



Office of Health, Safety and Security



Monthly Analysis of Electrical Safety Occurrences

October 2011

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 seventeen in September to eight in October and the number of reported electrical shocks decreased from seven to two. Also the number of electrical intrusion occurrences decreased from five in September to one in October. However, the number of hazardous energy control occurrences remained at about the same numbers as reported in September, underscoring the need for improvement in this area.

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 October occurrence reports is provided in Attachment 2.

Electrical Shock

There were two occurrences in October that resulted in an electrical shock. Both of these shocks involved non-electrical workers and both resulted because of damaged or faulty equipment. The occurrences are summarized below.

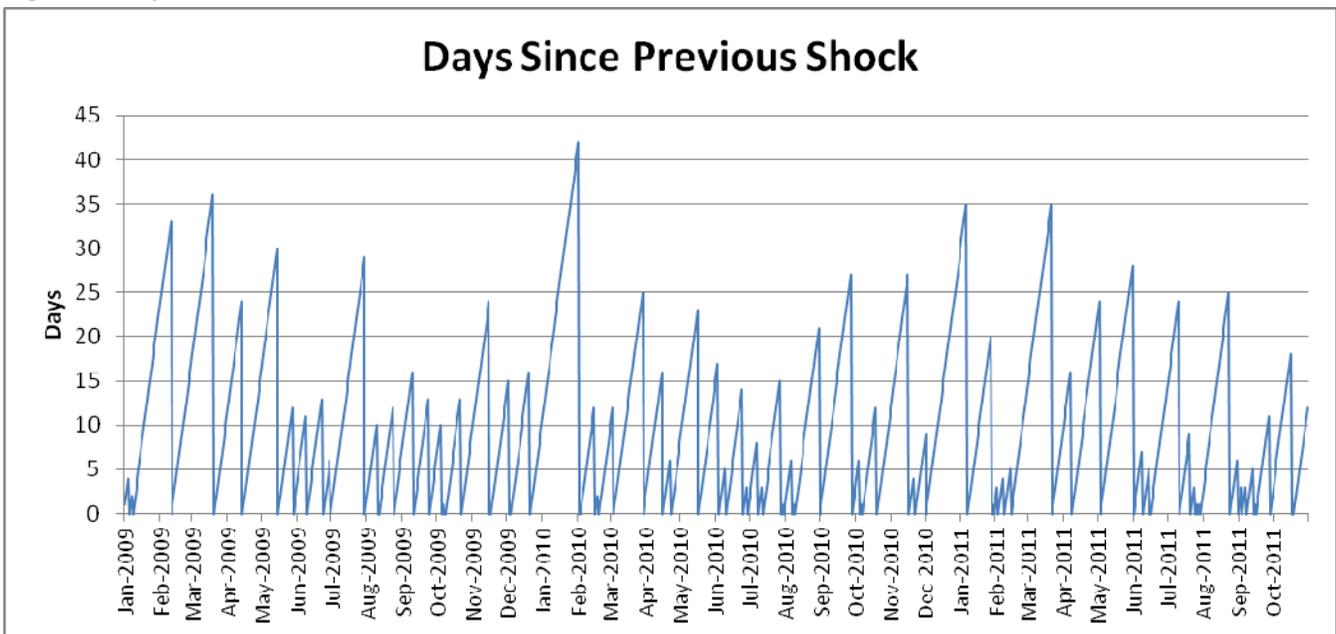
1. An Information Technology worker received a mild shock from a broken bulb in a desk lamp. When the desk lamp did not illuminate, the worker reached into the housing of the lamp to tighten the light bulb, unaware that the glass shell was broken, leaving the elements exposed and causing a mild shock. The worker reported the incident to his manager and was transported to a dispensary where he was checked and returned to

work without restriction. The lamp was taken out of service. Other lamps were also checked for functionality; those in question were removed from service.

2. A staff member received a mild shock to the back of his left hand from the metal jacket of an electrical connector while servicing a motor control box. He placed the equipment in a safe configuration. Paramedics examined him and confirmed there was no injury or other adverse effect. The AC cord for the motor control box had been plugged into a receptacle on an in-service extension cord. Initial testing revealed that the connector jacket was energized to 57 VAC and was capable of a discharge to ground of 3.5 mA. The faulty extension cord was removed from service.

Figure 1 shows the number of days since the previous electrical shock for the DOE complex. The present interval is 12 days. The longest interval was 41 days in 2010.

Figure 1 - Days since Previous Shock



Electrical Intrusion

In October there was a large decrease in the number of electrical intrusion occurrences (i.e., cutting/penetrating, excavating, or vehicle contact of electrical conductors) from five in September to one this month. This occurrence did not involve any electrical-type work. A subcontractor crew was conducting a horizontal directional drilling/back-reaming process to install high-density polyethylene piping when they hit an unknown electrical interference. The subcontractor temporarily suspended all work. The area had been previously hydro-excavated in order to locate two known Power Distribution Supervisory System communication lines (< 50 volts), which were not required to be under hazardous energy control. However, the site has electrical safety provisions that allow work to be conducted within 10 feet of an energized conductor when the conductor has been previously located and is visible. The struck conduit was identified as part of the 12,470-volt electrical distribution system. Maintenance personnel

disabled the lines and applied lockout/tagouts. There was no damage to facilities or equipment, other than the outer metal housing of one of the conduits.

Hazardous Energy Control

In October there were five reported occurrences involving lockout/tagout (LOTO) issues. This is a slight decrease from the six occurrences in September. These occurrences involved an unsecured locking device, removing a LOTO and leaving an uncontrolled energy source, beginning work before implementation of a LOTO, and not installing a lockout in the preferred configuration. It's very important that the locking device is correct for the application and is properly installed to ensure that it will remain in place, even if challenged. It can't be stressed hard enough, that starting work before the implementation of a LOTO or the verification of a safe-to-work condition is not allowed and a safety risk not worth taking.

1. Subcontract electricians discovered that their circuit breaker LOTO device was on the floor and not on the breaker to which they had applied their locks and tags. They had applied the LOTO to a 277-volt circuit breaker in an electrical room and began installation of a light fixture in another area. After they completed the task, they returned to re-energize the circuit and found the LOTO device no longer attached to the breaker switch, which was still in the off position. It has not been determined how the LOTO device came. The appropriate controls were in place when the electricians began work; however, because the breaker switch was not adequately controlled, this condition presents a management concern due to a near miss situation.
2. An Authorized Worker had removed his lock (eight-criteria) from an electrical distribution panel upstream of another electrical distribution panel which had the front cover removed. The worker had placed his lock on the upstream electrical distribution panel and then removed his lock from the panel at the completion of the day's activities without the downstream panel cover being re-installed, leaving the energy source uncontrolled. The lockout was re-installed to control the configuration and the panel cover was re-installed.
3. A small spark occurred when an Engineering Services, Design Engineering employee plugged a surge protector into a wall socket. The event occurred when the employee removed a six outlet mount-to-wall surge protector after it had failed. The faceplate of the receptacle had fallen off and energized electrical wiring was exposed when the spark occurred. Electricians were notified, a work ticket was generated, and the receptacle was replaced. There should have been a LOTO and the unqualified employee did not recognize this as electrical work.
4. A subcontractor removed a ventilation fan and did not follow written LOTO procedures. The subcontractor, who was performing work under contract to the M&O contractor, modified an approved work package to have the M&O contractor perform a lockout/tagout on the energy source to a ventilation fan. When the M&O contractor arrived at the facility to perform the LOTO, they discovered that the subcontractor had already removed the ventilation fan without the LOTO. Subsequent inspection determined that the circuit breaker switch was in the off position. The M&O contractor issued a stop work notice to the subcontractor.

- An operator applied a LOTO for an electrical isolation that was not applied in a manner anticipated during work planning. Although the applied configuration was determined to be compliant with hazardous energy control processes and all hazardous energy was adequately controlled, the LOTO work instructions did not contain sufficient detail to assure the configuration was applied as expected.

Electrical Near Miss

In October there were three occurrences that were considered to be an electrical near miss. These near-miss occurrences were previously summarized in Hazardous Energy Control occurrences number 1 and 3 and the Electrical Intrusion occurrence.

Monthly Occurrences Tables

Table 1 shows a breakdown of the outcomes, performance issues, and worker types associated with electrical safety occurrences for October 2011.

