

April 2009 Electrical Safety Occurrences

There were 11 electrical safety occurrences for April 2009:

- 1 resulted in a low-energy shock from a high-frequency source
- 5 involved inadequate lockout/tagout
- 5 involved electrical workers and 6 involved non-electrical workers
- 4 occurrences involved subcontractors
- 1 occurrence involved a vehicle contact with an overhead power line
- 1 occurrence involved penetration of an energized circuit during drilling

April reports indicate that workers are becoming more aware of electrical hazards since many of the reported incidents resulted from one employee observing and stopping an unsafe act before a co-worker was exposed to a hazard. Although there are still too many LOTO violations noted most did not result in an exposure by the offending worker. The single shock event occurred when a technician came in contact with a source of energy less than that needed to trip the GFCI protecting the circuit. The current was believed to be generated by a high-frequency source.

The 11 events this month are equal to the 11 events in April 2008 and seem to follow the trend experienced last year in the months March through August. We can expect that as work increases during the spring and summer months, so does the potential to expose workers to electrical hazards. It will take increased awareness, diligence, and attention-to-detail to reduce the number incidents and reduce the risk associated with electrical energy. May is designated Electrical Safety Awareness Month and is a great time to take a proactive approach to address the predictive undesirable trend in electrical events during the next several months.

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

None of the reports provided an ES score. The estimated scores provided in this report are based on information provided in the narratives. Although 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.

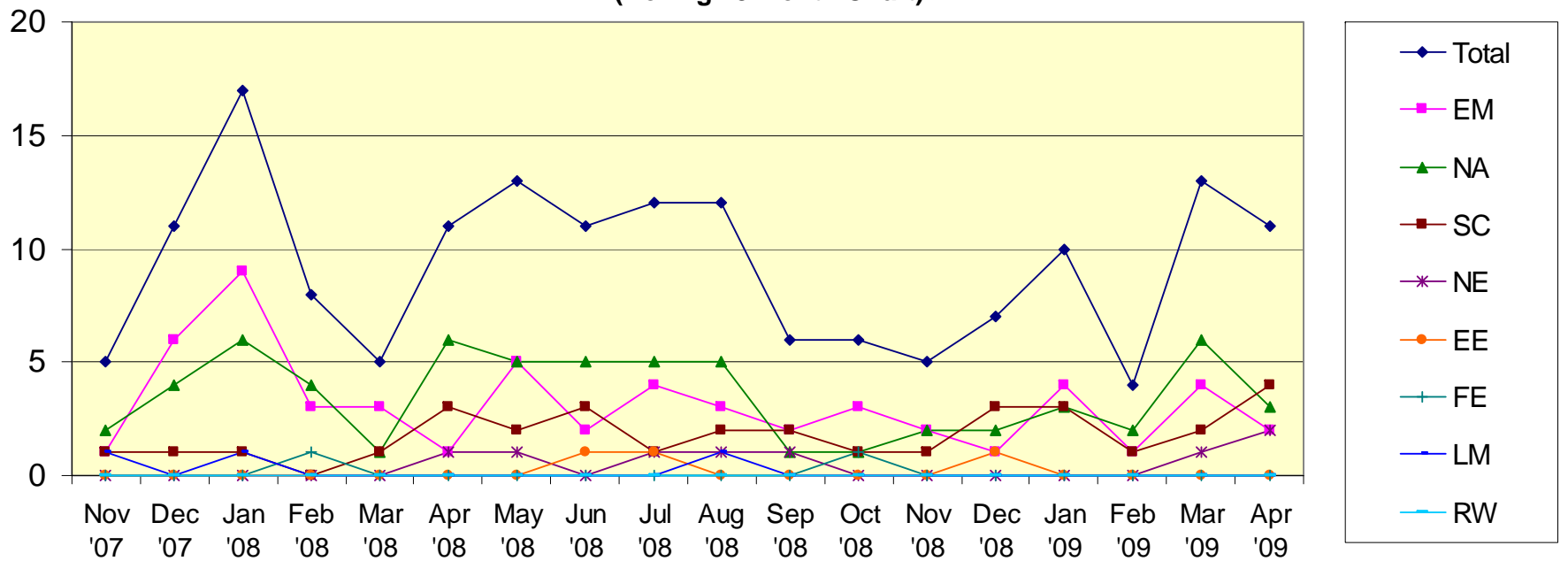
Below is the current summary of 2009 electrical safety occurrences:

Period	Electrical Safety Occurrences	Shocks	Burns	Fatalities
January-09	11	2	0	0
February-09	4	1	0	0
March-09	13	1	1	0
April-09	11	1	0	0
2009 total	39 (avg. 9.75/month)	5	1	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

After one quarter of the calendar year, the average rate of electrical safety occurrences in 2009 is 9.75 per month, which is slightly 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 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 – April 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⁾	ES ⁽⁹⁾
1	EM-RL--CPRC-PFP-2009-0005	While dismantling a conduit, an arc occurred in a wiring gutter.	X										0
2	EM-SR--GOSR-GOSR-2009-0001	A dump truck driven by a subcontractor hit a de-energized 480-volt overhead line with the raised bed.		X	X							X	0
3	NA--LASO-LANL-FIRNGHELAB-2009-0007	An electrical engineer performed electrical repairs without proper permits.	X										0
4	NA--LASO-LANL-NUCSAFGRDS-2009-0001	An energized circuit was damaged while drill penetrations in a ceiling.		X							X		?
5	NA--LSO-LLNL-LLNL-2009-0019	Metal filings entered an energized panel when a machine tool operator cut metal electrical conduit directly above the panel.		X					X				0
6	NE-ID--BEA-ATR-2009-0007	An elevator subcontractor failed to apply a LOTO.	X		X				X				0
7	NE-ID--BEA-SMC-2009-0003	A subcontract electrician opened an MCC and performed work that was not under control of a LOTO.	X		X				X				0
8	SC--BSO-LBL-ALS-2009-0001	Defective receptacles fail to drain high-frequency generated current to ground, resulting in contact of low-current energy by worker.		X		X							30
9	SC--PNSO-PNNL-PNNLBOPER-2009-0007	An employee failed to apply a personal locking device before accessing a de-energized panel.		X					X				0
10	SC--PNSO-PNNL-PNNLBOPER-2009-0008	An employee failed to apply a LOTO before accessing an energized electrical panel.		X					X				0
11	SC--SSO-SU-SLAC-2009-0010	An elevator subcontractor failed to increase the level of FR PPE before accessing a control panel with a label instructing to do so.	X		X								500
	TOTAL		5	6	4	1			5		1	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, (9)ES = electrical severity

ORPS Operating Experience Report

Production GUI - New ORPS

ORPS contains 54142 OR(s) with 57460 occurrences(s) as of 5/5/2009 11:42:48 AM
Query selected 11 OR(s) with 11 occurrences(s) as of 5/5/2009 3:23:57 PM

Download this report in Microsoft Word format. 

