

## July 2009 Electrical Safety Occurrences

There were 5 electrical safety occurrences for July 2009:

- 1 resulted in a shock
- 3 involved inadequate lockout/tagout (LOTO)
- 3 involved electrical workers and 2 involved non-electrical workers
- 2 occurrences involved subcontractors
- 1 occurrence reported severed lines due to cutting
- 1 excavation event was reported

July reports indicate a significant drop in the number of electrical events. Particularly noteworthy is NNSA that reported no electrical events for the first time in many months. The single shock this month involved very unusual circumstances when a worker contacted a de-energized medium voltage shielded cable that had not been grounded adequately. Fortunately, the worker was not seriously injured and the event should offer lessons learned to improve work practices at all DOE sites. Another positive indicator that electrical safety awareness continues to improve is the event that involved a 60 volt cable. The worker was wearing electrical hazard PPE even though the energy and risk was very low. As last month, only a single excavation event was reported for July.

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

Using the key words above, seven events were identified and two of the events were screened out of the report. One report indicated recurring events that had been previously reported. A second report was screened since it involved conduct of operations that was unrelated to electrical safety. This month a new expanded table is provided in response to suggestions from the field. Please continue to report all events and screen the events using the Electrical Severity Measurement Tool.

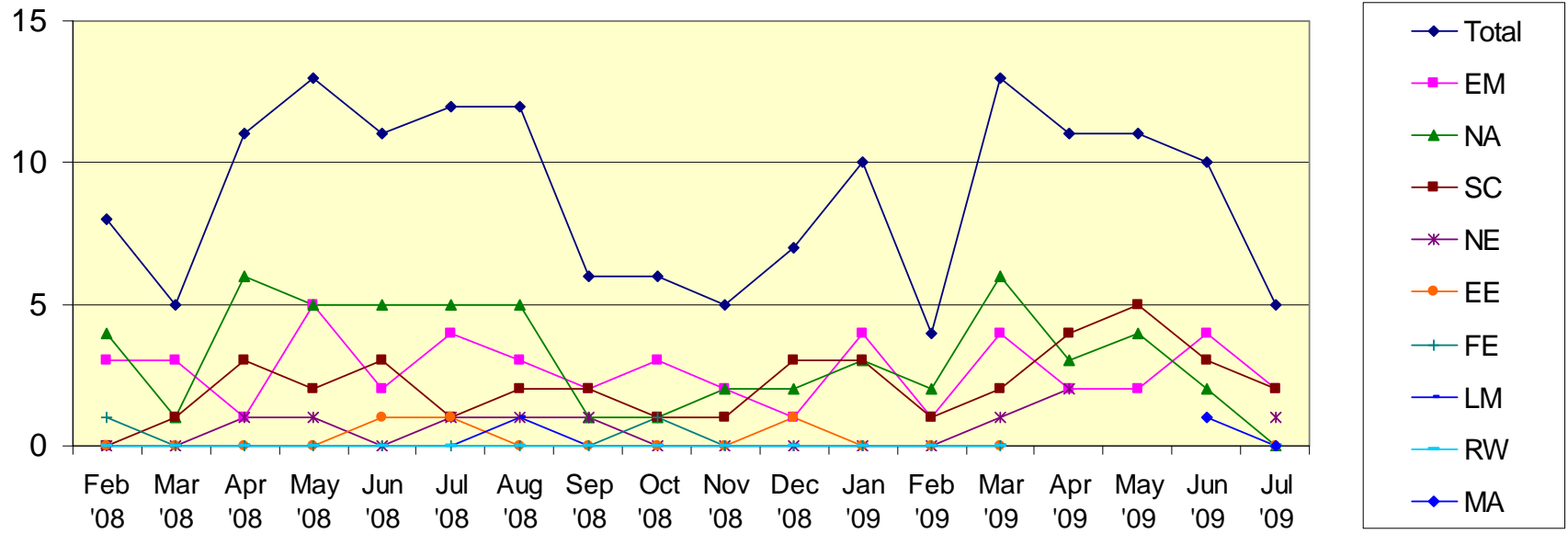
Below is the current summary of 2009 electrical safety occurrences:

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
May-09	11	2	0	0
June-09	10	3	0	0
July-09	5	1	0	0
2009 total	65 (avg. 9.3/month)	11	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

Seven months through the calendar year, the average rate of electrical safety occurrences in 2009 is 9.3 per month, which is below the average rate of 9.4 per month experienced in 2008, thanks to the good performance in July. The 2009 average rate is below the 2004 – 2007 average rates. The performance in July should be a motivation to maintain diligence to reduce the number of events and reverse the trend experienced in the summer months in previously years.