Table 1 - Breakdown of Electrical Occurrences

Number of Occurrences	Involving:	Last Month
2	Electrical Shocks	7
0	Electrical Burns	2
5	Hazardous Energy Control	6
0	Inadequate Job Planning	3
0	Inadvertent Drilling/Cutting of Electrical Conductors	3
1	Excavation of Electrical Conductors	1
0	Vehicle Intrusion of Electrical Conductors or Equipment	1
3	Electrical Near Misses	4
3	Electrical Workers	7
5	Non-Electrical Workers	10
2	Subcontractors	7

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 nine occurrence reports and one occurrence ([EM-SR--SRNS-HCAN-2011-0009](#)) was culled out because it did not involve an electrical safety issue or potential exposure.

Table 2 provides a summary of the electrical safety occurrences for CY 2011.

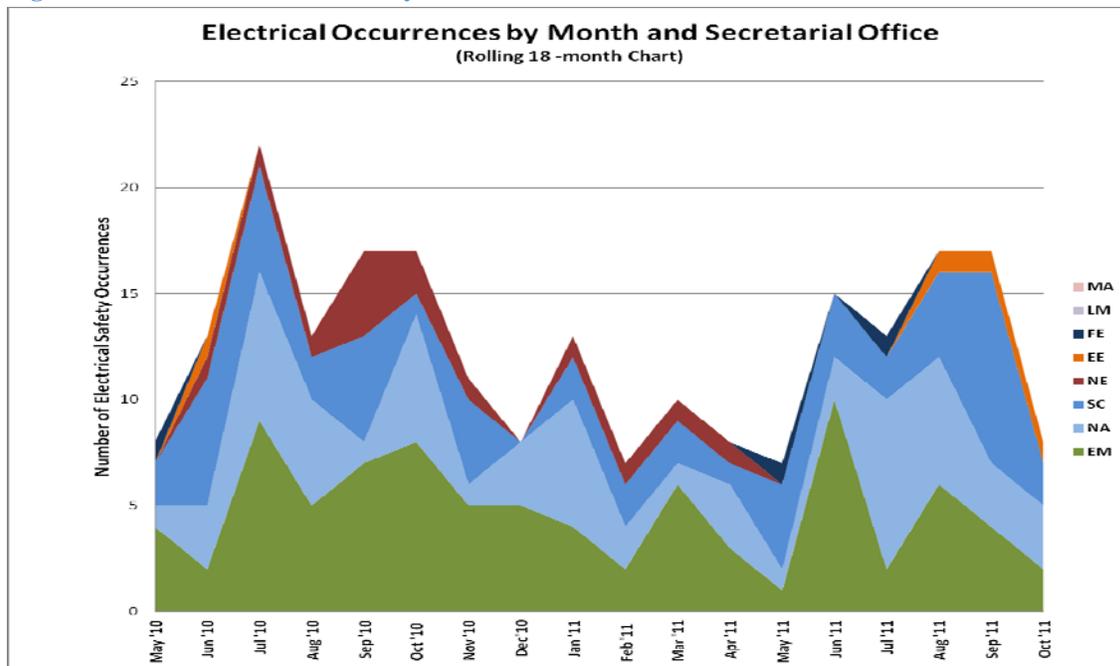
Table 2 - Summary of Electrical Occurrences

Period	Electrical Safety Occurrences	Shocks	Burns	Fatalities
October	8	2	0	0
September	17	7	2	0
August	17	2	0	0
July	12	5	0	0
June	16	5	1	0
May	6	1	0	0
April	9	1	0	0
March	10	1	0	0
February	7	3	0	0
January	13	3	1	0
2011 total	115 (avg. 11.5/month)	30	4	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

The monthly average for 2011 decreased slightly from last month's average of 11.9 occurrences; however, the reported number of electrical shocks is the highest since 2005.

Figure 2 shows the distribution of electrical safety occurrences by secretarial office. The Office of Nuclear Energy and the Office of Fossil Energy have not reported an occurrence in several months.

Figure 2 - Electrical Occurrences by Month and Secretarial Office



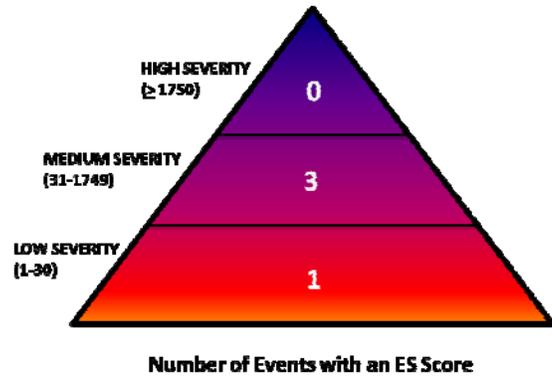
Electrical Severity

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 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. Four of the electrical occurrences this month did not have an Electrical Severity (ES) score. The other four occurrences are distributed as shown in Figure 3, with the highest ES score being 330. The actual score for each occurrence is provided in Attachment 1.

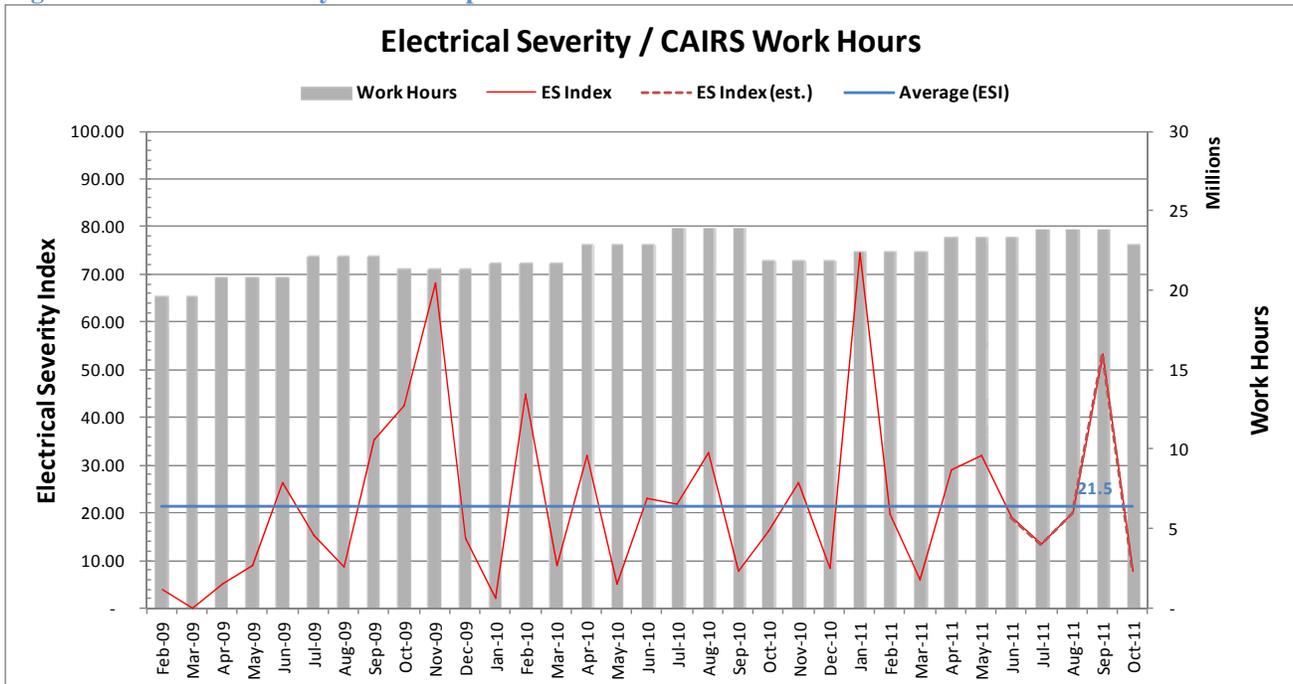
Figure 3 - Electrical Severity Count



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. Each DOE site calculates their own ESI and sets their own annual ESI goals. Figure 4 shows a calculated ESI for the DOE complex and Table 3 shows the ESI and how it has changed from the previous month.