1)Report Number:	EM-RL--CPRC-PFP-2009-0005 After 2003 Redesign		
Secretarial Office:	Environmental Management		
Lab/Site/Org:	Hanford Site		
Facility Name:	Plutonium Finishing Plant		
Subject/Title:	An electrical arc occurred in a wiring gutter during a planned electrical dismantling activity in an adjacent conduit		
Date/Time Discovered:	04/29/2009 20:15 (PTZ)		
Date/Time Categorized:	04/30/2009 11:50 (PTZ)		
Report Type:	Notification		
Report Dates:	Notification	05/04/2009	18:40 (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:	1) Define the Scope of Work 2) Analyze the Hazards 3) Develop and Implement Hazard Controls		
Subcontractor Involved:	No		
Occurrence Description:	On April 29, 2009 at 2015 hours, the PFP Shift Operations Manager (SOM) was notified that an electrical arc had occurred in a wiring gutter adjacent to a planned electrical dismantling activity in Room 235-B. It was unclear at that time whether any electrical protection devices had tripped and the circuits involved in the arc were unknown. The electrical dismantling work activity involved a conduit pipe originating at the wiring gutter and extending down to an out of service glovebox conveyor motor control system. The circuits in this conduit pipe had been de-energized and		

	<p>determined under a task performed earlier. The work instructions directed that the conduit pipe be cut, safe and label the wiring as deactivated, after which this safe and labeled wiring remnant would be pulled into the wiring gutter and remain there. While the conduit pipe was being manipulated just prior to being cut, a loud pop noise was heard. The work team stopped the job and notified the Person-in-Charge (PIC). An electrical investigation work package was released. The wiring gutter was checked and it is believed that a conduit bushing equipped with a grounding lug, located within the wiring gutter on the end of the conduit pipe being manipulated, pinched adjacent wiring between the bushing's grounding lug and the gutter wall, compromising the insulation and leading to an arc involving at least one of the conductors. An isolation point for the damaged wiring was determined, and a Controlling Organization Lock and Tag applied to the involved circuit.</p> <p>Based on information known at the time, the SOM and PFP Operations and Maintenance Manager determined additional investigation would need to be performed and a critique conducted. At 2215 hrs there was not enough information available to properly categorize this event and the SOM initiated standard non-reportable notifications. Additionally, access was restricted to Room 235-B pending completion of the investigation.</p> <p>With further information gathered on 04/30/09, management determined the event to be reportable. At no time did personnel contact electrical energy.</p>
Cause Description:	
Operating Conditions:	Does not apply.
Activity Category:	Facility Decontamination/Decommissioning
Immediate Action(s):	<ol style="list-style-type: none"> 1. Halted the work activity 2. Identified, isolated and controlled energy to damaged wiring. 3. Restricted access to Room 235-B. 4. A Critique Meeting was held on 4/30/09 at 1300 hours.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	<p>Yes. Before Further Operation? No By Whom: By When:</p>
Division or Project:	Plutonium Finishing Plant Closure Project
Plant Area:	200 West Area

System/Building/Equipment:	Bldg. 234-5Z, Room 235-B / Glovebox Conveyor HA-28															
Facility Function:	Plutonium Processing and Handling															
Corrective Action:																
Lessons(s) Learned:																
HQ Keywords:	01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 07D--Electrical Systems - Electrical Wiring 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency															
HQ Summary:	On April 29, 2009, an electrical arc occurred in a wiring gutter adjacent to a planned electrical dismantling activity. The conduit pipe was being manipulated just prior to being cut and a loud pop noise was heard. All electrical energy was then isolated and controlled. No personnel received an electrical shock or injury from this event. The work team stopped the job and made management notifications. An electrical investigation was started and a critique was held.															
Similar OR Report Number:																
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td colspan="3">CROCKER, MARK A.</td> </tr> <tr> <td>Phone</td> <td colspan="3">(509) 373-0600</td> </tr> <tr> <td>Title</td> <td colspan="3">PFP CLOSURE MANAGER</td> </tr> </table>				Name	CROCKER, MARK A.			Phone	(509) 373-0600			Title	PFP CLOSURE MANAGER		
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Originator:	<table border="1"> <tr> <td>Name</td> <td colspan="3">LEONARD, WILLIAM J</td> </tr> <tr> <td>Phone</td> <td colspan="3">(509) 373-1820</td> </tr> <tr> <td>Title</td> <td colspan="3">SENIOR OPERATIONS MANAGER</td> </tr> </table>				Name	LEONARD, WILLIAM J			Phone	(509) 373-1820			Title	SENIOR OPERATIONS MANAGER		
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04/30/2009	12:20 (PTZ)	Dickinson, Sharee L.	DOE-RL													
Authorized Classifier(AC):	N/A Date: 05/04/2009															

2)Report Number:	EM-SR--GOSR-GOSR-2009-0001 After 2003 Redesign
Secretarial Office:	Environmental Management
Lab/Site/Org:	Savannah River Site
Facility Name:	Government Operated Savannah River
Subject/Title:	Dump Truck Contacts Overhead Electrical Lines
Date/Time Discovered:	04/09/2009 08:50 (ETZ)
Date/Time Categorized:	04/09/2009 14:00 (ETZ)
Report Type:	Update

Report Dates:	Notification	04/10/2009	12:32 (ETZ)
	Initial Update	04/13/2009	10:10 (ETZ)
	Latest Update	04/24/2009	16:00 (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:	3) Develop and Implement Hazard Controls 4) Perform Work Within Controls		
Subcontractor Involved:	Yes Evans Grading and Paving		
Occurrence Description:	On 04/09/09, while a subcontractor for the U.S. Forest Service-Savannah River (USFS-SR), Evans Grading and Paving was conducting secondary road maintenance when a ten-wheeled dump truck's raised bed contacted overhead 480 volt electrical lines. Two insulated electrical lines were severed and two insulated lines suffered frictional damage to the insulation. At the time of the event, the lines were de-energized as a photocell (switch) is located upstream of the impact area and the event occurred during daylight hours. The truck driver backed the vehicle a safe distance and exited the vehicle.		
Cause Description:	The primary cause of this accident was the dump truck driver's lack of attention to the location of the power-line. He may have been overly focused on watching the gravel being gradually dumped onto the roadway behind the truck. When the dump truck driver realized he was at the power-line he then mistakenly thought that the raised truck bed would not contact the power-line. The contractor's representative (CR) was following the dump truck, but he too did not realize how close the dump truck was to the power-line until it was too late to stop the truck. A contributing cause was the failure of the CR to review the safety plan with the dump truck driver on the day of the accident.		
Operating Conditions:	Normal daylight hours with no rain		
Activity Category:	Maintenance		
Immediate Action(s):	Road maintenance activities were stopped. Notifications of the event were made to USFS-SR, DOE, and the Site M&O contractor. The upstream electrical disconnect was opened and work instructions (including a lockout/tagout) are being prepared for the necessary repairs.		
	A critique was held on 04/13/09. Participants included DOE-SR program		

	representatives, facility representatives and safety officers; USFS-SR project representatives, contracting officer, and safety officer; Savannah River Nuclear Solutions (SRNS) safety personnel; and the contractor (Evans Paving and Grading).
FM Evaluation:	The Manager of the USFS-SR participated in the critique and development of the corrective actions. I (DOE-SR Senior Technical Adviser and Project Officer) also attended the critique and agree with the proposed corrective actions.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: USFS-SR Manager By When:
Division or Project:	EQMD / AMCP
Plant Area:	K-Area
System/Building/Equipment:	Balance of Plant
Facility Function:	Balance-of-Plant - Site/outside utilities
Corrective Action 01:	Target Completion Date: 04/30/2009 Actual Completion Date:
	Look up, review, and evaluate a 2002 power-line incident (on a USFS-SR job site) to see what corrective actions were instituted and determine their relevance to the 2009 accident.
Corrective Action 02:	Target Completion Date: 04/30/2009 Actual Completion Date:
	The USFS-SR subcontractor will revise the JHA to incorporate additional level of controls and conduct a safety stand down with all its employees working under this USFS-SR contract.
Corrective Action 03:	Target Completion Date: 04/30/2009 Actual Completion Date:
	The USFS-SR will investigate the minimum clearance requirements exclusion for working under power-lines (e.g., road graders) and incorporate this information into appropriate JHAs.
Corrective Action 04:	Target Completion Date: 04/30/2009 Actual Completion Date:
	The USFS-SR will review and validate procedures for workers to follow in case of contact with power-lines.
Lessons(s) Learned:	1) The JHA may have been too vague concerning the 25-foot buffer on either side of the power-line. 2)The addition of a warning marker (e.g., green traffic cone 25-feet in front of the power-line) or spotter might have prevented this accident. 3)Special attention is needed to assure that the safety plan is reviewed by all job participants - especially those that are new

