June 2008 Electrical Safety Occurrences

There were 11 electrical safety occurrences for June 2008:

- 4 resulted in electrical shocks
- 2 involved lockout/tagout
- 2 involved cutting energized conductors
- 5 involved electrical workers and 6 involved non-electrical workers
- 7 occurrences involved subcontractors

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":

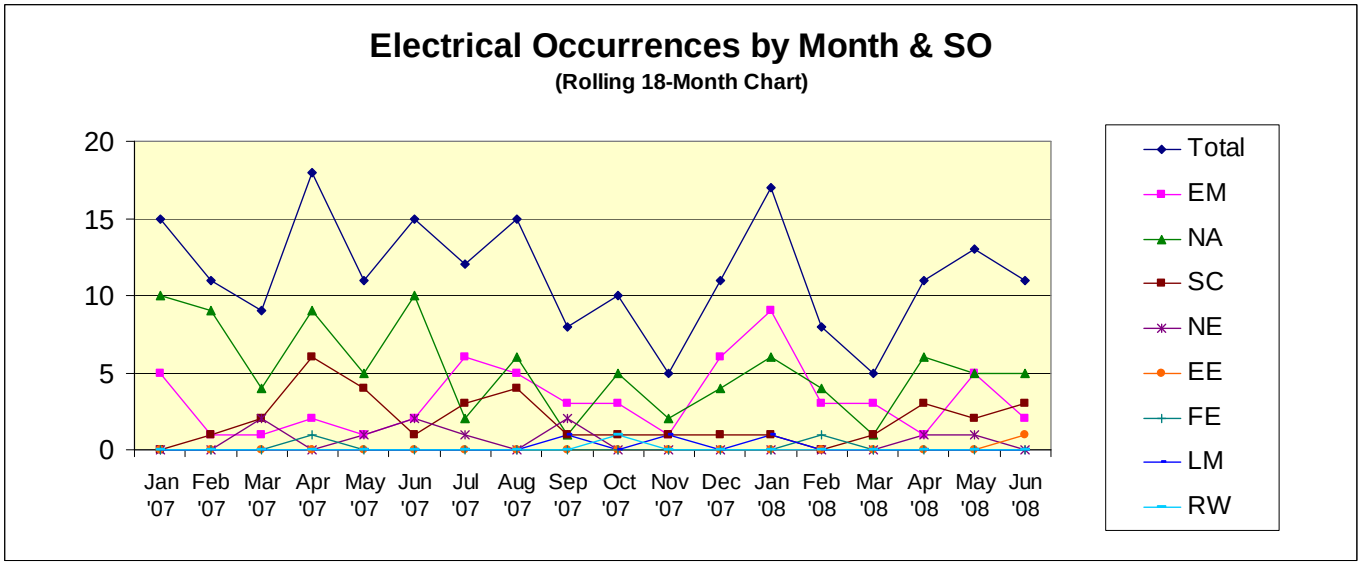
01K – Lockout/Tagout Electrical, 01M - Inadequate Job Planning (Electrical),
08A – Electrical Shock, 08J – Near Miss (Electrical), 12C – Electrical Safety

The initial search yielded 13 occurrences. However, one occurrence (NA--LASO-LANL-RADIOCHEM-2008-0004) involved the radiological contamination of an electrical worker, and another (NA--LASO-LANL-WASTEMGT-2008-0012) involved the failure to evaluate an equipment modification. Culling out these two occurrences yielded 11 electrical safety occurrences for the month.

Below is the current summary of 2008 electrical safety occurrences:

Period	Electrical Safety Occurrences	Shocks	Burns	Fatalities
Jan-08	17	7	0	0
Feb-08	8	3	0	0
Mar-08	5	1	0	0
Apr-08	11	1	0	0
May-08	13	1	1	0
Jun-08	11	4	0	0
2008 total	65 (avg. 10.8/month)	17	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 2008 is 10.8 per month, which is less than the average rate of 11.7 per month experienced in 2007.



Electrical Safety Occurrences – June 2008

No	Report Number	Subject/Title	EW[1]	N-EW[2]	SUB[3]	SHOCK	BURN	ARCF[4]	LOTO[5]	EXCAV[6]	CUT/D[7]	VEH[8]
1	EE-GO--NREL-NREL-2008-0009	Tingling Sensation when Hand Contacted an Ice Maker Cabinet		X		X						
2	EM---ARCS-LRBA-2008-0001	Access to Energized Panel without Lock-out and Tag-out	X		X				X			
3	EM-RL--PHMC-WSCF-2008-0001	Lockout Tagout Violation	X						X			
4	NA--LASO-LANL-BOP-2008-0011	Workers Discover Severed Electrical Line During Troubleshooting		X	X						X	
5	NA--LASO-LANL-WASTEMGT-2008-0008	Energized Conductor Found during Outlet Receptacle Replacement	X		X							
6	NA--SS-SNL-NMFAC-2008-0009	Concrete Cutting Operations Contacts Energized 120 Volt Conductors in Bldg. 892		X	X						X	
7	NA--SS-SNL-NMFAC-2008-0010	Receptacle Supplying Power to Electric Welder Mis-wired Resulting in Electrical Shock in Bldg. 892		X	X	X						
8	NA--SS-SNL-NMFAC-2008-0011	Electrical Work Suspended When Maintenance Electrician Fails to Identify the Intent to Establish Required Arc Flash Boundary	X									
9	SC--BSO-LBL-OPERATIONS-2008-0010	Subcontractor Received Shock From Live 277/480 Volt Wire Without Injury		X	X	X						
10	SC--FSO-FNAL-FERMILAB-2008-0002	CDF Trailer 146 Electrical Problem		X		X						
11	SC--PNSO-PNNL-PNNLBOPER-2008-0015	Discovery of Uncontrolled Hazardous Energy Source	X		X							
	TOTAL		5	6	7	4			2		2	

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 53777 OR(s) with 57095 occurrences(s) as of 7/2/2008 5:05:29 AM
Query selected 11 OR(s) with 11 occurrences(s) as of 7/2/2008 11:32:36 AM

Download this report in Microsoft Word format.

