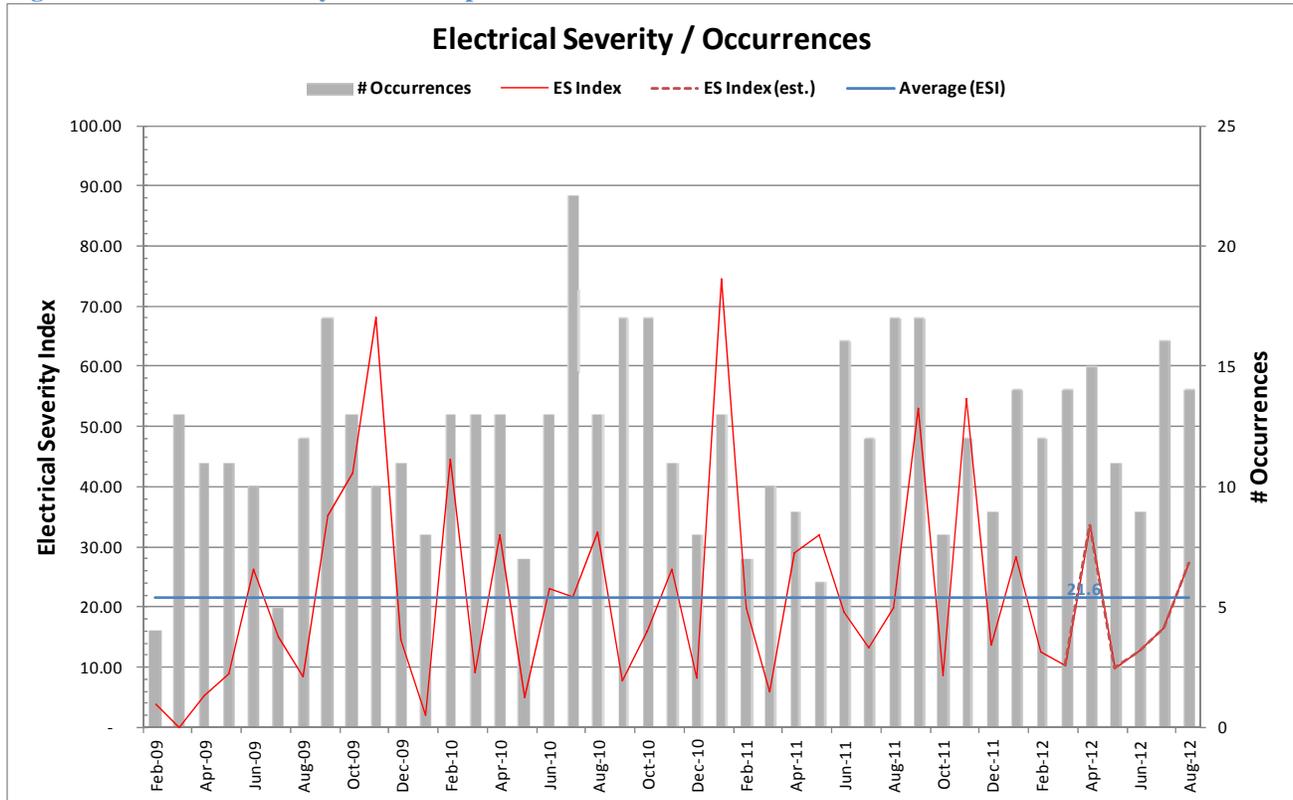
Category	July	August	Δ
Total Occurrences	16	14	-2
Total Electrical Severity	1,740	2,880	+1,140
Estimated Work Hours	21,097,134* (21,097,134)	21,070,250	-20,884
ES Index	16.50* (16.50)	27.34	+10.84
Average ESI	21.5	21.6	+0.1

* These are estimated CAIRS work hours for June and ES Index based on the estimated hours. The estimated hours and ES Index based on the estimated hours (as reported in March) are shown below in parentheses.

$$\text{Electrical Severity Index} = (\sum \text{Electrical Severity} / \sum \text{Work Hours}) 200,000$$

Figure 8 shows the ESI with the number of Occurrences instead of Work Hours.

Figure 8 - Electrical Severity Index Compared to Number of Occurrences



The average ESI (21.6) has increased slightly from last month. The lowest average ESI was 19.2 in June 2010. Figure 9 shows the number of days since the previous high severity occurrence. The present interval is 486 days as of August 31. The previous longest interval was 181 days in 2009.

Figure 9 - Days since Previous High Severity Occurrence

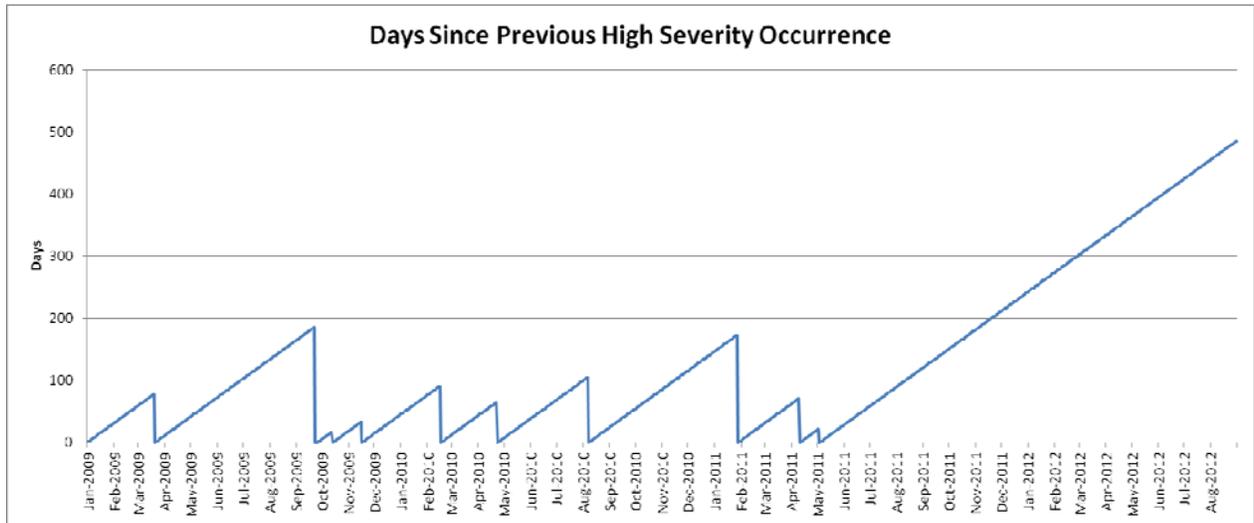
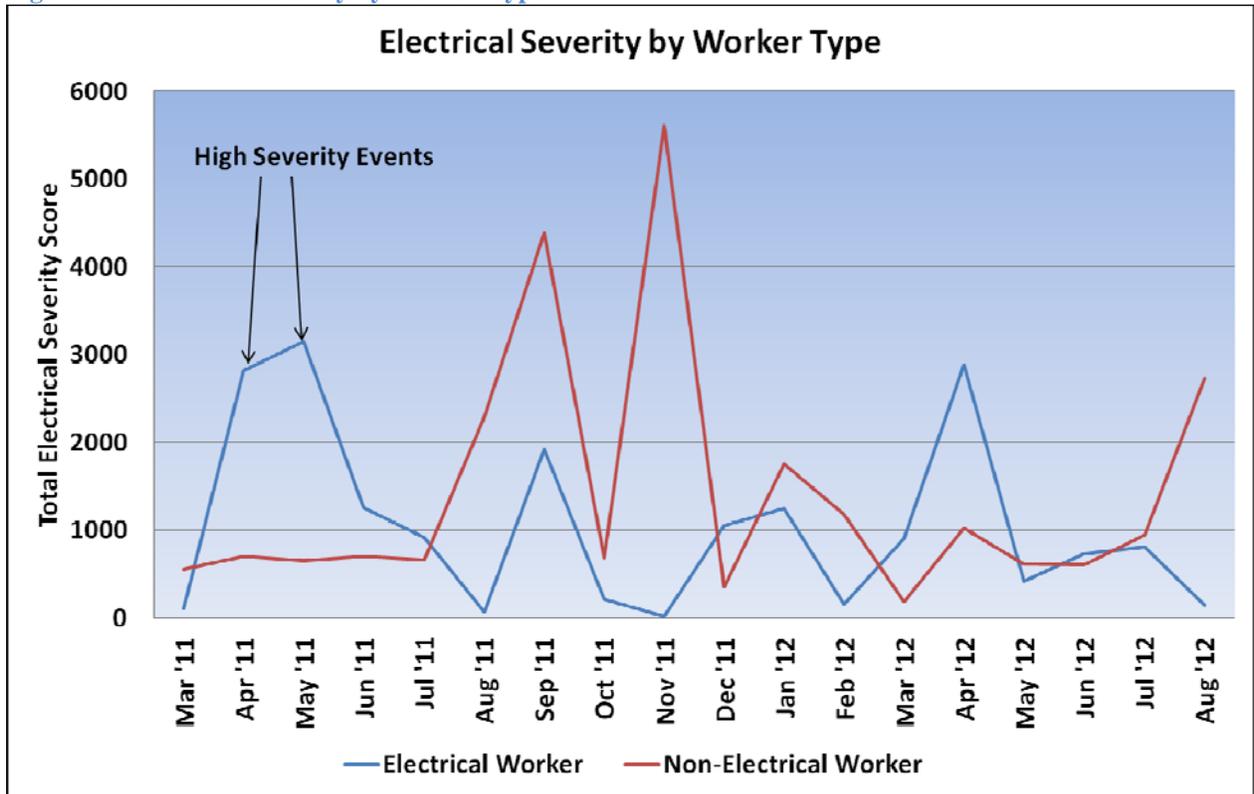


Figure 10 shows the total electrical severity score by worker type for each month.

Figure 10 – Electrical Severity by Worker Type



Electrical Workers typically have the fewest number of occurrences but they had High-Severity events while Non-Electrical Workers have Low to Medium ES scores. The ES scores for August showed a large separation with Non-Electrical Workers at 2,730 and Electrical Workers at 150.

Summary of Occurrences by Severity Band

For the interval August 2011 through August 2012 (current month and the past 12), Figures 11 and 12 summarize occurrences by severity band and month of discovery date by percentage of total occurrences in month and number of occurrences in month.

