

January 2009 Electrical Safety Occurrences

There were 11 electrical safety occurrences for January 2009:

- 2 resulted in electrical shocks
- 5 involved lockout/tagout
- 1 involved cutting energized conductors
- 5 involved electrical workers and 7 involved non-electrical workers (note: one occurrence had multiple events)
- 6 occurrences involved subcontractors

For the past three years electrical safety events reported in the month of January have been much higher than the previous months. In January 2008 there were 17 events with 7 electrical shocks, in January 2007 there were 15 events, and in January 2006 there were 24 events. The number of events in January usually tapers off until spring and summer when we see an increase in reported events, probably related to increased work activity associated with maintenance and construction. A seasonal review of electrical safety events has shown a favorable (decreasing) trend from the winter of 2004/2005 through the fall of 2008. A look at the distribution of events by season (2005 through 2007) shows that 17 percent of the events occurred in the fall, while 26 percent occurred in winter, 28 percent occurred in spring, and 29 percent occurred in summer.

In compiling the monthly totals, the search initially looked for occurrence discovery dates in this month (excluding Significance Category R 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 initial search yielded 12 occurrences. However, one occurrence (NE-ID--BEA-ATR-2009-0001) involved an equipment failure where the facility personnel took appropriate protective actions. Culling out this occurrence yielded 11 electrical safety occurrences for the month. Only one report (NA--SS-SNL-NMFAC-2009-0001) provided an ESI score. Although the use of the Electrical Severity Measurement Tool in the evaluation of electrical energy events is not required, it's use is strongly encouraged in order to provide a more consistent approach to tracking and trending electrical energy events.

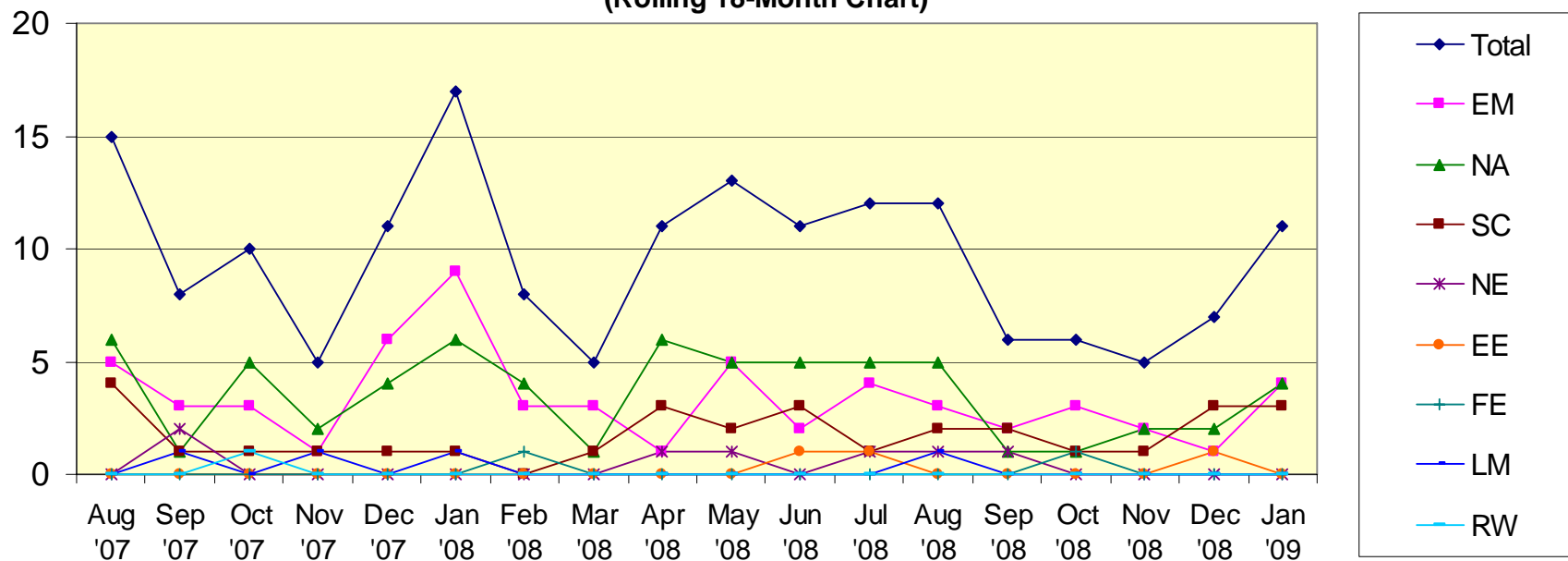
Below is the current summary of 2009 electrical safety occurrences:

Period	Electrical Safety Occurrences	Shocks	Burns	Fatalities
Jan-09	11	2	0	0
2009 total	11 (avg. 11.0/month)	2	0	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 average rate of electrical safety occurrences in 2009 is 11 per month, which is more than the average rate of 9.4 per month experienced in 2008. The 2009 average rate, of course, is based on a very small set of data and is still below the 2004 – 2007 average rates.

Electrical Occurrences by Month & Secretarial Office

(Rolling 18-Month Chart)



EE - Energy Efficiency and Renewable Energy, EM - Environmental Management, FE - Fossil Energy, LM - Legacy Management, NA - National Nuclear Security Administration, NE - Nuclear Energy, RW - Civilian Radioactive Waste Management, SC - Science

Electrical Safety Occurrences – January 2009

No	Report Number	Event Summary	EW ⁽¹⁾	N-EW ⁽²⁾	SUB ⁽³⁾	SHOCK	BURN	ARCF ⁽⁴⁾	LOTO ⁽⁵⁾	EXCAV ⁽⁶⁾	CUT/D ⁽⁷⁾	VEH ⁽⁸⁾
1	EM--PPPO-TPMC-PORTENVRES-2009-0001	A vendor failed to follow OSHA 1910.333(b)(2), Lockout and Tagging, by not applying a lock to the energy source point.	X		X				X			
2	EM--PPPO-UDS-PGDPDUCON-2009-0001	Workers discovered an improperly terminated electrical wire.		X					X			
3	EM-ID--BBWI-AMWTF-2009-0001	Hazardous energy was found while working under lockout and tagout protection.	X						X			
4	EM-RL--WCH-DND-2009-0001	A power tool was improper used in a wet environment resulting in a shock.		X	X	X						
5	NA--LSO-LLNL-LLNL-2009-0006	Unauthorized work was performed on a lighting switch.		X								
6	NA--PS-BWP-PANTEX-2009-0001	A subcontractor worker cut an energized conductor while working on a panel installation.	X		X				X			
7	NA--PS-BWP-PANTEX-2009-0004	A mechanic heard an arcing noise when he moved a cord cap on a power cord to a trailer.		X								
8	NA--SS-SNL-NMFAC-2009-0001	An electrician received a shock while terminating conductors in a new UPS.	X		X	X						
9	SC--BSO-LBL-OPERATIONS-2009-0001	Workers failed to follow LOTO procedures during an HSS review.	X	X	X				X			
10	SC--PNSO-PNNL-PNNLNUCL-2009-0001	Workers severed a conduit containing energized conductors while replacing flooring.		X	X						X	
11	SC--PSO-PPPL-PPPL-2009-0001	A researcher placed his hand behind the cover of an electrical panel and potentially exposed himself to an electrical shock.		X								
	TOTAL		5	7	6	2			5		1	

Key

(1)EW = electrical worker, (2)N-EW = non-electrical worker, (3)SUB = subcontractor, (4)ARCF = significant arc flash, (5)LOTO = lockout/tagout, (6)EXCAV = excavation, (7)CUT/D = cutting or drilling, (8)VEH = vehicle event

ORPS Operating Experience Report

Production GUI - New ORPS

ORPS contains 54056 OR(s) with 57374 occurrences(s) as of 2/25/2009 12:17:17 PM
Query selected 11 OR(s) with 11 occurrences(s) as of 2/25/2009 12:40:33 PM

Download this report in Microsoft Word format. 

1)Report Number:	EM--PPPO-TPMC-PORTENVRES-2009-0001 After 2003 Redesign		
Secretarial Office:	Environmental Management		
Lab/Site/Org:	Portsmouth Gaseous Diffusion Plant		
Facility Name:	Environmental Restoration		
Subject/Title:	OSHA 1910.333 Noncompliance		
Date/Time Discovered:	01/20/2009 10:30 (ETZ)		
Date/Time Categorized:	01/21/2009 17:06 (ETZ)		
Report Type:	Notification		
Report Dates:	Notification	01/23/2009	12:11 (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:	Yes Otis Elevator Company		
Occurrence Description:	<p>On January 20, 2009, a Certified Elevator Inspector (CEI) for Otis Elevator Company (OEC), a vendor procured by TPMC to conduct elevator preventive maintenance (PM), failed to follow OSHA 1910.333(b)(2), Lockout and Tagging, prescribed hazardous energy control process by not applying a lock to the energy source point. During a DOE assessment, one assessor identified that a disconnect switch was not locked out.</p> <p>The vendor was procured to perform PM on the X-1000 and X-720 Building elevators serving TPMC work spaces. The vendor was briefed by the TPMC Electrical Supervisor on the work package and the vendor signed on to the</p>		

work package. The vendor was specifically asked by the TPMC Electrical Supervisor if he was going to perform any electrical work and he said 'no'.

The vendor initiated work in the X-1000 Building, where the elevator/control system is located in a control room on the ground floor, adjacent to the elevator. Electrically, it is configured as follows: A 480 Volt disconnect is located on the south wall with the control cabinet sitting in the middle of the floor in the room. The cabinet contains 120 Volt power (for the light in the elevator), 480 Volt power for the elevator hydraulic pump motor, and a 24 Volt control power (supplied from a 480/24 Volt transformer inside the cabinet). The vendor accessed the 24 Volt portion of the control circuitry inside the cabinet to attach a jumper in order to 'simulate' a control position on the elevator. This action required opening the electrical panel, which was not authorized by the work package. The vendor's planned checks were to verify the integrity of the hydraulic seals on the elevator by evaluating 'leak off drop' with the elevator in the 'OFF' position. Prior to installing the jumper, the vendor de-energized the 480 Volt power via a disconnect switch in the room for the apparent reason to physical control the elevator. The vendor did not lockout the disconnect switch.