Figure 4 - 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 3 - Electrical Severity Index

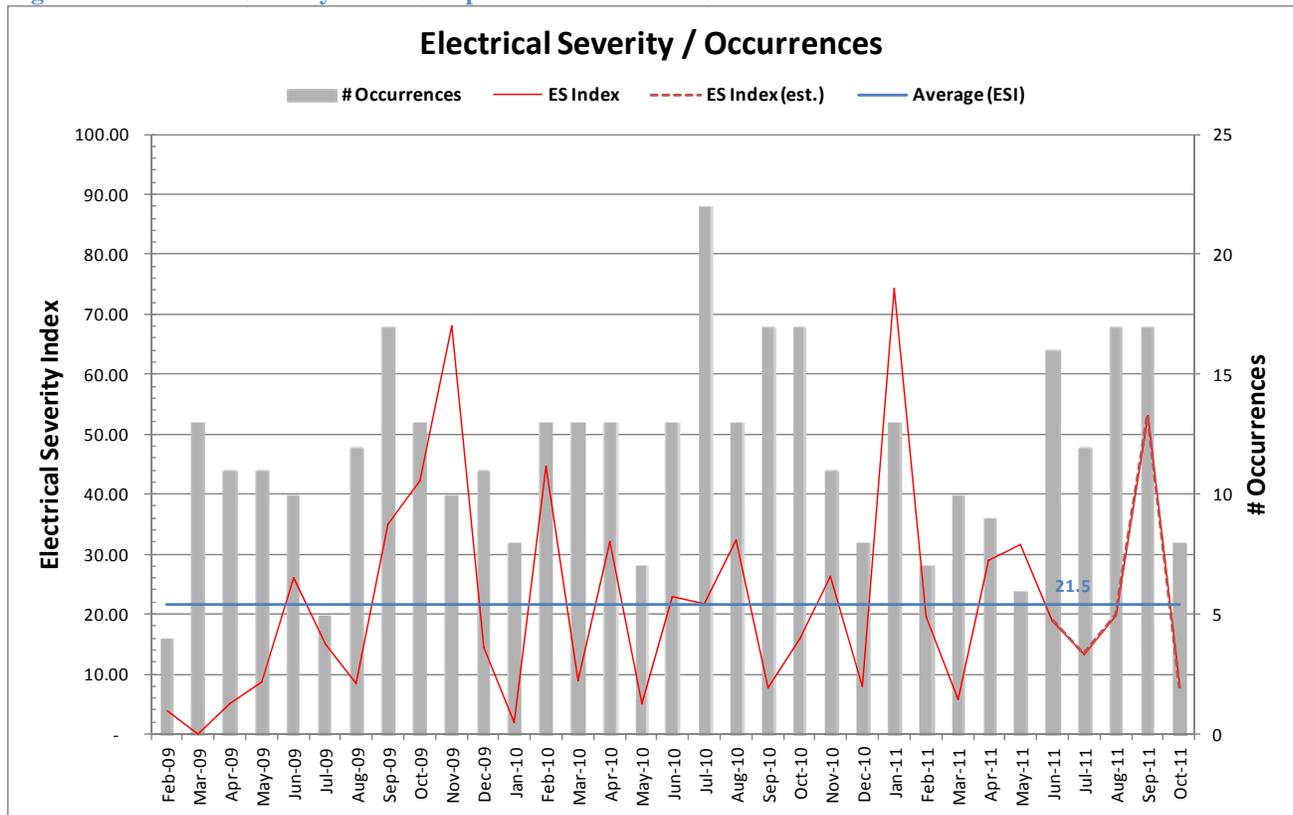
Category	September	October	Δ
Total Occurrences	17	8	-9
Total Electrical Severity	6,310	890	-5,420
Estimated Work Hours	22,715,074* (22,567,759)	22,813,543	-901,531
ES Index	53.22* (55.92)	7.80	-45.41
Average ESI	22.1	21.5	-0.6

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

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

Figure 5 shows the ESI with the number of Occurrences instead of Work Hours.

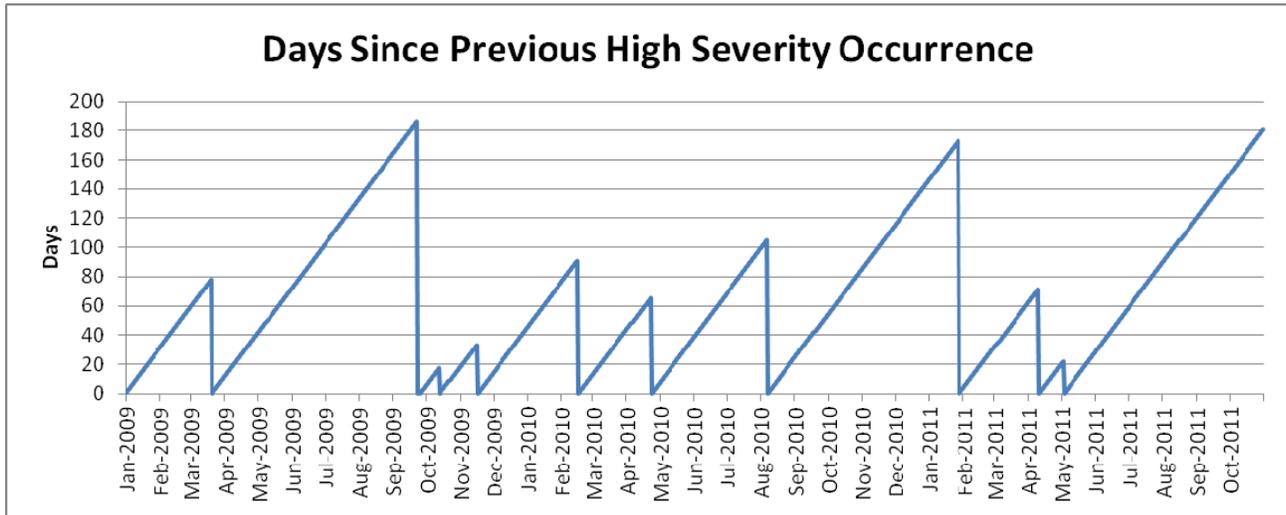
Figure 5 - Electrical Severity Index Compared to Number of Occurrences



The average ESI has increased from 19.2 in June 2010 to 21.5 in October 2011.

The following chart shows the number of days since the previous high severity occurrence. The present interval is 180 days and is approaching the longest interval of 181 days in 2009.

Figure 6 - Days since Previous High Severity Occurrence



Summary of Occurrences by Severity Band

For the interval October 2010 through October 2011 (current month and the past 12), Figures 7 and 8 summarize occurrences by severity band and month of discovery date by percentage of total occurrences in month and number of occurrences in month.

Figure 7 - Occurrences by Electrical Severity Band (Percentage)