Figure 11 - Occurrences by Electrical Severity Band (Percentage)

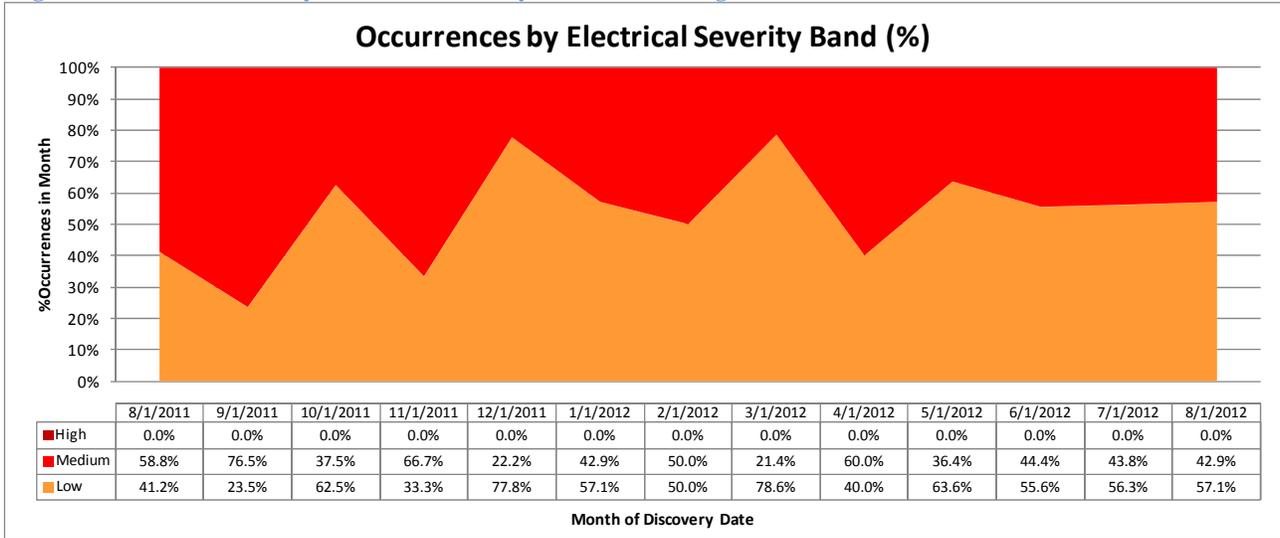
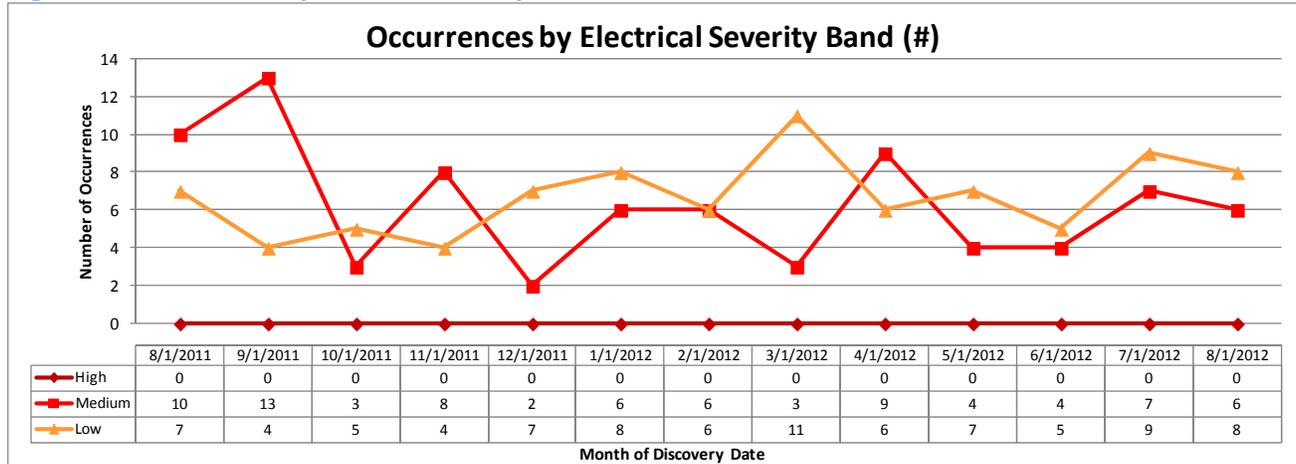


Figure 12 - Occurrences by Electrical Severity Band (Number)

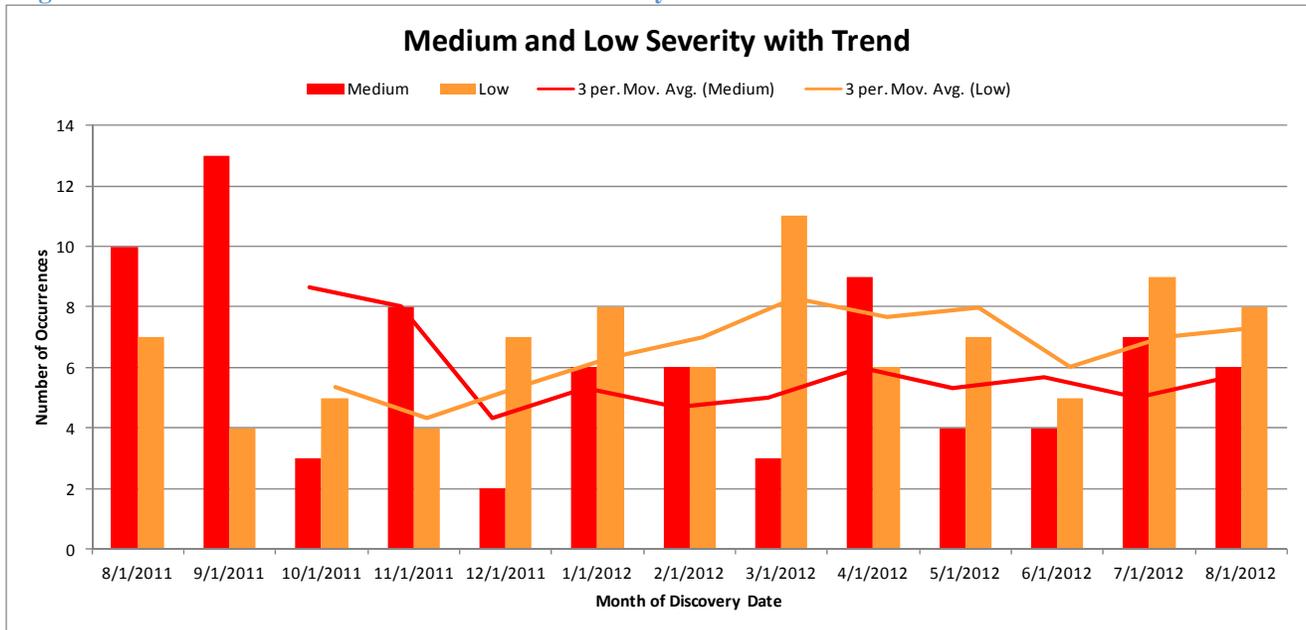


What can be seen from the previous two charts is that the number of occurrences with High electrical severity scores has remained at zero for the past 13 months and that the number of occurrences with Medium scores remains below the number of Low and zero severity occurrences.

Medium and Low Severity with Trend

Figure 13 focuses on the Medium and Low severity data series for August 2011 through August 2012. Trend lines are included for each, using a 3-month moving average.

Figure 13 - Trend of Medium and Low Electrical Severity Occurrences



The 3-month moving average shows an increasing trend for both Medium severity occurrences and Low severity occurrences. A higher percentage of Low severity occurrences is preferred.

Additional Resources

Electrical Safety Blog

<http://hsselectricalsafety.wordpress.com/>

Electrical Safety Wiki

<http://electricalsafety.doe-hss.wikispaces.net/home>

EFCOG Electrical Safety Subgroup

http://www.efcog.org/wg/esh_es/index.htm

Center of Excellence for Electrical Safety

<http://www.lanl.gov/safety/electrical/>

Contact

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Attachment 1

Electrical Safety Occurrences – August 2012

No	Report Number	Event Summary	SHOCK	BURN	ARCF ⁽¹⁾	LOTO ⁽²⁾	PLAN ⁽³⁾	EXCAV ⁽⁴⁾	CUT/D ⁽⁵⁾	VEH ⁽⁶⁾	SC ⁽⁷⁾	RC ⁽⁸⁾	ES ⁽⁹⁾
1	EM--WGI-G2H2-2012-0005	An electrician opened a breaker and installed an outlet in an electrical box without a LOTO.				X	X				4	2E(3)	110
2	EM--PPPO-FBP-PORTSDD-2012-0020	A mechanic's metal retractable tape measure inadvertently touched a crane electrical feed rail tripping a 480V circuit breaker.									3	10(3)	550
3	EM-RL--CPRC-PFP-2012-0010	Maintenance worked on a fan without installing their AWLs over the established controlling organization's lockbox.				X					4	2E(3)	0
4	EM-RL--CPRC-TPLANT-2012-0001	During a pre-job walk down, exposed 120V contacts were found in an instrument cabinet.					X				3	2E(2)	20
5	EM-RP--BNRP-RPPWTP-2012-0019	Electricians failed to sign a LOTO before Hi Pot testing on circuit breakers.				X					4	2E(3)	0
6	NA--LSO-LLNL-LLNL-2012-0042	A contractor electrician saw a spark from a neutral conductor when he went to secure it to the 102V neutral bus bar of the panel.									3	2E(2)	20
7	NA--SS-SNL-1000-2012-0008	An employee received a shock while moving a lamp that fell apart uncovered the wires leading to the 120V plug.	X								2	2E(1)	330
8	NA--SS-SNL-CASITE-2012-0002	Contractor cuts into energized conduit while cutting concrete floor slab.							X		3	2E(2)	10
9	NA--YSO-BWXT-Y12SITE-2012-0035	During a review of a LOTO, one of the component tags was incomplete.				X					4	2E(3)	0
10	NA--YSO-BWXT-Y12SITE-2012-0040	An engineer removed a circuit board from a control cabinet without applying a LOTO.				X					3	2E(2)	20
11	SC--ASO-ANLE-ANLEFMS-2012-0005	A subcontractor struck and severed a buried de-energized 2,300V lighting circuit cable.						X			3	10(3)	700

Attachment 1

No	Report Number	Event Summary	SHOCK	BURN	ARCF ⁽¹⁾	LOTO ⁽²⁾	PLAN ⁽³⁾	EXCAV ⁽⁴⁾	CUT/D ⁽⁵⁾	VEH ⁽⁶⁾	SC ⁽⁷⁾	RC ⁽⁸⁾	ES ⁽⁹⁾
12	SC--BSO-LBL-OPERATIONS-2012-0008	Subcontractor electricians cut energized 120V wires fed from a panel that had no LOTO.				X			X		3	2E(2)	20
13	SC--TJSO-JSA-TJNAF-2012-0010	While performing demolition a contractor damaged a 480V energized line.							X		3	2E(2)	50
14	SC--TJSO-JSA-TJNAF-2012-0011	While performing demolition a contractor cut a temporary 480V energized line.							X		3	10(3)	1050
	TOTAL		1	0	0	6	2	1	4	0			

Key

(1) ARCF = significant arc flash, (2) LOTO = lockout/tagout, (3) PLAN = job planning, (4) EXCAV = excavation/penetration, (5) CUT/D = cutting or drilling, (6) VEH = vehicle or equipment intrusion, (7) SC = ORPS significance category, (8) RC = ORPS reporting criteria, (9) ES = electrical severity

ES Scores: High is ≥ 1750 , Medium is 31-1749, and Low is 1-30

Attachment 1

Electrical Safety Occurrences – August 2012

No	Report Number	Event Summary	EW ⁽¹⁾	N-EW ⁽²⁾	SUB ⁽³⁾	HFW ⁽⁴⁾	WFH ⁽⁵⁾	PPE ⁽⁶⁾	70E ⁽⁷⁾	VOLT ⁽⁸⁾		C/T ⁽⁹⁾	NEUT ⁽¹⁰⁾	NM ⁽¹¹⁾
										H	L			
1	EM---WGI-G2H2-2012-0005	An electrician opened a breaker and installed an outlet in an electrical box without a LOTO.	X		X		X				X			
2	EM--PPPO-FBP-PORTSDD-2012-0020	A mechanic's metal retractable tape measure inadvertently touched a crane electrical feed rail tripping a 480V circuit breaker.		X		X					X			X
3	EM-RL--CPRC-PFP-2012-0010	Maintenance worked on a fan without installing their AWLs over the established controlling organization's lockbox.		X			X				X			
4	EM-RL--CPRC-TPLANT-2012-0001	During a pre-job walk down, exposed 120V contacts were found in an instrument cabinet.		X			X		X		X			X
5	EM-RP--BNRP-RPPWTP-2012-0019	Electricians failed to sign a LOTO before Hi Pot testing on circuit breakers.	X				X				X			
6	NA--LSO-LLNL-LLNL-2012-0042	A contractor electrician saw a spark from a neutral conductor when he went to secure it to the 102V neutral bus bar of the panel.	X		X	X					X			X
7	NA--SS-SNL-1000-2012-0008	An employee received a shock while moving a lamp that fell apart uncovered the wires leading to the 120V plug.		X			X				X			
8	NA--SS-SNL-CASITE-2012-0002	Contractor cuts into energized conduit while cutting concrete floor slab.		X	X	X					X			X
9	NA--YSO-BWXT-Y12SITE-2012-0035	During a review of a LOTO, one of the component tags was incomplete.	X				X				X			
10	NA--YSO-BWXT-Y12SITE-2012-0040	An engineer removed a circuit board from a control cabinet without applying a LOTO.		X			X				X			
11	SC--ASO-ANLE-ANLEFMS-2012-0005	A subcontractor struck and severed a buried de-energized 2,300V lighting circuit cable.		X	X	X					X			X