1)Report Number:	EE-GO--NREL-NREL-2008-0009 **After 2003 Redesign**
Secretarial Office:	Energy Efficiency and Renewable Energy
Lab/Site/Org:	National Renewable Energy Laboratory
Facility Name:	National Renewable Energy Laboratory
Subject/Title:	Tingling sensation when hand contacted an ice maker cabinet
Date/Time Discovered:	06/19/2008 10:53 (MTZ)
Date/Time Categorized:	06/19/2008 13:02 (MTZ)
Report Type:	Notification
Report Dates:	Notification: 06/20/2008 18:46 (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:	Background: On the evening of June 18, 2008 there was a report that water was leaking from the 4th floor to the 3rd floor within Denver West Building 17, a facility leased by NREL. Denver West personnel investigated the water leak. They identified an ice maker located in the fourth floor kitchen to be leaking so they shut off the water and unplugged the unit. At approximately 10:15 am on June 19, 2008 an NREL worker went to trouble shoot and repair the ice machine. The worker pulled the unit away from the wall, turned on the water, plugged it in. When the worker leaned down to observe what might be leaking inside the unit, he placed their right hand on the outer cabinetry of the ice maker and felt tingling in their hand.

Cause Description:	
Operating Conditions:	Normal
Activity Category:	Maintenance
Immediate Action(s):	Worker unplugged the ice maker. Worker notified their manager. The cord was cut on the ice maker, thus taking it out of service. The ESH&Q Office was notified of the event. Worker was medically evaluated.
FM Evaluation:	No impact to facility, operations or other personnel.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: ESH&Q and SOO Offices By When:
Division or Project:	Site Operations
Plant Area:	DW 4th Floor Kitchen
System/Building/Equipment:	Denver West Building 17/Ice Machine
Facility Function:	Solar Activities
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 05D--Mechanical/Structural - Mechanical Equipment Failure/Damage 08A--OSHA Reportable/Industrial Hygiene - Electrical Shock 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On the evening of June 18, 2008, water was discovered leaking from an icemaker in the fourth floor kitchen of the Denver West Building 17, a facility leased by NREL. Denver West personnel shut off the water to the ice maker and unplugged the unit. The next day, an NREL worker went to troubleshoot and repair the ice machine. The worker pulled the unit away from the wall, turned on the water, plugged it in. When the worker leaned down to observe what might be leaking inside the unit, he placed his right hand on the outer cabinetry of the ice maker and then felt tingling in his hand. He immediately unplugged the unit and reported the shock.
Similar OR Report Number:	
Facility Manager:	Name: JORDAN, MAUREEN Y

	Title: SENIOR ENVIRONMENTAL SCIENTIST
Originator:	Name: OKANE, BARBARA V. Phone: (303) 384-7609 Title: ENVIRONMENTAL H & S SENIOR ES&H SPEC
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	06/19/2008 12:45 (MTZ) Greg Collette DOE GO 06/19/2008 13:02 (MTZ) Karen Harness DOE GO
Authorized Classifier(AC):	

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2)Report Number:	EM---ARCS-LRBA-2008-0001 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Separations Process Research Unit
Facility Name:	Lower Rail Bed Area
Subject/Title:	Access to Energized Panel without Lock-out and Tag-out
Date/Time Discovered:	06/18/2008 10:15 (ETZ)
Date/Time Categorized:	06/19/2008 15:15 (ETZ)
Report Type:	Notification
Report Dates:	Notification: 06/20/2008 12:07 (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:	A4B1C01 - Management Problem; Management Methods Less Than Adequate (LTA); Management policy guidance / expectations not well-defined, understood or enforced A4B2C02 - Management Problem; Resource Management LTA; Insufficient supervisory resources to provide necessary supervision A4B3C11 - Management Problem; Work Organization & Planning LTA;

	Inadequate work package preparation A4B4C07 - Management Problem; Supervisory Methods LTA; Too many concurrent tasks assigned to worker A4B4C11 - Management Problem; Supervisory Methods LTA; Assignment did not consider worker's ingrained work patterns
ISM:	
Subcontractor Involved:	Yes Alarm & Suppression Inc.
Occurrence Description:	On June 18, 2008 at 1015, a fire alarm testing technician was discovered to have been working inside a fire alarm panel with an exposed 120 V terminal. The worker was not working to an approved work document and a lock-out tag-out had not been performed. The pre-job briefing and hazard analysis was inadequate as they did not identify the worker would be accessing the 120V energized portion of the panel.
Cause Description:	
Operating Conditions:	Does not apply
Activity Category:	Facility/System/Equipment Testing
Immediate Action(s):	The aRc Project Manager directed that the aRc Health & Safety Manager be notified prior to any subcontractors performing surveillance and maintenance activities on the site. The subcontractor, Alarm & Suppression Inc., was directed to provide detailed work instructions for alarm testing, annual alarm panel maintenance and repair of the fire alarm panel. At the June 19, 2008 project safety briefing all aRc project personnel were told to assume all electrical systems are energized until an individual competent in the system operation can assess the system manuals and the hazards associated with working on or near the system.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Peter Collopy By When: 07/11/2008
Division or Project:	SPRU
Plant Area:	Office Trailers
System/Building/Equipment:	SP-22 Trailer
Facility Function:	Balance-of-Plant - Offices
Corrective Action:	

Lessons(s) Learned:	
HQ Keywords:	01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 01O--Inadequate Conduct of Operations - Inadequate Maintenance 01R--Inadequate Conduct of Operations - Management issues 11G--Other - Subcontractor 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	A fire alarm testing technician was discovered to have been working inside a fire alarm panel with an exposed 120-volt terminal. The worker was not working to an approved work document and a lockout/tagout had not been performed. The subcontractor was directed to provide detailed work instructions for alarm testing, annual alarm panel maintenance and repair of the fire alarm panel.
Similar OR Report Number:	1. EM---LSS-SPRU-2008-0001
Facility Manager:	Name: COLLOPY, PETER Phone: (518) 859-1944 Title: EH&S MANAGER
Originator:	Name: Collopy, Peter Phone: (518) 859-1944 Title: EH&S MANAGER
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 06/18/2008; Time: 12:00 (ETZ); Person Notified: William Hunt, FR; Organization: DOE-SPRU Date: 06/19/2008; Time: 13:00 (ETZ); Person Notified: Bob Goldsmith; Organization: EM-62
Authorized Classifier(AC):	