	to the job site.															
HQ Keywords:	01N--Inadequate Conduct of Operations - Inadequate Job Planning (Other) 01O--Inadequate Conduct of Operations - Inadequate Maintenance 07D--Electrical Systems - Electrical Wiring 08F--OSHA Reportable/Industrial Hygiene - Industrial Operations Issues 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical) 11G--Other - Subcontractor 12K--EH Categories - Near Miss (Could have been a serious injury or fatality) 13E--Management Concerns - Facility Call Sheet 14E--Quality Assurance - Work Process Deficiency 14G--Quality Assurance - Procurement Deficiency															
HQ Summary:	On April 9, 2009, while conducting secondary road maintenance, the raised bed of a ten-wheeled dump truck operated by a subcontractor for the U.S. Forest Service-Savannah River, hit overhead 480-volt electrical lines. Two electrical lines were severed and the insulation on two other lines was damaged. The electrical lines were not energized because a photocell controls power and the incident occurred during daylight. The truck driver backed the vehicle a safe distance and exited the vehicle. Road maintenance was stopped and the upstream electrical disconnect was locked and tagged out to allow for repairs. A critique is scheduled.															
Similar OR Report Number:																
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td colspan="3">RYAN, DENNIS P</td> </tr> <tr> <td>Phone</td> <td colspan="3">(803) 952-7824</td> </tr> <tr> <td>Title</td> <td colspan="3">SENIOR TECHNICAL ADVISOR</td> </tr> </table>				Name	RYAN, DENNIS P			Phone	(803) 952-7824			Title	SENIOR TECHNICAL ADVISOR		
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04/09/2009	14:00 (ETZ)	Fryar, Scottie	DOE-SR													
Authorized Classifier(AC):	Drew Grainger Date: 04/10/2009															

3)Report Number:	NA--LASO-LANL-FIRNGHELAB-2009-0007 After 2003 Redesign
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Los Alamos National Laboratory
Facility Name:	Firing Sites and HE Lab.

Subject/Title:	MANAGEMENT CONCERN: Energized Work Performed Without Proper Permits		
Date/Time Discovered:	04/01/2009 14:45 (MTZ)		
Date/Time Categorized:	04/01/2009 14:45 (MTZ)		
Report Type:	Notification		
Report Dates:	Notification	04/02/2009	19:46 (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:	<p>MANAGEMENT SYNOPSIS: On March 17, 2009, at Technical Area 39, Building 57 (TA-39/57), an International and Applied Technology Division (IAT), Applied Electromagnetics (IAT-2) Group Research and Development (R & D) Electrical Engineer, while configuring a power system to support a programmatic demonstration, deviated from the approved "Power Line Configuration Procedure" PRC-08-0001, Rev A (PRC-08-0001), resulting in diagnostic work being performed on an energized system. A critique was held on April 1, 2009 whereby the Facility Operations Director Designee (FOD) categorized the event as a Management Concern Group 10, Subgroup 2, Significance Category 3. This event neither resulted in a personal injury nor any long term programmatic, facility, or environmental impacts.</p> <p>BACKGROUND: In June 2008, an upgrade was completed on the programmatic power installation at TA39/57; however the upgraded installation was never commissioned due to shifted programmatic priorities. Additionally, the system in the required configuration had not been used since early months of 2008. In March 2009, the equipment configuration was scheduled for testing and, in support of that effort; the power system would need to be energized. The power line configuration (PLC) would be performed by three IAT-2 personnel including the R & D engineer, a licensed electrician, and a technician in accordance with the PRC-08-10-0001. All work covered by this procedure per a hazard analysis of the work</p>		

is deemed to be low hazard and does not require an Integrated Work Document (IWD) to be generated when all engineered and administrative barriers are in place. Note: PLC work is not considered "testing operations", which may require an IWD pending hazard analysis. Additionally, PRC-08-0001 dictates proper (and specific) sequencing and procedural steps when operating the programmatic power system (PPS) and identifies appropriate operation of the system including Kirk Key engineered interlock controls for the safe isolation of power (vs. a formal lockout/tagout process).

On March 17, 2009, PRC-08-10-0001 was reviewed, updated, and signed by workers, R and D Electrical Engineer, IAT -2 Responsible Line Manager (RLM), and two Facility Operations Directors (FOD) designees associated with Science and Technology Operations and the Weapons Facilities. A few days prior to March 17, 2009, the R & D Electrical Engineer drove down the entire programmatic utility to ensure that there were no obvious problems. He and the two other workers then did a pre-job brief against PRC-08-10-0001 prior to testing the programmatic utility. During the start-up process, it became apparent that there was a problem with the programmatic power delivery. While still working within the PRC-08-10-0001 process, the R & D Electrical Engineer determined that the problem was likely occurring with equipment installed during the 2008 upgrade. Since no work had been performed since the upgrade and the upgrade did not undergo a final commissioning at the conclusion of the upgrade, no one realized earlier that a problem existed with the power flow. At this point, R & D Electrical Engineer proceeded with diagnostic analysis which required that the affected sections be energized. Upon discovering the source of the problem (incorrect wiring connections), R & D Electrical Engineer proceeded to fix the problem. The consequence of R & D Electrical Engineer's actions resulted in work being performed outside the scope of work of PRC-08-10-0001 and without proper work permits or an IWD. According to the Weapons Facility (WFO) Electrical Safety Officer (ESO), the programmatic utility troubleshooting was conducted in a safe manner but it should have been performed using an IWD.

Cause Description:	
Operating Conditions:	Normal
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	1)IAT-2 group management formally Paused Work on programmatic utilities work at TA-39/57 on 3/31/09 at approximately 1500 to evaluate the event. 2)A formal walk down of PRC-08-0001, as related to TA-39-/57, took place at 04/02/2009, 0830 hours with all relevant personnel, including the Weapons Facility Operations-Weapons Facilities (WFO-WF) Operations Manager.
FM Evaluation:	
DOE Facility Representative	

Input:									
DOE Program Manager Input:									
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: ESH-OFF & FOD By When: 05/15/2009								
Division or Project:	International and Applied Technologies								
Plant Area:	TA-39-57								
System/Building/Equipment:	Programatic Utilities								
Facility Function:	Balance-of-Plant - Site/outside utilities								
Corrective Action:									
Lessons(s) Learned:									
HQ Keywords:	01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 01O--Inadequate Conduct of Operations - Inadequate Maintenance 12B--EH Categories - Conduct of Operations 14E--Quality Assurance - Work Process Deficiency								
HQ Summary:	On March 17, 2009, while configuring a power system to support a programmatic demonstration at Technical Area 39, Building 57, an electrical engineer deviated from the approved Power Line Configuration Procedure when he performed diagnostic work on an energized system. The electrical engineer was trying to diagnose a problem with the programmatic power delivery, which required the affected sections to be energized. Upon discovering incorrect wiring connections, the electrical engineer proceeded to fix the problem, which was performed outside the scope of work of the procedure and without proper work permits or an Integrated Work Document. A critique was held.								
Similar OR Report Number:									
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td>R. R. Sharp-Geiger</td> </tr> <tr> <td>Phone</td> <td>(505) 667-4246</td> </tr> <tr> <td>Title</td> <td>WFO Facility Operations Director</td> </tr> </table>	Name	R. R. Sharp-Geiger	Phone	(505) 667-4246	Title	WFO Facility Operations Director		
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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>04/01/2009</td> <td>14:45 (MTZ)</td> <td>Roberto Torres</td> <td>NNSA</td> </tr> </tbody> </table>	Date	Time	Person Notified	Organization	04/01/2009	14:45 (MTZ)	Roberto Torres	NNSA
Date	Time	Person Notified	Organization						
04/01/2009	14:45 (MTZ)	Roberto Torres	NNSA						

Authorized Classifier(AC): Antonia Tallarico Date: 04/02/2009

4)Report Number:	NA--LASO-LANL-NUCSAFGRDS-2009-0001 After 2003 Redesign		
Secretarial Office:	National Nuclear Security Administration		
Lab/Site/Org:	Los Alamos National Laboratory		
Facility Name:	Nuclear Safeguards		
Subject/Title:	Management Concern: Circuit Breakers Tripped		
Date/Time Discovered:	04/30/2009 12:00 (MTZ)		
Date/Time Categorized:	04/30/2009 12:05 (MTZ)		
Report Type:	Notification		
Report Dates:	Notification	05/04/2009	20:15 (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:	<p>MANAGEMENT SYNOPSIS: On April 30, 2009, at 1205, the Science and Technology Operations (STO) Facility Operations Director (FOD) declared a management concern due to the tripping of circuit breakers in Technical Area 3, Building 2322 resultant of a conduit being compromised during ceiling penetration work. On April 28, 2009, at 1822, the STO operations manager (OM) received an electronic page from a tenant informing him of a power outage on the fourth floor of TA3-2322. Subsequent inspection found a circuit breaker and main circuit breaker on the fourth floor had tripped. The breakers were re-set and the power restored. Preliminary evaluation indicated two possible scenarios for the impact to the circuit breakers. First, the insulation on a conductor(s) inside of the conduit embedded in the concrete between the third and fourth floor may have been compromised during penetration work performed on the third floor. Secondly, the electrical panel where these circuit breakers were located may be overloaded. The STO operations manager suspended the penetration work</p>		

pending further evaluation.