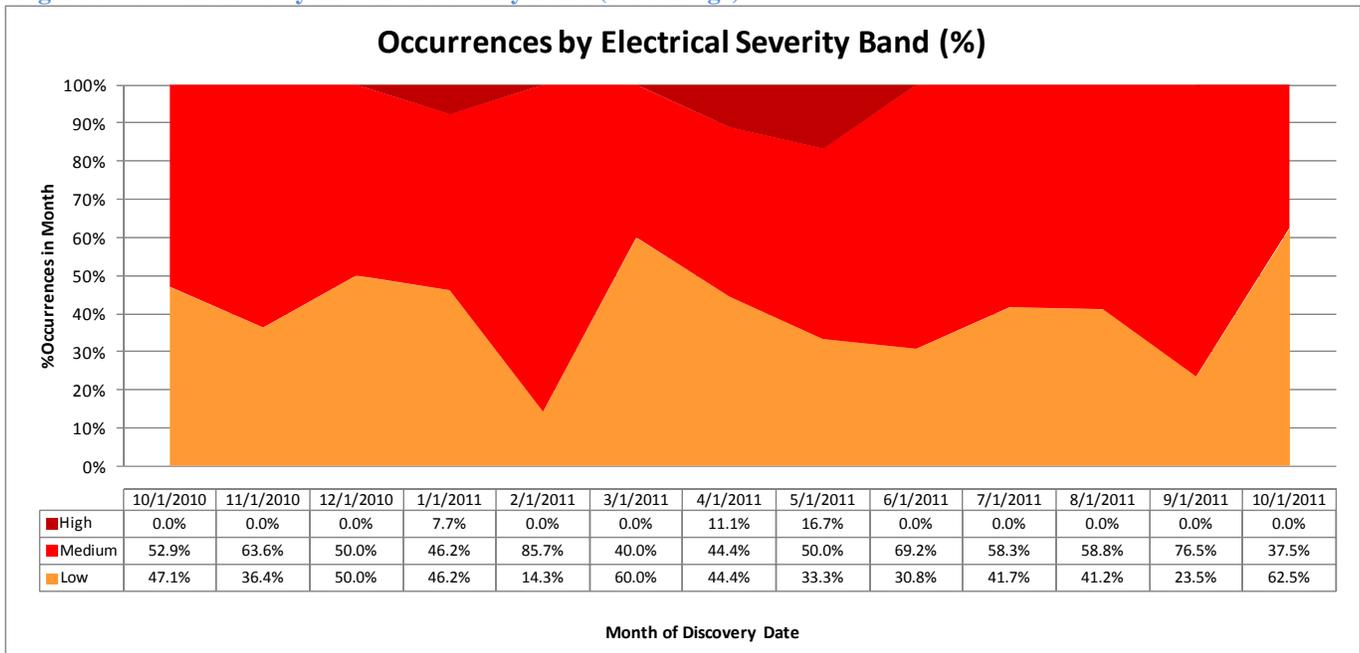
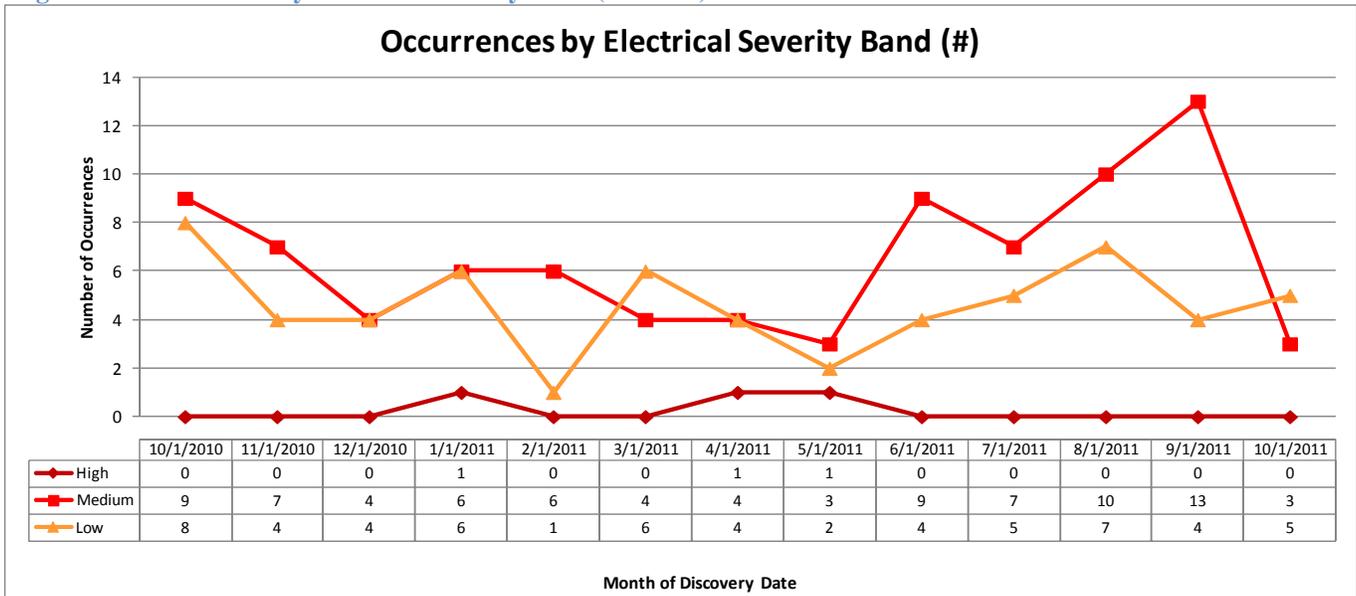


Figure 8 - Occurrences by Electrical Severity Band (Number)

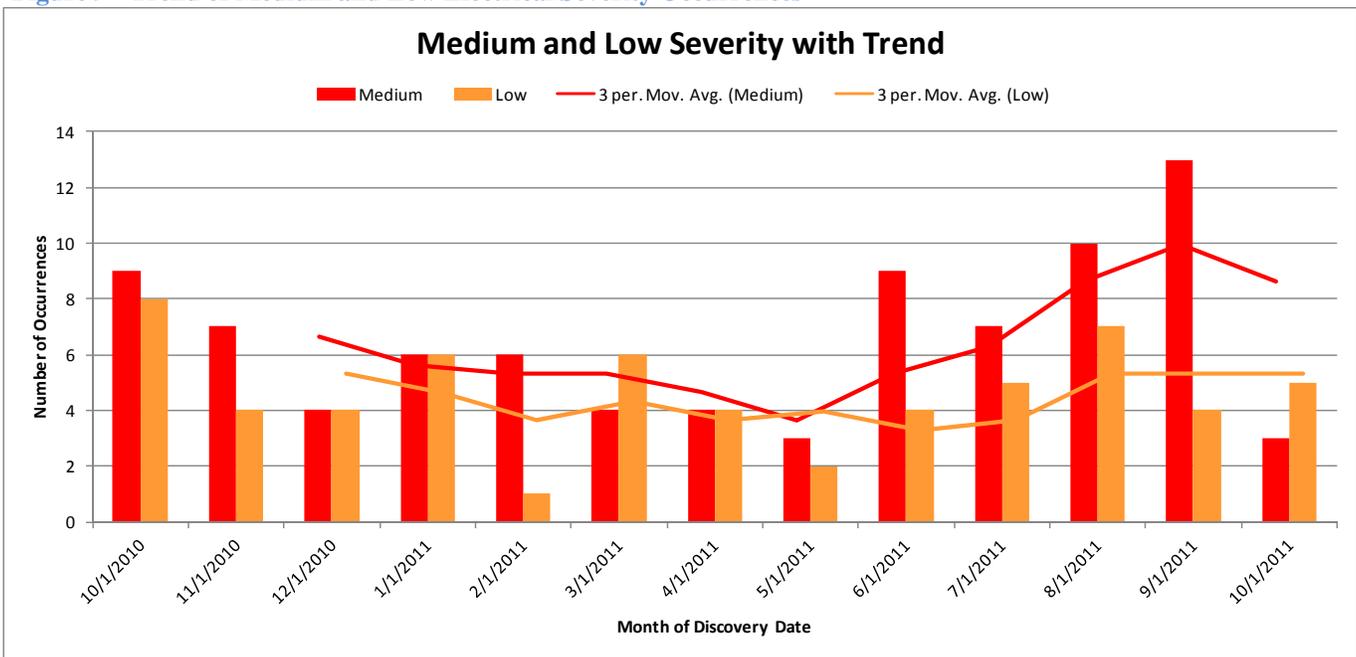


What can be seen from the previous two charts is that the number of occurrences with High electrical severity scores has remained at zero for the past five months and that the number of occurrences with Medium scores, following a steady increase since May, have dropped below the number of Low severity occurrences.

Medium and Low Severity with Trend

Figure 9 focuses on the Medium and Low severity data series for October 2010 through October 2011. Trend lines are included for each, using a 3-month moving average.

Figure 9 - Trend of Medium and Low Electrical Severity Occurrences



The 3-month moving average shows a decrease in the Medium severity occurrences following a steady increase since May 2011. This increase relates to the increase in the number of electrical occurrences with Medium severity scores during the past two months. The figure also shows a leveling off of Low severity occurrences.