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3)Report Number:	EM-RL--PHMC-WSCF-2008-0001 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Hanford Site
Facility Name:	Waste Sampling & Characterization
Subject/Title:	Lockout Tagout Violation
Date/Time Discovered:	06/19/2008 11:30 (PTZ)

Date/Time Categorized:	06/23/2008 11:40 (PTZ)
Report Type:	Notification
Report Dates:	Notification 06/25/2008 16:25 (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:	During a Post-job briefing being conducted by the WSCF Field Work Supervisor (FWS), it was identified that in performance of troubleshooting an electrical circuit in conjunction with an inadvertent loss of WSCF Building 6266 North Laboratory ventilation, a 120 volt alternating current (VAC) wire was reconnected to a terminal block inside an electrical cabinet without using appropriate hazardous energy control per the requirements of procedure HNF-PRO-081, Lockout/Tagout. Note: The electrical power to the 120 VAC line had been isolated (i.e., de-energized) prior to reconnection to the terminal block; however, it had not been controlled (i.e., no lockout/tagout).
Cause Description:	
Operating Conditions:	Normal
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	1. Per WSCF Operations Manager direction, all WSCF work involving Hazardous Energy Control has been suspended. 2. Identified HNF-PRO-18090, Lock and Tag Reporting, and HNF-PRO-060, Reporting Occurrences and Processing Operations Information, reporting requirements. 3. A critique was conducted.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	

Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: By When:
Division or Project:	Waste Stabilization and Disposal
Plant Area:	600 Area
System/Building/Equipment:	6266 HVAC
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	During a post job briefing, a hazardous energy control procedure violation was identified. An electrician had reconnected a 120-volt wire to a terminal block after troubleshooting an electrical circuit for HVAC in Building 6266 without using appropriate hazardous energy controls (lockout/tagout) as required by procedure. All Waste Sampling and Characterization Facility work involving hazardous energy control was suspended and a critique was held.
Similar OR Report Number:	
Facility Manager:	Name: Mike Neely Phone: (509) 373-0654 Title: WSCF Facility Manager
Originator:	Name: SMITHWICK, RONALD L Phone: (509) 376-3030 Title:

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
06/23/2008	11:40 (PTZ)	Troy Dale	WSCF OCM
06/23/2008	11:40 (PTZ)	Bruce Darling	WSCF Ops
06/23/2008	11:40 (PTZ)	Mike Neely	WSCF FM
06/23/2008	11:40 (PTZ)	Don Hart	DIR AS
06/23/2008	11:48 (PTZ)	Dale McKenney	VP WSD
06/23/2008	11:50 (PTZ)	Larry Earley	DOE FR

	06/23/2008	12:14 (PTZ)	Mike Boyce	FH ONC
Authorized Classifier(AC):				

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4)Report Number:	NA--LASO-LANL-BOP-2008-0011 **After 2003 Redesign**
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Los Alamos National Laboratory
Facility Name:	"at large" or Balance of Plant
Subject/Title:	Workers Discover Severed Electrical Line During Troubleshooting
Date/Time Discovered:	06/10/2008 16:30 (MTZ)
Date/Time Categorized:	06/11/2008 09:31 (MTZ)
Report Type:	Notification
Report Dates:	Notification 06/12/2008 20:06 (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 KSL Services
Occurrence Description:	MANAGEMENT SYNOPSIS: On June 10, 2008, at 1630, while troubleshooting at Technical Area 16, Building 180 (fire station), KSL Services electricians (E1 and E2) discovered a severed, de-energized 208-volt electrical line. E1 and E2 had been tasked to troubleshoot the inoperability of a roll-up door. Further investigation found the breaker for the roll-up door in the tripped position. E1 immediately notified his supervisor. Subsequent review of work in the facility found that KSL masons had cut into the concrete floor of the fire station to install the new fire suppression line in mid-April 2008. It is suspected that the electrical line may have been severed at that time since no other excavation or penetration work has been performed in the facility since then. Because the breaker for the roll-up door was found tripped, it is assumed that the electrical line was energized when it was severed. The Institutional Facilities and Central Services (IFCS) maintenance coordinator tagged the roll-up door out of

	service pending further review. On June 11, 2008, using the electrical severity tool, the Laboratory's Acting Chief Electrical Safety Officer evaluated the event to determine its electrical severity significance. The evaluation resulted in a low hazard electrical severity significance with a score of 10 due to the personal protective equipment (PPE) mitigation taken for the excavation work. BACKGROUND: On June 9, 2008, KSL mechanics were performing preventive maintenance (PM) work on the roll-up doors in the fire station. One of the doors would not operate so the mechanics reported the condition to the IFCS maintenance coordinator. The IFCS maintenance coordinator issued a facility service request for the electricians to troubleshoot and resolve the condition after finding the breaker for the roll-up door in the tripped position. On June 10, 2008, E1 and E2 began troubleshooting and did a voltage test on the disconnect to DRE-005 and found zero voltage. Next, E1 and E2 performed a voltage test on Circuits 5 and 7 and found them energized. Then they went back to DRE-005 and performed another voltage test with the same results (zero voltage). E2 then saw a fire alarm suppression water line on the other side of the room. E1 and E2 opened the push button station, tested it, and found zero voltage. E1 started to pull on the wires until the severed portions of the line were removed. According to the IFCS facility coordinator, work had been performed in the facility in mid-April in support of the Fire Suppression Upgrades Project. KSL masons were tasked to pothole and excavate so that the fitters could install the new fire suppression line at the fire station. An approved integrated work document (IWD) and excavation permit had been issued. The excavation permit identified all the utilities lines as being located twelve (12) feet from the work area. Prior to the work, ground penetration radar (GPR) had been performed that identified no utility lines in the work area. In a subsequent discussion with the masons, they verified that they did perform the work using a saw cutter; however, they did not observe any indications that the electrical line had been severed during the performance of the work. The masons indicated that they wore di-electric gloves rated for 1000 volts, boots, and safety glasses in accordance with the IWD. The facility coordinator indicated that no other penetration or excavation work has been performed in the facility since the fire suppression line installation.
Cause Description:	
Operating Conditions:	Troubleshooting Activities
Activity Category:	Inspection/Monitoring
Immediate Action(s):	1. The IFCS maintenance coordinator tagged the roll-up door out of service pending further review. 2. IFCS facility management will issue a work ticket to install a new