Attachment 1

No	Report Number	Event Summary	EW ⁽¹⁾	N-EW ⁽²⁾	SUB ⁽³⁾	HFW ⁽⁴⁾	WFH ⁽⁵⁾	PPE ⁽⁶⁾	70E ⁽⁷⁾	VOLT ⁽⁸⁾		C/I ⁽⁹⁾	NEUT ⁽¹⁰⁾	NM ⁽¹¹⁾
										H	L			
12	SC--BSO-LBL-OPERATIONS-2012-0008	Subcontractor electricians cut energized 120V wires fed from a panel that had no LOTO.	X		X	X					X			
13	SC--TJSO-JSA-TJNAF-2012-0010	While performing demolition a contractor damaged a 480V energized line.		X	X	X					X			X
14	SC--TJSO-JSA-TJNAF-2012-0011	While performing demolition a contractor cut a temporary 480V energized line.		X	X	X					X			X
	TOTAL		5	9	7	8	6	0	1	1	13	0	0	7

Key

(1) EW = electrical worker, (2) N-EW = non-electrical worker, (3) SUB = subcontractor, (4) HFW = hazard found the worker, (5) WFH = worker found the hazard, (6) PPE = inadequate or no PPE used, (7) 70E = NFPA 70E issues, (8) VOLT = H (>600) L(≤600), (9) C/I = Capacitance/Inductance, (10) NEUT = neutral circuit, (11) NM = near miss

ORPS Operating Experience Report

Production GUI - New ORPS

ORPS contains 55839 OR(s) with 59149 occurrences(s) as of 9/25/2012 6:40:27 AM
 Query selected 14 OR(s) with 14 occurrences(s) as of 9/25/2012 10:37:17 AM

Download this report in Microsoft Word format. 

1)Report Number: [EM---WGI-G2H2-2012-0005](#) **After 2003 Redesign**
Secretarial Office: Environmental Management
Lab/Site/Org: Separations Process Research Unit
Facility Name: G2/H2 Facilities
Subject/Title: Failure to Follow Electrical Hazardous Energy Control Procedure (LOTO)
Date/Time Discovered: 08/01/2012 08:20 (ETZ)
Date/Time Categorized: 08/01/2012 10:09 (ETZ)
Report Type: Notification/Final

Report Dates:

Notification	08/03/2012	12:52 (ETZ)
Initial Update	08/03/2012	12:52 (ETZ)
Latest Update	08/03/2012	12:52 (ETZ)
Final	08/03/2012	12:52 (ETZ)

Significance Category: 4
Reporting Criteria: 2E(3) - Any failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout, hazardous energy control program).
Cause Codes: A3B1C03 - Human Performance Less Than Adequate (LTA); Skill Based Errors; Incorrect performance due to mental lapse
 -->couplet - NA
ISM: 4) Perform Work Within Controls
Subcontractor Involved: Yes
 CR Grey
Occurrence Description: Four electricians were installing plug in emergency lights in a site trailer (SP 44). The work required the lights to be hung on the wall of the trailer and plugged in to existing 110v outlets. The work was being done under work package CN FWP 119 and JHA R302. The supervisor pre-job briefing covered the work scope to be performed. The method of installing this specific emergency light was discussed by the work group supervisor during the pre-job briefing. The instructions were for the electrician was to feed the power cord through a wall opening and plug the unit into a 110v outlet located in the adjacent room. The work scope covered in the briefing did not include installation of an electrical outlet. During the work, one electrician shut off a breaker and installed a 110v outlet in a pre-existing electrical box. The work was performed without performing a LOTO as

required by the work package/JHA and SPRU-COO-003. The Operations staff discovered the work in progress and notified the Shift Manager who stopped the work activity.

Cause Description: The electrician is experienced and has been working on the SPRU project for over a year. The individual is trained and knowledgeable of site requirements for LOTO.

Operating Conditions: Normal Operations - S&M Activity

Activity Category: Maintenance

Immediate Action(s): Stopped the work in progress and placed the work area in a safe condition. Classified the event and made notifications. Conducted a Fact Finding at 2 pm on 08/01/2012. The Operations Manager conducted briefings with the field work crews and the work group supervisors on the event and management expectations on 08/02/2012 at 0630 and 1200 hours.

FM Evaluation: This event was caused by a single individual who did not perform work IAW the pre-job briefing, SPRU requirements or past training. The subcontractor (CR Grey) has been working on the SPRU site for over a year with no incidents of this type. Personnel action was taken in accordance with company HR policies.

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required: No

Division or Project: Separation Research Process Unit (SPRU)

Plant Area: LLRB

System/Building/Equipment: SP-44

Facility Function: Environmental Restoration Operations

Corrective Action:

Lessons(s) Learned:

HQ Keywords: 01E--Inadequate Conduct of Operations - Operations Procedure Noncompliance
01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical)
01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical)
08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance
11G--Other - Subcontractor
12I--EH Categories - Lockout/Tagout (Electrical or Mechanical)
14E--Quality Assurance - Work Process Deficiency
14G--Quality Assurance - Procurement Deficiency

HQ Summary: On August 1, 2012, an electrician shut off a breaker and installed an outlet

in a pre-existing electrical box without a lockout/tagout and outside of the scope of work during planned work to install plug-in emergency lights in Site Trailer 44. The work required the lights to be hung on the wall of the trailer and plugged into existing 110 volt outlets. The pre-job briefing instructed the electrician to feed the power cord through a wall opening and plug the unit into a 110 volt outlet located in the adjacent room. During the work, an electrician shut off a breaker and installed a 110 volt outlet in a pre-existing electrical box. Work was stopped and the work area was placed in a safe condition.

Similar OR Report Number: 1. EM---WGI-G2H2-2012-0004

Facility Manager:

Name	HALL, DAVID M
Phone	(865) 253-1655
Title	ESH&Q MANAGER

Originator:

Name	HALL, DAVID M
Phone	(865) 253-1655
Title	ESH&Q MANAGER

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/01/2012	10:09 (ETZ)	R. Crossman	DOE FR
08/01/2012	10:09 (ETZ)	D. Hall	URS
08/01/2012	10:09 (ETZ)	K. Kline	DOE FR

Authorized Classifier(AC): N/A Date: 08/01/2012

2)Report Number:

[EM--PPPO-FBP-PORTSDD-2012-0020](#) After 2003 Redesign

Secretarial Office:

Environmental Management

Lab/Site/Org:

Portsmouth Gaseous Diffusion Plant

Facility Name:

Portsmouth Decontamination and Decommissioning

Subject/Title:

Bay Crane #8 Feed Rail Near Miss

Date/Time Discovered:

08/23/2012 15:30 (ETZ)

Date/Time Categorized:

08/27/2012 16:50 (ETZ)

Report Type:

Notification

Report Dates:

Notification	08/28/2012	16:01 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category:

3

Reporting Criteria: 10(3) - A near miss to an otherwise ORPS reportable event, where something physically happened that was unexpected or unintended, or where no or only one barrier prevented an event from having a reportable consequence.
The significance category assigned to the near miss must be based on an evaluation of the potential risks and extent of personnel exposure to the hazard. (1 of 3 criteria - This is a SC 3 occurrence)

Cause Codes:

ISM: 3) Develop and Implement Hazard Controls

Subcontractor Involved: No

Occurrence Description: At 1530 hours on August 23, 2012, a mechanic's metal retractable tape measure inadvertently made contact with the crane electrical feed rail causing a 480 volt breaker to trip. The mechanic was on the cell floor of the X-326 Building and was in an open crane cab located 16 feet and 7 inches above the cell floor. The mechanic was taking a measurement over a cell bypass housing pipe galley to determine the clearance of a new lifting fixture over the pipe galley, which will be used for removing cell housings. After the mechanic extended the tape measure approximately three feet upward and took the measurement the tape bent. When the mechanic attempted to straighten the tape measure, it flipped into the feed rail, which was approximately three feet away. There was no injury or shock to the mechanic when the tape measure contacted the feed rail, but a small portion of the tape measure was melted on each side where it made contact with feed rail housing while still in contact with the feed rail. At the time the mechanic was wearing full anti-c's consisting of anti-c coveralls, two latex gloves, and booties with totes shoe covers.

Power to the crane is supplied by the feed rails which consist of three copper bus bars which are enclosed by sheet metal housing. There is an opening down the center of the feed rail housing which is approximately one inch wide that forms a channel. Connecting any two of the three bus bars provides 480 volts. The feed rails are mounted horizontally with the channel opening underneath. The collector shoe rides in the housing on wheels while brushes contact each of the buses inside the feed rail housing to provide power to the crane. When the tape measure bent backward it fell into the channel in the feed rail contacting one of the bus bars and the feed rail housing which is grounded.

Cause Description:

Operating Conditions: Normal Operations

Activity Category: Normal Operations (other than Activities specifically listed in this Category)

Immediate Action(s): --Power was restored to the crane and the crane was returned to its normal position so the mechanic could exit the crane by ladder.
--A Problem Report was initiated.

- Initial ORPS review was conducted and deemed not reportable at that time.
- Management initiated an investigation, personal statements were obtained and a Fact Finding meeting was held.
- FBP Management, Performance Assurance, Plant Shift Superintendent and the on-site DOE Facility Rep were notified.
- An Occurrence Report was initiated.

FM Evaluation: An internal investigation will be conducted and corrective actions developed.

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required: Yes.
Before Further Operation? No
By Whom:
By When:

Division or Project: X-326 Deactivation; Cut and Cap of Process Equipment

Plant Area: G4

System/Building/Equipment: X-326 Building, Bay Crane Number 8

Facility Function: Environmental Restoration Operations

Corrective Action:

Lessons(s) Learned:

HQ Keywords: 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical)
12K--EH Categories - Near Miss (Could have been a serious injury or fatality)
14L--Quality Assurance - No QA Deficiency

HQ Summary: On August 23, 2012, a mechanic's metal retractable tape measure inadvertently touched the crane electrical feed rail causing a 480-volt circuit breaker to trip. The mechanic was on the cell floor of the X-326 Building and was in an open crane cab located 16 feet and 7 inches above the cell floor. The mechanic was taking a measurement over a cell bypass housing pipe galley to determine the clearance of a new lifting fixture over the pipe galley. After the mechanic extended the tape measure approximately 3 feet upward and took the measurement the tape bent. When the mechanic attempted to straighten the tape measure, it flipped into the feed rail, which was approximately 3 feet away. There was no injury or shock to the mechanic when the tape measure hit the feed rail, but a small portion of the tape measure was melted on each side where it made contact with feed rail housing. Power was restored to the crane and the crane was returned to its normal position so the mechanic could exit the crane by ladder. Management was notified and a fact finding meeting was held.

Similar OR Report Number:

Facility Manager:

Name	Dennis Carr
Phone	(740) 897-3532
Title	Fluor-B&W/Portsmouth Program Mgr.

Originator:

Name	BOOK, JACKIE
Phone	(740) 897-2569
Title	QUALITY PROGRAMS COORDINATOR

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/27/2012	17:14 (ETZ)	Dee Powell	DOEPORTS
08/27/2012	17:21 (ETZ)	Bob Nichols	PORTSFBP
08/27/2012	17:32 (ETZ)	Dennis Carr	PORTSFBP

Authorized Classifier(AC): William K. Vanderpool Date: 08/28/2012

3)Report Number:

[EM-RL--CPRC-PFP-2012-0010](#) After 2003 Redesign

Secretarial Office:

Environmental Management

Lab/Site/Org:

Hanford Site

Facility Name:

Plutonium Finishing Plant

Subject/Title:

Some Work Performed on Exhaust Fan EF-6 without AWLs Hung Over Established Controlling Lockout/Tagout

Date/Time Discovered:

08/29/2012 11:40 (PTZ)

Date/Time Categorized:

08/29/2012 13:00 (PTZ)

Report Type:

Notification/Final

Report Dates:

Notification	09/04/2012	23:16 (ETZ)
Initial Update	09/04/2012	23:16 (ETZ)
Latest Update	09/04/2012	23:16 (ETZ)
Final	09/04/2012	23:16 (ETZ)

Significance Category:

4

Reporting Criteria:

2E(3) - Any failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout, hazardous energy control program).