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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Email: glenn.searfoss@hq.doe.gov

Attachment 1

Electrical Safety Occurrences – October 2011

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	EE-GO--NREL-NREL-2011-0012	Subcontract electricians discovered LOTO device no longer on breaker switch.				X					3	10(3)	0
2	EM-ID--CWI-LANDLORD-2011-0001	Employee shocked while tightening broken bulb in desk lamp that had exposed elements.	X								3	2C(2)	330
3	EM-RP--WRPS-TANKFARM-2011-0024	A worker removed a lock from an electrical distribution panel upstream of de-energized panel that had the front cover removed.				X					3	2C(2)	0
4	NA--LASO-LANL-TA55-2011-0027	A small spark occurred when an employee plugged a surge protector into a wall socket.				X					3	2C(2)	20
5	NA--NVSO-WSIN-NTS-2011-0003	A subcontractor removed a ventilation fan and did not have a LOTO on the open breaker.				X					3	2C(2)	210
6	NA--PS-BWP-PANTEX-2011-0069	During drilling, an electrical conduit was damaged containing energized conductors for the 12,470-volt distribution system.						X			3	10(2)	0
7	SC--PNSO-PNNL-PNNLNUCL-2011-0005	A LOTO configuration for an electrical isolation was not applied as planned.				X					4	10(2)	0
8	SC-ORO--ORNL-X10CHRIDGE-2011-0002	A staff member was shocked when his hand touched faulty 57-volt connector jacket.	X								2	2C(1)	330
	TOTAL		2	0	0	5	0	1	0	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 – October 2011

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			
1	EE-GO--NREL-NREL-2011-0012	Subcontract electricians discover LOTO device no longer on breaker switch.	X		X		X				X			X
2	EM-ID--CWI-LANDLORD-2011-0001	Employee shocked while tightening broken bulb in desk lamp that had exposed elements.		X		X					X			
3	EM-RP--WRPS-TANKFARM-2011-0024	A worker removed a lock from an electrical distribution panel upstream of de-energized panel that had the front cover removed.	X				X				X			
4	NA--LASO-LANL-TA55-2011-0027	A small spark occurred when an employee plugged a surge protector into a wall socket.		X		X					X			X
5	NA--NVSO-WSIN-NTS-2011-0003	A subcontractor removed a ventilation fan and did not have a LOTO on the open breaker.	X				X				X			
6	NA--PS-BWP-PANTEX-2011-0069	During drilling, an electrical conduit was damaged containing energized conductors for the 12,470-volt distribution system.		X	X	X				X				X
7	SC--PNSO-PNNL-PNNLNUCL-2011-0005	A LOTO configuration for an electrical isolation was not applied as planned.		X			X				X			
8	SC-ORO--ORNL-X10CHRIDGE-2011-0002	A staff member was shocked when his hand touched faulty 57-V connector jacket.		X		X					X			
	TOTAL		3	5	2	4	4	0	0	1	7	0	0	3

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

ORPS contains 55433 OR(s) with 58743 occurrences(s) as of 11/7/2011 12:37:15 PM
 Query selected 8 OR(s) with 8 occurrences(s) as of 11/7/2011 12:39:03 PM

Download this report in Microsoft Word format. 

1)Report Number: [EE-GO--NREL-NREL-2011-0012](#) **After 2003 Redesign**
Secretarial Office: Energy Efficiency and Renewable Energy
Lab/Site/Org: National Renewable Energy Laboratory
Facility Name: National Renewable Energy Laboratory
Subject/Title: Near miss - subcontract electricians discover LOTO device no longer on breaker switch

Date/Time Discovered: 10/12/2011 09:17 (MTZ)
Date/Time Categorized: 10/12/2011 11:00 (MTZ)

Report Type: Notification

Report Dates:

Notification	10/14/2011	18:54 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category: 3
Reporting Criteria: 10(3) - A near miss, where no barrier or only one barrier prevented an event from having a reportable consequence. One of the four significance categories should be assigned to the near miss, based on an evaluation of the potential risks and the corrective actions taken. (1 of 4 criteria - This is a SC 3 occurrence)

Cause Codes:
ISM:

Subcontractor Involved: Yes
 Haselden Construction and Weifield Group

Occurrence Description: On October 11, 2011, two subcontract electricians working on the Research Support Facility project discovered their circuit breaker lockout / tagout (LOTO) device on the floor and not on the breaker to which they had applied their locks and tags. The electricians applied LOTO to a 277-volt circuit breaker in an electrical room and began installation of a light fixture in another area of the facility. After the electricians completed the task, they returned to re-energize the circuit when they discovered that the LOTO was no longer attached to the breaker switch. The breaker switch was still in the off position and there were no other scheduled electrical work activities in the area. At this time, it has not been determined how the LOTO device came off the breaker. The appropriate controls were in place

when the electricians began work, however since the breaker switch was not adequately protected, this condition presents a management concern due to a near miss situation.

No injuries or property damage occurred as a result of this incident.

Cause Description:

Operating Conditions: Normal operations

Activity Category: Construction

Immediate Action(s): The electricians reported this condition to their immediate supervisor.

An incident investigation has been initiated.

FM Evaluation:

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required:

Yes.
Before Further Operation? No
By Whom: NREL and subcontractor
By When:

Division or Project:

Infrastructure Campus Development Office/RSF2

Plant Area:

South Table Mountain

System/Building/Equipment: RSF2

Facility Function:

Laboratory - Research & Development

Corrective Action:

Lessons(s) Learned:

HQ Keywords:

01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical)
08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance
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 October 11, 2011, two subcontract electricians working on the Research Support Facility project discovered that their circuit breaker Lockout/Tagout (LOTO) device was on the floor and not on the breaker to which they had applied their locks and tags. The electricians had applied the LOTO to a 277-volt circuit breaker in an electrical room and began installation of a light fixture in another area of the facility. After the electricians completed the task, they returned to re-energize the circuit when they discovered that the LOTO was no longer attached to the breaker

switch. The breaker switch was still in the off position and there were no other scheduled electrical work activities in the area. At this time, it has not been determined how the LOTO device came off the breaker. The appropriate controls were in place when the electricians began work, however since the breaker switch was not adequately protected, this condition presents a management concern due to a near miss situation. No injuries or property damage occurred as a result of this incident. An incident investigation has been initiated.

Similar OR Report Number:

Facility Manager:

Name	JORDAN, MAUREEN Y
Phone	(303) 275-3248
Title	EHS Office Director

Originator:

Name	BAYLOSIS, ED A.
Phone	(303) 275-3240
Title	ISM PROGRAM MANAGER

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
10/12/2011	16:41 (MTZ)	Event Distribution	DOE/NREL

Authorized Classifier(AC):

2)Report Number:

[EM-ID--CWI-LANDLORD-2011-0001](#) After 2003 Redesign

Secretarial Office:

Environmental Management

Lab/Site/Org:

Idaho National Laboratory

Facility Name:

ICP Landlord Activities

Subject/Title:

Employee Receives Mild Shock from Desk Lamp

Date/Time Discovered:

10/19/2011 11:45 (MTZ)

Date/Time Categorized:

10/19/2011 13:45 (MTZ)

Report Type:

Notification

Report Dates:

Notification	10/20/2011	20:50 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category:

3

Reporting Criteria:

2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical

power circuit, steam line, pressurized gas). 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: 6) N/A (Not applicable to ISM Core Functions as determined by management review.)

Subcontractor Involved: No

Occurrence Description: On October 19, an Information Technology (IT) worker received a mild shock from a broken desk lamp light bulb in Idaho Falls Facilities building Technical Support Annex (TSA) classroom G.

The worker, when the desk lamp did not illuminate, reached into the desk lamp's housing to tighten the light bulb. While doing so, and unaware the light bulb's glass shell was broken leaving the elements exposed, the worker received a mild shock.

The worker reported the incident to his manager. The worker was transported to the dispensary at Willow Creek Building. The worker was checked over, no burns or any effects noted. No treatment was needed. The worker was returned to work with no restrictions. The lamp was taken out of service. See also immediate actions taken.

Cause Description:

Operating Conditions: Classroom setting. Dim lights for computer work.

Activity Category: Training

Immediate Action(s): Lamp was removed from service.
Other lamps were also checked for functionality; those of question were removed from service.
Fact finding meeting held.

FM Evaluation:

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required: No

Division or Project: Facility Management, Idaho Falls Facilities

Plant Area: TSA-Idaho Falls

System/Building/Equipment: Technical Support Annex (TSA)

Facility Function: Balance-of-Plant - Offices

Corrective Action:

Lessons(s) Learned:

HQ Keywords: 05D--Mechanical/Structural - Mechanical Equipment Failure/Damage
 08A--OSHA Reportable/Industrial Hygiene - Electrical Shock
 12C--EH Categories - Electrical Safety
 14L--Quality Assurance - No QA Deficiency

HQ Summary: On October 19, an Information Technology worker received a mild shock from a broken desk lamp light bulb in the Idaho Falls Facilities Building Technical Support Annex Classroom G. When the desk lamp did not illuminate, the worker reached into the desk lamp's housing to tighten the light bulb, unaware that the light bulb's glass shell was broken, leaving the elements exposed and causing a mild shock to the worker. The worker reported the incident to his manager and was transported to the dispensary at Willow Creek Building. The worker was checked, with no burns or other effects noted. No treatment was needed and the worker was returned to work without restriction. The lamp was taken out of service. Other lamps were also checked for functionality; those in question were removed from service. A fact finding meeting was held.