	electrical line.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: IFCS and ESH-IO By When: 07/25/2008
Division or Project:	KSL Services
Plant Area:	TA16-180
System/Building/Equipment:	208-Volt Electrical Line
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01B--Inadequate Conduct of Operations - Loss of Configuration Management/Control 07D--Electrical Systems - Electrical Wiring 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14D--Quality Assurance - Documents and Records Deficiency 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	While troubleshooting an inoperable roll-up door, two KSL Services electricians discovered a severed, de-energized 208-volt electrical line. Further investigation found the circuit breaker for the roll-up door in the tripped position. Subsequent review of work in the facility found that KSL masons had cut into the concrete floor to install a new fire suppression line in mid-April 2008 and it is believed that the electrical line may have been severed at that time. The Institutional Facilities and Central Services maintenance coordinator tagged the roll-up door out of service pending further review.
Similar OR Report Number:	
Facility Manager:	Name: Judith Huchton Phone: (505) 665-2272 Title: IFCS Facility Operations Director
Originator:	Name: YAZZIE, ALVA M Phone: (505) 664-0666 Title: OCCURRENCE INVESTIGATOR

HQ OC Notification:	

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:	

Date	Time	Person Notified	Organization
06/12/2008	16:00 (MTZ)	Ed Christie	NNSA

Authorized Classifier(AC):	Linda Collier Date: 06/12/2008

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5)Report Number:	NA--LASO-LANL-WASTEMGT-2008-0008 **After 2003 Redesign**
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Los Alamos National Laboratory
Facility Name:	Waste Management
Subject/Title:	Energized Conductor Found During Outlet Receptacle Replacement
Date/Time Discovered:	06/03/2008 14:50 (MTZ)
Date/Time Categorized:	06/03/2008 16:18 (MTZ)
Report Type:	Notification
Report Dates:	

Notification	06/05/2008	17:55 (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 KSL
Occurrence Description:	Management Synopsis: Two electricians at TA-50-1 (RLWTF) were replacing two non-GFCI (ground fault circuit interrupter) outlet receptacles with GFCI receptacles in Room 35. The electricians followed the lockout/tagout (LOTO) procedure and performed a zero energy verification on the outlets prior to starting work. One of the electricians began to remove the non-GFCI receptacle when he noted an electrical arc when a wire slipped off a loose screw. He had discovered that screws on the receptacle were used as part of a circuit that shares a single neutral as a return path. The two additional hot wires were not de-energized (110 VAC) but fed different

	circuit utilization devices, most probably receptacles. When the electrician discovered the energized wires both electricians paused work, re-installed the original outlet, and made all proper notifications. The Facility Operation Director (FOD) designee categorized this event as reportable on 06/03/2008 at 1618 hours. Background: Room 35 is in a part of RLWTF built in 1962. At that time, it was not an uncommon practice to have circuits in a multi-wire configuration sharing a single neutral as was the case in this event. The electrician observed a second anomaly in the wiring. The non-GFCI receptacle wire was not pigtailed. Pigtailing is a practice where the incoming and outgoing neutral wire ends are joined together with the hot wire. If the installed receptacle had been wired in this fashion, there would not have been an arc. (Note: With the neutral circuit unbroken the voltage between any two parts of the neutral wire is essentially zero. When the electrician broke the continuity of the conductor, the voltage on the upstream side of the circuit went from zero to 120(110) volts and the arc was indication of that change of state.) Also GFCI were not installed in buildings of that era. Two electricians were tasked as part of a maintenance project to replace two non-GFCI receptacles with GFCI receptacles since they are within 6 feet of a water source. Prior to the start of the job, the electricians did a pre-job brief. During the activity they followed the electrical procedure and Integrated Work Document (IWD) which included wearing proper Personnel Protective Equipment (PPE) during the zero energy verification. After the first electrician performed the zero energy verification, the second electrician checked, per procedure, to ensure no energy was present. The first electrician had removed his PPE since the zero energy had been verified. He then proceeded to pull out the receptacle when he noted an electrical arc. The electrician re-installed the original receptacle (put the work site in a safe configuration), paused work, and then made proper notifications. According to the Los Alamos National Laboratory Institutional Electrical Safety Officer, "I have calculated a score of 20 which in the low, non-reportable range of scores. The reason the score is not zero is because of the voltage, and the fact the worker was in the limited approach boundary which is 42 inches for a fixed conductor (reference table 130.2(C) NFPA 70E). According to the tool the risk of injury was low."
Cause Description:	
Operating Conditions:	Normal
Activity Category:	Maintenance

Immediate Action(s):	The workers stopped work, re-installed the original receptacle, and made notification to their supervisor.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: ESH-OFF and FMO-STO By When: 07/18/2008
Division or Project:	Radiation Liquid Waste Treatment Facilty
Plant Area:	Room 35
System/Building/Equipment:	TA-50-0001
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01B--Inadequate Conduct of Operations - Loss of Configuration Management/Control 01O--Inadequate Conduct of Operations - Inadequate Maintenance 01S--Inadequate Conduct of Operations - Incorrect/Inadequate Installation 07D--Electrical Systems - Electrical Wiring 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14D--Quality Assurance - Documents and Records Deficiency 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	Two electricians were replacing two non-GFCI (ground fault circuit interrupter) outlet receptacles with GFCI receptacles in Room 35. The electricians followed the lockout/tagout procedure and performed a zero energy verification on the outlets prior to starting work. When one of the electricians began to remove the non-GFCI receptacle, he noted an electrical arc when a wire slipped off a loose screw. He then discovered that the screws on the receptacle were used as part of a circuit that shares a single neutral as a return path. The two additional hot wires were not de-energized, but fed different circuit utilization devices, most probably receptacles. The electrician stopped work, re-installed the original outlet, and made all proper notifications.
Similar OR Report Number:	
Facility Manager:	Name: Peter Rice Phone: (505) 665-6320 Title: Facility Operation Director Designee