Further evaluation identified the 'allowable' distances for a Qualified Person for the Shock Hazard for the 120 Volt system is 'Don't Touch'. The allowable distance for the 480 Volt system is 6 inches. In both instances, the vendor was outside the required boundary for Shock Hazard; therefore, no personnel protection was required. The calculated distances for Arc Flash boundaries for the X-1000 Building are 4 inches (or less) for the 120 Volt power, and 31 inches for the 480 Volt power. In this instance, the 120 Volt distance from the control jumper to the bare connections was outside the required 4 inches, and no protection was required. However, the measured 20 inches to the 480 Volt power was less than the required 31 inch Arc Flash boundary. Therefore, personnel protection was required for accessing this region. While the vendor had de-energized the 480 Volt power to the cabinet via the disconnect switch, the vendor had not controlled the disconnect switch via lockout.

Late categorization is due to investigation of shock and Arc Flash boundary distances to aid in determining categorization.

Cause Description:

Operating Conditions:

Normal Work Routine

Activity Category:

Maintenance

Immediate Action(s):

(1) Further vendor PM work on elevators was cancelled pending resolution of hazardous energy control issues raised by the incident.

(2) Notified TPMC Management.

	(3) Discussed with DOE Site Representatives.						
	(4) An Incident Report was initiated.						
	(5) An Occurrence Report was initiated.						
	(6) A Critique was held on January 22, 2009.						
FM Evaluation:							
DOE Facility Representative Input:							
DOE Program Manager Input:							
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: By When:						
Division or Project:	Operations & Maintenance/Electrical Maintenance						
Plant Area:	H4						
System/Building/Equipment:	X-1000 Building Elevator Equipment Room						
Facility Function:	Environmental Restoration Operations						
Corrective Action:							
Lessons(s) Learned:							
HQ Keywords:	01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01O--Inadequate Conduct of Operations - Inadequate Maintenance 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 January 20, 2009, a Certified Elevator Inspector fail to apply a lock to the energy source point during preventive maintenance. This violates OSHA 1910.333(b)(2). During a DOE assessment, one assessor identified that a disconnect switch was not locked out. Further vendor maintenance work has been suspended pending resolution of this issue.						
Similar OR Report Number:							
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td>Clarence Sheward</td> </tr> <tr> <td>Phone</td> <td>(740) 897-2755</td> </tr> <tr> <td>Title</td> <td>President, Theta Pro2Serve Management Co., LLC</td> </tr> </table>	Name	Clarence Sheward	Phone	(740) 897-2755	Title	President, Theta Pro2Serve Management Co., LLC
Name	Clarence Sheward						
Phone	(740) 897-2755						
Title	President, Theta Pro2Serve Management Co., LLC						
Originator:	<table border="1"> <tr> <td>Name</td> <td>FORSHEY, CATHY D</td> </tr> </table>	Name	FORSHEY, CATHY D				
Name	FORSHEY, CATHY D						

	Phone	(740) 897-3878		
	Title	QA SPECIALIST		
HQ OC Notification:	Date	Time	Person Notified	Organization
	NA	NA	NA	NA
Other Notifications:	Date	Time	Person Notified	Organization
	01/20/2009	10:30 (ETZ)	Tony Takacs	DOE
	01/20/2009	11:30 (ETZ)	Clarence Sheward	TPMC
Authorized Classifier(AC):	Henry Thomas		Date: 01/21/2009	

2)Report Number:	EM--PPPO-UDS-PGDPDUCON-2009-0001 After 2003 Redesign		
Secretarial Office:	Environmental Management		
Lab/Site/Org:	Paducah Gaseous Diffusion Plant		
Facility Name:	Paducah Duf6 Conversion Plant		
Subject/Title:	Workers Discover Improperly Terminated Electrical Wire		
Date/Time Discovered:	01/13/2009 10:55 (ETZ)		
Date/Time Categorized:	01/13/2009 13:03 (ETZ)		
Report Type:	Notification		
Report Dates:	Notification	01/15/2009	17:45 (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:	<p>SUMMARY:</p> <p>At approximately 1055 EST, two Operators discovered a black wire that had not been properly terminated while performing leak testing of the Instrument Air System (IAS). The black wire was insulated with exception of the very end; where the bare conductor had come in contact with an instrument air system pipe. At the time of discovery, the wire was energized with 110 volt</p>		

A.C. As the color and size of the wire looked very similar to the nearby IAS tubing, both operators touched the insulated portion of the wire to ascertain it's purpose. Both operators indicated that it was warm to the touch and witnessed a spark as it's exposed end was moved away from the piping; that it had rested against. There were no personnel injuries and neither operator came in contact with hazardous energy. Furthermore, neither operator felt an "electrical shock" sensation, but rather only the heat emanating through the insulation to their fingers. The operators immediately stopped work and notified supervision.

BACKGROUND:

The Operator/Technicians were performing leak checks per an approved work package and were wearing prescribed personal protective equipment. They were spraying a soap and water solution on pipe joints and noticed a black wire, which was thought to be a low pressure plastic tube. The Operator/Technicians assumed the tube to be of no hazard and made contact to determine it's purpose. The tube was hot to the touch. Upon examination, it was determined that the tube was actually an electrical wire and was energized. It was later found that the wire was intended to supply control power to a nearby dryer control panel.

Cause Description:

Operating Conditions:

Does not apply.

Activity Category:

Facility/System/Equipment Testing

Immediate Action(s):

1. All leak testing work was stopped and supervision was notified.
2. Access to the area was controlled.
3. UDS Senior Management and the DOE FR were immediately notified.
4. All electrical sources in area of event were de-energized.
5. Because there was some communication errors with regard to whether the Operators were exposed to hazardous energy, both were taken to occupational medical facility for precautionary evaluation.
6. An Initial Event Report was issued with preliminary event information. A follow-up notice was issued stating that the Operator/Technicians were medically cleared (no injuries) and that there was not actually an electrical contact, only a thermal contact due to resistance heating of the wire.
7. A walk down of the IAS skid-mounted equipment was performed to confirm that no other wires/tubing was left in a similar condition.
8. Photographs were taken of the wires and control panel.
9. Electrical components of the system were placed under LOTO.
10. A fact finding review of the work control documents was conducted.
11. A Finding of Fact meeting was convened with attendees from construction, operations, and senior management, and DOE.
12. An extent of condition evaluation was commenced.
13. A condition report was initiated to track corrective actions.
14. A crew briefing was conducted to inform Operations and Maintenance workers of the event and its contributing factors.

	15. The power cable to the air dryers was properly terminated and the terminal box was identified.						
FM Evaluation:							
DOE Facility Representative Input:							
DOE Program Manager Input:							
Further Evaluation is Required:	No						
Division or Project:	Uranium Disposition Services, LLC						
Plant Area:	D-Area						
System/Building/Equipment:	Instrument Air System/C-1300						
Facility Function:	Uranium Conversion/Processing and Handling						
Corrective Action:							
Lessons(s) Learned:							
HQ Keywords:	01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01B--Inadequate Conduct of Operations - Loss of Configuration Management/Control 01Q--Inadequate Conduct of Operations - Personnel error 07D--Electrical Systems - Electrical Wiring 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12C--EH Categories - Electrical Safety 14D--Quality Assurance - Documents and Records Deficiency 14E--Quality Assurance - Work Process Deficiency						
HQ Summary:	On January 13, 2009, two operators were leak testing instrument air systems when they discovered a black wire that had not been properly terminated. They initially believed that it was a low pressure plastic tube. When they touched it, they found it was warm to the touch. Upon examination, it was determined that the tube was actually an electrical wire and was energized. It was later found that the wire was intended to supply control power to a nearby dryer control panel. The operators had experienced a thermal contact due to resistance heating of the wire. There was no electrical shock or injury.						
Similar OR Report Number:							
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td>VEAZEY, RICHARD R</td> </tr> <tr> <td>Phone</td> <td>(270) 462-3436</td> </tr> <tr> <td>Title</td> <td>CYLINDER OPERATIONS MANAGER</td> </tr> </table>	Name	VEAZEY, RICHARD R	Phone	(270) 462-3436	Title	CYLINDER OPERATIONS MANAGER
Name	VEAZEY, RICHARD R						
Phone	(270) 462-3436						
Title	CYLINDER OPERATIONS MANAGER						
Originator:	<table border="1"> <tr> <td>Name</td> <td>ROBERSON, REGINA WAYNETTE</td> </tr> <tr> <td>Phone</td> <td>(270) 462-3560</td> </tr> <tr> <td>Title</td> <td>COMPLIANCE OFFICER</td> </tr> </table>	Name	ROBERSON, REGINA WAYNETTE	Phone	(270) 462-3560	Title	COMPLIANCE OFFICER
Name	ROBERSON, REGINA WAYNETTE						
Phone	(270) 462-3560						
Title	COMPLIANCE OFFICER						

HQ OC Notification:	Date	Time	Person Notified	Organization
	01/13/2009	11:15 (ETZ)	Bob Goldsmith	DOE
Other Notifications:	Date	Time	Person Notified	Organization
	01/13/2009	11:05 (ETZ)	Dave Kent	UDS
	01/13/2009	11:07 (ETZ)	Barry Tilden	UDS
	01/13/2009	11:07 (ETZ)	Paul Kreitz	UDS
	01/13/2009	11:07 (ETZ)	Greg Bazzell	DOE
Authorized Classifier(AC):	M. Stanley Date: 01/15/2009			

3)Report Number:	EM-ID--BBWI-AMWTF-2009-0001 After 2003 Redesign		
Secretarial Office:	Environmental Management		
Lab/Site/Org:	Idaho National Laboratory		
Facility Name:	ADVANCED MIXED WASTE TREATMENT FAC		
Subject/Title:	Hazardous Energy Found While Working Under Lockout and Tagout Protection		
Date/Time Discovered:	01/07/2009 18:00 (MTZ)		
Date/Time Categorized:	01/07/2009 18:39 (MTZ)		
Report Type:	Update/Final		
Report Dates:	Notification	01/08/2009	18:27 (ETZ)
	Initial Update	02/19/2009	14:59 (ETZ)
	Latest Update	02/19/2009	14:59 (ETZ)
	Final		
Significance Category:	2		
Reporting Criteria:	<p>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.</p> <p>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 2 occurrence)</p>		
Cause Codes:	A1B3C01 - Design/Engineering Problem; Design / documentation LTA; Design/documentation not complete A1B3C02 - Design/Engineering Problem; Design / documentation LTA;		