Cause Codes:

ISM:

4) Perform Work Within Controls

Subcontractor Involved:

No

Occurrence Description:

On 8/28/2012 and 8/29/2012, some Maintenance personnel performed

work on Exhaust Fan Six (EF-6) in Room 500 of Building 291-Z without installing their Authorized Workers Locks (AWLs) over the established Controlling Organization's lockout/tagout lockbox. Safe Condition Checks and Safe-to-Work Checks were performed and Electricians' AWLs were hung during establishment of the Controlling Organization Lockout/Tagout and remained in place during their portion of the work performed for Work Package 2Z-12-01756, "REPAIR 291-Z EXHAUST FANS EF-1 THROUGH EF-7; Expires 06/30/2013" and Tagout Authorization Form (TAF) POU-12-045. Because the motor had been electrically disconnected and the hazard was believed to be eliminated, the Field Work Supervisors (FWS#1 and FWS#2) directed the Millwrights to perform their portions of the work without hanging their AWLs.

A Post-Job review had been conducted on 5/16/2012 following repair work on EF-7 (see EM-RL--CPRC-PFP-2012-0004, Unexpected Shutdown of Exhaust Fan Motor EM-7 in Building 291-Z). A suggestion was made that, during upcoming repairs to other exhaust fans, potential hazardous energy could be controlled by disconnecting electrical conductors at the motor when repairs were occurring. This was captured as a note during the Post-Job review meeting. Prior to finalizing the Post-Job Review Form, a third Field Work Supervisor (FWS#3) discussed the suggestion with the PFP Controlling Organization Administrator (COA) and "determined [the suggestion was] not feasible, so we will continue to utilize the LOTO process." Reportedly, this decision was not communicated to other members of the PFP Maintenance organization.

NOTE: The remaining description of occurrence provides the basis for FWS#1 and FWS#2 direction to not hang AWLs.

On 8/21/2012, a meeting was held to coordinate resource scheduling for fan repair activities associated with PFP Justification for Continued Operation (JCO) Condition of Approvals (COAs) (see EM-RL--CPRC-PFP-2011-0007, 291-Z Exhaust Fan (EF-1) Failure/Small Fire). On 8/22/12, the Mechanical and Deactivation Manager suggested electrically isolating/air gapping EM-6 so that we "would have no hazards to verify for new craft added to work". This suggestion was presented to the PFP Instrumentation/Electrical Maintenance and Deactivation Manager as well as the PFP Work Management Director, who agreed that it was a good idea. FWS#2 "proceeded down that path" without recognizing that this suggestion did not align with the Hanford procedure for Hazardous Energy Control (DOE-0336, "Lockout/Tagout").

On 8/27/2012, TAF POU-12-045 was released for work with 2Z-12-01756. FWS#2 conducted a Pre-job brief and Electrical Person-in-Charge (PIC) participated in the associated LOTO briefing. The breaker was "racked out" per the facility procedure. This included Electricians hanging

their AWLs. All non-involved personnel stood outside the boundary of Room 500, observing removal of the breaker. A Chain Vise was installed on the fan shaft for potential rotation per the work package. Work was performed on EF-6 during swing shift under the direction of FWS#2.

On 8/28/2012, FWS#1 conducted a Pre-job brief , during which the work team specifically discussed that "LOTO [was] no longer needed because of "air gap" on fan motor and the block and chain was installed on the shaft..."

NOTE: During Pre-job briefings on 8/27/2012 and 8/28/2012, multiple workers questioned whether the "air gapping" methodology was acceptable to allow working without hanging AWLs. They were repeatedly told that it was acceptable.

On 8/29/2012, a CHPRC Nuclear Safety and Performance Evaluation Board (NSPEB) Member questioned where the "air gapping" methodology was documented as being acceptable. FWS#1 and the NSPEB Member discussed the issue with the PFP Shift Operations Manager, who then notified PFP Management and the COA. Work Package 2Z-12-01756 was suspended and the work area in Room 500 was roped off pending results of the critique/investigation.

Cause Description:

Operating Conditions: Normal Operations

Activity Category: Normal Operations (other than Activities specifically listed in this Category)

Immediate Action(s): Work Package 2Z-12-01756 was suspended and the work area in Room 500 was roped off pending results of the critique/investigation.

FM Evaluation:

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required: No

Division or Project: PFP Closure Project

Plant Area: 200 West

System/Building/Equipment: Exhaust Fan Motor EM-6/EF-6, Building 291-Z

Facility Function: Plutonium Processing and Handling

Corrective Action:

Lessons(s) Learned: "Air Gapping" is a function of facility modification and should not be used to control hazardous energy.

HQ Keywords: 01A--Inadequate Conduct of Operations - Inadequate Conduct of

- Operations (miscellaneous)
- 01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical)
- 01P--Inadequate Conduct of Operations - Inadequate Oral Communication
- 01R--Inadequate Conduct of Operations - Management issues
- 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance
- 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical)
- 14E--Quality Assurance - Work Process Deficiency

HQ Summary:

On August 28 and 29, 2012, maintenance personnel worked on Exhaust Fan Six in Room 500 of Building 291-Z without installing their Authorized Workers Locks (AWLs) over the established Controlling Organization's lockout/tagout lockbox. Safe Condition Checks and Safe-to-Work Checks were performed and electricians' AWLs were hung during establishment of the Controlling Organization Lockout/Tagout and remained in place during their portion of the work. The field work supervisors had directed the millwrights to perform their portions of the work without hanging their AWLs because the motor had been electrically disconnected and the hazard was believed to be eliminated. The work package was suspended and the work area in Room 500 was roped off pending results of the critique/investigation.

Similar OR Report Number:

Facility Manager:

Name	Jerry Long
Phone	((50) 9) -373-
Title	Vice President and Project Manager

Originator:

Name	GIBSON, SHAWN A.
Phone	(509) 373-2523
Title	OPERATIONS SPECIALIST

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/29/2012	12:00 (PTZ)	L. E. Ebbeson	CHPRC
08/29/2012	13:00 (PTZ)	M. A. Wright	CHPRC
08/29/2012	13:00 (PTZ)	J. W. Long	CHPRC
08/29/2012	13:05 (PTZ)	K. M. Schierman	DOE-RL

Authorized Classifier(AC):

4)Report Number: [EM-RL--CPRC-TPLANT-2012-0001](#) After 2003 Redesign
Secretarial Office: Environmental Management
Lab/Site/Org: Hanford Site

Facility Name: T-Plant Facility
Subject/Title: Questionable Guarding of Electrical Terminals
Date/Time Discovered: 08/14/2012 10:30 (PTZ)
Date/Time Categorized: 08/14/2012 12:12 (PTZ)
Report Type: Notification

Report Dates:

Notification	08/16/2012	19:08 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category: 3
Reporting Criteria: 2E(2) - Any unexpected discovery of an uncontrolled electrical hazardous energy source (e.g., live electrical power circuit, etc.). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.

Cause Codes:

ISM:

Subcontractor Involved: No

Occurrence Description: On 08/14/12 during a maintenance pre-job walk down, exposed 120V contacts in the 291-T Stack Monitoring Instrument Cabinet (1-RM-291T-284), located in the upper left hand corner, were identified. This identification of exposed electrical contacts within the cabinet and a worker question on the required controls to access the cabinet led facility management to perform an extent of condition on who accesses the panel. It was determined that this cabinet is routinely accessed by other facility personnel working under approved procedures that do not address the exposed electrical hazard.

Cause Description:

Operating Conditions: Maintenance

Activity Category: Maintenance

Immediate Action(s): Work within the stated cabinet was stopped and notifications were made. An extent of condition within T Plant was initiated. A timely order was issued to restrict access to the panel. A critique was conducted.

FM Evaluation:

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required: Yes.
 Before Further Operation? No
 By Whom: T Plant

By When: 09/27/2012

Division or Project: Decommissioning Waste Fuels & Remediation Services

Plant Area: 200 West

System/Building/Equipment: 291-T Stack Monitor

Facility Function: Nuclear Waste Operations/Disposal

Corrective Action:

Lessons(s) Learned:

HQ Keywords: 01G--Inadequate Conduct of Operations - Inadequate Procedure
 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical)
 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance
 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical)
 12C--EH Categories - Electrical Safety
 14D--Quality Assurance - Documents and Records Deficiency
 14E--Quality Assurance - Work Process Deficiency

HQ Summary: On August 14, 2012, during a maintenance pre-job walk down, exposed 120-volt contacts located in the upper left hand corner in the 291-T Stack Monitoring Instrument Cabinet (1-RM-291T-284) were identified. The identification of the exposed electrical contacts and a worker question on the required controls to access the cabinet led facility management to perform an extent of condition on who accesses the panel. Management determined that this cabinet is routinely accessed by other facility personnel working under approved procedures that do not address the exposed electrical hazard. Work within the cabinet was stopped and notifications were made. A timely order was issued to restrict access to the panel and a critique was conducted.

Similar OR Report Number:

Facility Manager:

Name	Sauceda, Daniel G
Phone	(509) 373-3194
Title	Facility Manager

Originator:

Name	POOLE, M ELIZABETH
Phone	(509) 373-0522
Title	

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/14/2012	10:30 (PTZ)	DG Sauceda	T Plant
08/14/2012	12:12 (PTZ)	JJ Waring	DOE RL
08/14/2012	12:51 (PTZ)	M Boyce	MSA ONC

Authorized Classifier(AC):

5)Report Number: [EM-RP--BNRP-RPPWTP-2012-0019](#) After 2003 Redesign

Secretarial Office: Environmental Management

Lab/Site/Org: Hanford Site

Facility Name: RPP Waste Treatment Plant

Subject/Title: Failure to Sign LOTO Prior to Performing Work

Date/Time Discovered: 08/21/2012 11:30 (PTZ)

Date/Time Categorized: 08/21/2012 11:30 (PTZ)

Report Type: Notification/Final

Report Dates:

Notification	08/23/2012	14:57 (ETZ)
Initial Update	08/23/2012	14:57 (ETZ)
Latest Update	08/23/2012	14:57 (ETZ)
Final	08/23/2012	14:57 (ETZ)

Significance Category: 4

Reporting Criteria: 2E(3) - Any failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout, hazardous energy control program).

Cause Codes: A3B2C05 - Human Performance Less Than Adequate (LTA); Rule Based Error; Situation incorrectly identified or represented results in wrong rule used
 -->couplet - A4B5C05 - Management Problem; Change Management LTA; System interactions not considered

ISM: 4) Perform Work Within Controls

Subcontractor Involved: No

Occurrence Description: On August 20, 2012, electricians were testing electrical cables (Hi Pot testing) on breakers in building 87. This is the main electrical distribution center for the WTP construction site and the work involved several electrical lockout/tagouts (LOTOs). The electricians did not sign LOTO 238 which violated the WTP hazardous energy work process.

There were no injuries and no exposure to hazardous energy.

Cause Description: There were several electrical LOTOs on this job and the crew failed to sign onto one of them, believing it did not apply to the job.

Operating Conditions: Construction

Activity Category: Construction

Immediate Action(s): Construction Management recalled all electrical hazardous work packages from the field and paused LOTO activity pending further review.

FM Evaluation: There have been other instances where crews have failed to sign LOTOs. Although none have resulted in injury or exposure to hazardous energy,

they are of concern to WTP. WTP will conduct a common cause analysis of these events to determine appropriate corrective actions to prevent recurrence.