Originator:	Name: TALLARICO, ANTONIA Phone: (505) 665-6988 Title: OCCURRENCE INVESTIGATOR
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 06/03/2008; Time: 16:20 (MTZ); Person Notified: Notification Line; Organization: NNSA
Authorized Classifier(AC):	Antonia Tallarico Date: 06/05/2008

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6)Report Number:	NA--SS-SNL-NMFAC-2008-0009 **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:	Concrete Cutting Operations Contacts Energized 120 Volt Conductors in Bldg. 892
Date/Time Discovered:	06/04/2008 11:00 (MTZ)
Date/Time Categorized:	06/04/2008 11:00 (MTZ)
Report Type:	Notification
Report Dates:	Notification: 06/05/2008 17:56 (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 Albuquerque Concrete Coring (sub to SDV)
Occurrence Description:	On June 4, 2008, at approximately 10:45 am, a concrete cutting subcontractor was saw-cutting a concrete floor, located in the Bldg. 892 basement. While cutting the concrete, a 1" conduit with four 120 volt circuits were cut in the concrete slab. This caused a breaker in panel KL,

	feeding subpanel breaker for panel KL2, to trip. The contractor was utilizing personal protective equipment (PPE) which included dielectrically rated gloves, boots, and a face shield as a control. A second precaution that was administered was the lockout and tagout of circuit 25 in panel KL, which was thought to be the circuit located in the slab. A penetration and excavation permit had been requested and implemented for the operation. The equipment could determine the lack of high voltage in the area, however; due to the rebar in the floor, the low voltage readings could not determine the presence of live circuits. One circuit was locked and tagged prior to the saw cutting operation. However, the conduit that was contacted was not detected by prior investigations. There was no electrical shock, no impact to the environment or line operations as a result of this event.
Cause Description:	
Operating Conditions:	Normal
Activity Category:	Construction
Immediate Action(s):	Concrete cutting was suspended and area was placed in a safe condition Investigation was initiated Electrical maintenance was contacted, and impacted circuits were locked and tagged
FM Evaluation:	EOC #6622 Early Notification Dates and Times: EOC - 6/4/08 - 11:10 FR - Wayne Walker - 6/4/08, 11:04
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Causal Analysis Team By When: 07/18/2008
Division or Project:	4000/Heating System Modernization (HSM)
Plant Area:	Tech Area I
System/Building/Equipment:	Bldg. 892/1st Floor Central Mechanical Room

Facility Function:	Balance-of-Plant - Site/outside utilities
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01B--Inadequate Conduct of Operations - Loss of Configuration Management/Control 01N--Inadequate Conduct of Operations - Inadequate Job Planning (Other) 07D--Electrical Systems - Electrical Wiring 08F--OSHA Reportable/Industrial Hygiene - Industrial Operations Issues 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical) 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14D--Quality Assurance - Documents and Records Deficiency 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On June 4, 2008, a subcontractor was saw-cutting a concrete floor in the Bldg. 892 basement and cut a one-inch conduit with four 120 volt circuits in the concrete slab, and caused a breaker to trip. He was working pursuant to a penetration and excavation permit, and pre-job scans detected no high voltage. However, due to the rebar in the floor, the live circuits went undetected. He was wearing personal protective equipment which included dielectrically rated gloves, boots, and a face shield as a control.
Similar OR Report Number:	
Facility Manager:	Name: Carla Lamb Phone: (505) 844-1753 Title: ES&H Coordinator - Facilities Management & Ops Ctr
Originator:	Name: LUCERO, JEWELEE A Phone: (505) 845-4727 Title: REPORTING ADMINISTRATOR
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 06/04/2008; Time: 11:04 (MTZ); Person Notified: Wayne Walker, FR; Organization: DOE/SSO Date: 06/04/2008; Time: 11:10 (MTZ); Person Notified: Jeff Quintenz; Organization: 4800
Authorized Classifier(AC):	John Norwalk Date: 06/05/2008

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7)Report Number:	NA--SS-SNL-NMFAC-2008-0010 **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:	Receptacle Supplying Power to Electric Welder Mis-wired Resulting in Electrical Shock in Bldg. 892
Date/Time Discovered:	06/06/2008 11:00 (MTZ)
Date/Time Categorized:	06/06/2008 11:00 (MTZ)
Report Type:	Update
Report Dates:	Notification 06/09/2008 18:53 (ETZ) Initial Update 06/10/2008 10:57 (ETZ) Latest Update 06/10/2008 10:57 (ETZ) Final
Significance Category:	2
Reporting Criteria:	2C(1) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or disturbance of a previously unknown or mislocated hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas) resulting in a person contacting (burn, shock, etc.) hazardous energy.
Cause Codes:	
ISM:	
Subcontractor Involved:	Yes Prime Electric (sub to SDV)
Occurrence Description:	At approximately 11am, on June 6, 2008, a Construction Mechanical Subcontract welder received a shock when the welder touched the building structure while leaning against an electric welder in the mechanical room in Building 892. The welder was working on the Facilities Management & Operations Center (FMOC) Heating System Modernization (HSM) Project. The cause of the shock was determined to be an incorrectly wired 4-wire, 120/208V, 50A cord cap. The conductors feeding the ground terminal and one of the three phase terminals on the cord cap were reversed. When the electric welder was plugged into the existing receptacle the frame of the electrical welder was energized with 120 volts to ground. The rubber wheels and other mechanical support portions of the welder, which were in contact with the concrete floor on which the welder was sitting, isolated the energized welding frame. Because the welding frame was isolated from ground the 40A panel breaker supplying power to the wall receptacle did not operate. When the contractor subsequently made contact with the metal frame of the welder, and a nearby (nominally-grounded) metal pole (which provided support for overhead mechanical piping), he felt a slight electrical shock caused by the 120V on the welder frame. The current felt by the contractor was limited by the resistance of the paint on the metal pole, the resistance between the pole and building steel, the worker's skin resistance, and the available (120V) system voltage. The worker immediately reported to