	<p>Design/documentation not up-to-date</p> <p>A3B2C04 - Human Performance Less Than Adequate (LTA); Rule Based Error; Previous success in use of rule reinforces continued use of rule -->couplet - A4B3C08 - Management Problem; Work Organization & Planning LTA; Job scoping did not identify special circumstances and/or conditions</p> <p>A4B3C09 - Management Problem; Work Organization & Planning LTA; Work planning not coordinated with all departments involved in task</p> <p>A5B3C02 - Communications Less Than Adequate (LTA); Written Communications Not Used; Not available or inconvenient for use</p>
ISM:	2) Analyze the Hazards
Subcontractor Involved:	No
Occurrence Description:	<p>On 01/07/09 at approximately 1800, a Maintenance Technician (MT) performing work to remove the Gas Generation Testing system from Characterization Building WMF-628 discovered energized wiring.</p> <p>The work involved removing two blower control switches downstream of an electrical power distribution panel. The blower control switches appeared to be connected in series. A Lockout and Tagout had been applied and safe-to-work checks for hazardous energy were completed satisfactorily. The MT had successfully removed the wiring and conduit between the power distribution panel and the first blower control switch. Believing all hazardous energy was now removed from the downstream circuit the MT proceeded to cut three wires in the first blower control switch that connected to the second blower control switch. The wires were cut one at a time. The MT then cut the three wires entering the second blower control switch, again the wires were cut one at a time. After removing a section of the conduit connecting to the second blower control switch the MT again cut the three wires only this time he cut all three of them at the same time. The MT observed what appeared to be a low voltage spark and the wires, under tension, retracted into the remaining conduit. Not being able to take a voltage reading on the three wires at the second blower control switch, the MT returned to the first blower control switch and using a meter discovered 117 volts on the three cut wires. The MT was wearing leather gloves, hard hat and safety glasses during wire cutting activities. No personnel were injured, the MT did not receive an electrical shock.</p>
Cause Description:	<p>The root cause analysis was conducted using Change Analysis. This methodology implements a direct questioning technique to analyze for the existence of any differences in conditions, activities, times, locations, actions and personnel that could have had an effect on the event in consideration of a comparable activity or equipment that did not have resulting undesired consequences. Using this method and approach the following Root Cause and Contributing Causes were determined:</p> <p>Root Cause</p>

1. Drawings associated with this event were found to be inaccurate. Additional drawings were found, but were also inaccurate although they did contain more information. These additional drawings were located in the Idaho National Laboratory (INL) electronic document management system (EDMS) versus the AMWTP EDMS.

A1-Design/Engineering Problem;B3-Design/documentation LTA
;CO1 Design/documentation not complete

A1-Design/Engineering Problem;B3-Design/documentation LTA
;CO2 Design/documentation not up to date

Contributing Cause(s) of the Problem:

1. Personnel involved in the work to be performed are not required to be in attendance for the job walk down, the lockout and tagout, or safe to work checks. The job walk down should be a time for employees to familiarize themselves with the work to be performed, the system in which they will be working and to identify any last minute hazards that should be mitigated or eliminated.

A4-Management Problem;B3-Work Organization & Planning LTA;C09
Work planning not coordinated with all departments involved in task

2. Not all System Engineers are aware of the differences and limitations associated with AMWTP designed facilities and drawings versus the government furnished equipment (GFE) and drawings. Nor are they aware that additional design documents are available from the INL EDMS that are not found in the AMWTP EDMS.

A5-Communications Less Than Adequate (LTA);B3-Written
Communications Not Used;C02-Not available or inconvenient for use

3. Indicators were not recognized as identifying multiple power sources. Based on decisions made using the inaccurate drawing by work control, the level of rigor applied during the walkdown by work control, and the high level of confidence in the work control process by the maintenance technician (MT), opportunities to identify the other power source were overlooked and lost.

A3-Human Performance Less Than Adequate (LTA);B2-Rule Based
Error;C04-Previous success in use of rule reinforced continued use of rule
A4-Management Problem;B3-Work Organization & Planning LTA;C08-Job
scoping did not identify special circumstances and/or conditions

4. Human Performance precursors

Lack of proficiency/inexperience: Nuances of AMWTP design history are not well disseminated. The MT felt very safe in his work environment, but had he been familiar with the possibility that the job parameters could be based on inaccurate drawings, he may have increased his situational awareness and questioning attitude.

Inaccurate risk perception: While many consider a "zero energy check" to be a good work practice every time electrical work is performed, the MT did not complete a "zero energy check" at the blower switches. This is based in part on his trust with AMWTP processes, which led him to believe that

	<p>everything was done properly, as well as not being a required component of the work.</p> <p>Unexpected equipment conditions: With both inaccurate drawings and a walkdown that did not incorporate the system engineers or the MT performing the work, the additional energy source was not identified.</p> <p>A3-Human Performance Less Than Adequate (LTA);B2-Rule Based Error;C04-Previous success in use of rule reinforced continued use of rule A4-Management Problem;B3-Work Organization & Planning LTA;C08-Job scoping did not identify special circumstances and/or conditions</p>		
Operating Conditions:	Gas Generation Testing system was being dismantled.		
Activity Category:	Facility Decontamination/Decommissioning		
Immediate Action(s):	All work on the Gas Generation Testing system was stopped. The area was roped off to prevent personnel entry.		
FM Evaluation:	<p>Prior to continuing with dismantling the Gas Generation Testing system the Engineering Manager will ensure an investigation into the source of the unidentified electrical energy is completed and the energy isolated.</p> <p>02/19/09 - Update report has been submitted as final report. Roy McCarthy DOE-ID FR notified 02/19/09 1300.</p>		
DOE Facility Representative Input:			
DOE Program Manager Input:			
Further Evaluation is Required:	No		
Division or Project:	AMWTP		
Plant Area:	Waste Characterizati		
System/Building/Equipment:	Gas Generation Testing		
Facility Function:	Nuclear Waste Operations/Disposal		
Corrective Action 01:	<table border="1"> <tr> <td>Target Completion Date:04/20/2009</td> <td>Tracking ID:42843</td> </tr> </table>	Target Completion Date: 04/20/2009	Tracking ID: 42843
Target Completion Date: 04/20/2009	Tracking ID: 42843		
	Corrective actions are listed separately and attached to CAR-42843		
Lessons(s) Learned:	<p>When transferring Government Furnished Equipment between contractors, due diligence is required of all involved parties to ensure a complete and accurate set of drawings is provided to the receiving contractor.</p> <p>When working on electrical equipment under lockout and tagout protection, zero energy checks should be performed in all panels in which work will be performed.</p>		
HQ Keywords:	<p>01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical)</p> <p>01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical)</p> <p>08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical)</p> <p>12K--EH Categories - Near Miss (Could have been a serious injury or</p>		

	fatality) 14E--Quality Assurance - Work Process Deficiency															
HQ Summary:	On January 7, 2009, a maintenance technician discovered energized wiring while removing two blower control switches downstream of an electrical power distribution panel. A lockout/tagout had been applied and safe-to-work checks for hazardous energy were completed satisfactorily. While cutting three wires at the same time, the technician observed what appeared to be a low voltage spark. A check with a meter indicated 117 volts on the three cut wires. No personnel were injured and the technician did not receive an electrical shock. All work was stopped.															
Similar OR Report Number:	1. EM-ID--BBWI-AMWTF-2006-0026															
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td colspan="3">SISSON, CLINTON E</td> </tr> <tr> <td>Phone</td> <td colspan="3">(208) 521-3523</td> </tr> <tr> <td>Title</td> <td colspan="3">AMWTP CHARACTERIZATION FAC. NUCLEAR</td> </tr> </table>				Name	SISSON, CLINTON E			Phone	(208) 521-3523			Title	AMWTP CHARACTERIZATION FAC. NUCLEAR		
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Phone	(208) 521-3523															
Title	AMWTP CHARACTERIZATION FAC. NUCLEAR															
Originator:	<table border="1"> <tr> <td>Name</td> <td colspan="3">SISSON, CLINTON E</td> </tr> <tr> <td>Phone</td> <td colspan="3">(208) 521-3523</td> </tr> <tr> <td>Title</td> <td colspan="3">AMWTP CHARACTERIZATION FAC. NUCLEAR</td> </tr> </table>				Name	SISSON, CLINTON E			Phone	(208) 521-3523			Title	AMWTP CHARACTERIZATION FAC. NUCLEAR		
Name	SISSON, CLINTON E															
Phone	(208) 521-3523															
Title	AMWTP CHARACTERIZATION FAC. NUCLEAR															
HQ OC Notification:	<table border="1"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Person Notified</th> <th>Organization</th> </tr> </thead> <tbody> <tr> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> </tr> </tbody> </table>				Date	Time	Person Notified	Organization	NA	NA	NA	NA				
Date	Time	Person Notified	Organization													
NA	NA	NA	NA													
Other Notifications:	<table border="1"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Person Notified</th> <th>Organization</th> </tr> </thead> <tbody> <tr> <td>01/07/2009</td> <td>18:39 (MTZ)</td> <td>Roy McCarthy</td> <td>DOE-ID</td> </tr> </tbody> </table>				Date	Time	Person Notified	Organization	01/07/2009	18:39 (MTZ)	Roy McCarthy	DOE-ID				
Date	Time	Person Notified	Organization													
01/07/2009	18:39 (MTZ)	Roy McCarthy	DOE-ID													
Authorized Classifier(AC):																