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required: No

Division or Project: Waste Treatment Plant/BNI

Plant Area: BOF

System/Building/Equipment: Building 87 - Balance of Facilities

Facility Function: Nuclear Waste Operations/Disposal

Corrective Action:

Lessons(s) Learned:

HQ Keywords: 01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical)
 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance
 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical)
 14E--Quality Assurance - Work Process Deficiency

HQ Summary: On August 20, 2012, electricians failed to sign a lockout/tagout (LOTO) before testing electrical cables (Hi Pot testing) on circuit breakers in Building 87. This is the main electrical distribution center for the Waste Treatment Plant (WTP) construction site and the work involved several electrical LOTOs. The electricians did not sign LOTO 238, which violated the WTP hazardous energy work process. The electricians believed that the LOTO did not apply to the job. There were no injuries and no exposure to hazardous energy.

Similar OR Report Number:

Facility Manager:

Name	Steve Overton
Phone	(509) 373-8268
Title	Manager of Construction

Originator:

Name	CLARK, LAURE L.
Phone	(509) 371-2742
Title	SENIOR ES&H SPECIALIST

HQ OC Notification:

Date	Time	Person Notified	Organization
08/21/2012	12:30 (PTZ)	Woodford, Terry	ONC

Other Notifications:

Date	Time	Person Notified	Organization
08/21/2012	11:30 (PTZ)	Overton, Steve	BNI Mgt

08/21/2012	12:00 (PTZ)	Schroeder, Paul	DOE FR
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Authorized Classifier(AC): Scott Neubauer **Date:** 08/21/2012

6)Report Number: [NA--LSO-LLNL-LLNL-2012-0042](#) **After 2003 Redesign**
Secretarial Office: National Nuclear Security Administration
Lab/Site/Org: Lawrence Livermore National Lab.
Facility Name: Lawrence Livermore Nat. Lab. (BOP)
Subject/Title: Unexpected Energy Source Discovered Building 391 Electrical Panel Replacement
Date/Time Discovered: 08/17/2012 10:00 (PTZ)
Date/Time Categorized: 08/17/2012 13:30 (PTZ)
Report Type: Notification
Report Dates:

Notification	08/21/2012	16:36 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category: 3
Reporting Criteria: 2E(2) - Any unexpected discovery of an uncontrolled electrical hazardous energy source (e.g., live electrical power circuit, etc.). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.

Cause Codes:

ISM:

Subcontractor Involved: Yes
 ACS, Inc.

Occurrence Description: On August 17, at approximately 1000 hrs, an Akima Construction Services (ACS) electrician while working on an electrical panel interior replacement project noticed a small spark coming from a neutral conductor when he went to secure it to the neutral bus bar of the panel (436A5). The electrician upon discovery of the unexpected and uncontrolled 120v energy source immediately stopped work and notified his management. Facility & Infrastructure was notified at approximately 1215 hrs.

The electrician had obtained all appropriate outage permits prior to starting work. The LOTO was also performed correctly. Apparently, a previous contractor had left the panel in a condition that the neutral conductor somehow became energized when it was removed from the older panel's neutral bus bar. There was no shock or injuries to personnel as a result of this incident.

Appropriate PPE was worn at the time of the incident. Electrical Severity Index has been calculated to be 20. The panel was returned to a safe condition. Further investigation will be held to determine the source of the unexpected energy source.

This occurrence report is being tracked in LLNL's Issues Tracking System, reference Assessment No. 34997.

Cause Description:

Operating Conditions: Normal

Activity Category: Construction

Immediate Action(s):

1. The electrician paused work and immediately notified their supervisor.
2. The supervisor notified NIF and F&I line management
3. With F&I Line Management approval the electrician donned electrically rated PPE and placed the panel in a safe configuration (i.e., landed the wire on the neutral bus)
4. An evaluation of the panel will be conducted prior to the resumption of work

FM Evaluation: Submit the final occurrence report to the ORO by 9/26/2012.

Enter the final occurrence report into ORPS by 10/01/2012.

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required: Yes.
Before Further Operation? No
By Whom: Kevin Akey
By When:

Division or Project: O&B

Plant Area: Site 200

System/Building/Equipment: Building 391 Installation of new interior components (breaker

Facility Function: Laboratory - Research & Development

Corrective Action:

Lessons(s) Learned:

HQ Keywords: 01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous)
01Q--Inadequate Conduct of Operations - Personnel error
07D--Electrical Systems - Electrical Wiring
08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical)
11G--Other - Subcontractor
12C--EH Categories - Electrical Safety
14E--Quality Assurance - Work Process Deficiency
14G--Quality Assurance - Procurement Deficiency

HQ Summary:

On August 17, 2012, while working on an electrical panel interior replacement project, a contractor electrician noticed a small spark coming from a neutral conductor when he went to secure it to the neutral bus bar of the panel. After discovering the unexpected and uncontrolled 120-volt energy source, the electrician immediately stopped work and appropriate notifications were made. The electrician had prepared a correct lockout/tagout and appropriate PPE was worn at the time of the incident. Apparently, a previous contractor had left the panel in a condition that the neutral conductor somehow became energized when it was removed from the older panel's neutral bus bar. There was no shock or injuries to personnel as a result of this incident.

Similar OR Report Number: 1. NA--LSO-LLNL-LLNL-2010-0028
2. NA--LSO-LLNL-LLNL-2006-0033

Facility Manager:

Name	Harold Conner
Phone	(925) 422-5786
Title	Associate Director, Facilities & Infrastructure Di

Originator:

Name	LUDWIG, MARK E.
Phone	(925) 422-6964
Title	OCCURRENCE REPORTING OFFICER

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/17/2012	10:00 (PTZ)	Joel Bowers	LEDO
08/17/2012	15:33 (PTZ)	Tracey Simpson	ES&H TL
08/17/2012	15:36 (PTZ)	Roy Kearns	NNSA LSO

Authorized Classifier(AC): Jon Sjoberg Date: 08/17/2012

7)Report Number:

[NA--SS-SNL-1000-2012-0008](#) After 2003 Redesign

Secretarial Office:

National Nuclear Security Administration

Lab/Site/Org:

Sandia National Laboratories - SS

Facility Name:

SNL Division 1000

Subject/Title:

Unintentional contact with hazardous electrical energy (>50 V) in 860/115

Date/Time Discovered:

08/17/2012 11:44 (MTZ)

Date/Time Categorized:

08/17/2012 14:45 (MTZ)

Report Type:

Notification

Report Dates:

Notification	08/20/2012	18:58 (ETZ)
Initial Update		

Latest Update		
Final		

Significance Category: 2
Reporting Criteria: 2E(1) - Any unexpected or unintended personal contact (burn, injury, etc.) with an electrical hazardous energy source (e.g., live electrical power circuit, etc.).

Cause Codes:

ISM:

Subcontractor Involved: No

Occurrence Description: At 1144 on 8/17/2012, an employee in Department 1522 received a shock while moving a photography lamp during activity level work in the lab. Apparently, part of the lamp fell apart without the individual noticing, and this uncovered the wires leading to the 120 V plug. When the employee reached with their hand to adjust the lamp, the employee touched across the wires and was shocked. The employee was escorted to medical for examination and was determined to be OK, and returned to work just after lunchtime. When the department manager learned of the incident, the manager asked lab personnel to stand down lab work for the afternoon so department personnel could evaluate the situation.

The Organization 1520 ES&H coordinator asked the ES&H Electrical Safety SME to visit the lab that afternoon to examine the scene and interview the individual who was shocked. The Electrical Safety SME indicated verbally that this was a dry one-hand shock due to a failed piece of UL listed equipment. The SME also suggested several lighting options that would be sturdier and safer alternatives to the light duty lamps that were being used. The department manager asked the lab personnel to take an inventory of all such lamps in the lab and replace them with one of the options suggested by the SME before resuming the activity-level work.

Cause Description:

Operating Conditions: Normal

Activity Category: Research

Immediate Action(s): Removed faulty lamp from service and labeled it; operations stood down for rest of work day.

Critique/Fact Finding Performed: 8/17/2012.

FM Evaluation: This event scored a 330 on the Electrical Severity Measurement Tool, Rev 2, as follows: Electrical Hazard Factor: 10 (120 VAC single phase); Environment Factor: 0 (Dry); Shock Proximity Factor: 10 (contact with live parts, inside the prohibited approach boundary); Arc Flash Proximity Factor: 0 (single phase 120 VAC); Thermal Proximity Factor: NA; No PPE Mitigations; Injury Factor: 3 (shock with no fibrillation).

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required: Yes.
 Before Further Operation? No
 By Whom: Causal Analysis Team
 By When:

Division or Project: 1000/Characterization of Laser Welds

Plant Area: Tech Area I

System/Building/Equipment: 860/Light-duty photographic lamp (NRTL listed)

Facility Function: Laboratory - Research & Development

Corrective Action:

Lessons(s) Learned:

HQ Keywords: 07D--Electrical Systems - Electrical Wiring
 08A--OSHA Reportable/Industrial Hygiene - Electrical Shock
 12C--EH Categories - Electrical Safety
 14L--Quality Assurance - No QA Deficiency

HQ Summary: On August 17, 2012, an employee in Department 1522 received a shock while moving a photography lamp during activity level work in the lab. Part of the lamp fell apart without the individual noticing, and this uncovered the wires leading to the 120 V plug. When the employee reached with their hand to adjust the lamp, the employee touched across the wires and was shocked. The employee was escorted to medical for examination. No injuries were reported and the employed returned. The department manager asked the lab personnel to take an inventory of all such lamps in the lab and replace them with one of the options suggested by the SME before resuming the activity-level work.

Similar OR Report Number:

Facility Manager:

Name	Janise Baldo-Pulaski
Phone	(505) 845-9531
Title	1520 ES&H Coordinator

Originator:

Name	GOETSCH, ROBERT S.
Phone	(505) 284-4647
Title	SENIOR TECHNICAL WRITER

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/17/2012	11:47 (MTZ)	Darrick Jones	1521

08/17/2012	11:48 (MTZ)	Duane Dimos	1500
08/17/2012	11:48 (MTZ)	Wayne McKenna	1515
08/17/2012	11:48 (MTZ)	David Epp	1522
08/17/2012	11:48 (MTZ)	Craig Dickensheets	1901
08/17/2012	11:48 (MTZ)	Stephen Rottler	1000
08/17/2012	11:48 (MTZ)	Benjamin Huff	1901
08/17/2012	11:48 (MTZ)	Hazel Barclay	1901
08/17/2012	11:48 (MTZ)	Carolyn Childress	1901
08/17/2012	11:49 (MTZ)	EOC	4136
08/17/2012	14:45 (MTZ)	Rose Wright	DOE/SSO
08/17/2012	15:22 (MTZ)	Justine Johannes	1520
08/17/2012	15:30 (MTZ)	Jessica Rogers	4135

Authorized Classifier(AC): John Pott **Date:** 08/20/2012

8)Report Number: [NA--SS-SNL-CASITE-2012-0002](#) **After 2003 Redesign**
Secretarial Office: National Nuclear Security Administration
Lab/Site/Org: Sandia National Laboratories - Livermore
Facility Name: SNL California Site
Subject/Title: Contractor Cuts into Live Electrical Conduit While Performing an Initial 3-inch Deep Cut into a Concrete Floor Slab
Date/Time Discovered: 08/10/2012 14:08 (PTZ)
Date/Time Categorized: 08/10/2012 14:47 (PTZ)
Report Type: Update

Report Dates:

Notification	08/14/2012	19:06 (ETZ)
Initial Update	09/18/2012	17:32 (ETZ)
Latest Update	09/18/2012	17:32 (ETZ)
Final		

Significance Category: 3
Reporting Criteria: 2E(2) - Any unexpected discovery of an uncontrolled electrical hazardous energy source (e.g., live electrical power circuit, etc.). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.