	medical as required. The cord was installed by a journeyman electrician working for the Electrical Subcontractor on the HSM project. The area was placed in a safe condition. The shocked subcontract welder was taken to Sandia National Laboratories Medical for evaluation and released back to work.
Cause Description:	
Operating Conditions:	Normal
Activity Category:	Construction
Immediate Action(s):	Work with the electric welder suspended Area was placed in a safe condition Investigation was initiated Stop work was issued to the Prime Construction Subcontractor. The Subcontractor must submit the results of their investigation of the event and proposed corrective action which must be accepted by the FMOC Project Manager prior to work being resumed.
FM Evaluation:	EOC #6655 Early Notification Dates and Times: EOC - 6/6/08 - 11:10 FR - Heather Holman - 6/6/08, 11:40 FR - Duty Officer - 6/6/08, 11:15
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Causal Analysis Team By When: 07/21/2008
Division or Project:	4000/Heating System Modernization
Plant Area:	Tech Area I
System/Building/Equipment:	Bldg. 892/Mechanical Room/Electric Welder cord cap
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	

HQ Keywords:	01S--Inadequate Conduct of Operations - Incorrect/Inadequate Installation 07D--Electrical Systems - Electrical Wiring 08A--OSHA Reportable/Industrial Hygiene - Electrical Shock 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	A construction mechanical subcontract welder received a shock when the welder touched the building structure while leaning against an electric welder in the mechanical room in Building 892. The cause of the shock was determined to be an incorrectly wired 4-wire, 120/208V, 50A cord cap. The conductors feeding the ground terminal and one of the three phase terminals on the cord cap were reversed causing the frame of the welder to be energized with 120 volts to ground. The welder immediately reported to medical as required. The area was placed in a safe condition and an investigation was initiated.
Similar OR Report Number:	
Facility Manager:	Name: Carla Lamb Phone: (505) 844-1753 Title: ES&H Coordinator - Facilities Management & Ops Ctr
Originator:	Name: LUCERO, JEWELEE A Phone: (505) 845-4727 Title: REPORTING ADMINISTRATOR
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	06/09/2008 08:00 (MTZ) John Norwalk 4827 06/09/2008 08:00 (MTZ) Mike Quinlan 4820 06/09/2008 16:00 (MTZ) Wayne Walker, FR DOE/SSO 06/06/2008 11:40 (MTZ) Heather Trumble, FR DOE/SSO
Authorized Classifier(AC):	John Norwalk Date: 06/09/2008

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8)Report Number:	NA--SS-SNL-NMFAC-2008-0011 **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:	Electrical Work Suspended When Maintenance Electrician Fails to Identify the Intent to Establish Required Arc Flash Boundary
Date/Time Discovered:	06/16/2008 13:00 (MTZ)

Date/Time Categorized:	06/16/2008 14:00 (MTZ)
Report Type:	Update
Report Dates:	Notification 06/18/2008 17:57 (ETZ) Initial Update 06/25/2008 11:26 (ETZ) Latest Update 06/25/2008 11:26 (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:	No
Occurrence Description:	On June 16, 2008, a Facilities Management and Operations Center (FMOC) Electrical Craftsperson was performing infrared scanning on distribution panel PIC (208 volt) located in the first floor east hallway of Building 802 when the craftsperson was questioned by a Sandia Site Office (SSO) ES&H person concerning the establishment of an arc flash boundary around the panel prior to removing the panel's dead front cover. The FMOC Electrical Craftsperson answered that they did not normally establish the boundary because it would impede flow of personnel traffic in the hallway, and their opinion was that people often do not pay attention when barricades are installed. The craftsperson stated that they had parked their maintenance cart in the hallway on one side of the panel board to detour traffic around them. The craftsperson opened the panel's cover and had scanned the panelboard with the dead front cover in place. An unusual reading was seen on circuit 41, and the craftsperson was preparing to take a closer look when the SSO person arrived and asked the craftsperson what work was being performed and could the craftsperson demonstrate the work activity. The craftsperson donned electrically rated gloves with leather gauntlets and removed the two lower screws of the panel board's dead front cover. The craftsperson was preparing to don their required hard hat and face shield to remove the two remaining screws on the dead front cover in order to remove the cover when the SSO person requested that the craftsperson suspend the activity. Once the dead front cover is removed, energized electrical parts are

	exposed, and NFPA70E, the SNL ES&H Manual, and the FMOC Low Voltage Electrical Work Operations Procedure, OP-304 requires that an arc flash boundary be established for this work. When questioned, the craftsperson identified that infrared scanning had been performed on six panels that involved the removal of the dead front cover (exposure of energized parts) without establishing a barricade identifying the arc flash boundary. The craftsperson performing the work did wear required PPE (electrically rated gloves, leather gauntlets, FR pants and shirt, hard hat, and rated face shield). Prior to the work being performed there was no arc flash hazard analysis performed for this specific panel and therefore based on system modeling, a 208volt panel would be a risk/hazard class three/four (conservative approach). Arc Flash calculations performed by FMOC Electrical Engineering (following the incident) for Panel PIC showed that the risk/hazard category for this panel is actually a zero. The arc flash and limited approach (shock) boundary for this panel would be 3.5 feet. This boundary would also apply to the others six panels in Building 802 where infrared work was performed without barricading that same day. The craftsperson identified that although barricading was not installed, the use of the cart resulted in pedestrian traffic not entering within 3.5 feet of the exposed energized electrical parts. The craftsperson wore required PPE for being within the arc flash and limited approach boundaries. Based on this information this occurrence was categorized as a Subgroup C: Hazardous Energy Control - Significance Category 3 - (2) Failure to follow a prescribed hazardous energy control process but does not meet the criteria for the near miss of a shock.
Cause Description:	Critique/Fact Finding Performed 6/17/08
Operating Conditions:	Normal
Activity Category:	Maintenance
Immediate Action(s):	- Work was suspended - Site walk-thru with FMOC Center Director, Senior Manager, Electrical Dept. Manager, Electrical Team Leader, and ES&H Coordinator - Employee was coached - Critique performed
FM Evaluation:	DOE/SSO Early Notification Date & Time: EOC - 06/16/08 - 16:15 FR - Wayne Walker - 06/16/08 - 14:00 UPDATE 6/25/08 Description of Occurrence - 480volt was changed to 208volt.