Similar OR Report Number:

Facility Manager:

Name	F. J. Kocsis
Phone	(208) 360-0425
Title	Director, Information Mngmnt Systems / Facilities

Originator:

Name	ALLRED, MATTHEW D
Phone	(208) 533-6294
Title	ORPS COORDINATOR

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
10/19/2011	13:58 (MTZ)	Jim Geringer	DOE-ID

Authorized Classifier(AC): /s/ M. S. Casteel, DC, 164 Date: 10/20/2011

3)Report Number: [EM-RP--WRPS-TANKFARM-2011-0024](#) After 2003 Redesign
Secretarial Office: Environmental Management
Lab/Site/Org: Hanford Site
Facility Name: Tank Farms
Subject/Title: Uncontrolled Energy Source Discovered During Safety Inspection
Date/Time Discovered: 10/20/2011 08:17 (PTZ)
Date/Time Categorized: 10/20/2011 09:42 (PTZ)
Report Type: Notification
Report Dates:

Notification	10/21/2011	15:20 (ETZ)
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Initial Update		
Latest Update		
Final		

Significance Category:

3

Reporting Criteria:

2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). 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
- 3) Develop and Implement Hazard Controls

Subcontractor Involved:

No

Occurrence Description:

On October 19, 2011, in Mobile Office MO-116, an Authorized Worker (AW) had placed his lock (eight-criteria) on an electrical distribution panel upstream of another electrical distribution panel from which the front cover had been removed. The AW removed his lock from the upstream electrical distribution panel at the completion of the day's activities without the downstream panel cover being re-installed, which left the energy source uncontrolled. The work scope per the work package, install drywall covering throughout MO-116, was not completed in MO-116. The breaker(s) in the electrical distribution panel supplying power to MO-116 were in the off position and no one was working in MO-116 when an Employee Accident Prevention Council (EAPC) inspection observed the condition.

Cause Description:

Operating Conditions:

Does not apply.

Activity Category:

Construction

Immediate Action(s):

Access to MO-116 was locked and DANGER tape installed at the door. The work package was suspended. Re-installed the eight-criteria lockout to control the configuration and re-installed the panel cover. Required notifications completed.

FM Evaluation:

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is

Yes.

Required:

Before Further Operation? No
By Whom: Saueressig, David J

By When:

Division or Project: Washington River Protection Solutions LLC (WRPS)

Plant Area: 600 Area

System/Building/Equipment: Cold Test Facility/Mobile Office MO-116/Electrical Panel

Facility Function: Nuclear Waste Operations/Disposal

Corrective Action:

Lessons(s) Learned:

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

HQ Summary: On October 19, 2011, in Mobile Office MO-116, an Authorized Worker (AW) had removed his lock (eight-criteria) from an electrical distribution panel upstream of another electrical distribution panel which had the front cover removed. The AW had placed his lock on the upstream electrical distribution panel and then removed his lock from the panel at the completion of the day's activities without the downstream panel cover being re-installed, which left the energy source uncontrolled. The work scope per the work package, install drywall covering throughout MO-116, was not completed in MO-116. The circuit breakers in the electrical distribution panel that supply power to MO-116 were in the off position and no one was working in MO-116 when an Employee Accident Prevention Council inspection observed the condition. Access to MO-116 was locked and DANGER tape installed at the door and the work package was suspended. The eight-criteria lockout was re-installed to control the configuration and the panel cover was re-installed. Required notifications were completed.

Similar OR Report Number:

Facility Manager:

Name	Saueressig, David J
Phone	(509) 373-0183
Title	Manager, C Farm Retrieval & Closure

Originator:

Name	WATERS, SHAUN F
Phone	(509) 373-3457
Title	OPERATIONS SPECIALIST

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
10/20/2011	09:45 (PTZ)	Moser, D. R.	WRPS
10/20/2011	09:47 (PTZ)	Gregory, R. E.	WRPS

10/20/2011	09:56 (PTZ)	Domnoske-Rauch, L. A.	DOE-ORP
10/20/2011	09:58 (PTZ)	Davis, K. W.	MSA-ONC

Authorized Classifier(AC):

4)Report Number: [NA--LASO-LANL-TA55-2011-0027](#) After 2003 Redesign
Secretarial Office: National Nuclear Security Administration
Lab/Site/Org: Los Alamos National Laboratory
Facility Name: Plutonium Proc & Handling Fac
Subject/Title: Unexpected Exposure to Live Electrical Conduits During Wall Receptacle Evaluation
Date/Time Discovered: 10/31/2011 11:50 (MTZ)
Date/Time Categorized: 10/31/2011 12:05 (MTZ)
Report Type: Notification
Report Dates:

Notification	11/01/2011	11:38 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category: 3
Reporting Criteria: 2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). 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: MANAGEMENT SYNOPSIS: On Thursday, October 27, 2011 at approximately 0720, at Technical Area 50, Building 37 (TA-50-37), a small spark occurred when an Engineering Services, Design Engineering (ES-DE) employee (E1) plugged a surge protector into a wall socket. The event occurred after E1 had removed a 6 outlet mount-to-wall surge protector after it had failed. The event was originally categorized as not ORPS reportable because the receptacle face plate was still installed under the mount-to-wall surge suppressor. The incident was critiqued on Monday, October 31, 2011. During the critique the TA-50 (TA-55-RLW) Operations Manger (OM) learned that the face plate of the receptacle had fallen off, the live electrical wiring was exposed, and a small spark occurred when E1 plugged in the surge protector. The OM notified the TA-55 Facility Operations Director (TA55-DO FOD) at approximately

1205 and the event was re-categorized as a failure to follow a prescribed hazardous energy control process which results in the unexpected discovery of an uncontrolled hazardous energy source (Group 2, Subgroup C, section 2, significance category 3).

Cause Description:

Operating Conditions:

Normal operations

Activity Category:

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

Immediate Action(s):

E1 and E2 notified their FLMs and the TA-50 Operations Center at approximately 0810 on the day of the event.
E2 notified Maintenance and Site Services, Central Shop operations (MSS-CS) electricians.
E2 generated a work ticket and the receptacle was replaced.
A critique was scheduled for Monday, October 31, 2011. After the critique the TA-55-RLW OM notified the TA-55 FOD and the event was re-categorized.

FM Evaluation:

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required:

Yes.
Before Further Operation? No
By Whom: TA55-DO
By When: 12/15/2011

Division or Project:

ES-DE

Plant Area:

TA-50

System/Building/Equipment: TA-50, Building 37, wall electrical receptacle

Facility Function:

Plutonium Processing and Handling

Corrective Action:

Lessons(s) Learned:

HQ Keywords:

07E--Electrical Systems - Electrical Equipment Failure
08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance
08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical)
12C--EH Categories - Electrical Safety
14E--Quality Assurance - Work Process Deficiency

HQ Summary:

On October 27, 2011, at Technical Area 50, Building 37, a small spark occurred when an Engineering Services, Design Engineering employee plugged a surge protector into a wall socket. The event occurred when the employee removed a six outlet mount-to-wall surge protector after it had failed. The event was originally categorized as not ORPS reportable because the receptacle face plate was still installed under the mount-to-wall surge suppressor; however, during a critique on October 31, the TA-

50 Operations Manager (OM) learned that the face plate of the receptacle had fallen off and energized electrical wiring was exposed when the spark occurred. The OM notified the TA-55 Facility Operations Director and the event was re-categorized as a failure to follow a prescribed hazardous energy control process which results in the unexpected discovery of an uncontrolled hazardous energy source. Electricians were notified, a work ticket was generated, and the receptacle was replaced.