4)Report Number:	EM-RL--WCH-DND-2009-0001 After 2003 Redesign																	
Secretarial Office:	Environmental Management																	
Lab/Site/Org:	Hanford Site																	
Facility Name:	Decontamination & Decommissioning																	
Subject/Title:	Improper Use of a Power Tool in a Wet Environment																	
Date/Time Discovered:	01/05/2009 12:50 (PTZ)																	
Date/Time Categorized:	01/06/2009 15:00 (PTZ)																	
Report Type:	Notification/Final																	
Report Dates:	<table border="1"> <tr> <td>Notification</td> <td>01/08/2009</td> <td>19:41 (ETZ)</td> </tr> <tr> <td>Initial Update</td> <td>01/08/2009</td> <td>19:41 (ETZ)</td> </tr> <tr> <td>Latest Update</td> <td>01/08/2009</td> <td>19:41 (ETZ)</td> </tr> <tr> <td>Final</td> <td>01/08/2009</td> <td>19:41 (ETZ)</td> </tr> <tr> <td>Revision 2</td> <td>01/19/2009</td> <td>17:35 (ETZ)</td> </tr> </table>			Notification	01/08/2009	19:41 (ETZ)	Initial Update	01/08/2009	19:41 (ETZ)	Latest Update	01/08/2009	19:41 (ETZ)	Final	01/08/2009	19:41 (ETZ)	Revision 2	01/19/2009	17:35 (ETZ)
Notification	01/08/2009	19:41 (ETZ)																
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Latest Update	01/08/2009	19:41 (ETZ)																
Final	01/08/2009	19:41 (ETZ)																
Revision 2	01/19/2009	17:35 (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:	A3B2C05 - Human Performance Less Than Adequate (LTA); Rule Based Error; Situation incorrectly identified or represented results in wrong rule used -->couplet - A4B3C08 - Management Problem; Work Organization & Planning LTA; Job scoping did not identify special circumstances and/or conditions
ISM:	4) Perform Work Within Controls
Subcontractor Involved:	Yes WM Dickson
Occurrence Description:	<p>On 01/05/2009, a Washington Closure Hanford (WCH) subcontractor laborer was tasked with removing outdoor metal air ducts on the roof with the 109N Building. The 109N Building is currently undergoing decommissioning and demolition. Due to recent inclement weather, the duct and surrounding roof top was covered with ice and snow. Removal of the ducting required the use of a hand-held reciprocating saw and electric metal shears. Power to the saw and shears was provided via a portable junction box that was equipped with a Ground Fault Circuit Interrupter (GFCI).</p> <p>The Laborer had been cutting and removing duct work all morning and then went to lunch. At approximately 1250 hrs, the laborer returned to the duct work, cleared some of the snow on top of the ducting and began cutting into the duct with the metal shears. A few minutes into the job, the laborer felt a minor tingling sensation in the right hand (this is the hand holding the shears), followed by a second tingling sensation in the right hand and also in the left leg. The left leg was in contact with the duct during the cutting activity. The laborer stopped work and reported the incident to supervision.</p>
Cause Description:	<p>Apparent Cause analysis was conducted with information from the fact finding meeting, equipment testing and the results of the post event investigations.</p> <p>The investigation determined the Laborer was working in wet conditions in Level D Personal Protective Equipment, which included leather gloves and personal work pants. The Laborer stated the work pants had a hole in the pant leg, which exposed some of his skin. At the time of the event the pants and leather work gloves were in a wet condition. The snowy and wet</p>

conditions on the roof of the building were not evaluated prior to assigning the work. This situation can be changed by improving the Job Hazards Analysis (JHA) so that the water in the work space is properly addressed to avoid an electrical event. The employees will also receive re-fresher training on the use of electrical tools. Management will provide a briefing on the revised task instructions.
(Corrective Actions 1-4)

During the fact finding meeting the subcontractor's management stated the metal shears were issued without reviewing the shear's printed "Safety Rules". Also the subcontractor did not meet a portion of the Job Hazards Analysis (JHA) as it relates to water in the work area. However, the subcontractor did take steps to protect the connectors for the power extensions cords which were elevated above the snow and standing water on the roof. Future situations like this will be avoided by improving the JHA with regards to electrical tool use and the control of water in the work space.
(Corrective Actions 6)

During the review of the metal shear's printed "Safety Rules", the user is instructed to "Prevent body contact with grounded surfaces". Also the user is instructed "Not to expose power tools to rain or snow and not to use power tools in damp or wet locations". The Work Package (ISS-08-10-15-001, Rev. 0) applied to this job contains a Job Hazards Analysis (JHA) that outlines the use of power tools and prevention of electrical shock. The JHA states to "Clean up areas of water accumulation within work areas to minimize the potential for electrical shock and / or shorts in power cord connections. In the same JHA, a WCH Lessons Learned regarding using power tools in wet conditions was also referred to (RCCC-06-0009). The subcontractor failed to review the "Safety Rules", the Lessons Learned and the "Use of Power Tools" portion of the JHA prior to commencing the work evolution. This event is very similar to the event mentioned in the Lessons Learn noted above. The time and training applied during a productive pre-evolution briefing will help to prevent future electrical events.
(Corrective Actions 1-4)

WCH electricians safely reconstructed the event scene. The source of the mild tingle the Laborer felt was isolated to small amount of "leaking current" from the brush vents in the body of the metal shears. The brush vents are directly above the grasping area on the handle of the metal shears. The moisture on the shear's handle and the wet gloved hand was close enough to the brush vents to allow leaking current to be felt by the Laborer. The Laborer also reported a tingle in his leg which was braced against the wet metal duct. The tingle on his leg was the same area where his wet skin was exposed through the hole in his pants. The electricians determined that the GFCI is designed to trip at less than 5 milli-amps. However the Laborer reported feeling a slight tingle which has been estimated by the electricians

	<p>to be less than 3 milli-amps. After the initial tingle the Laborer continued to cut the metal, which resulted in the second encounter. The Laborer did not recognize that his wet leather gloves should not have been used while operating an electrical hand tool. The subcontractor management did not correctly identify that the hazards of working with electrical tools in a wet environment.</p> <p>The conclusion to the apparent cause analysis is that the subcontractor's management allowed the Laborer to work with electrical tools in a wet condition, which is a violation of the JHA for this work evolution. Also subcontractor's management did not review metal shear's manual of Safety Rules before issuing the tool for work to the Laborer. The Laborer had the opportunity to identify the wet work conditions prior to beginning work with any electrical tools. (Corrective Actions 1-4,6)</p>
Operating Conditions:	N/A
Activity Category:	Facility Decontamination/Decommissioning
Immediate Action(s):	<p>Management directed the laborer to be evaluated by the on-site medical provider and was determined to be uninjured.</p> <p>Management also directed electricians to test the shears, power cords, and junction box. The shears were determined to be new and in good working condition. The power cords were found to be undamaged and also in good working order. The junction box and internal GFCI was found to be dry and working properly.</p> <p>WCH management notified the DOE Facility Representative and scheduled a fact-finding investigation.</p> <p>WCH management restricted the subcontractor from performing all electrical related work until the subcontractor's work process improvements are complete and approved by WCH Project Management.</p>
FM Evaluation:	When changes of conditions occur at the job site such as the introduction of new tools and / or inclement weather, managers and supervisors should review the JHA to ensure work is conducted in a safe manner. They should also incorporate into the JHA any information related to manufacturers safety rules for using tools.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	D4 OPERATIONS

Plant Area:	100 N Area
System/Building/Equipment:	Electric Hand Held Metal Shears
Facility Function:	Environmental Restoration Operations
Corrective Action 01:	Target Completion Date: 01/22/2009 Tracking ID: IF 2009-0001
	Train WM Dickson employees on Electric power tool use safety.
Corrective Action 02:	Target Completion Date: 01/22/2009 Tracking ID: IF 2009-0001
	Review this event and other previous related events with WM Dickson Employees.
Corrective Action 03:	Target Completion Date: 02/27/2009 Tracking ID: IF 2009-0001
	Strengthen the implementation of the pre-evolution briefings for WM Dickson work.
Corrective Action 04:	Target Completion Date: 01/13/2009 Tracking ID: IF 2009-0001
	Issue a Subcontractor Deficiency Report detailing corrective actions 1 through 3, and transmit it to the subcontractor.
Corrective Action 05:	Target Completion Date: 02/27/2009 Tracking ID: IF 2009-0001
	WM Dickson will suspend all electrical work until process improvements are complete and approved by Project Management and electrical work is released by the D4 Project Director.
Corrective Action 06:	Target Completion Date: 02/27/2009 Tracking ID: IF 2009-0001
	Perform modifications to the subject task instructions and JHA involving electrical work hazards and corresponding controls, to ensure that requirements and precautions in user's manuals are fully incorporated.
Lessons(s) Learned:	WCH Lesson Learned RCCC-06-0009
HQ Keywords:	01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01F--Inadequate Conduct of Operations - Training Deficiency 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 01Q--Inadequate Conduct of Operations - Personnel error 01R--Inadequate Conduct of Operations - Management issues 08A--OSHA Reportable/Industrial Hygiene - Electrical Shock 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 11D--Other - Natural Phenomena 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14B--Quality Assurance - Training and Qualification Deficiency 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On January 5, 2009, a subcontractor laborer was removing outdoor metal air ducts on the roof of the 109N Building with a hand-held reciprocating saw

and electrical metal shears. The duct and surrounding roof top was covered with ice and snow. While cutting with the shears, the laborer felt a minor tingling sensation in the right hand (i.e., the hand holding the shears), followed by a second tingling sensation in the right hand and also in the left leg. The left leg was in contact with the duct during the cutting activity. The laborer stopped work and reported the incident to supervision. The laborer failed to follow safety rules for using electrically powered hand tools in a wet environment.

Similar OR Report Number: 1. EM-RL--WCH-DND-2006-0006
2.