	END OF UPDATE
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Causal Analysis Team By When: 07/31/2008
Division or Project:	4000/Infrared Scanning of Elect. Distr. Panel
Plant Area:	Tech Area I
System/Building/Equipment:	Low Voltage Elec. Distribution System/Bldg. 805/East Hallway
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01E--Inadequate Conduct of Operations - Operations Procedure Noncompliance 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	An electrician performed infrared scanning on a 480-volt distribution panel in Building 802 without establishing an arc flash boundary around the panel before removing the dead front cover from the panel. This resulted in a violation of Sandia procedures and NFPA 70E. Work was suspended when the activity was questioned by a Sandia Site Office employee. A critique was held.
Similar OR Report Number:	
Facility Manager:	Name: Carla Lamb Phone: (505) 844-1753 Title: ES&H Coordinator - Facilities Management & Ops Ctr
Originator:	Name: LUCERO, JEWELEE A Phone: (505) 845-4727 Title: REPORTING ADMINISTRATOR
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date; Time; Person Notified; Organization

	06/16/2008	14:00 (MTZ)	Jeff Quintenz	4800
	06/16/2008	14:00 (MTZ)	Jose Martinez	4840
	06/16/2008	14:00 (MTZ)	Wayne Walker, FR	DOE/SSO
Authorized Classifier(AC):	John Norwalk Date: 06/18/2008			

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9)Report Number:	SC--BSO-LBL-OPERATIONS-2008-0010 **After 2003 Redesign**
Secretarial Office:	Science
Lab/Site/Org:	Lawrence Berkeley Laboratory
Facility Name:	Operations Division
Subject/Title:	Subcontractor Received Shock From Live 277/480 Volt Wire Without Injury
Date/Time Discovered:	06/18/2008 15:40 (PTZ)
Date/Time Categorized:	06/18/2008 15:50 (PTZ)
Report Type:	Notification
Report Dates:	Notification 06/19/2008 16:23 (ETZ) Initial Update Latest Update Final
Significance Category:	2
Reporting Criteria:	2C(1) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or disturbance of a previously unknown or mislocated hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas) resulting in a person contacting (burn, shock, etc.) hazardous energy.
Cause Codes:	
ISM:	3) Develop and Implement Hazard Controls 4) Perform Work Within Controls
Subcontractor Involved:	Yes Cal-Neva
Occurrence Description:	On 06/17/2008 at around 1155, a subcontractor (Cal-Neva) employee working on Building 76 renovation project came in contact with live 277/480 volt wires and received an electric shock on his left forearm. The worker was not injured. The contact occurred when he was removing a duct and the live wires were hanging from a conduit above the duct. He immediately reported the shock to the his foreman who in turn notified an LBNL carpenter, The carpenter contacted the LBNL project construction manager and advised him to come to the Building 76 project site immediately. The construction manager came to the site and learned of the electric shock incident from the subcontractor foreman.

Cause Description:	
Operating Conditions:	Indoors, well-lit, dry
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	The LBNL project construction manager immediately examined the electric panel and discovered that the lighting circuit was not locked out/tagged out (LOTO'ed). He contacted and notified the LBNL project lead electrician to report to the job site to secure the live wires and apply LOTO. After the job site was secured, the construction manager notified Facilities management and ordered 'stop work' on the project. He also reported the incident through the Laboratory's incident reporting hot-line.
FM Evaluation:	Upon arrival at the incident site, the LBNL project construction manager was told that the employee who received the shock was not injured and was at lunch. Despite repeated advisement, the subcontractor employee declined to seek medical examination and evaluation. The construction manager contacted the LBNL Health Services staff and was advised that the examination/evaluation is voluntary. LBNL Facilities and EH&S personnel have met to ascertain that all immediate actions were adequate and sufficient to ensure job site and building 76 resident employee safety. Facilities and EH&S will conduct investigation and root cause analysis to develop corrective actions and lessons learned.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Facilities and EH&S By When:
Division or Project:	Facilities
Plant Area:	Building 76
System/Building/Equipment:	Building 76
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 07D--Electrical Systems - Electrical Wiring 08A--OSHA Reportable/Industrial Hygiene - Electrical Shock

	08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical) 11G--Other - Subcontractor 12K--EH Categories - Near Miss (Could have been a serious injury or fatality) 13A--Management Concerns - HQ Significant (High-lighted for Management attention) 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	A subcontractor employee working on Building 76 renovation project came in contact with live 277/480-volt wires and received an electric shock on his left forearm. The contact occurred when he was removing a duct and the energized wires were hanging from a conduit above the duct. He immediately reported the shock. The worker was not injured, and declined to seek medical examination and evaluation. The LBNL project construction manager examined the electric panel and discovered that the lighting circuit was not locked out/tagged out. An LBNL electrician secured the wires and applied a lockout/tagout. Work was suspended and notifications were made.
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: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 06/18/2008; Time: 16:00 (PTZ); Person Notified: Kim Abbott; Organization: BSO
Authorized Classifier(AC):	

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10)Report Number:	SC--FSO-FNAL-FERMILAB-2008-0002 **After 2003 Redesign**
Secretarial Office:	Science
Lab/Site/Org:	FERMI National Accelerator Laboratory
Facility Name:	FERMI National Accelerator Lab.(BOP)
Subject/Title:	CDF Trailer 146 Electrical Problem
Date/Time Discovered:	06/05/2008 15:27 (CTZ)
Date/Time Categorized:	06/06/2008 13:12 (CTZ)
Report Type:	Notification