BACKGROUND: The following is the sequence of events relative to the event:

On April 28, 2009, at 1822, the STO operations manager (OM) received an electronic page from a tenant informing him of a power outage on the fourth floor of TA3-2322. At 1840, the OM responded to the site and began to investigate. He went to the electrical panel in the east electrical closet and found a breaker tripped. The OM reset the breaker, but power was not restored. He then observed the main circuit breaker in the tripped position. Prior to resetting the breaker, the OM went to another electrical closet on the fourth floor to check on the breakers in that electrical panel. No breakers were found in the tripped position. He went back to the first panel and turned off all the breakers in the panel. He re-set the main breaker without incident and then re-set each individual breaker separately without incident restoring power. The OM observed no evidence of scorching on the electrical panel.

After realizing carpenters were performing a Class 1 penetration in the ceiling on the third floor, the OM went to check on the work. The work was being performed in support of a security project. The carpenters indicated they had made shallow penetrations of approximately one inch in depth and 1/4 inch in diameter to install six anchors in the ceiling. Visual inspection of the drill bits used for the penetration and the electrical outlet where the drill was plugged into showed no signs of scorching. The carpenters reported no abnormalities with work. The work was authorized under an integrated work document and a Class 1 penetration permit had been generated. The carpenters wore di-electric gloves and used a double-insulated drill and GFCI protection to perform the penetrations. Subsequent review determined the penetration work was conducted in accordance with LANL Procedure P101-22, "Penetration Operations Safety Program." Because of the reason(s) for the tripping of the circuit breakers was indeterminate, the OM suspended the penetration work and secured the room pending further evaluation. The OM notified the project superintendent of the work suspension.

The OM notified the STO engineering manager who responded to the scene. After visual inspection, the STO engineering manager determined the area was in a safe configuration until a more thorough inspection could be conducted. The OM notified and briefed the STO FOD on the status of the situation.

On April 29, 2009, at 0720, the STO maintenance coordinator conducted a walk-down of the affected area. He observed no scorching in the electrical outlets or breakers in the tripped position.

At 1000, the STO FOD convened a critique to review the sequence of events

and to determine a path forward. Based on the information collected and the determination the event posed no safety or fire hazard, the STO FOD categorized the event as sub-threshold reportable pending further inspection and testing. A path forward was developed which included: a) develop a formal plan and integrated work document (IWD) to conduct further inspection and testing of the circuits to determine any damages to the circuit conductors; b) removed the anchors previously installed to determine the presence of a conduit in the concrete; c) notify tenants and security personnel of the testing; and d) this work would be conducted on April 29, 2009, after the proper review and approvals have been obtained. A follow-up critique was scheduled for April 30, 2009.

The Chief Electrical Safety Officer and the STO electrical safety officer evaluated the event using the electrical severity measurement tool. The evaluation resulted in a score of 10 which was considered low hazard due to the workers wearing the appropriate personal protective equipment and the use of double-insulated tools.

After the critique, the STO FOD tasked the STO maintenance manager to review the IWDs for the penetration work. The review found the IWD had no mention of the embedded conduit hazard.

At approximately 1630, a pre-job briefing was held for the breaker crew. After the briefing, the breaker crew locked and tagged out the necessary circuit breakers and began the inspection and testing of the circuit breakers. Using electrical testing (meggering), the initial evaluation of the circuits did not result in a direct indication of damage to the circuit conductor insulation. It was subsequently determined from pictures taken during the original facility construction that the embedded conduit was non-metallic.

After the anchor bolts were removed, it was discovered the south anchor bolt and possibly another one in the ceiling penetration had penetrated a conduit causing the breaker to trip. An electrical insulation check determined Circuit Conductor 21 on LP-72 had been slightly damaged; however, the testing resulted in more than adequate insulation resistance which subsequent tripping probably would not occur. The breach in insulation, the apparently undamaged adjacent conductors in the same conduit, and the conduit was non-metallic contributed to this assertion. In spite of adequate insulation resistance measurements, the Circuit Conductor 21 was left in the off position pending further action(s) to affect corrective maintenance.

At 2230, the follow-on activities were completed. The OM notified the STO FOD of the status of the work.

On April 30, 2009, at 1115, a follow-up critique was conducted. The OM indicated a conduit in the ceiling had been slightly compromised during the

	penetration work impacting Circuit 21. Based on this information, it was determined the ceiling penetration caused the main breaker to trip. The STO FOD re-categorized the event as a reportable management concern.
Cause Description:	
Operating Conditions:	Normal Operations
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	<p>1. The STO OM suspended the penetration work pending further review. The work will be resumed after the IWDs for the project have been reviewed and re-approved.</p> <p>2. The STO OM secured the room where the penetration work was being performed.</p> <p>3. At the direction of the STO FOD, further inspection and testing was conducted on the circuits to determine any damages to circuit conductors. The inspection found a conduit in the ceiling had been penetrated causing the breaker to trip. An electrical insulation check determined Circuit Conductor 21 on LP-72 was slightly damaged. The Circuit Conductor 21 was left in the off position pending further action(s) to affect corrective maintenance.</p> <p>4. The STO FOD tasked the STO maintenance manager to review the work packages for the security construction project to ensure their appropriateness. In addition, the roles and responsibilities for the project personnel and interfaces between the project, STO maintenance, and STO operations will be evaluated.</p> <p>5. The Project Management personnel will have the project's design engineering firm review alternatives for ceiling penetrations.</p>
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	<p>Yes. Before Further Operation? No By Whom: STO-DO, PMF-DO & CAO-PF By When: 06/12/2009</p>
Division or Project:	Science and Technology Operations Division
Plant Area:	TA3-2322 4th Floor
System/Building/Equipment:	LP-70 Main Circuit Breaker
Facility Function:	Balance-of-Plant - Safeguards/security
Corrective Action:	

Lessons(s) Learned:									
HQ Keywords:	01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 07C--Electrical Systems - Power Outage 07D--Electrical Systems - Electrical Wiring 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency								
HQ Summary:	On April 30, 2009, a management concern was declared due to the tripping of circuit breakers in Building 2322 as a result of a conduit being compromised during ceiling penetration work. On April 28, 2009, an inspection in response to a power outage found a circuit breaker and main circuit breaker on the fourth floor had tripped. The breakers were reset and the power restored. Management suspended the penetration work pending further evaluation.								
Similar OR Report Number:									
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td>Gail Johnson</td> </tr> <tr> <td>Phone</td> <td>(505) 667-4362</td> </tr> <tr> <td>Title</td> <td>STO Facility Operations Director</td> </tr> </table>	Name	Gail Johnson	Phone	(505) 667-4362	Title	STO Facility Operations Director		
Name	Gail Johnson								
Phone	(505) 667-4362								
Title	STO Facility Operations Director								
Originator:	<table border="1"> <tr> <td>Name</td> <td>YAZZIE, ALVA M</td> </tr> <tr> <td>Phone</td> <td>(505) 664-0666</td> </tr> <tr> <td>Title</td> <td>OCCURRENCE INVESTIGATOR</td> </tr> </table>	Name	YAZZIE, ALVA M	Phone	(505) 664-0666	Title	OCCURRENCE INVESTIGATOR		
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HQ OC Notification:	<table border="1"> <tr> <td>Date</td> <td>Time</td> <td>Person Notified</td> <td>Organization</td> </tr> <tr> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> </tr> </table>	Date	Time	Person Notified	Organization	NA	NA	NA	NA
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Date	Time	Person Notified	Organization						
05/04/2009	08:55 (MTZ)	Notification Line	NNSA						
Authorized Classifier(AC):	Antonia Tallarico Date: 05/04/2009								