Facility Manager:	Name	SMITH, BOB
	Phone	(509) 372-9411
	Title	DIRECTOR, D4 OPERATIONS

Originator:	Name	Teller, Donald S
	Phone	(509) 372-9722
	Title	OCCURRENCE INVESTIGATOR

HQ OC Notification:	Date	Time	Person Notified	Organization
	NA	NA	NA	NA

Other Notifications:	Date	Time	Person Notified	Organization
	01/05/2009	13:15 (PTZ)	Joe Waring	DOE FR
	01/06/2009	15:17 (PTZ)	Gary Trump	DOE ONC

Authorized Classifier(AC):

5)Report Number: [NA--LSO-LLNL-LLNL-2009-0006](#) 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: Unauthorized Work On Lighting Switch In Building 453 Office

Date/Time Discovered: 01/29/2009 14:00 (PTZ)

Date/Time Categorized: 01/29/2009 14:30 (PTZ)

Report Type: Notification

Report Dates:	Notification	01/30/2009	16:36 (ETZ)
	Initial Update		
	Latest Update		
	Final		

Significance Category: 3

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 3 occurrence)
Cause Codes:	
ISM:	
Subcontractor Involved:	No
Occurrence Description:	On Tuesday, January 27, 2009, at approximately 1:45 PM, a Computation facility management representative responded to an office request in Building 453. Upon entering the office the facility management representative noticed that the office occupant had removed the light switch plate and light switch from the wall. Upon questioning the office occupant, the office occupant indicated he had adjusted the setting knob on the back of the switch. Live electrical wires were present, but not readily accessible during this adjustment. There was no personnel injury/shock or damage to any equipment. An investigation has been initiated.
Cause Description:	
Operating Conditions:	Does not apply
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	The facility management representative replaced the faceplate back on the wall unit and instructed the office occupant to not remove again. The facility management representative contacted the Computation Facility Manager and reported the incident.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Computations Management By When: 03/15/2009
Division or Project:	S&T
Plant Area:	Site 200
System/Building/Equipment:	Building 453 Office Light Switch/Sensor
Facility Function:	Balance-of-Plant - Offices
Corrective Action:	
Lessons(s) Learned:	

HQ Keywords: 01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous)
 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical)
 01Q--Inadequate Conduct of Operations - Personnel error
 12C--EH Categories - Electrical Safety
 14E--Quality Assurance - Work Process Deficiency

HQ Summary: On January 27, 2009, a Computation Facility Management representative entered an office in Building 453 and saw that an office occupant had removed a light switch plate and light switch from the wall. Upon questioning, the office occupant indicated that he had adjusted the setting knob on the back of the switch. Energized electrical wires were present but not readily accessible during the adjustment. There was no personnel injury/shock or damage to any equipment. An investigation has been initiated.

Similar OR Report Number:

Facility Manager:

Name	Dona L. Crawford
Phone	(925) 422-1985
Title	Computations Associate Director

Originator:

Name	FREEMAN, JEFFREY W
Phone	(925) 424-6787
Title	OCCURRENCE REPORTING

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
01/29/2009	14:30 (PTZ)	Scott McAllister	LEDO
01/29/2009	14:35 (PTZ)	Lois Marik	NNSA/LSO
01/29/2009	14:45 (PTZ)	Tracey Simpson	ESH TL

Authorized Classifier(AC):

6)Report Number: [NA--PS-BWP-PANTEX-2009-0001](#) After 2003 Redesign
Secretarial Office: National Nuclear Security Administration
Lab/Site/Org: Pantex Plant
Facility Name: Pantex Plant
Subject/Title: Discovery of Unexpected Energized Conductor
Date/Time Discovered: 01/10/2009 14:02 (CTZ)
Date/Time Categorized: 01/10/2009 15:02 (CTZ)
Report Type: Update

Report Dates:	Notification	01/13/2009	08:44 (ETZ)
	Initial Update	02/24/2009	18:34 (ETZ)
	Latest Update	02/24/2009	18:34 (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 Tri-State General Contractor and Duke Electric Subcontractor		
Occurrence Description:	<p>Update Report to provide status:</p> <p>After the initial ORPS report was submitted, a Causal Factors Analysis (CFA) process was selected as the appropriate approach to conduct a thorough evaluation of this event. A CFA team has been assembled and daily meetings are being conducted to include involved personnel interviews, identification of an extensive event timeline, assembly of detailed event flow charts and entering the development of judgment of needs with initial draft report writing started.</p> <p>CFA is an extensive form of cause analysis requiring the CFA team to understand associated processes and interfaces involving several divisions and includes our subcontractors. Then, the CFA team investigates the event to further identify the points in the process where work performed was different than work as planned, and ultimately, the team determines conditions in place that allowed a gap to develop between work as planned and work as performed.</p> <p>Due to the in depth and rigorous nature of the CFA process including final report development and approvals it is expected that the final ORPS report submittal will occur on or before March 31, 2009.</p> <p>Initial Event Descriptor: On January 10, 2009 a B&W subcontractor discovered an energized 110 volt electrical conductor that was previously thought to be deenergized.</p> <p>Power to this facility was provided from electrical panel A, circuit 8, which</p>		

fed electrical panel K and controlled the section of the facility being worked including the affected facilities Fire Alarm Control Panel (FACP). B&W Pantex Electrical Technicians conducted Lock-Out / Tag-Out (LOTO) of the panel A, circuit 8 and validated the absence of power on all related panels and circuits.

This FACP provides fire monitoring protection for five (5) other facilities. In order to continue to provide fire detection coverage, Fire Protection Engineers had reviewed the panel and approved a process to provide temporary power to the FACP. This process was based on similar prior processes that had been successfully used to provide temporary power installation in order to maintain fire monitoring protection coverage.

B&W Pantex Fire Protection Technicians and Crafts Electrical Technicians validated the subcontractor's successful connection of the temporary power to the FACP as directed. Upon completion, the FACP cover was installed and the technicians left the area. Installation of the temporary fire protection allowed the subcontractor to return to work. While wearing approved and appropriate Personal Protective Equipment, the contractor began to prepare the wiring for connection at a junction box. This preparation required that the wiring be cut and the surrounding insulation removed for proper mechanical and electrical connections. While cutting the conductor, the subcontractor observed a spark, heard a pop and noticed that adjacent lighting was terminated. Realizing that he had cut through an energized line, the subcontractor stopped work and made appropriate notifications.

There was no personnel injury, no damage to facility or equipment, or no threat to security or the environment as a result of this event.

Cause Description:

Operating Conditions:

A normal operation, work was conducted over a weekend while no-one was in the affected facility.

Activity Category:

Construction

Immediate Action(s):

Upon discovery the subcontractor stopped work and notified the attending Project Subcontract Technical Representative (PSTR). Upon notification, the PSTR contacted his Department Manager and the Operations Center (OC). The OC subsequently notified B&W Pantex Duty Manager, Environmental Safety and Health, B&W Pantex Crafts Electrical Safety and others as applicable.

B&W Pantex Crafts Electrical Technicians were dispatched to the area to determine the cause of this event. The area was cordoned off to prevent any possible unintentional access. Within a couple hours of the event, the B&W Pantex Electricians placed the affected circuit in a safe configuration.

B&W Pantex Safety personnel responded and took photos of the scene and

	acquired statements from all witnesses.		
	An event critique was conducted on January 12, 2009 @ 10:00 A.M.		
FM Evaluation:	<p>Although the CFA team has been meeting daily, the rigor involved with event analysis within the CFA process to ensure accurate information is identified is detailed and time consuming. The CFA team has progressed to development of judgment of needs and initial draft report writing.</p> <p>The goal of the CFA is to identify all factors involved with this event, thorough review of similar issues and eventual determination of corrective actions to prevent recurrence.</p>		
DOE Facility Representative Input:			
DOE Program Manager Input:			
Further Evaluation is Required:	<p>Yes. Before Further Operation? No By Whom: Ron McNabb By When:</p>		
Division or Project:	Projects Division		
Plant Area:	Zone 12 North		
System/Building/Equipment:	Zone 12 North		
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)		
Corrective Action:			
Lessons(s) Learned:			
HQ Keywords:	<p>01B--Inadequate Conduct of Operations - Loss of Configuration Management/Control 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14D--Quality Assurance - Documents and Records Deficiency 14E--Quality Assurance - Work Process Deficiency</p>		
HQ Summary:	On January 10, 2009, a subcontract worker discovered an energized 110 volt electrical conductor, previously thought to be deenergized, while working on fire alarm control panel installation. The worker observed a spark, a pop, and the termination of adjacent lighting when he cut the conductor. There was no injury or electrical shock. Management notifications were made and a critique was held.		
Similar OR Report Number:			
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td>Ian Hughes</td> </tr> </table>	Name	Ian Hughes
Name	Ian Hughes		

	Phone	(806) 477-7530		
Originator:	Name	MCNABB, RON O		
	Phone	(806) 477-6855		
	Title	SUPPORT REPRESENTATIVE		
HQ OC Notification:	Date	Time	Person Notified	Organization
	01/10/2009	15:02 (CTZ)	Earl Burkholder DOE	PXSO
Other Notifications:	Date	Time	Person Notified	Organization
	01/10/2009	15:02 (CTZ)	Tyfani Lanier	B&W
Authorized Classifier(AC):	Robert Barr	Date: 02/24/2009		

7)Report Number:	NA--PS-BWP-PANTEX-2009-0004 After 2003 Redesign			
Secretarial Office:	National Nuclear Security Administration			
Lab/Site/Org:	Pantex Plant			
Facility Name:	Pantex Plant			
Subject/Title:	Zone 4 MAA Office of Secure Transportation (OST) Trailer Power Plug			
Date/Time Discovered:	01/29/2009 14:55 (CTZ)			
Date/Time Categorized:	01/29/2009 15:00 (CTZ)			
Report Type:	Notification			
Report Dates:	Notification	02/02/2009	09:47 (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:	2) Analyze the Hazards 3) Develop and Implement Hazard Controls 4) Perform Work Within Controls 5) Provide Feedback and Continuous Improvement			
Subcontractor Involved:	No			
Occurrence Description:	On January 29, 2009 following a critique a determination was made that a			