Cause Codes:

ISM: 2) Analyze the Hazards

Subcontractor Involved: Yes
 Bara Infoware

Occurrence Description: On the afternoon of August 10, 2012 at approximately 1320 hours, a

construction contractor operating an electric wet saw made a 3-inch deep cut into a concrete floor slab, and severed an electrical conduit containing a 208 volt circuit. The contractor operating the saw was unaware that an underground conduit was severed, and continued cutting operations until the construction superintendent instructed the contractor to stop work immediately. The construction superintendent stopped work when concerns regarding system outages were raised. No injuries or electrical shock resulted, and there were no visible arc or sparks noticed. The contractor was wearing PPE which included electrical safety PPE (600V gloves and boots), hard hat and respirator. The concrete slab was being cut to facilitate a trench for new drain lines in connection with an ongoing restroom renovation project.

Power was affected to the following areas and systems: B905 CRF Hub Room/Network, some security cameras and badge readers, and electrical power to the B905 CRF Reception Area.

Initial facts collected indicate work was performed under a signed penetration permit; an underground survey was performed and identified a conduit that was thought to be deeper than the work area. Known electrical utilities in the vicinity of the work to be performed were de-energized (LOTO) prior to cutting operations. The saw made contact with the conduit within 3 inches below the surface.

Cause Description:

Critique/Fact Finding Performed: 8/13/2012

Operating Conditions:

Construction

Activity Category:

Construction

Immediate Action(s):

Contractors and Sandia Facilities/Maintenance performed LOTO of affected panels, hidden hazard work paused at SNL/CA site. Electrical power restored to affected areas.

FM Evaluation:

EOC# 26441

Hidden hazard work was paused at SNL/CA site pending a review by Management and SME of current processes and mitigation strategies. Hidden hazard work will begin upon a review and approval of a plan.

Update: 9/18/2012 Revised Severity Score as follows:

The updated severity score for this event is 120, as follows: Electrical Hazard Factor: 10 (208 VAC, downstream of < 125 KVA transformer); Environment Factor: 10 (wet); Shock Proximity Factor: 1 (Inside Limited Approach Boundary); Arc Flash Proximity Hazard: 0 (< 1.2 cal/cm²); Thermal Proximity Factor: NA; No PPE Mitigations; Injury Factor: 1 (no injury). Note: the worker was wearing PPE, but there was no evidence that the PPE was tested as required by NFPA 70E and appropriate testing standards.

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required:

Yes.
Before Further Operation? Yes
By Whom: Causal Analysis Team
By When: 09/24/2012

Division or Project:

8000/B905 Restroom Restoration Project

Plant Area:

Other

System/Building/Equipment: 208VAC Electrical Circuit/B905/Room 118

Facility Function:

Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)

Corrective Action:

Lessons(s) Learned:

HQ Keywords:

01B--Inadequate Conduct of Operations - Loss of Configuration Management/Control
07C--Electrical Systems - Power Outage
07D--Electrical Systems - Electrical Wiring
08F--OSHA Reportable/Industrial Hygiene - Industrial Operations Issues
08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance
08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical)
11G--Other - Subcontractor
12G--EH Categories - Industrial Operations
14D--Quality Assurance - Documents and Records Deficiency
14E--Quality Assurance - Work Process Deficiency

HQ Summary:

On August 10, 2012, a construction contractor operating an electric wet saw made a 3-inch deep cut into a concrete floor slab, and severed an electrical conduit containing a 208-volt circuit. The contractor operating the saw was unaware that an underground conduit was severed, and continued cutting until the construction superintendent instructed the contractor to stop work immediately. The construction superintendent stopped work when concerns regarding system outages were raised. No injuries or electrical shock resulted, and there were no visible arc or sparks noticed. The contractor was wearing electrical safety PPE (600V gloves and boots), hard hat and respirator. The concrete slab was being cut to facilitate a trench for new drain lines in connection with an ongoing restroom renovation project. A critique and fact finding was performed.

Similar OR Report Number:

- 1. NA--SS-SNL-CASITE-2012-0001
- 2. NA--SS-SNL-CASITE-2011-0004
- 3. NA--SS-SNL-CASITE-2010-0008

Facility Manager:

Name	Peter Davies
Phone	(925) 294-3072

Title	8100 Center Director
-------	----------------------

Originator:

Name	ROGERS, JESSICA
Phone	(505) 845-4727
Title	OCCURRENCE REPORTING ADMINISTRATOR

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/10/2012	14:08 (PTZ)	EOC	4236
08/10/2012	14:47 (PTZ)	Peter Davies	8100
08/10/2012	15:11 (PTZ)	Gary Schmidtke	DOE/SSO

Authorized Classifier(AC): John Garcia Date: 08/13/2012

9)Report Number: [NA--YSO-BWXT-Y12SITE-2012-0035](#) After 2003 Redesign

Secretarial Office: National Nuclear Security Administration

Lab/Site/Org: Y12 National Security Complex

Facility Name: Y-12 Site

Subject/Title: Incomplete LOTO Tag Discovered

Date/Time Discovered: 08/07/2012 13:30 (ETZ)

Date/Time Categorized: 08/07/2012 14:30 (ETZ)

Report Type: Notification/Final

Report Dates:

Notification	08/08/2012	09:27 (ETZ)
Initial Update	08/08/2012	09:27 (ETZ)
Latest Update	08/08/2012	09:27 (ETZ)
Final	08/08/2012	09:27 (ETZ)

Significance Category: 4

Reporting Criteria: 2E(3) - Any failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout, hazardous energy control program).

Cause Codes:

ISM: 4) Perform Work Within Controls

Subcontractor Involved: No

Occurrence Description: During a review of a permitted Lockout/Tagout (LOTO) energy isolation, one of the isolation component tags was found to be incomplete. The tag contained all of the required information except the actual tag number suffix (i.e., -03). The associated work activity had been previously suspended as a part of a site-wide LOTO stand-down and was being reviewed for work resumption when the administrative error was

discovered. The omission did not impede the successful isolation of energy. The tag will be corrected/replaced per Y73-107 prior to resuming work.

NOTE: The Y-12 Site is currently in the process of resuming work associated with LO/TO after a May 8, 2012, self-imposed site-wide stand-down. Response activities to date have included the reduction of the number of active Issuing Authorities (IA), providing updated IA training, and requiring a Senior Review Board review and approval of each LO/TO prior to performing any associated work. Each existing LO/TO that was in place prior to the stand-down is being reviewed by teams that include personnel independent from the initial application of the LO/TO to determine if the LO/TO is adequate to allow work to resume. It was during one of these review activities that this administrative error was identified.

Cause Description:

Operating Conditions:

The site is reviewing all LO/TOs implemented prior to May 8, 2012, for adequacy.

Activity Category:

Maintenance

Immediate Action(s):

- The area Shift Manager and FI&S Management were notified of the discovery
- The LO/TO was already in suspension.

FM Evaluation:

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required:

No

Division or Project:

FI&S

Plant Area:

Protected Area

System/Building/Equipment: 9201-5N

Facility Function:

Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)

Corrective Action:

Lessons(s) Learned:

HQ Keywords:

- 01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical)
- 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance
- 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical)
- 14E--Quality Assurance - Work Process Deficiency

HQ Summary:

On August 7, 2012, during a review of a permitted Lockout/Tagout (LOTO) energy isolation, one of the isolation component tags was found to be incomplete. The tag contained all of the required information except

the actual tag number suffix. The associated work activity had been previously suspended as a part of a site-wide LOTO stand-down and was being reviewed for work resumption when the administrative error was discovered. The omission did not impede the successful isolation of energy. The tag will be corrected/replaced prior to resuming work. Management was notified.

Similar OR Report Number: 1. NA--YSO-BWXT-Y12SITE-2012-0031

Facility Manager:

Name	M. W. McFarland
Phone	(865) 574-5801
Title	FI&S Lockout/Tagout Manager

Originator:

Name	CHARLES, TONY M
Phone	(865) 574-1566
Title	OCCURRENCE REPORTING PROGRAM MANAGER

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/07/2012	14:30 (ETZ)	R. S. Underwood	FI&S Dir
08/07/2012	14:30 (ETZ)	D. A. Taylor	FI&S Iss
08/07/2012	15:20 (ETZ)	W. M. Crisp	PSS
08/07/2012	15:23 (ETZ)	Duty-FR	NNSA
08/07/2012	15:30 (ETZ)	A. S. Dull	NNSA

Authorized Classifier(AC): J. A. Nations Date: 08/08/2012

10)Report Number: [NA--YSO-BWXT-Y12SITE-2012-0040](#) After 2003 Redesign

Secretarial Office: National Nuclear Security Administration

Lab/Site/Org: Y12 National Security Complex

Facility Name: Y-12 Site

Subject/Title: Building 9202, Room 101A LOTO-Anomaly

Date/Time Discovered: 08/28/2012 08:35 (ETZ)

Date/Time Categorized: 08/28/2012 09:40 (ETZ)

Report Type: Notification

Report Dates:

Notification	08/30/2012	15:22 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category: 3

Reporting Criteria: 2E(2) - Any unexpected discovery of an uncontrolled electrical hazardous energy source (e.g., live electrical power circuit, etc.). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.

Cause Codes:

ISM: 4) Perform Work Within Controls

Subcontractor Involved: No

Occurrence Description: As a result of a walk-down of a potential LOTO-Violation Development Operations categorized a LOTO-Occurrence (2E-2 Category 3). A Development Engineer removed a Circuit-Board from a Control Cabinet. Because of a concern that the Engineer's actions did not properly follow the Lockout/Tagout for Personnel Protection Manual, the walk-down was performed. This Walk-down resulted in the Authority Having Jurisdiction determining a LOTO should have been used when the Engineer removed the circuit-board.

Cause Description:

Operating Conditions: Normal Operations (NO)

Activity Category: Inspection/Monitoring

Immediate Action(s): A detailed Management walk-down was conducted.

All "On or Near" Development Electrical Work (1508-01) was suspended on Development's POD and an Email was sent to all "hands-on" 1508-01 workers from the Section Manager.

Occurrence Notifications were made.

Note: No actions were required to place the equipment in a secure and safe state. The equipment cabinet had been closed by the Engineer. The associated circuit breaker and power disconnect were left in the open position.

FM Evaluation: Preliminary: Employee self-reported he was out of scope of his work-package and had violated LOTO-Requirements.

Block: 24 Evaluation: The Operations Manager and Organization Manager will review the Development troubleshooting and repair work packages (on the Plan of the Day) to ensure plant requirements are specified and adequate.

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Yes.

Required: Before Further Operation? Yes

By Whom: Harless/Richey
 By When: 08/31/2012

Division or Project: Development
Plant Area: Limited Area
System/Building/Equipment: 9202
Facility Function: Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)

Corrective Action:

Lessons(s) Learned:

HQ Keywords: 01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical)
 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance
 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical)
 14E--Quality Assurance - Work Process Deficiency

HQ Summary: On August 28, 2012, it was determined during a walk-down of potential Lockout/Tagout (LOTO) violations that a Development Engineer removed a circuit board from a control cabinet without applying a LOTO. The walk-down was performed because of a concern that the Engineer did not follow the Lockout/Tagout for Personnel Protection Manual.

- Similar OR Report Number:**
1. NA--YSO-BWXT-Y12SITE-2012-0003
 2. NA--YSO-BWXT-Y12SITE-2012-0003
 3. NA--YSO-BWXT-Y12SITE-2012-0003
 4. NA--YSO-BWXT-Y12SITE-2102-0035
 5. NA--YSO-BWXT-Y12SITE-2012-0005
 - 6.
 7. NA--YSO-BWXT-Y12SITE-2012-0003
 - 8.

Facility Manager:

Name	D Phillip Harless
Phone	(865) 255-4752
Title	Development Director of Operations & Security Mgr.

Originator:

Name	CHARLES, TONY M
Phone	(865) 574-1566
Title	OCCURRENCE REPORTING PROGRAM MANAGER

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/28/2012	08:45 (ETZ)	D. Phil Harless	Ops Mgr.