5)Report Number:	NA--LSO-LLNL-LLNL-2009-0019 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:	Near Miss Involving Non-authorized Energized Work in Building 691		
Date/Time Discovered:	04/23/2009 14:30 (PTZ)		
Date/Time Categorized:	04/24/2009 14:45 (PTZ)		
Report Type:	Notification		
Report Dates:	Notification	04/28/2009	16:55 (ETZ)
	Initial Update		

	Latest Update		
	Final		
Significance Category:	3		
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 3 occurrence)</p>		
Cause Codes:			
ISM:			
Subcontractor Involved:	No		
Occurrence Description:	<p>On the morning of April 23, 2009, a Machine Tool Services (MTS) worker performing Decommission and Demolition (D&D) work in Building 691, Room 116, cut into multiple empty metal electrical conduits directly above three energized electrical panels (480/277 & 208/120 volt). No energized conductors were touched, however, the cutting could have introduced metal chips/shavings into the electrical panels through the conduit, creating the potential for an arc flash and possible severe personal injury.</p> <p>At approximately 1:45 PM on April 23rd, a facility construction manager observed the energized panels with cut conduit stubs. The MTS workers had completed this portion of the work and were not present in Building 691 at this time. The construction manager then contacted facility management, management in charge of the electrical work and the LLNL electrical safety subject matter expert (SME). The area was secured, based on guidance from the electrical safety SME. The panel was de-energized using Lock Out/Tag Out (LOTO) procedures, the panels were then vacuumed and cleaned of debris and "knockout" panels installed in the holes left by removal of the conduit.</p> <p>There was no evidence of an arc flash or damage at or in the panels, no report of injuries and no indication of any contact with hazardous energy. This was confirmed by interview with the affected workers and their management.</p> <p>The worker stated he had LOTO'd the panels, disconnected the conductors in</p>		

	<p>the panel and pulled them out of the conduits. He then cleared the LOTO on the panels and re-energized them (to clear a facility trouble alarm condition). The worker then proceeded to cut the conduit from which he had just pulled the cabling.</p> <p>As the power panels had been re-energized the cutting of the conduit was considered work on or near energized electrical equipment, requiring either LOTO or appropriate permitting and personal protective equipment. Neither of which were in place. For this reason this Occurrence Report meets the criteria for a Group 2(C)2, SC3.</p> <p>The incident resulted in an electrical severity score in the "high" category (700), using the EFCOG Electrical Severity Measurement Tool. Based on this result, and the result of a critique held Monday, April 27, it was determined that this incident met the criteria for a Group 10(3), SC3, "Near Miss" OR. A management review of the incident will be conducted.</p>
Cause Description:	
Operating Conditions:	Does not apply
Activity Category:	Facility Decontamination/Decommissioning
Immediate Action(s):	The work was halted, the area placed in a safe, secure status and a critique held.
FM Evaluation:	<p>The Final Report is due to the ORO by 6/5/2009.</p> <p>The Final Report is due for entry into ORPS by 6/8/2009.</p>
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	<p>Yes.</p> <p>Before Further Operation? No</p> <p>By Whom: Bob Dillman</p> <p>By When: 06/05/2009</p>
Division or Project:	S&T Eng
Plant Area:	Site 200
System/Building/Equipment:	Building 691 Electrical System/Panels
Facility Function:	Balance-of-Plant - Machine shops
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	<p>01E--Inadequate Conduct of Operations - Operations Procedure Noncompliance</p> <p>01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical)</p> <p>07D--Electrical Systems - Electrical Wiring</p>

	08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical) 12K--EH Categories - Near Miss (Could have been a serious injury or fatality) 14E--Quality Assurance - Work Process Deficiency																				
HQ Summary:	On April 23, 2009, a Machine Tool Services worker performing decommission and demolition work in Building 691, Room 116, cut into multiple empty metal electrical conduits directly above three energized electrical panels (480/277 and 208/120 volt). No energized conductors were touched; however, the cutting could have introduced metal chips/shavings into the electrical panels through the conduit, creating the potential for an arc flash and possible severe personal injury. The work was halted, the area placed in a safe and secure status. A critique was held.																				
Similar OR Report Number:																					
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td>Monya Lane</td> </tr> <tr> <td>Phone</td> <td>(925) 422-1886</td> </tr> <tr> <td>Title</td> <td>Engineering Associate Director (Acting)</td> </tr> </table>	Name	Monya Lane	Phone	(925) 422-1886	Title	Engineering Associate Director (Acting)														
Name	Monya Lane																				
Phone	(925) 422-1886																				
Title	Engineering Associate Director (Acting)																				
Originator:	<table border="1"> <tr> <td>Name</td> <td>FREEMAN, JEFFREY W</td> </tr> <tr> <td>Phone</td> <td>(925) 424-6787</td> </tr> <tr> <td>Title</td> <td>OCCURRENCE REPORTING</td> </tr> </table>	Name	FREEMAN, JEFFREY W	Phone	(925) 424-6787	Title	OCCURRENCE REPORTING														
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Title	OCCURRENCE REPORTING																				
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04/24/2009	15:32 (PTZ)	Steve Liedle	LLNL DD																		
Authorized Classifier(AC):																					

6)Report Number:	NE-ID--BEA-ATR-2009-0007 After 2003 Redesign
Secretarial Office:	Nuclear Energy, Science and Technology
Lab/Site/Org:	Idaho National Laboratory
Facility Name:	Advanced Test Reactor
Subject/Title:	Unguarded Energized 480 Volt Freight Elevator Control Panel Discovered at the Advanced Test Reactor (ATR)
Date/Time Discovered:	04/08/2009 09:00 (MTZ)
Date/Time Categorized:	04/08/2009 14:30 (MTZ)
Report Type:	Notification

Report Dates:	Notification	04/13/2009	18:21 (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		
Subcontractor Involved:	Yes Schlinder Elevator Corporation		
Occurrence Description:	<p>At approximately 0900 on April 8, 2009, during an oversight tour of the ATR facility, a DOE Facility Representative (FacRep) discovered a control panel with the panel cover removed. The FacRep, while touring the ATR second basement, determined the freight elevator control panel was energized when he noticed lights and a Liquid Crystal Display (LCD) were on. The panel cover was removed, no workers were in attendance, and no barriers were in place to prevent access to unqualified personnel. The FacRep also noted, on the lower portion of the control panel, vinyl material (rated at 5000 volts) covering the 480 volt connections feeding the panel, but not covering the exposed wiring to the fuse holders (energized by 110 volts alternating current [ac]).</p> <p>The FacRep left the area to consult with another FacRep and to notify the ATR Shift Supervisor (SS) of a potential problem as, at the time, the FR did not know what voltage was on the wiring to the fuse holders. While the FacRep was gone, the subcontractor who had been doing the overhaul work on the ATR freight elevator for the past several weeks, was in the process of troubleshooting a problem with the "Down Slow" solenoid for the elevator controls. The subcontractor, working under the escort criteria in the company lockout/tagout (LO/TO) program, opened the power disconnect and installed a personal lock and tag on the disconnect, without the escort present. It was later discovered that zero energy verification was being accomplished by observing the lights and LCD going off when the disconnect was open instead of using a meter to determine zero energy as required by procedure.</p>		