	<p>near miss occurred where no barrier or only one barrier prevented an event from having a reportable consequence occurred on January 23. When a Garage Mechanic moved the electrical cord cap and heard an arcing noise.</p> <p>On January 23, at approximately 0030 the Operations Center (OC) notified Vehicle Maintenance Facility (VMF) Supervision the green light on an Office of Secure Transportation (OST) trailer staged in Zone 4 MAA Pad #3 was not illuminated. The VMF Supervisor sent two Garage Mechanics to Zone 4 MAA Pad #3 at about 0730 hrs to investigate the reported issue with the OST trailer. It had been reported that the green OST power light was not illuminated. Upon arriving at the area the Garage Mechanics noted that the Green OST trailer power light was not illuminated but the red indicator light on the station that feeds power to the trailer was illuminated. The Garage Mechanics then opened the generator door on the trailer and noted the indicators on the generator showed that there was no power to the trailer. One of the Garage Mechanics then checked the power cord to the trailer to assure that it was plugged in completely. When the Garage Mechanic moved the cord cap he heard an arcing noise and immediately released the cord. The Garage Mechanics opened the power disconnect that feeds the cord and left the area. They notified the Security Police Officer working the Zone 4 MAA security gate of the situation and returned to the VMF to notify VMF supervision. The OC was notified and Industrial Safety and Electric shop Management personnel evaluated the incident. A Lock-out Tag-out (LO/TO) was installed until the investigation is completed and the problem corrected.</p> <p>A preliminary critique held January 26th and a follow on critique on January 29th gathered all pertinent information for this issue. The critique held on the 29th determined that this issue met ORPS report-ability.</p>
Cause Description:	
Operating Conditions:	The OST Trailer pads have no condition modes
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	<p>B&W Security, Industrial Safety, Vehicle Maintenance Facility (VMF) and Electric Shop management were notified.</p> <p>LO/TO was applied.</p> <p>Operation Center, NNSA Duty Officer and the Facility Representative were notified.</p>
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	Manufacturing

Plant Area:	Zone 4														
System/Building/Equipment:	Zone 4														
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)														
Corrective Action:															
Lessons(s) Learned:															
HQ Keywords:	07D--Electrical Systems - Electrical Wiring 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 January 23, 2009, while trying to determine why there was no electrical power to an OST trailer, a garage mechanic heard an arcing noise when he moved the cord cap on the power cord to the trailer to see if it was completely plugged in. The mechanic immediately released the cord. A lockout/tagout was installed on the power disconnect that feeds the cord until an investigation is completed and the problem corrected.														
Similar OR Report Number:															
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td colspan="3">Stephen Moore</td> </tr> <tr> <td>Phone</td> <td colspan="3">(806) 477-3463</td> </tr> <tr> <td>Title</td> <td colspan="3">B&W PANTEX Facility Representative</td> </tr> </table>			Name	Stephen Moore			Phone	(806) 477-3463			Title	B&W PANTEX Facility Representative		
Name	Stephen Moore														
Phone	(806) 477-3463														
Title	B&W PANTEX Facility Representative														
Originator:	<table border="1"> <tr> <td>Name</td> <td colspan="3">ASHLOCK, GARY G</td> </tr> <tr> <td>Phone</td> <td colspan="3">(806) 477-4018</td> </tr> <tr> <td>Title</td> <td colspan="3">BUSINESS SUPPORT REP.</td> </tr> </table>			Name	ASHLOCK, GARY G			Phone	(806) 477-4018			Title	BUSINESS SUPPORT REP.		
Name	ASHLOCK, GARY G														
Phone	(806) 477-4018														
Title	BUSINESS SUPPORT REP.														
HQ OC Notification:	<table border="1"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Person Notified</th> <th>Organization</th> </tr> </thead> <tbody> <tr> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> </tr> </tbody> </table>			Date	Time	Person Notified	Organization	NA	NA	NA	NA				
Date	Time	Person Notified	Organization												
NA	NA	NA	NA												
Other Notifications:	<table border="1"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Person Notified</th> <th>Organization</th> </tr> </thead> <tbody> <tr> <td>01/29/2009</td> <td>15:01 (CTZ)</td> <td>G. Rose NNSA/Fac. Rep.</td> <td>PXSO</td> </tr> </tbody> </table>			Date	Time	Person Notified	Organization	01/29/2009	15:01 (CTZ)	G. Rose NNSA/Fac. Rep.	PXSO				
Date	Time	Person Notified	Organization												
01/29/2009	15:01 (CTZ)	G. Rose NNSA/Fac. Rep.	PXSO												
Authorized Classifier(AC):	George Weathers Date: 02/02/2009														

8)Report Number:	NA--SS-SNL-NMFAC-2009-0001 After 2003 Redesign
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Sandia National Laboratories - SS
Facility Name:	SNL NM Site-wide F & M
Subject/Title:	Subcontractor Electrician Receives a Shock while Terminating Conductors in a New Uninterruptable Power Supply in Bldg. 890
Date/Time Discovered:	01/08/2009 15:30 (MTZ)
Date/Time Categorized:	01/08/2009 15:30 (MTZ)

Report Type:	Final		
Report Dates:	Notification	01/12/2009	18:36 (ETZ)
	Initial Update	02/19/2009	16:38 (ETZ)
	Latest Update	02/19/2009	16:38 (ETZ)
	Final	02/19/2009	16:38 (ETZ)
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:	A3B1C02 - Human Performance Less Than Adequate (LTA); Skill Based Errors; Step was omitted due to distraction -->couplet - A4B5C04 - Management Problem; Change Management LTA; Risks / consequences associated with change not adequately reviewed / assessed		
ISM:	4) Perform Work Within Controls		
Subcontractor Involved:	Yes B&D Electric (sub to ECI)		
Occurrence Description:	<p>On January 8, 2009, at approximately 1:30 p.m., an electrician working for an FMOC Electrical Subcontractor received a finger to finger shock while terminating conductors in a newly installed Uninterruptable Power Supply (UPS). The UPS is located in Building 890, room 2498. The Electrician and the UPS Manufacturer's Representative performed initial start-up activities to confirm that the unit was working correctly. Once the initial start-up was complete the Electrician de-energized and locked and tagged the 100 amp electrical circuit supplying power to the UPS, so conductors from the Emergency Push Off (EPO) switch could be terminated in the UPS.</p> <p>A two man crew comprised of two Journeyman Electricians installed the UPS and a momentary switch to operate the UPS emergency shutdown system. The momentary switch was located next the computer room exit. Journeyman #1 (electrician participating in the start-up activity) installed and terminated conductors in a momentary contact switch in a normally open configuration.</p> <p>It was later determined that to interface properly with the UPS emergency off circuitry the momentary switch would need to be replaced with an Emergency Push Off (EPO) switch. Journeyman #2 made the change out and terminated the conductors in the new EPO switch.</p>		

When Journeyman #1 took the wire nuts off the conductors from the EPO switch to perform the terminations the Journeyman received a left hand finger to finger shock. Subsequent testing identified that the 120 volt, 20 amp conductors from the EPO switch were energized.

Electrical power to the EPO is supplied by a separate circuit and was not de-energized when the 70 amp circuit supplying power to the UPS was de-energized and locked and tagged out. Journeyman #1 failed to identify the correct hazardous energy source supplying power to the UPS shunt trip and failed to verify electrical energy isolated prior to contacting the conductors. Failure to verify (test) is a violation of OSHA and NFPA LOTO requirements. Verification would have prevented this shock.

The shocked electrical contractor was a licensed journeyman with approximately 15 years of experience as an electrician with approximately 15 months experience at SNL.

Cause Description:

Critique/Fact Finding Performed 1/9/09

Timeline, Causal Factors Analysis

A3B1C02 Step was omitted due to distraction: The electrician terminating the conductors was focused on the start-up and did not focus on the de-energization process. The electrician isolated and locked and tagged out the incorrect breaker, isolating the 70 amp breaker supplying power to the UPS and not the 20 amp breaker supplying power to the EPO switch. Additionally, the electrician failed to perform verification (testing) of the conductors prior to performing the task that would place them in contact with the bare # 12 conductors. Performing verification (testing) as required by OSHA, NFPA, FMOC ES&H Specifications, and the Electrical Subcontractor's Contract Specific Safety Plan would have prevented this shock.

Couplet A4B5C04 Risks/consequences associated with change not adequately reviewed/assessed: When the electrician had previously performed work on the UPS and EPO circuits, LOTO had been performed on the bus duct breaker supplying power to the newly installed Panel P2L (installed as part of this project) or the main breaker in Panel P2L. De-energization of either the bus duct breaker or the Main breaker in Panel P2L isolates the 70 amp power to the UPS and the 20 amp power to the EPO switch which operated the UPS shunt trip. Instead of isolating at one of these locations, the electrician chose to isolate at the 70 amp beaker supplying power to the UPS, thinking at the time this would isolate the conductors that would be terminated to operate the UPS shunt trip. The 70 amp breaker did not isolate the EPO operating the shunt trip. The electrician had installed the UPS including the UPS shunt trip and knew that a separate 20 amp circuit supplied UPS shunt trip. Energy isolation verification (testing) would have

	<p>identified this error and prevented this shock.</p> <p>NOTE: The work being performed that day by the electrician and the manufacturer's representative did not expose them to the electrical circuit supplying power to the UPS. The termination strip where the EPO conductors needed to be terminated was isolated from the batteries and 70 amp AC power in the UPS. As a result, the 70 amp breaker did not require LOTO. The only work that resulted in exposure to energized parts was termination of the EPO circuit in the UPS.</p>
Operating Conditions:	Normal
Activity Category:	Construction
Immediate Action(s):	<p>Circuits were placed in a safe condition.</p> <p>The shocked electrician was taken to medical for evaluation and released to full duty.</p>
FM Evaluation:	<p>EOC Event # 9591</p> <p>DOE/SSO Early Notification Date & Time: EOC - 1/8/09 - 15:40 FR - Veronica Martinez - 1/8/09 - 15:35</p> <p>The Electrical Safety Subject Matter Expert provided the following Electrical Severity Index: Severity Score: 330 - Hazard Factor (energy): 10 - Environmental factor (dry): 0 - Shock proximity (within the prohibited approach boundary): 10 - Arc proximity: 0 - Thermal proximity: 0 - Injury (shock): 3.</p> <p>This shock is a perfect example of why we must ALWAYS perform step 6 in the LOTO process, Verify Energy Isolation. The Craftsperson understood the hazards and controls associated with the task, had the PPE, testing equipment, and LOTO training required to perform the task safely. Investigation identified that the two man crew had completed the installation of the new panel P2L, installation of the new UPS, installation and removal of the momentary switch, and installation of the EPO switch, following all the LOTO requirements. We should take this opportunity to remind ourselves and our electrical and non-electrical workers to; stay focused, errors can be dangerous even deadly when working around electrical energy.</p>
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	4000/Computer Room Upgrades