Similar OR Report Number:

Facility Manager:

Name	Victor Salazar
Phone	(505) 667-3030
Title	TA-55-RLW Operations Manager

Originator:

Name	HUNSINGER, MARK W
Phone	(505) 665-1496
Title	OCCURRENCE INVESTIGATOR

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
10/31/2011	12:05 (MTZ)	Dan Carter	NNSA/FR

Authorized Classifier(AC): Mark Hunsinger Date: 10/31/2011

5)Report Number:

[NA--NVSO-WSIN-NTS-2011-0003](#) After 2003 Redesign

Secretarial Office:

National Nuclear Security Administration

Lab/Site/Org:

Nevada Test Site

Facility Name:

Nevada Test Site

Subject/Title:

Violation of Lockout/Tagout Procedures

Date/Time Discovered:

10/20/2011 12:00 (PTZ)

Date/Time Categorized:

10/20/2011 14:00 (PTZ)

Report Type:

Notification

Report Dates:

Notification	10/24/2011	11:47 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category:

3

Reporting Criteria:

2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). This criterion does not include

discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.

Cause Codes: A3B4C02 - Human Performance Less Than Adequate (LTA); Work Practices LTA; Deliberate violation
-->couplet - NA

ISM:

Subcontractor Involved: Yes
Canyon Warrior Joint Venture

Occurrence Description: On October 19, 2011, a subcontractor was performing work under contract to the NNSS M&O contractor at a WSI Nevada controlled facility. The subcontractor modified the approved work package to have the M&O contractor perform a lockout/tagout on the energy source to a ventilation fan which the subcontractor needed to remove. At approximately 0730 Hours, October 20, 2011, when the M&O contractor arrived at the facility to perform the LOTO, they discovered that the subcontractor had already removed the ventilation fan without the LOTO. Subsequent inspection determined that the circuit breaker switch was in the off position. On October 20, the M&O contractor issued a stop work notice to the subcontractor and initiated an investigation.

Cause Description: Subcontractor performed work and did not follow written lockout/tagout procedures.

Operating Conditions: Under Renovation

Activity Category: Construction

Immediate Action(s): M&O contractor issued stop work notice to subcontractor and initiated investigation.

FM Evaluation: M&O contractor is conducting investigation.

DOE Facility Representative Input:

DOE Program Manager Input:

Further Evaluation is Required: Yes.
Before Further Operation? Yes
By Whom: NNSS M&O Contractor
By When: 11/20/2011

Division or Project: WSI Nevada

Plant Area: Area 6, NNSS

System/Building/Equipment: CP-41, Area 6, Nevada National Security Site

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)
 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 October 19, 2011, a subcontractor removed a ventilation fan and did not follow written lockout/tagout (LOTO) procedures. The subcontractor, who was performing work under contract to the NNSS M&O contractor at a WSI Nevada controlled facility, modified an approved work package to have the M&O contractor perform a lockout/tagout on the energy source to a ventilation fan. On October 20, when the M&O contractor arrived at the facility to perform the LOTO, they discovered that the subcontractor had already removed the ventilation fan without the LOTO. Subsequent inspection determined that the circuit breaker switch was in the off position. The M&O contractor issued a stop work notice to the subcontractor and initiated an investigation.

Similar OR Report Number:

Facility Manager:

Name	G. Scott Damron
Phone	(702) 295-6630
Title	Director, Security Services Division

Originator:

Name	Shook, Richard Dennis
Phone	(702) 295-6368
Title	

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
10/20/2011	14:37 (PTZ)	Pat Bodin	NSO/AMSS

Authorized Classifier(AC): Phillip J. Mertz Date: 10/20/2011

6)Report Number: [NA--PS-BWP-PANTEX-2011-0069](#) After 2003 Redesign
Secretarial Office: National Nuclear Security Administration
Lab/Site/Org: Pantex Plant
Facility Name: Pantex Plant
Subject/Title: Damaged conduit protecting unknown and energized conductor
Date/Time Discovered: 10/11/2011 14:50 (CTZ)
Date/Time Categorized: 10/11/2011 15:00 (CTZ)
Report Type: Update

Report Dates:

Notification	10/12/2011	17:33 (ETZ)
Initial Update	10/12/2011	17:59 (ETZ)
Latest Update	10/13/2011	11:42 (ETZ)
Final		

Significance Category:

3

Reporting Criteria:

2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). 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
Ledcor

Occurrence Description:

On 10-07-11, Ledcor, a B&W Pantex subcontractor, was conducting a horizontal directional drilling/back-reaming process for installation of insert full definition (HDPE) piping when they contacted an unknown interference. Upon this contact, all work was temporarily suspended by Ledcor.

This area had been previously hydro-excavated in order to locate two known Power Distribution Supervisory System (PDSS), communication lines, less than 50 Volts that were not required to be under Lock Out Tag Out (LOTO). However, B&W Pantex Electrical Safety has provisions, as needed, which allow work to be conducted within ten feet of an energized conductor when it has been previously located and is visible during continued operations.

Upon discovery of this interference, and thinking that it would consist of backfill materials (concrete, blacktop etc) as previously found at other locations, Ledcor conducted additional hydro-excavation in order to locate and identify the source of the interference. The additional hydro-excavation located two previously unknown conduits (housing energized circuits) that were positioned in parallel with the two previously identified PDSS conduits, but were approximately four feet lower in depth.

With this discovery, all further work was suspended and Ledcor made notifications. The B&W Pantex Project Subcontractor Representative (PSTR), Project Manager (PM) and Electrical Safety was notified, arrived, and identified that these conductors are a portion of the 12,470 volt plant service (electrical distribution system).

Upon identification of these lines, B&W Pantex Electrical Safety coordinated an analysis of this distribution system with B&W Pantex Engineering, and the B&W Pantex Facility Manager. Final determination of LOTO requirements were provided to B&W Pantex Maintenance who disabled the lines by application of approved LOTO.

Following the application of the LOTO, Ledcor excavated safe passage to these distribution service conduits. During review, B&W Pantex Electrical Safety personnel inspected the conduits and discovered the outer metal housing of one of the conduits had been damaged, but no other damage existed to any portion of the conduits or the internal conductors.

There was no damage to facilities or equipment, other than a small portion of this electrical conductor's outer metal conduit, no danger to personnel, nor any threat to security or the environment as a result of this event.

Cause Description:

Operating Conditions:

Activity Category:

Immediate Action(s):

Operating Normally (construction job for HPFL)

Construction

- A. Job suspended when additional electrical conduits were located.
- B. Notifications to B&W Pantex PSTR, PM, Electrical Safety, and Projects Division Management made.
- C. B&W Pantex Electrical Safety coordinated Lock Out Tag Out (LOTO) investigation with B&W Pantex Engineering and B&W Pantex Facility Manager.
- D. B&W Pantex Electrical Safety provided B&W Pantex Maintenance personnel guidance from prior LOTO investigation and they de-energized these electrical distribution lines via LOTO.
- E. Ledcor excavated safe passage to the identified de-energized distribution lines.
- F. B&W Pantex Electrical Safety conducted further investigation of distribution lines and determined that one of the lines outer steel cover had been damaged, but no other damage existed to either conduits or internal conductors.
- G. The damaged distribution line remains in a safe and stable capacity under LOTO.
- H. An event critique was conducted on 10-11-2011 at 1300 hrs. Event categorization: 10 2 S(C)3. It was identified that Ledcor has completed all work for this project that involves directional drilling/back reaming.

Initial categorization of event was 2C 2 SC3

NNSA Duty Officer, Operations Center, and Management was notified throughout the progression of these events.

FM Evaluation: Event Critique resulted in re-categorization of this event to a 10-2 SC 3. PXSO requested that this be moved back to the initial categorization of 2C2 SC3.

DOE Facility Representative

Input:

DOE Program Manager

Input:

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

Division or Project: Projects Division

Plant Area: Zone 12 South MAAA

System/Building/Equipment: Zone 12 South

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
07B--Electrical Systems - Electrical Distribution
08F--OSHA Reportable/Industrial Hygiene - Industrial Operations Issues
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
14G--Quality Assurance - Procurement Deficiency

HQ Summary: On October 7, 2011, a B&W Pantex subcontractor was conducting a horizontal directional drilling/back-reaming process for installation of insert full definition piping when they hit an unknown electrical conduit. The subcontractor temporarily suspended all work. The area had been previously hydro-excavated in order to locate two known Power Distribution Supervisory System communication lines (< 50 volts) that were not required to be under Lock Out/Tag Out (LOTO). However, B&W Pantex Electrical Safety has provisions that allow work to be conducted within 10 feet of an energized conductor when it has been previously located and is visible. The B&W Pantex Project Subcontractor Representative, the Project Manager, and Electrical Safety arrived and identified that these conductors are a portion of the 12,470-volt plant service (electrical distribution system). Upon identification of these lines, B&W Pantex Electrical Safety personnel coordinated an analysis of this distribution system with B&W Pantex Engineering and the B&W Pantex

Facility Manager. Final determination of LOTO requirements were provided to B&W Pantex Maintenance who disabled the lines by application of approved LOTOs. There was no damage to facilities or equipment, other than a small portion of this electrical conductor's outer metal.