Cause Description:	
Operating Conditions:	The Advanced Test Reactor was operating at nominal full power for Cycle 144A-1.
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	Appropriate levels of BEA management and DOE-ID personnel were notified of this event. A critique was scheduled for April 9, 2009, at 0800 hours. A barrier was installed around the control panel to prevent access.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	ATR Programs
Plant Area:	Second Basement
System/Building/Equipment:	Advanced Test Reactor, TRA-670
Facility Function:	Category "A" Reactors
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) 01R--Inadequate Conduct of Operations - Management issues 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 April 8, 2009, during an oversight tour of the ATR facility, a DOE Facility Representative discovered a panel cover removed from an energized control panel for a freight elevator. There were no workers in attendance and no barriers were in place to prevent access to unqualified personnel. After the Facility Representative left the area, the subcontractor, who was overhauling the elevator under the escort criteria in the company lockout/tagout program, opened the power disconnect and installed a personal lock and tag on the disconnect, without the escort present. It was later discovered that zero energy verification was performed by observing the disconnect indicating lights instead of using a meter to determine zero

	energy as required by procedure. A barrier was installed around the control panel to prevent access and a critique was held.			
Similar OR Report Number:	1. NE-ID--BEA-ATR-2009-0006			
Facility Manager:	Name	SCHUEBERT, EDMOND J		
	Phone	(208) 533-4284		
	Title	ATR OPERATIONS FACILITY MANAGER		
Originator:	Name	OWENS, MARJORIE A		
	Phone	(208) 533-4563		
	Title	ATR OPERATIONS FACILITY ADMINISTRATI		
HQ OC Notification:	Date	Time	Person Notified	Organization
	NA	NA	NA	NA
Other Notifications:	Date	Time	Person Notified	Organization
	04/08/2009	09:00 (MTZ)	J. Geringer	DOE-ID
	04/08/2009	12:45 (MTZ)	R. Denning	DOE-ID
	04/08/2009	14:30 (MTZ)	R. Denning	DOE-ID
Authorized Classifier(AC):	E. BRUCE CRISWELL Date: 04/13/2009			

7)Report Number:	NE-ID--BEA-SMC-2009-0003 After 2003 Redesign		
Secretarial Office:	Nuclear Energy, Science and Technology		
Lab/Site/Org:	Idaho National Laboratory		
Facility Name:	Specific Manufacturing Capability		
Subject/Title:	Work Performed in Energized Electrical Panel Without Proper Protection		
Date/Time Discovered:	04/06/2009 07:10 (MTZ)		
Date/Time Categorized:	04/06/2009 08:30 (MTZ)		
Report Type:	Notification		
Report Dates:	Notification	04/08/2009	16:57 (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 K & D Electric
Occurrence Description:	<p>On April 6, 2009, at the Specific Manufacturing Capability (SMC) facility, a BEA employee observed a subcontractor electrician open a Motor Control Center (MCC) panel, and recognized that the work was not being performed under a Lockout/Tagout. The BEA employee notified the SMC Safety and Health Manager and the SMC Electrical Foreman of the observation.</p> <p>The subcontractor electrician performed work in violation of the work control requirements established contractually by INL Subcontractor Requirements Manual, Requirements Document RD-2011 Electrical Safety and RD-2012 Lockouts and Tagouts.</p> <p>No personnel were injured as a result of this event. With the circuit breakers in an open and undamaged condition there was no electrical shock hazard. However, the flash boundary, for the entire MCC, is calculated to be 61.9 inches, which included the area where the subcontractor had performed work without the proper PPE as required by RD-2011 and NFPA 70E.</p>
Cause Description:	
Operating Conditions:	Construction
Activity Category:	Construction
Immediate Action(s):	<p>BEA Facility and Site Services management placed an immediate suspension (see below) on subcontractor energized electrical work and work requiring a Lockout/Tagout until the issue can be addressed.</p> <p>"ALL ELECTRICAL WORK IS TO STOP IMMEDIATELY THAT INVOLVES LOCK OUT TAG OUT AND/OR WORKING IN LIVE OR POTENTIALLY LIVE PANELS UNTIL FURTHER NOTICE. PRIOR TO WORKING IN OR AROUND ONE OF THESE CONDITIONS YOU MUST CONTACT CONSTRUCTION. RUNNING OF CONDUIT, PULLING OF WIRE, ETC. MAY CONTINUE."</p>
FM Evaluation:	To be determined
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	<p>Yes.</p> <p>Before Further Operation? Yes</p> <p>By Whom: Anderson Eric K</p>

	By When: 05/15/2009																			
Division or Project:	F&SS, Construction Management																			
Plant Area:	SMC																			
System/Building/Equipment:	Electrical Power Supply/TAN- 629/MCC-AE-3																			
Facility Function:	Uranium Conversion/Processing and Handling																			
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) 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:	<p>On April 6, 2009, a Specific Manufacturing Capability facility worker observed a subcontractor electrician open a Motor Control Center panel and perform work that was not under appropriate lockout and tagout controls. The worker made appropriate management notifications of the observation. There was no electrical shock or injury as a result of this event. With the circuit breakers in an open and undamaged condition, there was no electrical shock hazard. Management placed an immediate suspension on all subcontractor energized electrical work.</p>																			
Similar OR Report Number:																				
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td colspan="3">SPELLS, JIMMY L</td> </tr> <tr> <td>Phone</td> <td colspan="3">(208) 526-6012</td> </tr> <tr> <td>Title</td> <td colspan="3">FACILITY SUPERVISOR</td> </tr> </table>				Name	SPELLS, JIMMY L			Phone	(208) 526-6012			Title	FACILITY SUPERVISOR						
Name	SPELLS, JIMMY L																			
Phone	(208) 526-6012																			
Title	FACILITY SUPERVISOR																			
Originator:	<table border="1"> <tr> <td>Name</td> <td colspan="3">GERDES, ANNETTE W</td> </tr> <tr> <td>Phone</td> <td colspan="3">(208) 526-6355</td> </tr> <tr> <td>Title</td> <td colspan="3">OPERATIONS SUPPORT</td> </tr> </table>				Name	GERDES, ANNETTE W			Phone	(208) 526-6355			Title	OPERATIONS SUPPORT						
Name	GERDES, ANNETTE W																			
Phone	(208) 526-6355																			
Title	OPERATIONS SUPPORT																			
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>04/06/2009</td> <td>08:30 (MTZ)</td> <td>Wayne Moe</td> <td>SMC Ops</td> </tr> <tr> <td>04/06/2009</td> <td>08:56 (MTZ)</td> <td>Joel Duling</td> <td>SMC Dir</td> </tr> <tr> <td>04/06/2009</td> <td>10:00 (MTZ)</td> <td>Robert Seal</td> <td>DOE-ID</td> </tr> </tbody> </table>				Date	Time	Person Notified	Organization	04/06/2009	08:30 (MTZ)	Wayne Moe	SMC Ops	04/06/2009	08:56 (MTZ)	Joel Duling	SMC Dir	04/06/2009	10:00 (MTZ)	Robert Seal	DOE-ID
Date	Time	Person Notified	Organization																	
04/06/2009	08:30 (MTZ)	Wayne Moe	SMC Ops																	
04/06/2009	08:56 (MTZ)	Joel Duling	SMC Dir																	
04/06/2009	10:00 (MTZ)	Robert Seal	DOE-ID																	
Authorized Classifier(AC):	Karl Griffin Date: 04/08/2009																			