Plant Area:	Tech Area I	
System/Building/Equipment:	Uninterruptable Power Supply/Bldg. 890, Rm. 2498	
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)	
Corrective Action 01:	Target Completion Date: 02/06/2009	Actual Completion Date: 02/06/2009
	Department 4847 - The Electrical Subcontractor will provide the shocked electrician retraining on the contractor's LOTO procedures. [A3B1C02, A4B5C04]	
Corrective Action 02:	Target Completion Date: 02/12/2009	Actual Completion Date: 02/12/2009
	Department 4847 - The Electrical Subcontractor will share lessons learned with employees at safety meetings and through the subcontractor's Safety Bulletin [A3B1C02, A4B5C04]	
Corrective Action 03:	Target Completion Date: 05/01/2009	Actual Completion Date:
	Department 4844 - The Electrical Subcontractor will share lessons learned at the Facilities Management and Operations Center Quarterly Safety Meetings. Meetings include FMOC Prime and Subcontractors, FMOC Project Leaders, Construction Observers and ES&H Subject Matter Experts. [A3B1C02, A4B5C04]	
Corrective Action 04:	Target Completion Date: 05/01/2009	Actual Completion Date:
	Department 4800 - Lesson Learned will be shared with FMOC Maintenance Craftspeople. [A3B1C02, A4B5C04]	
Corrective Action 05:	Target Completion Date: 03/15/2009	Actual Completion Date: 02/24/2009
	Department 4800 - Lesson Learned will be shared through the SNL Corporate Lessons Learned Program. [A3B1C02, A4B5C04]	
Lessons(s) Learned:	<p>Title: Subcontractor Electrician Receives a Shock while Terminating Conductors in a New Uninterruptable Power Supply</p> <p>Lesson Learned Statement: Failure to perform step 6 in the LOTO process, Verify Energy Isolation (test) results in shock to construction electrical craftsperson.</p> <p>Discussion of Activities: An electrician working for an Electrical Subcontractor received a finger to finger shock while terminating conductors in a newly installed Uninterruptable Power Supply (UPS). The Electrician and the UPS Manufacturer's Representative performed initial start-up activities to confirm that the unit was working correctly.</p>	

Once the initial start-up was complete the Electrician de-energized and locked and tagged the 70 amp electrical circuit supplying power to the UPS, so conductors to the UPS shunt trip system could be terminated.

The UPS shunt trip wiring had been installed by two Journeymen Electricians. The installation was part of a project which included installation of a new Panel (P2L), a new UPS and an Emergency Push Off (EPO) switch to operate the UPS shunt trip (emergency shutdown) system.

When the Electrician removed wire nuts off the two #12 conductors from the EPO switch to perform the terminations the Electrician received a left hand finger to finger shock. Subsequent testing identified that the 120 volt, 20 amp conductors from the EPO were energized.

Electrical power to the EPO is supplied by a separate circuit and was not de-energized when the 70 amp circuit supplying power to the UPS was de-energized and locked and tagged out.

Analysis:

The electrician terminating the conductors was focused on the start-up and did not focus on the de-energization process. The electrician isolated and locked and tagged out the incorrect breaker, isolating the 70 amp breaker supplying power to the UPS and not the 20 amp breaker supplying power to the EPO switch. Additionally, the electrician failed to perform verification (testing) of the conductors prior to performing the task that would place them in contact with the bare # 12 conductors. Performing verification (testing) as required by OSHA, NFPA, FMOC ES&H Specifications, and the Electrical Subcontractor's Contract Specific Safety Plan would have prevented this shock.

Recommended Actions:

We should take this opportunity to remind ourselves and our electrical and non-electrical workers to; 1) stay focused, 2) follow all LOTO steps in the correct order, and 3) remember that errors made when working around energized electrical equipment and systems can be dangerous even deadly.

HQ Keywords:

01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical)
01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical)
08A--OSHA Reportable/Industrial Hygiene - Electrical Shock
11G--Other - Subcontractor
12C--EH Categories - Electrical Safety
14E--Quality Assurance - Work Process Deficiency

HQ Summary:

On January 8, 2009, a subcontractor electrician received a finger to finger shock when an energized 120 volt conductor was contacted while working

on a newly installed Uninterruptable Power Supply (UPS). The electrician and the UPS manufacturer's representative had performed initial start-up activities. The determination was then made that a switch required replacement. The electrician contacted the energized conductor during the switch replacement. This conductor was fed from another power source that had not been de-energized. The electrician was medically evaluated and returned to full duty. An investigation is ongoing.

Similar OR Report Number: 1. DP--YSO-BWXT-Y12CM-2003-0003
 2. DP-ALO-KO-SNL-2000-2000-0001
 3. SC-CH-AA-ANLE-ANLEET-2001-0002

Facility Manager:	Name	Carla Lamb
	Phone	(505) 844-1753
	Title	ES&H Coordinator - Facilities Management & Ops Ctr

Originator:	Name	LUCERO, JEWEELEE A
	Phone	(505) 845-4727
	Title	REPORTING ADMINISTRATOR

HQ OC Notification:	Date	Time	Person Notified	Organization
	NA	NA	NA	NA

Other Notifications:	Date	Time	Person Notified	Organization
	01/08/2009	15:30 (MTZ)	Jeff Quintenz	4800
	01/08/2009	15:30 (MTZ)	Michael Quinlan	4840
	01/08/2009	15:30 (MTZ)	Lynnwood Dukes	4820
	01/08/2009	15:35 (MTZ)	Veronica Martinez, FR	DOE/SSO

Authorized Classifier(AC): John Norwalk Date: 02/19/2009

9)Report Number:	SC--BSO-LBL-OPERATIONS-2009-0001 After 2003 Redesign		
Secretarial Office:	Science		
Lab/Site/Org:	Lawrence Berkeley Laboratory		
Facility Name:	Operations Division		
Subject/Title:	Failure to Follow LOTO Procedures During HSS Review - No injuries		
Date/Time Discovered:	01/29/2009 15:30 (PTZ)		
Date/Time Categorized:	01/29/2009 15:43 (PTZ)		
Report Type:	Notification		
Report Dates:	Notification	02/03/2009	21:13 (ETZ)
	Initial Update		
	Latest Update		

	Final		
Significance Category:	3		
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 3 occurrence)		
Cause Codes:			
ISM:	2) Analyze the Hazards 3) Develop and Implement Hazard Controls 4) Perform Work Within Controls		
Subcontractor Involved:	Yes Pacific Data Electric Co.		
Occurrence Description:	<p>During the week of January 26, 2009, DOE HSS reviewers and LBNL personnel observed four separate instances of LOTO procedural lapses. None resulted in injuries nor hazardous energy exposure.</p> <p>Incident 1: Building 83, fume hood blower maintenance On 01/26/2009, at approximately 0800, while performing maintenance work on fume hood blower, a Facilities maintenance technician skipped a step in the LOTO process. The technician was to work on blower BL-9 located on the roof of Building 83. This blower and a second blower (BL-19) served as main and backup blower to the fume hood. Each blower is controlled by a separate labeled disconnect safety switch. The switches are also connected to one controller that automatically starts the backup blower BL-19 if the main BL-9 is shut down. The controller has a 3-position switch located above the two disconnect safety switches. It resets the controller and allows for the restart of BL-9 and shut-down of BL-19.</p> <p>The only permissible way for a non-electrically-qualified worker to verify absence of hazardous energy in this equipment is to restart the blower using the 3-position switch. Since the technician wanted to keep the other blower (BL-19) in service while he performed the maintenance work on BL-9, he did not want to shut down the fume hood by LOTO both blowers. After shutting down BL-9 via the disconnect safety switch, he proceeded to perform his maintenance, bypassing the verification step in the process mentioned above.</p> <p>Incident 2: B62 machine room pump GP-007 On 01/26/2009 at approximately 1300, while holding a flashlight to assist an electrician in the replacement of a motor for a water pump at Building 62, a maintenance technician reached over the motor to reposition the</p>		

disconnected wires. By touching the wires, the technician had become part of the actual repair work. This required the worker to perform his/her own LOTO at the control point, in addition to LOTO already performed by the electrician. Although no hazard actually existed since the electrician's lock was properly in place, the technician's touching the 0-energy wires without performing LOTO first was nonetheless not in accordance with the LBNL established Lockout/Tagout procedure. There were no injuries nor hazardous energy exposure.

Incident 3: B 50 Library Renovation:

At approximately 0800 on 01/27/2009, an LBNL Facilities electrician and a subcontractor (Pacific Data Electric Co.) electrician performed respective LOTO to de-energize an electrical panel in the Building 50 Library. This is done in preparation for adding a sub-panel as part of the library renovation project. After the LBNL electrician conducted meter verification and verified 0-energy at the panel, the subcontractor then used his own meter to check for 0-energy as an added precautionary step. Since the panel had already been verified as 0-energy and properly LOTO'd, this was thought as a redundancy verification. The subcontractor did not perform meter verification to ensure the meter is functioning properly prior to and after the 0-energy verification. There was no exposure to hazardous energy.

Incident 4: B-72B Electronmicroscope, TEAM 1.0 Project

On 01/27/2009 at approximately 0800, a subcontractor (Pacific Data Electric Co.) apprentice electrician forgot to perform LOTO prior to start of work. There were no injuries nor hazardous energy exposure.

Three subcontractor journeyman electricians and the apprentice electrician had worked on the B72 electronmicroscope project a couple of weeks prior and had performed their respective LOTO at the time. The electrical work had just resumed on 01/27/2009 after a 2-week break to allow for completion of some paint jobs. Since the three subcontractor electricians knew they were to return to the project in two weeks, they left their locks at the job site and the LOTO was intact. The apprentice electrician removed her locks because she was not scheduled to return to the job site. On 01/27/2009 however, the apprentice electrician returned to the job site with the three original electricians. As the LOTO had stayed intact, the three electricians started to work and the apprentice electrician did the same, having forgotten that she had removed her locks two weeks earlier. 10 minutes later, when asked by HSS reviewer about LOTO, the apprentice electrician realized that she had forgotten about the earlier lock removal and should have performed LOTO anew.