Similar OR Report Number:

Facility Manager:

Name	Dale Moon
Phone	(806) 477-7070
Title	Line Item Project Manager

Originator:

Name	MCNABB, RON O
Phone	(806) 477-6855
Title	SUPPORT REPRESENTATIVE

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
10/11/2011	15:00 (CTZ)	Amanda Clarke	PXSO

Authorized Classifier(AC): Don Gerber Date: 10/12/2011

7)Report Number: [SC--PNSO-PNNL-PNNLNUCL-2011-0005](#) After 2003 Redesign

Secretarial Office: Science

Lab/Site/Org: Pacific Northwest National Laboratory

Facility Name: PNNL Nuclear Facilities

Subject/Title: Management Concern Regarding Lockout/Tagout Work Instructions

Date/Time Discovered: 10/31/2011 08:00 (PTZ)

Date/Time Categorized: 11/02/2011 11:30 (PTZ)

Report Type: Notification/Final

Report Dates:

Notification	11/04/2011	12:51 (ETZ)
Initial Update	11/04/2011	12:51 (ETZ)
Latest Update	11/04/2011	12:51 (ETZ)
Final	11/04/2011	12:51 (ETZ)

Significance Category: 4

Reporting Criteria: 10(2) - An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manager or line management to be of safety significance or of concern to other facilities or activities in the DOE complex. One of the four significance categories should be assigned to the occurrence, based on an evaluation of the potential risks and the corrective actions taken. (1 of 4 criteria - This is

a SC 4 occurrence)

Cause Codes:

ISM: 5) Provide Feedback and Continuous Improvement

Subcontractor Involved: No

Occurrence Description: On October 31, 2011, at the Radiochemical Processing Laboratory, it was identified that a Lockout/Tagout (LOTO) configuration was not applied in a manner anticipated during work planning. Although the applied configuration was determined to be compliant with PNNL hazardous energy control processes and all hazardous energy was adequately controlled, the LOTO work instructions did not contain sufficient detail to assure the configuration was applied as expected. This represents a concern to management.

Cause Description:

Operating Conditions: N/A

Activity Category: Maintenance

Immediate Action(s): Notifications were made. A formal critique was held Thursday, November 3, 2011.

FM Evaluation:

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is Required: No

Division or Project: Nuclear & Material Operations Division/Operational

Plant Area: 300 Area

System/Building/Equipment: RPL Facility (325)

Facility Function: Laboratory - Research & Development

Corrective Action:

Lessons(s) Learned:

HQ Keywords: 01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical)
01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical)
12I--EH Categories - Lockout/Tagout (Electrical or Mechanical)
14D--Quality Assurance - Documents and Records Deficiency
14E--Quality Assurance - Work Process Deficiency

HQ Summary: On October 31, 2011, at the Radiochemical Processing Laboratory, a Lockout/Tagout (LOTO) configuration for an electrical isolation was not applied in a manner anticipated during work planning. Although the applied configuration was determined to be compliant with Pacific

Northwest National Laboratory hazardous energy control processes and all hazardous energy was adequately controlled, the LOTO work instructions did not contain sufficient detail to assure the configuration was applied as expected. A formal critique was held on November 3.

Similar OR Report Number:

Facility Manager:

Name	Kooiker, C. A.
Phone	(509) 375-5352
Title	Building Manager, Radiochemical Processing Laborat

Originator:

Name	POLLARI, ROGER A
Phone	(509) 371-7700
Title	

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
11/02/2011	12:17 (PTZ)	T. Davies	PNSO

Authorized Classifier(AC): Pollari, R. A. Date: 11/04/2011

8)Report Number: [SC-ORO--ORNL-X10CHRIDGE-2011-0002](#) After 2003 Redesign

Secretarial Office: Science

Lab/Site/Org: Oak Ridge National Laboratory

Facility Name: Chestnut Ridge

Subject/Title: Mild Electrical Shock due to Faulty Extension Cord

Date/Time Discovered: 10/17/2011 17:47 (ETZ)

Date/Time Categorized: 10/18/2011 01:05 (ETZ)

Report Type: Notification

Report Dates:

Notification	10/19/2011	16:47 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category: 2

Reporting Criteria: 2C(1) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or disturbance of a previously unknown or mislocated hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas) resulting in a person contacting (burn, shock, etc.) hazardous energy.

Cause Codes:

ISM:

Subcontractor Involved: No

Occurrence Description: On October 17, 2011 at approximately 17:47, a staff member servicing research equipment received a mild electrical shock to the back of his left hand from the metal jacket of an electrical connector. The staff member immediately placed the equipment in a safe configuration and notified the Instrument Hall Coordinator (IHC). Hazardous energy control processes were not violated, and the research equipment had been inspected, approved, installed, and operated consistent with its intended use.

The research equipment consisted of a motor control box that requires AC power, interface cabling and a sample stick. The AC cord for the motor control box was plugged into an empty receptacle on an existing in-service extension cord.

The IHC notified the Oak Ridge National Laboratory (ORNL) Laboratory Shift Superintendent (LSS) of the event and requested paramedics to examine the staff member. The paramedics confirmed the shock had not resulted in an injury or other adverse effect.

There were no injuries, environmental, health or safety consequences, or operational impacts as a result of this occurrence.

Cause Description:

Operating Conditions: The accelerator was operating for cycle 2012-1

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

Immediate Action(s): Initial testing by a qualified electrical worker revealed that the connector jacket was energized to 57 VAC and was capable of a discharge to ground of 3.5 mA. Further testing and trouble shooting was performed on the research equipment. A faulty extension cord was identified and removed from service. After the cord was replaced, the equipment was tested and returned to service.

On October 18, 2011, an initial summary of the event was provided to SNS staff members at the plan of the day meeting.

On October 18, 2011, a critique was conducted.

FM Evaluation: Further analysis and investigation by ORNL line management will be performed and corrective actions will be implemented as appropriate.

DOE Facility Representative

Input:

DOE Program Manager

Input:

Further Evaluation is No

Required:

Division or Project: Spallation Neutron Source
Plant Area: Bldg. 8705
System/Building/Equipment: Bldg. 8705
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 October 17, 2011, a staff member servicing research equipment received a mild electrical shock to the back of his left hand from the metal jacket of an electrical connector. The staff member immediately placed the equipment in a safe configuration and notified the Instrument Hall Coordinator (IHC). Hazardous energy control processes were not violated, and the research equipment had been inspected, approved, installed, and operated consistent with its intended use. The AC cord for the motor control box was plugged into an empty receptacle on an existing in-service extension cord. The IHC notified the Oak Ridge National Laboratory Shift Superintendent of the event and requested paramedics to examine the staff member, who confirmed the shock had not resulted in an injury or other adverse effect. Initial testing by a qualified electrical worker revealed that the connector jacket was energized to 57 VAC and was capable of a discharge to ground of 3.5 mA. A faulty extension cord was identified and removed from service. After the cord was replaced, the equipment was tested and returned to service. A critique was conducted.

Similar OR Report Number:

Facility Manager:

Name	Donald H. Abercrombie
Phone	(865) 241-5736
Title	Instrument Operations Manager

Originator:

Name	PEHRSON, PAUL B.
Phone	(865) 576-7929
Title	OCCURRENCE REPORTING MANAGER

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
10/17/2011	17:50 (ETZ)	Lab. Shift Superintendent	ORNL LSS
10/18/2011	02:10 (ETZ)	Doug Paul	DOE FR

10/18/2011	06:08 (ETZ)	Michele Branton	DOE ORNL
10/18/2011	06:08 (ETZ)	Johnny Moore	DOE ORNL

Authorized Classifier(AC):

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