8)Report Number:	SC--BSO-LBL-ALS-2009-0001 After 2003 Redesign		
Secretarial Office:	Science		
Lab/Site/Org:	Lawrence Berkeley Laboratory		
Facility Name:	Advanced Light Source Division		
Subject/Title:	Defective Electrical Receptacles at ALS		
Date/Time Discovered:	04/14/2009 15:10 (PTZ)		
Date/Time Categorized:	04/14/2009 16:38 (PTZ)		
Report Type:	Notification/Final		
Report Dates:	Notification	04/16/2009	18:10 (ETZ)
	Initial Update	04/16/2009	18:10 (ETZ)
	Latest Update	04/16/2009	18:10 (ETZ)
	Final	04/16/2009	18:10 (ETZ)
Significance Category:	4		
Reporting Criteria:	<p>4C(3) - Discovery of any defective item or material, other than a suspect/counterfeit item or material, in any application whose failure could result in a loss of safety function, or present a hazard to public or worker health and safety.</p> <p>A defective item or material is any item or material that does not meet the commercial standard or procurement requirements as defined by catalogues, proposals, procurement specifications, design specifications, testing requirements, contracts, or the like. It does not include parts or services that fail or are otherwise found to be inadequate because of random failures or errors within the accepted reliability level.</p>		
Cause Codes:			
ISM:	2) Analyze the Hazards		
Subcontractor Involved:	No		
Occurrence Description:	<p>On 04/08/2009 at approximately 0115, an LBNL vacuum technician received a mild electric shock when he came in contact with the case of a turbo pump cart in Building 6, room 1000.</p> <p>Details: The LBNL Engineering Division vacuum technician experienced a mild tingling sensation when he came in contact with the case of a turbo pump cart. Believing the turbo pump had a short, an electronic maintenance (EM) technician tagged out the pump and had a new pump brought in. Four hours later, the vacuum technician experienced another shock from the new pump. Upon investigation, the EM and the vacuum technicians suspected the source of the problem might have come from the receptacle on a plug strip located in a raceway mounted under a table. The EM technician tagged out the plug strip as well.</p>		

Cause Description:	
Operating Conditions:	Indoors, lighted, dry
Activity Category:	Maintenance
Immediate Action(s):	- The first pump cart was tagged out - The plug strip was tagged out
FM Evaluation:	<p>The pump cart was plugged into a 120V GFCI receptacle located in a raceway mounted under a table. The GFCI did not trip. An ammeter connected in series between the case and the grounded surface measured 0.55mA of current. GFCI trip setting is 4-6 mA, currents below this level are considered to be non-hazardous.</p> <p>During initial investigation, the EM technician tried plugging the cart into each of the four duplex receptacles mounted in the raceway. He found that the problem existed in three out of four cases. He suspected that there was a grounding problem in three of the receptacles.</p> <p>The LBNL electrical safety engineer conducted a follow-up investigation and noted the following findings:</p> <ol style="list-style-type: none"> 1. All metal surfaces of the cart were found to be electrically continuous (not 'floating'), measuring 54 mOhm resistance from the top to the bottom of the cart. 2. With the addition of the cord, the resistance increased to 117 mOhm which is not unusual. 3. When testing the ground pins of the receptacles with a receptacle tension tester, he found zero tension on the three problem receptacles, and ~20 oz. tension on the good receptacle. Minimum acceptable tension is 4 oz. Since the ground pin depends on this tension to establish a reliable path to ground, this indicated that at the time of the incident, the equipment grounding path was poor to nonexistent. 4. The three defective receptacles were all Arrow-Hart #GF5342. 5. A survey of other receptacles in the area revealed that 10 out of 12 Arrow-Hart receptacles had no ground tension. All other non-Arrow-Hart receptacles in the area were found to be satisfactory. <p>Preliminary Conclusions:</p> <ol style="list-style-type: none"> 1. The source of the voltage is likely to be one or more EMI Filters. These filters use capacitors to shunt undesirable frequencies to ground. With a properly grounded system, these tiny currents are conducted safely to ground and no voltage will be present on the exterior case. However, with the

	<p>grounding path eliminated, the open circuit voltage can rise to 60 volts between the case and a grounded surface.</p> <p>2. The current is inherently limited by the circuit to non-hazardous levels (less than 5mA), as evidenced by the observed short circuit current of 0.55mA. Human body impedance greatly reduces the possible current. Therefore, the "shock" did not represent a hazardous energy source.</p> <p>3. The discovery of multiple defective receptacles is cause for concern.</p>						
DOE Facility Representative Input:							
DOE Program Manager Input:							
Further Evaluation is Required:	No						
Division or Project:	Advanced Light Source (ALS)						
Plant Area:	B.6 Rm1000						
System/Building/Equipment:	Building 6 Room 1000 /Turbo Pump Cart						
Facility Function:	Laboratory - Research & Development						
Corrective Action:							
Lessons(s) Learned:							
HQ Keywords:	<p>07E--Electrical Systems - Electrical Equipment Failure</p> <p>08A--OSHA Reportable/Industrial Hygiene - Electrical Shock</p> <p>11H--Other - Procurement Deficiency/Defective Items</p> <p>11L--Other - Supplier</p> <p>12R--EH Categories - Suspect/Counterfeit Items - Defective Items</p> <p>14G--Quality Assurance - Procurement Deficiency</p>						
HQ Summary:	<p>On April 8, 2009, an LBNL vacuum technician received a mild electric shock when he touched the case of a turbo pump cart in Building 6, room 1000. The pump cart was plugged into a 120-volt GFCI receptacle located in a raceway mounted under a table. Believing the turbo pump had a short, an electronic maintenance technician tagged out the pump and had a new pump brought in. Four hours later, the vacuum technician experienced another shock from the new pump. The electronic maintenance technician and the vacuum technician suspected the source of the problem might be the receptacle on a plug strip located in a raceway mounted under a table. The plug strip was also tagged out and three receptacles were determined to be defective.</p>						
Similar OR Report Number:							
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td>Roger Falcone</td> </tr> <tr> <td>Phone</td> <td>(510) 486-6692</td> </tr> <tr> <td>Title</td> <td>Division Director</td> </tr> </table>	Name	Roger Falcone	Phone	(510) 486-6692	Title	Division Director
Name	Roger Falcone						
Phone	(510) 486-6692						
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
	04/14/2009	16:45 (PTZ)	Mary Gross	BSO
Authorized Classifier(AC):				

9)Report Number:	SC--PNSO-PNNL-PNNLBOPER-2009-0007 After 2003 Redesign		
Secretarial Office:	Science		
Lab/Site/Org:	Pacific Northwest National Laboratory		
Facility Name:	Energy Research Programs (PNNL)		
Subject/Title:	Noncompliance with PNNL Hazardous Energy Control Program		
Date/Time Discovered:	04/15/2009 10:00 (PTZ)		
Date/Time Categorized:	04/15/2009 11:51 (PTZ)		
Report Type:	Notification		
Report Dates:	Notification	04/17/2009	15:30 (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		
Subcontractor Involved:	No		
Occurrence Description:	On Wednesday, April 15, 2009, at 1000 hours, it was determined that a PNNL staff member working in 326 Building Room 11A on March 26, 2009, opened an electrical junction box containing exposed de-energized conductors. The staff member did not apply a personal Lock Out Tag Out (LOTO) device or perform a safe to work check as required by PNNLs hazardous energy control program. The staff member did not contact		

	hazardous energy as the junction box had been locked and tagged out by other workers for this scheduled work activity.							
Cause Description:								
Operating Conditions:	N/A							
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)							
Immediate Action(s):	Work on the affected system was suspended pending further evaluation and a critique of the event will be scheduled as soon as possible.							
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 Mechs & Struct Matls / Energy & Environment							
Plant Area:	300 Area							
System/Building/Equipment:	326 / Room 11A							
Facility Function:	Laboratory - Research & Development							
Corrective Action:								
Lessons(s) Learned:								
HQ Keywords:	01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 14E--Quality Assurance - Work Process Deficiency							
HQ Summary:	On April 15, 2009, it was determined that a PNNL staff member working in 326 Building Room 11A on March 26, 2009, opened an electrical junction box containing exposed de-energized conductors. The staff member did not apply a personal Lock-Out/Tag-Out device or perform a safe to work check as required by PNNLs hazardous energy control program. The staff member did not contact hazardous energy as the junction box had been locked and tagged out by other workers for this scheduled work activity. Work on the affected system was suspended pending further evaluation and a critique of the event will be scheduled as soon as possible.							
Similar OR Report Number:								
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td>Henager, C. H.</td> </tr> <tr> <td>Phone</td> <td>(509) 376-1442</td> </tr> <tr> <td>Title</td> <td>Manager, Materials & Structures Performance</td> </tr> </table>		Name	Henager, C. H.	Phone	(509) 376-1442	Title	Manager, Materials & Structures Performance
Name	Henager, C. H.							
Phone	(509) 376-1442							
Title	Manager, Materials & Structures Performance							