Report Dates:	<table><tr><td>Notification</td><td>06/10/2008</td><td>11:51 (ETZ)</td></tr><tr><td>Initial Update</td><td></td><td></td></tr><tr><td>Latest Update</td><td></td><td></td></tr><tr><td>Final</td><td></td><td></td></tr></table>
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:	6) N/A (Not applicable to ISM Core Functions as determined by management review.)
Subcontractor Involved:	No
Occurrence Description:	On June 5 at approximately 3:00 pm, a Fermilab employee showering in the CDF Trailer 146 washroom received a mild shock. The shock was received when the employee came into contact with either the faucet, shower head, or shower drain cover. The shock was described by the employee as being similar to that you would receive from a 9-volt battery. The shower stall is a modular plastic unit. Water lines enter the shower from underneath the trailer. The water pipes servicing the shower are wrapped with electrical heat tape to prevent the pipes from freezing in the winter months. The shower has been taken out of service, the washroom secured, and the electrical heat tape circuit locked-out. There had been no previous problems with this shower unit. This incident is under investigation by the Fermilab Particle Physics Division with the participation of the Fermilab Electrical Safety Subcommittee.
Cause Description:	
Operating Conditions:	Normal operating conditions
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	Shower taken out of service, room was secured and circuit was locked-out.
FM Evaluation:	Incident is under investigation with the involvement of the Laboratory's Electrical Safety Subcommittee.
DOE Facility Representative Input:	
DOE Program Manager	

Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Investigation Team By When:
Division or Project:	Particle Physics Division
Plant Area:	CDF Trailer 146
System/Building/Equipment:	CDF Trailer 146 Electrical Problem
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	08A--OSHA Reportable/Industrial Hygiene - Electrical Shock 12C--EH Categories - Electrical Safety 14L--Quality Assurance - No QA Deficiency
HQ Summary:	A Fermilab employee received a mild electrical shock while showering in the Collider Detector Facility (CDF) Trailer 146 washroom. The shock was received when the employee came into contact with the faucet, shower head, or shower drain cover. The employee described the shock as being similar to what you would receive from a 9-volt battery. The shower stall is a modular plastic unit. The water lines enter from underneath the trailer and are wrapped with electrical heat tape for freeze protection. The shower has been taken out of service, the washroom secured, and the electrical heat tape circuit locked out. The incident is under investigation.
Similar OR Report Number:	
Facility Manager:	Name: Bruce Chrisman Phone: (630) 840-2359 Title: Chief Operating Officer
Originator:	Name: JAMES, WILLIAM R Phone: (630) 840-8901 Title: ES&H EMERGENCY PLANNER
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 06/06/2008; Time: 13:20 (CTZ); Person Notified: J. Livengood; Organization: DOE-FSO
Authorized Classifier(AC):	

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11)Report Number:	SC--PNSO-PNNL-PNNLBOPER-2008-0015 **After 2003 Redesign**

Secretarial Office:	Science
Lab/Site/Org:	Pacific Northwest National Laboratory
Facility Name:	Energy Research Programs (PNNL)
Subject/Title:	Discovery of Uncontrolled Hazardous Energy Source
Date/Time Discovered:	06/26/2008 09:30 (PTZ)
Date/Time Categorized:	06/26/2008 11:33 (PTZ)
Report Type:	Notification
Report Dates:	Notification 06/30/2008 19:15 (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:	4) Perform Work Within Controls 5) Provide Feedback and Continuous Improvement
Subcontractor Involved:	Yes Amercian Electric
Occurrence Description:	On Thursday, June 26, 2008, at approximately 0800 hours, a planned activity was initiated to fabricate and install a longer 120 volt power cord on a liquid flow meter. During fabrication of the new power cord, an electrician installed a male cord cap on one end and routed the wire from a location near the receptacle (not plugged in) to the flow meter. After determining the appropriate length of the cord, the subcontractor electrician cut the cord near the flow meter and left the immediate area. During his absence (~ 0930 hours), PNNL staff, who regularly operate the flow meter, thinking the installation was completed, attempted to turn on the flow meter by plugging in the male end of the cord into the 120V outlet, creating an uncontrolled hazardous energy source at the cut end of the cord. Upon his return, the electrician, noticing what the PNNL staff were doing, warned them that the installation was not completed. There were no electrical shocks or contact with hazardous energy associated in the event.
Cause Description:	
Operating Conditions:	Dry surfaces
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)

Immediate Action(s):	The electrician completed the installation of the cord; putting it in a safe configuration. An immediate meeting was convened with all workers in the facility regarding the event and expectations for controlling potentially hazardous conditions associated with on-going work activities. Notifications were made and a critique was held Friday, June 27, 2008.
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:	Energy & Environment Directorate
Plant Area:	RCHN Area
System/Building/Equipment:	PDL-W
Facility Function:	Laboratory - Research & Development
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01Q--Inadequate Conduct of Operations - Personnel error 07D--Electrical Systems - Electrical Wiring 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On June 26, 2008, at approximately 0800 hours, during fabrication of a new power cord for a liquid flow meter, an electrician installed a male cord cap on one end and routed the wire from a location near the receptacle (not plugged in) to the flow meter. After determining the appropriate length of the cord, the subcontractor electrician cut the cord near the flow meter and left the immediate area. During his absence, PNNL staff, who thought the work was completed, attempted to turn on the flow meter by plugging in the male end of the cord into the 120V outlet, creating an uncontrolled hazardous energy source at the cut end of the cord. There were no electrical shocks or contact with hazardous energy associated in the event.
Similar OR Report Number:	
Facility Manager:	Name: Rinker, M. W. Phone: (509) 375-6623 Title: Mgr, Engineeringg Mechanics & Structural Materials

Originator:	Name: FAULK, DIANE E Phone: (509) 371-7046 Title: ACTING MANAGER, TECH OPS & ASSURANCE
HQ OC Notification:	Date: NA, Time: NA, Person Notified: NA, Organization: NA
Other Notifications:	Date: 06/26/2008, Time: 11:40 (PTZ), Person Notified: Carlson, J. L., Organization: PNSO
Authorized Classifier(AC):	Pollari, R. A. Date: 06/30/2008