08/28/2012	08:45 (ETZ)	Mark Richey	Org Mgr.
08/28/2012	08:45 (ETZ)	Ken Keith	Eng. VP
08/28/2012	08:45 (ETZ)	Catherine Schidel	NNSA
08/28/2012	08:45 (ETZ)	Kevin Ross	PSS
08/28/2012	08:45 (ETZ)	Duty-FR	NNSA

Authorized Classifier(AC): D Phillip Harless **Date:** 08/30/2012

11)Report Number: [SC--ASO-ANLE-ANLEFMS-2012-0005](#) **After 2003 Redesign**
Secretarial Office: Science
Lab/Site/Org: Argonne National Laboratory East
Facility Name: Facility Management Services
Subject/Title: Severed Underground De-energized Electrical Street Lighting Cable
Date/Time Discovered: 08/22/2012 08:40 (CTZ)
Date/Time Categorized: 08/23/2012 11:32 (CTZ)
Report Type: Notification
Report Dates:

Notification	08/27/2012	18:18 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category: 3
Reporting Criteria: 10(3) - A near miss to an otherwise ORPS reportable event, where something physically happened that was unexpected or unintended, or where no or only one barrier prevented an event from having a reportable consequence.
 The significance category assigned to the near miss must be based on an evaluation of the potential risks and extent of personnel exposure to the hazard. (1 of 3 criteria - This is a SC 3 occurrence)

Cause Codes:
ISM: 6) N/A (Not applicable to ISM Core Functions as determined by management review.)
Subcontractor Involved: Yes
 Sonoma Underground (subcontractor to Gibson Electric)
Occurrence Description: On August 22, 2012, at approximately 8:40 AM, Sonoma Underground (a subcontractor to Gibson Electric) struck and severed a buried de-energized lighting circuit cable, labeled at 2300 volts, at a depth of 4 feet 2 inches, while excavating for the installation of a new precast manhole. The circuit was not energized as the light was controlled by a dusk-to-dawn photosensor cell.

On August 21, 2012, an Argonne High Voltage Specialist had performed a locate per the requirements of the approved dig permit, and the Argonne site map, and the excavation was to be approximately 20 feet from an Argonne locator marked underground line and 50 feet off the south side of Inner Circle Drive south of Building 221.

There were no injuries associated with this event. The excavation work was paused and proper notifications made. Statements were obtained from all personnel and a fact-finding meeting was initiated.

Cause Description:

Operating Conditions:

Daylight, dry and warm weather conditions

Activity Category:

Construction

Immediate Action(s):

Excavation activities for this project were paused. Sonoma Underground contacted the Argonne Project Specialist who in turn contacted the High Voltage Foreman to assist with placing everything in a safe condition. A 911 call was then initiated by the Argonne Project Specialist at approximately 9:30 am.

Argonne High Voltage Specialists verified a zero energy state and then proceeded to the lighting panel box location at Building 108 to LO/TO the ARC street lighting circuit. It was determined that the severed wire was a 2300 volt (max rating) street lighting circuit with an override switch controlled by a dusk-to-dawn photosensor cell.

FM Evaluation:

A review of the approved dig permit and the Argonne site map showed the light circuit as a straight line running underground parallel to Meridian Road. Argonne High Voltage specialists performed the locate prior to the excavation with the expectation that this was the path of the light circuit as depicted on the site map. The locate did give a true signal of depth and variance of an underground utility. When the excavation, which was approximately 20 feet from the locator marks west of Meridian Road, unearthed the de-energized electrical cables, the Argonne High Voltage Specialists performed a series of tests to verify the source of these electrical cables.

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is

Yes.

Required:

Before Further Operation? No

By Whom: Steve Spangler

By When:

Division or Project:

CIS Cable Plant Upgrade Project

Plant Area:

200 Area

System/Building/Equipment: Electrical lighting, Bldg. 221

Facility Function: Balance-of-Plant - Site/outside utilities

Corrective Action:

Lessons(s) Learned:

HQ Keywords: 01B--Inadequate Conduct of Operations - Loss of Configuration Management/Control
 07D--Electrical Systems - Electrical Wiring
 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical)
 11G--Other - Subcontractor
 12K--EH Categories - Near Miss (Could have been a serious injury or fatality)
 14D--Quality Assurance - Documents and Records Deficiency
 14E--Quality Assurance - Work Process Deficiency
 14G--Quality Assurance - Procurement Deficiency

HQ Summary: On August 22, 2012, Sonoma Underground (a subcontractor to Gibson Electric) struck and severed a buried de-energized lighting circuit cable, labeled at 2,300 volts, at a depth of 4 feet 2 inches, while excavating for the installation of a new precast manhole. The circuit was not energized as the light was controlled by a dusk-to-dawn photosensor cell. There were no injuries associated with this event. The excavation work was paused and proper notifications made. Statements were obtained from all personnel and a fact-finding meeting was initiated.

Similar OR Report Number:

Facility Manager:

Name	Gail Y. Stine
Phone	(630) 252-8930
Title	FMS Division Director

Originator:

Name	COLGLAZIER, ROBIN ALAN
Phone	(630) 252-8747
Title	SR REGULATORY COMPLIANCE SPECIALIST

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/23/2012	11:30 (CTZ)	Roby Enge	ANL-ESQ
08/23/2012	11:45 (CTZ)	John Quintana	ANL-OPS
08/23/2012	12:00 (CTZ)	Craig Schumann	DOE-ASO

Authorized Classifier(AC):

12)Report Number: [SC--BSO-LBL-OPERATIONS-2012-0008](#) After 2003 Redesign

Secretarial Office: Science

Lab/Site/Org: Lawrence Berkeley National Laboratory

Facility Name: Operations Division
Subject/Title: Subcontractor Cut Live Wires in Building 84 - No Injuries
Date/Time Discovered: 08/22/2012 10:30 (PTZ)
Date/Time Categorized: 08/22/2012 14:37 (PTZ)
Report Type: Notification

Report Dates:

Notification	08/24/2012	16:20 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category: 3
Reporting Criteria: 2E(2) - Any unexpected discovery of an uncontrolled electrical hazardous energy source (e.g., live electrical power circuit, etc.). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.

Cause Codes:
ISM: 4) Perform Work Within Controls

Subcontractor Involved: Yes
 Pacific Data Electric/Crouse Construction

Occurrence Description: At approximately 1030 hours on 08/22/2012, an LBNL Facilities Division project manager and a subcontractor superintendent discovered that two second-tier subcontractor electricians had cut live 120 V wires fed from a panel that had not been locked out and tagged out (LOTO'd). There were no injuries.

At approximately 0900 hours on 08/22/2012, the Building 84 project general contractor Crouse Construction's superintendent provided instructions to two Pacific Data Electric (PDE) electricians for demolition work to be done in room 355 on the third floor. He instructed them to start with disconnecting the flexible conduits for the room lights first. After that, they were to disconnect the electrical outlets/receptacles located at the end of five laboratory work benches. Each bench was attached to the wall at one end and open to the room at the other end. The outlets were all located at the open-end of the benches. Four of the five benches had two emergency power receptacles each. One bench(B1) had two regular power receptacles and one emergency power receptacle. He advised them that while the electric panels controlling the lighting and regular receptacles had been LOTO'd previously, the E-panel (emergency power panel) had not been LOTO'd and was still waiting for an approved LOTO permit. Hence, the emergency power receptacles were all still live.

The superintendent left the room for a while to provide work instructions

to another worker. When he returned, the two electricians asked him to review with them the lighting LOTO paperwork and to walk-down the related panels that had been previously LOTO'd. While waiting for the superintendent to retrieve the LOTO paperwork binder from the second floor, the electricians decided to start disconnecting the receptacles on B1, two of which were regular receptacles fed from panels that had already been LOTO'd. When the superintendent returned to room 355 with the LBNL project manager, he noticed that all three electrical receptacles on B1 had been disconnected, including the live emergency power receptacle. Upon being questioned, one electrician noted that he did not know one receptacle was fed from the E-panel that had not been LOTO'd. He stated that he had tested all three receptacles with his inductance (proximity) tester and all three indicated zero energy. The electrician cut the wires individually by staggering the cuts. There was no arc and the cuts did not trip the breaker.

Cause Description:

Operating Conditions:

Indoors, Lighted, Dry

Activity Category:

Construction

Immediate Action(s):

- Upon discovering that live wires had been cut, the LBNL project manager and the Crouse superintendent notified their respective line management.
- The LBNL project manager verified that the e-Panel circuit was on and the cut emergency power wire was still live. He ordered stop-work in Room 355.
- Facilities personnel conducted a stand-down meeting with Crouse Construction and PDE personnel.
- Crouse superintendent and PDE foreman advised the subcontractor workers to look at the labels on the outlets to verify their source panel, showed them how to identify E-panel outlets, and instructed them to check all circuits before disconnecting and demolishing the outlets.
- Work in room 355 remains in stand-down status until LBNL receives and approves a written work plan from PDE/Crouse to ensure future work safety.

FM Evaluation:

- Upon discovering that the wires had been cut, the LBNL project manager verified that the circuit in the E-panel was in the 'on' position, therefore still live. He asked the PDE electrician to check the cut wires from all three circuits at the end of B1. The proximity tester that was used earlier to test for zero energy did not register any power. The project manager then asked the other PDE electrician to use his tester on the same wires and the tester sounded off immediately showing the emergency circuit was live. The project manager stopped work and notified line management. It

appeared that the first tester the electrician originally used to determine zero energy was faulty.

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required:

Yes.
Before Further Operation? No
By Whom: Facilities and EH&S
By When:

Division or Project:

Facilities Division

Plant Area:

B84-355

System/Building/Equipment: Building 84 Room 355

Facility Function:

Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)

Corrective Action:

Lessons(s) Learned:

HQ Keywords:

01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical)
08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance
11G--Other - Subcontractor
12I--EH Categories - Lockout/Tagout (Electrical or Mechanical)
14E--Quality Assurance - Work Process Deficiency
14G--Quality Assurance - Procurement Deficiency

HQ Summary:

On August 22, 2012, a Lawrence Berkeley National Laboratory (LBNL) Facilities Division project manager and a subcontractor superintendent discovered that two second tier subcontractor electricians had cut energized 120-volt wires fed from a panel that had not been Locked Out and Tagged Out (LOTO'd). There were no injuries. The Building 84 project general contractor Crouse Construction's superintendent provided instructions to two Pacific Data Electric (PDE) electricians for demolition work to be done in Room 355 on the third floor. They were to disconnect the electrical outlets/receptacles located at the end of five laboratory work benches. Each bench was attached to the wall at one end and open to the room at the other end. The outlets were all located at the open-end of the benches. Four of the five benches had two emergency power receptacles each. One bench had two regular power receptacles and one emergency power receptacle. He advised them that while the electric panels controlling the lighting and regular receptacles had been LOTO'd previously, the E-panel (emergency power panel) had not been LOTO'd and was still waiting for an approved LOTO permit. Therefore, the emergency power receptacles were all still energized. Management was notified and a stop work was ordered in Room 355. Room 355 will remain in a stand down status until LBNL receives and approves a written work

plan from PDE/Crouse to ensure future work safety.

Similar OR Report Number:

Facility Manager:

Name	Jennifer Ridgeway
Phone	(510) 486-6339
Title	Division Director

Originator:

Name	MOU, FLORENCE P.
Phone	(510) 486-7872
Title	SENIOR ADMINISTRATOR

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/22/2012	14:43 (PTZ)	Mary Gross	BSO
08/22/2012	14:43 (PTZ)	Kevin Hartnett	BSO

Authorized Classifier(AC):

13)Report Number:

[SC--TJSO-JSA-TJNAF-2012-0010](#) After 2003 Redesign

Secretarial Office:

Science

Lab/Site/Org:

Thomas Jefferson National Accelerator Site

Facility Name:

Thomas Jefferson Nat'l Accelerator

Subject/Title:

TEDF-12-0801 Interior Demolition Activity Damages Unknown Energized Line, No Injuries

Date/Time Discovered:

08/01/2012 08:30 (ETZ)

Date/Time Categorized:

08/01/2012 14:18 (ETZ)

Report Type:

Update

Report Dates:

Notification	08/03/2012	15:16 (ETZ)
Initial Update	09/17/2012	16:55 (ETZ)
Latest Update	09/17/2012	16:55 (ETZ)
Final		

Significance Category:

3

Reporting Criteria:

2E(2) - Any unexpected discovery of an uncontrolled electrical hazardous energy source (e.g., live electrical power circuit, etc.). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.