Originator:	Name	POLLARI, ROGER A		
	Phone	(509) 371-7700		
	Title			
HQ OC Notification:	Date	Time	Person Notified	Organization
	NA	NA	NA	NA
Other Notifications:	Date	Time	Person Notified	Organization
	04/15/2009	11:52 (PTZ)	Christ, Josef	PNSO
Authorized Classifier(AC):	Pollari, R. A. Date: 04/17/2009			

10)Report Number:	SC--PNSO-PNNL-PNNLBOPER-2009-0008 After 2003 Redesign		
Secretarial Office:	Science		
Lab/Site/Org:	Pacific Northwest National Laboratory		
Facility Name:	Energy Research Programs (PNNL)		
Subject/Title:	Non-Compliance with Electrical Safety Program Requirements		
Date/Time Discovered:	04/23/2009 12:20 (PTZ)		
Date/Time Categorized:	04/23/2009 14:15 (PTZ)		
Report Type:	Notification		
Report Dates:	Notification	04/27/2009	17:01 (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		
Subcontractor Involved:	No		
Occurrence Description:	On Thursday, April 23, 2009, at 1220 hours, a PNNL staff member was found to be working on energized research equipment with a panel removed. The staff member did not have required electrical training or implement appropriate controls for the work. The worker did not come in contact with hazardous energy.		
Cause Description:			

Operating Conditions:	Indoor, Dry							
Activity Category:	Research							
Immediate Action(s):	The research equipment was de-energized and placed in a safe condition. A critique of the event was conducted on Monday, April 27, 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:	National Security Directorate							
Plant Area:	RCHN Area							
System/Building/Equipment:	EDL Building / Room 108							
Facility Function:	Laboratory - Research & Development							
Corrective Action:								
Lessons(s) Learned:								
HQ Keywords:	01F--Inadequate Conduct of Operations - Training Deficiency 01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 14B--Quality Assurance - Training and Qualification Deficiency 14E--Quality Assurance - Work Process Deficiency							
HQ Summary:	On April 23, 2009, a PNNL staff member was found to be working on energized research equipment with a panel removed. The staff member did not have required electrical training or implement appropriate controls for the work. The worker did not come in contact with hazardous energy. The research equipment was de-energized and placed in a safe condition. A critique of the event was conducted.							
Similar OR Report Number:								
Facility Manager:	<table border="1"> <tr> <td>Name</td> <td>Bruckner-Lea, C. J.</td> </tr> <tr> <td>Phone</td> <td>(509) 371-7053</td> </tr> <tr> <td>Title</td> <td>Manager, Chemical & Biologic Signature Sciences</td> </tr> </table>		Name	Bruckner-Lea, C. J.	Phone	(509) 371-7053	Title	Manager, Chemical & Biologic Signature Sciences
Name	Bruckner-Lea, C. J.							
Phone	(509) 371-7053							
Title	Manager, Chemical & Biologic Signature Sciences							
Originator:	<table border="1"> <tr> <td>Name</td> <td>POLLARI, ROGER A</td> </tr> <tr> <td>Phone</td> <td>(509) 371-7700</td> </tr> <tr> <td>Title</td> <td></td> </tr> </table>		Name	POLLARI, ROGER A	Phone	(509) 371-7700	Title	
Name	POLLARI, ROGER A							
Phone	(509) 371-7700							
Title								

HQ OC Notification:	Date	Time	Person Notified	Organization
	NA	NA	NA	NA
Other Notifications:	Date	Time	Person Notified	Organization
	04/23/2009	14:30 (PTZ)	Carlson, J. L.	PNSO
Authorized Classifier(AC):	Pollari, R. A. Date: 04/27/2009			

11)Report Number:	SC--SSO-SU-SLAC-2009-0010 After 2003 Redesign		
Secretarial Office:	Science		
Lab/Site/Org:	Stanford Linear Accelerator Center		
Facility Name:	Stanford Linear Accelerator Center		
Subject/Title:	Subcontractor Performing Work Without Proper Personal Protective Equipment (PPE).		
Date/Time Discovered:	04/15/2009 11:00 (PTZ)		
Date/Time Categorized:	04/16/2009 11:30 (PTZ)		
Report Type:	Update		
Report Dates:	Notification	04/17/2009	16:02 (ETZ)
	Initial Update	05/01/2009	19:02 (ETZ)
	Latest Update	05/01/2009	19:02 (ETZ)
	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:	1) Define the Scope of Work 2) Analyze the Hazards		
Subcontractor Involved:	Yes Thyssenkrupp Elevator		
Occurrence Description:	At approximately 1100 hours on April 15, 2009, an elevator maintenance subcontractor, accompanied by 2 Federal Inspectors was brought into the building 40 Pulse Project construction site for elevator maintenance and inspection activity. The contractor was wearing appropriate PPE for performing inspection activities in front of a Category 1arc flash hazard. The technician opened up an elevator control panel marked with a 480V sticker		

	without wearing the proper PPE for this potential Category 3 arc flash hazard (the actual arc flash hazard category for this hazard has not yet been determined). The panel consists primarily of 120V relay circuits with a small quantity of protected 480V power wiring with sealed leads that feed a sealed 480V/120V step-down transformer. The technician opened the panel door and retrieved a blueprint roll contained within. No actual work was performed and the University Technical Representative (UTR) asked the technician to close the door based on the 480V sticker and the lack of an arc flash sticker which could indicate an arc flash hazard up to Category 3. The technician's PPE was insufficient for the potential arc flash hazard of 3. The incident was reported to Linac Coherent Light Source (LCLS) Management 24 hours after the event. Preliminary information is that the technician was qualified to perform the work and had the appropriate work control documentation on hand, although the adequacy of the documentation has not yet been determined. Additionally, the adequacy of the PPE worn by the technician for the hazard presented is yet to be determined.
Cause Description:	
Operating Conditions:	Does not apply.
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	The UTR stopped the activity immediately. The elevator technicians were instructed to leave the construction site and not return until they had the proper arc flash PPE and work control documentation.
FM Evaluation:	This event was recategorized based on further investigation. The Final Report will be submitted by May 31, 2009.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	Operations
Plant Area:	Service Elevator 40
System/Building/Equipment:	Building 40
Facility Function:	Accelerators
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency

	14G--Quality Assurance - Procurement Deficiency			
HQ Summary:	On April 15, 2009, an elevator maintenance subcontractor was scheduled to perform elevator maintenance and inspection activity in building 40 Pulse Project construction site. The contractor was wearing appropriate PPE for performing inspection activities in front of a Category 1 arc flash hazard. The technician opened an elevator control panel marked with a 480V sticker to retrieve a blueprint roll without wearing the proper PPE for this potential Category 3 arc flash hazard. No actual work was performed and the University Technical Representative (UTR) asked the technician to close the door based on the 480V sticker and the lack of an arc flash sticker which could indicate an arc flash hazard up to Category 3. The UTR stopped the activity immediately. The elevator technicians were instructed to leave the construction site and not return until they had the proper arc flash PPE and work control documentation.			
Similar OR Report Number:				
Facility Manager:	Name	KERWIN, RALPH R		
	Phone	(650) 926-2095		
	Title	FIRE MARSHAL		
Originator:	Name	JOHNSON, HOPE E		
	Phone	(650) 926-4322		
	Title	FACILITY MANAGER ADMIN.		
HQ OC Notification:	Date	Time	Person Notified	Organization
	NA	NA	NA	NA
Other Notifications:	Date	Time	Person Notified	Organization
	04/16/2009	10:20 (PTZ)	Ralph Kerwin	SLAC
	04/16/2009	13:30 (PTZ)	Scott Wenzholz	SSO DOE
Authorized Classifier(AC):				

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 at (800) 473-4375. Hours: 7:30 a.m. - 5:00 p.m., Mon - Fri (ETZ).
 Please include [detailed information](#) when reporting problems.