Cause Description:

Operating Conditions:	Indoors, dry, lighted or flash light aided lighting
Activity Category:	Construction
Immediate Action(s):	Facilities Division and EH&S Division conducted investigation into each incidents. Facilities also conducted critique with the workers regarding the incidents.
FM Evaluation:	<p>Incident 1: Later on, the employee commented that the presence of the reviewer watching him made him nervous. He recognized and stated that the proper procedure was to:</p> <ul style="list-style-type: none"> - contact the affected users of the fume hood to ensure safety - Shut down and LOTO both blowers. - Attempt to restart BL-9 and BL-19. - Remove LOTO of BL-19 and turn on BL-19. - Verify correct blower. - Do maintenance task - Release BL-9 from LOTO and reset the system. <p>The technician was also working on the equipment without a posted multiple-control-point equipment-specific LOTO procedure. LBNL Facilities Division has an approved program to write these procedures. Writing the procedure would have required the employee to describe a verification step by filling in a required box.</p> <p>Incident 2: The technician was instructed in proper Lockout/Tagout.</p>
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	<p>Yes. Before Further Operation? No By Whom: Facilities Division By When:</p>
Division or Project:	Facilities Division
Plant Area:	B. 83 , 50, 62, 72B
System/Building/Equipment:	Various Buildings
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	<p>01G--Inadequate Conduct of Operations - Inadequate Procedure 01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01M--Inadequate Conduct of Operations - Inadequate Job Planning</p>

(Electrical)
 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance
 11G--Other - Subcontractor
 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical)
 14D--Quality Assurance - Documents and Records Deficiency
 14E--Quality Assurance - Work Process Deficiency
 14G--Quality Assurance - Procurement Deficiency

HQ Summary: During the week of January 26, 2009, DOE HSS reviewers and LBNL personnel observed four separate instances of lockout/tagout (LOTO) procedural lapses. These four instances included: (1) skipping a verification step in the LOTO process, (2) touching zero-energy wirers without performing a LOTO, (3) not verifying a test meter was functioning properly before use, and (4) forgetting to perform a LOTO before starting work. None of the incidents resulted in injuries or hazardous energy exposure. Facilities Division and EH&S Division investigated each incident. Facilities also conducted a critique with the workers regarding the incidents.

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
01/29/2009	16:00 (PTZ)	Kim Abbott	BSO
01/29/2009	16:00 (PTZ)	Julie Henderson	BSO

Authorized Classifier(AC):

10)Report Number:	SC--PNSO-PNNL-PNNLNUCL-2009-0001 After 2003 Redesign
Secretarial Office:	Science
Lab/Site/Org:	Pacific Northwest National Laboratory
Facility Name:	PNNL Nuclear Facilities
Subject/Title:	Conduit Severed by Construction Activity
Date/Time Discovered:	01/10/2009 17:20 (PTZ)
Date/Time Categorized:	01/10/2009 20:00 (PTZ)
Report Type:	Update

Report Dates:	Notification	01/13/2009	16:19 (ETZ)
	Initial Update	02/09/2009	16:20 (ETZ)
	Latest Update	02/09/2009	16:20 (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:	5) Provide Feedback and Continuous Improvement		
Subcontractor Involved:	Yes InterMech		
Occurrence Description:	<p>On Saturday, January 10, 2009, at approximately 1720 hours, a conduit containing seven conductors was severed during a construction project to replace the flooring in the men's change room at the Radiochemical Processing Laboratory (RPL). Although the conduit had not been identified during preparation of the Job Planning Package, precautions had been taken to lock-out all potential sources of power to the change room and immediate vicinity. As a result, when the incident was first reported, the Building Manager categorized it as not reportable at 1850 hours. None the less, the Construction Manager investigated the incident further and at 1945 hours discovered two tripped breakers. The Building Manager was briefed on the new information and at 2000 hours, the event was upgraded to reportable under criteria 2C(2), SC-3, for the uncontrolled hazardous energy sources.</p> <p>There were no personal injuries or shock resulting from this incident.</p>		
Cause Description:			
Operating Conditions:	N/A		
Activity Category:	Construction		
Immediate Action(s):	<p>The worked was stopped. Notifications were made. At approximately 2010 hours, the Power Operator placed controlling organization lock and tag on the two breakers.</p> <p>On Monday, January 12, 2009, at approximately 0830 hours, an additional circuit was discovered to be denergized by an office occupant. The breaker had not tripped, so the breaker was opened by the Power Operator at about 0900 hours and a controlling organization lock and tag was placed on it as well.</p>		

	A critique was held on Monday, January 12, 2009 at 1400 hours.															
FM Evaluation:	<<< Update in Lieu of Final - 02/09/09 >>>															
	This occurrence has become the subject of an NTS report. The formal causal analysis is due 2/16/09 and the corrective action plan is to follow on 3/1/09. As a result, an Update in Lieu of Final is offered to establish a new due date of 3/20/09 for the Final occurrence report. ~RAP															
DOE Facility Representative Input:																
DOE Program Manager Input:																
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: By When:															
Division or Project:	Operational Systems / Facilities & Operations															
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) 07D--Electrical Systems - Electrical Wiring 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency															
HQ Summary:	On January 10, 2009, an energized conduit containing seven conductors was severed during a flooring replacement construction project, causing two breakers to trip. There was no injury or electrical shock. A critique was held.															
Similar OR Report Number:																
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td colspan="3">Cunningham, J. A.</td> </tr> <tr> <td>Phone</td> <td colspan="3">(509) 371-7948</td> </tr> <tr> <td>Title</td> <td colspan="3">Manager, Project Resources</td> </tr> </table>				Name	Cunningham, J. A.			Phone	(509) 371-7948			Title	Manager, Project Resources		
Name	Cunningham, J. A.															
Phone	(509) 371-7948															
Title	Manager, Project Resources															
Originator:	<table border="1"> <tr> <td>Name</td> <td colspan="3">POLLARI, ROGER A</td> </tr> <tr> <td>Phone</td> <td colspan="3">(509) 371-7700</td> </tr> <tr> <td>Title</td> <td colspan="3"></td> </tr> </table>				Name	POLLARI, ROGER A			Phone	(509) 371-7700			Title			
Name	POLLARI, ROGER A															
Phone	(509) 371-7700															
Title																
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Date	Time	Person Notified	Organization													

	NA	NA	NA	NA
Other Notifications:	Date	Time	Person Notified	Organization
	01/10/2009	20:16 (PTZ)	Davies, T. H.	PNSO
Authorized Classifier(AC):	Pollari, R. A. Date: 02/09/2009			

11)Report Number:	SC--PSO-PPPL-PPPL-2009-0001 After 2003 Redesign		
Secretarial Office:	Science		
Lab/Site/Org:	Princeton Plasma Physics Laboratory		
Facility Name:	Princeton Plasma Physics Lab. (BOP)		
Subject/Title:	MRX Electrical Breaker Panel - Near Miss		
Date/Time Discovered:	01/07/2009 14:30 (ETZ)		
Date/Time Categorized:	01/08/2009 10:30 (ETZ)		
Report Type:	Update		
Report Dates:	Notification	01/08/2009	16:23 (ETZ)
	Initial Update	02/19/2009	14:50 (ETZ)
	Latest Update	02/19/2009	14:50 (ETZ)
	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:	2) Analyze the Hazards		
Subcontractor Involved:	No		
Occurrence Description:	<p>A physicist/researcher on MRX pulled out the front cover to a breaker panel and placed his hand behind the cover in order to free up the panel door latch and, thereby, potentially exposed himself to an electrical shock.</p> <p>1/9/08: Reporting criteria changed to 10(3) after discussion with Jeannie Boyle.</p> <p>While investigating a power supply problem, the cognizant electrical person observed the researcher pull out the panel and reach in to unlock the panel door.</p>		
Cause Description:			
Operating Conditions:	MRX was down due to a power supply failure.		
Activity Category:	Maintenance		

Immediate Action(s):	Front panel cover was re-secured properly to the breaker panel box, to preclude future similar access. Additionally, MRX operation was stopped for a full causal analysis.							
FM Evaluation:	(2/19/08) The investigation to date indicates that this is an isolated incident. The Root Cause Analysis is still in progress.							
DOE Facility Representative Input:								
DOE Program Manager Input:								
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: PPPL Investigation Team By When:							
Division or Project:	MRX							
Plant Area:	C-site Lab wing							
System/Building/Equipment:	Lab Bldg L-217, Electrical Breaker Panel							
Facility Function:	Fusion Activities							
Corrective Action 01:	Target Completion Date: 03/08/2009	Actual Completion Date:						
	PPPL to perform a root cause analysis							
Lessons(s) Learned:								
HQ Keywords:	01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01Q--Inadequate Conduct of Operations - Personnel error 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:	While investigating a power supply problem at the Magnetic Reconnection Experiment (MRX), the cognizant electrical person observed a physicist/researcher pull out the front cover to a breaker panel and reach behind the cover in order to free up the panel door latch, thereby potentially exposing himself to an electrical shock. The front panel cover was re-secured properly to the breaker panel box to preclude future similar access. MRX operation was stopped for a full causal analysis.							
Similar OR Report Number:	1. None							
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td>SAMTMANN, C. CRAIG</td> </tr> <tr> <td>Phone</td> <td>(609) 243-2899</td> </tr> <tr> <td>Title</td> <td>HEAD OF SITE PROTECTION DIVISION</td> </tr> </table>		Name	SAMTMANN, C. CRAIG	Phone	(609) 243-2899	Title	HEAD OF SITE PROTECTION DIVISION
Name	SAMTMANN, C. CRAIG							
Phone	(609) 243-2899							
Title	HEAD OF SITE PROTECTION DIVISION							
Originator:	<table border="1"> <tr> <td>Name</td> <td>MALSURY, JUDITH A</td> </tr> <tr> <td>Phone</td> <td>(609) 243-2415</td> </tr> </table>		Name	MALSURY, JUDITH A	Phone	(609) 243-2415		
Name	MALSURY, JUDITH A							
Phone	(609) 243-2415							

	Title	HEAD, QUALITY ASSURANCE		
HQ OC Notification:	Date	Time	Person Notified	Organization
	NA	NA	NA	NA
Other Notifications:	Date	Time	Person Notified	Organization
	01/08/2009	10:58 (ETZ)	Leif Dietrich	DOE/PSO
Authorized Classifier(AC):				

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