Cause Codes:

ISM:

Subcontractor Involved: Yes
Canada

Occurrence Description: A subcontractor work crew with the TEDF Project was conducting demolition activities in the Test Lab (area G) using a skid steer loader with grapple attachment. The specific area being demolished was a suspended floor composed of plywood decking and steel framework. During the floor rip-out, an unknown energized 480 volt electrical line was damaged by the grapple. Upon seeing the spark at the damaged conduit, the equipment operator promptly backed away to exit the area safely and notify project management. There was no shock or injury sustained by the operator and there was no damage to the equipment. The electrical line was subsequently traced to a panel in the Test Lab basement and locked and tagged off. The metal conduit which contained the electrical line would have hindered the identification of the live line with ordinary field testers. The Test Lab basement contains electrical switchgear that services several systems needed to remain operational during the demolition phase. Before demolition activities began, JLab worked with the contractors to verify electrical pathways, shut off circuits and/or breaker panels which powered the area to be demolished, and lock out tag out circuits and/or breakers as appropriate. After each contractor placed their lock on the power source, workers then tested all visible outlets for power.

Cause Description:

Operating Conditions: Summer Conditions- Contractor was inside

Activity Category: Construction

Immediate Action(s):

1. Work was immediately stopped in Area G of the Test Lab and Project Management was promptly notified.
2. The work area was roped off and the power source was identified and locked and tagged out.
3. The contractor removed approximately 24 inches of paneling and wood around the perimeter of the remaining raised floor so that JLab can verify what utilities may be under the raised floor before work resumes in Area G.
4. Additional efforts are underway to better identify critical utility systems so that all unnecessary electrical and other utility isolations are taken during demolition activities, especially those coming into and going out of the Test Lab basement and boiler room.

FM Evaluation: Request for an extension:

The investigation is currently underway. The investigation process revealed a potential error in the drawings that were provided by a third party vendor. The Lab is currently pursuing the answers to several related questions as well as conducting follow-up meetings with the Contractor before finalizing the report.

As a precautionary measure the Lab has already enforced the following

interim controls in an effort to help reduce recurrence while the longer-term corrective actions are being developed and implemented.

1. Facilities Management and Logistics (FM&L) has developed a list of critical electrical loads that are staying energized during the work and have walked the routing of these circuits down.

2. FM&L and Mortenson (Contractor) are signing off on all of the demolition drawings; the sign-offs represent that the utility investigation protocols have been followed prior to the start of demolition in each identified area.

3. FM&L has developed a protocol for Mortenson to follow when working with the electric circuits in the Test Lab. This protocol references utilities to be demolished, utilities that remain energized, and utilities that get powered down during construction but will be made operational again.

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required:

Yes.
Before Further Operation? No
By Whom:
By When:

Division or Project:

TEDF- Technical Engineering Development Facility

Plant Area:

Test Lab 1st floor

System/Building/Equipment: Test Lab Addition Project-Demolition and Struck Electrical line

Facility Function:

Laboratory - Research & Development

Corrective Action:

Lessons(s) Learned:

HQ Keywords:

01N--Inadequate Conduct of Operations - Inadequate Job Planning (Other)
07D--Electrical Systems - Electrical Wiring
08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance
08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical)
11G--Other - Subcontractor
12C--EH Categories - Electrical Safety
14E--Quality Assurance - Work Process Deficiency
14G--Quality Assurance - Procurement Deficiency

HQ Summary:

On August 1, 2012, a subcontractor operating a skid steer loader with a grapple attachment struck an unknown energized 480 volt electrical line during demolition activities in the Area G Test Lab. The operator promptly backed away to exit the area safely and notified project management after

observing a spark. The operator was not shocked or injured and the equipment was not damaged. The electrical line was subsequently traced to a panel in the Test Lab basement and locked and tagged out. Work was immediately stopped in Area G of the Test Lab.

Similar OR Report Number:

Facility Manager:

Name	JOHNSON, CHRISTINA J.
Phone	(757) 269-7611
Title	REPORTING OFFICER

Originator:

Name	JOHNSON, CHRISTINA J.
Phone	(757) 269-7611
Title	REPORTING OFFICER

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/01/2012	12:00 (ETZ)	Steve Neilson	TJSO

Authorized Classifier(AC): Christina Johnson Date: 08/01/2012

14)Report Number:

[SC--TJSO-JSA-TJNAF-2012-0011](#) After 2003 Redesign

Secretarial Office:

Science

Lab/Site/Org:

Thomas Jefferson National Accelerator Site

Facility Name:

Thomas Jefferson Nat'l Accelerator

Subject/Title:

TEDF-12-0816 While Performing Demolition Contractor Unexpectedly Hit Temporary Energized Line / No injuries

Date/Time Discovered:

08/16/2012 10:30 (ETZ)

Date/Time Categorized:

08/16/2012 15:00 (ETZ)

Report Type:

Final

Report Dates:

Notification	08/21/2012	11:18 (ETZ)
Initial Update	09/21/2012	15:58 (ETZ)
Latest Update	09/21/2012	15:58 (ETZ)
Final	09/21/2012	15:58 (ETZ)

Significance Category:

3

Reporting Criteria:

10(3) - A near miss to an otherwise ORPS reportable event, where something physically happened that was unexpected or unintended, or where no or only one barrier prevented an event from having a reportable consequence.

The significance category assigned to the near miss must be based on an evaluation of the potential risks and extent of personnel exposure to the

hazard. (1 of 3 criteria - This is a SC 3 occurrence)

Cause Codes: A3B1C04 - Human Performance Less Than Adequate (LTA); Skill Based Errors; Infrequently performed steps are performed incorrectly
-->couplet - A4B2C02 - Management Problem; Resource Management LTA; Insufficient supervisory resources to provide necessary supervision
A5B2C08 - Communications Less Than Adequate (LTA); Written Communication Content LTA; Incomplete / situation not covered

ISM: 2) Analyze the Hazards
4) Perform Work Within Controls

Subcontractor Involved: Yes
Canada

Occurrence Description: On August 16, 2012, a subcontract worker on the Technology Engineering and Development Facility (TEDF) Project was conducting selective removal of exposed flexible conduit in the Test Lab first floor office area. The conduit being removed was at ceiling level elevation. The subcontractor was wearing appropriate protective equipment for the removal of the exposed flexible conduit and was standing in a scissor lift using a saw to perform the work. As the flexible conduit was severed, the momentum of the saw caused the blade to continue forward striking a clearly marked energized temporary electric supply line. The 480 volt, 250 amp power line was approximately 12 inches from the flexible conduit. Upon seeing the spark from the damaged line the worker immediately notified his supervisor and all work was stopped. There was no shock or injury sustained by the operator and there was no damage to equipment.

Cause Description: The wrong tool was used to complete this work activity. A Sawzall can be an acceptable tool for cutting conduit or other rigid items but for loose electrical wiring, which was this case, a bolt cutter would have been a more appropriate choice.

Contributing causes include:

Lack of proper supervision. Supervisors were assigned dual roles - both supervising and working. This did not allow the supervisor time to correctly direct and oversee the work activities and get involved in giving them proper direction with regards to tool selection, safety concerns, work methods, etc.

Running a temporary 480v line in an area scheduled for demolition. The temporary line should have been run in a different area. If this was not possible, the line should have been relocated from that area before any hand activities were performed or additional protection provided to block contact with the line.

Activity Hazard Analysis (AHA) did not address all of the possible

foreseeable hazards. All AHA's need to be reviewed in depth by the appropriate subject matter experts (SME). SME need to review the document while keeping in mind that demolition is one of the most dangerous activities done in the construction industry.

The assigned task was in a difficult area to access. This was overhead work in a pipe rack area which caused the contractor to reach up, and over, existing equipment in order to perform his task. The contractor also had to perform this work while in a lift.

Operating Conditions: Inside working conditions
Activity Category: Construction
Immediate Action(s): 1. Work was immediately stopped in the Test Lab (1st floor-office area) and Project Management was promptly notified.
 2. The power source was secured.
 3. The construction project General Contractor initiated a safety stand down to review the incident and assess safety posture for all activities.
 4. Hand-demolition work was stopped until procedures are established to ensure safe performance of this type of work.
 5. The General Contractor has been directed to submit a corrective action plan that must be approved by Jefferson Lab prior to restarting hand-demolition.
 5. Jefferson Lab fined the General Contractor as a measure to reinforce safe work performance for this high risk portion of the project.
FM Evaluation: The Facility Manager believes that the Corrective actions will address the weaknesses and causes for this particular event.

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required: No

Division or Project: TEDF- Technical Engineering Development Facility

Plant Area: Test Lab- 1st floor

System/Building/Equipment: Test Lab Addition Project- Struck Electrical line

Facility Function: Laboratory - Research & Development

Corrective Action 01: **Target Completion Date:**09/01/2012 **Tracking ID:**NE-2012-20-01

Hold all hands stand down meeting to discuss this incident and raise awareness with the contractor.

Corrective Action 02: **Target Completion Date:**09/30/2012 **Tracking ID:**NE-2012-20-02

Repair damaged 480volt cable to support construction activities and re-route 480v cable to ensure that it is not in the demolition area. The

contractor also plans to use a protective conduit for this repair in an effort to protect the electrical line from being damaged in the future.

Corrective Action 03:

Target Completion Date:09/01/2012 **Tracking ID:**NE-2012-20-03

Supervisors' duties have been revised. Supervisors are no longer permitted to work and supervise. This reorganization will allow them the opportunity to walk the work area, ask questions, and ensure their worker's are performing their duties in the safest manner possible.

Corrective Action 04:

Target Completion Date:09/01/2012 **Tracking ID:**NE-2012-20-04

Revise the Activity Hazard Analysis (AHA) which did not address all of the possible foreseeable hazards when performing demolition.

Lessons(s) Learned:

1. Ensure that the correct tool is used for the task being performed.
2. Relocate any temporary electrical line out of the area where demolition is being done or provide additional safety barriers to protect the line.
3. Ensure sufficient supervision is available and that they have sufficient time to be allowed to do their job.
4. A much more thorough review is required for contractor AHA's being submitted for work that is considered extremely hazardous.

HQ Keywords:

- 01N--Inadequate Conduct of Operations - Inadequate Job Planning (Other)
- 07D--Electrical Systems - Electrical Wiring
- 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical)
- 11G--Other - Subcontractor
- 12K--EH Categories - Near Miss (Could have been a serious injury or fatality)
- 14E--Quality Assurance - Work Process Deficiency
- 14G--Quality Assurance - Procurement Deficiency

HQ Summary:

On August 16, 2012, while removing exposed flexible conduit in the Test Laboratory, a subcontract worker on the Technology Engineering and Development Facility (TEDF) Project struck an energized temporary electric supply line. The conduit being removed was at ceiling level elevation. The subcontractor was wearing appropriate protective equipment for the removal of the exposed flexible conduit and was standing in a scissor lift using a saw to perform the work. As the flexible conduit was severed, the momentum of the saw caused the blade to continue forward striking a clearly marked energized temporary electric supply line. The 480-volt, 250-amp power line was approximately 12 inches from the flexible conduit. Work was immediately stopped, the power source was secured, and appropriate notifications were made. There was no shock or injury sustained by the operator and there was no damage to equipment.

Similar OR Report Number: 1. None

Facility Manager:

Name	JOHNSON, CHRISTINA J.
Phone	(757) 269-7611
Title	REPORTING OFFICER

Originator:

Name	JOHNSON, CHRISTINA J.
Phone	(757) 269-7611
Title	REPORTING OFFICER

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
08/16/2012	15:00 (ETZ)	Steve Neilson	TJSO

Authorized Classifier(AC): Christina Johnson Date: 08/16/2012

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