## 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, MA - Management, NA - National Nuclear Security Administration, NE - Nuclear Energy, RW - Civilian Radioactive Waste Management, SC - Science

## Electrical Safety Occurrences – July 2009

No	Report Number	Event Summary	EW <sup>(1)</sup>	N-EW <sup>(2)</sup>	SUB <sup>(3)</sup>	SHOCK	BURN	ARCF <sup>(4)</sup>	LOTO <sup>(5)</sup>	EXCAV <sup>(6)</sup>	CUT/D <sup>(7)</sup>	VEH <sup>(8)</sup>	ES <sup>(9)</sup>
1	EM-ID--CWI-LANDLORD-2009-0004	While trouble-shooting a loss of power, an electrician received a shock while removing a fuse.	X			X			X				1650
2	EM-RL--PHMC-FSS-2009-0007	Electricians found an outer panel cover missing from a 480/277 VAC distribution panel.	X		X								0
3	NE-ID--BEA-HFEF-2009-0002	While observing a cask cart evolution, a DOE FR noted that workers were able to get their fingers very close to the energized 480Vcask cart bus.		X					X				0
4	SC--SSO-SU-SLAC-2009-0015	A worker cut an energized 60v, 14A coaxial network cable believed to have been de-energized.	X						X		X		10
5	SC--TJSO-JSA-TJNAF-2009-0004	A backhoe operator damaged a buried, energized electrical conduit.		X	X					X			0
	TOTAL		3	2	2	1			3	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

## Electrical Safety Occurrences – July 2009

No	Report Number	Event Summary	NM <sup>(1)</sup>	PLAN <sup>(2)</sup>	NEUT <sup>(3)</sup>	70E <sup>(4)</sup>	HV <sup>(5)</sup>	LV <sup>(6)</sup>	HFW <sup>(7)</sup>	WFH <sup>(8)</sup>	PPE <sup>(9)</sup>	SC <sup>(10)</sup>	RC <sup>(8)</sup>
1	EM-ID--CWI-LANDLORD-2009-0004	While trouble-shooting a loss of power, an electrician received a shock while removing a fuse.							X			2	2C(1)
2	EM-RL--PHMC-FSS-2009-0007	Electricians found an outer panel cover missing from a 480/277 VAC distribution panel.		X		X		X		X		3	10(2)
3	NE-ID--BEA-HFEF-2009-0002	While observing a cask cart evolution, a DOE FR noted that workers were able to get their fingers very close to the energized 480V cask cart bus.	X					X		X		3	2C(2)
4	SC--SSO-SU-SLAC-2009-0015	A worker cut an energized 60V, 14A coaxial network cable believed to have been de-energized.		X				X	X			3	2C(2)
5	SC--TJSO-JSA-TJNAF-2009-0004	A backhoe operator damaged a buried, energized electrical conduit.	X						X			4	10(3)
	TOTAL		2	2		1		3	3	2			

### Key

(1)NM = near miss, (2)PLAN = job planning, (3)NEUT = neutral circuit, (4)70E = NFPA 70E issues, (5)HV = high voltage, (6)LV= low voltage, (7)HFW = hazard found the worker, (8)WFH = worker found the hazard, (9)PPE = inadequate or no PPE used, (10)SC = significance category, (11)RC = reporting criteria

# ORPS Operating Experience Report

Production GUI - New ORPS

ORPS contains 54270 OR(s) with 57588 occurrences(s) as of 8/11/2009 6:09:21 AM

Query selected 5 OR(s) with 5 occurrences(s) as of 8/11/2009 3:19:08 PM

Download this report in Microsoft Word format. 

<b>1)Report Number:</b>	<a href="#">EM-ID--CWI-LANDLORD-2009-0004</a> After 2003 Redesign		
<b>Secretarial Office:</b>	Environmental Management		
<b>Lab/Site/Org:</b>	Idaho National Laboratory		
<b>Facility Name:</b>	ICP Landlord Activities		
<b>Subject/Title:</b>	Hazardous Energy Event During Electrical System Troubleshoot / Repair		
<b>Date/Time Discovered:</b>	07/30/2009 09:40 (MTZ)		
<b>Date/Time Categorized:</b>	07/30/2009 10:40 (MTZ)		
<b>Report Type:</b>	Notification		
<b>Report Dates:</b>	Notification	08/03/2009	18:34 (ETZ)
	Initial Update		
	Latest Update		
	Final		
<b>Significance Category:</b>	2		
<b>Reporting Criteria:</b>	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.		
<b>Cause Codes:</b>			
<b>ISM:</b>	1) Define the Scope of Work 2) Analyze the Hazards 3) Develop and Implement Hazard Controls 4) Perform Work Within Controls		
<b>Subcontractor Involved:</b>	No		
<b>Occurrence Description:</b>	<p>On 07/30/2009 at approximately 04:15 INTEC Power Operations (IPO) Electricians were called to report to Idaho Nuclear Technology &amp; Engineering Center (INTEC) in response to a plant wide power failure. As a part of this problem, trouble-shooting work commenced on the eastside of the plant in response to a power failure near CPP-1771 on PSS-FGP-120.</p> <p>While trouble-shooting the eastside power loss an IPO electrician received a electrical shock while in the process of removing a fuse. All measures</p>		

were in place to establish a safe trouble-shooting configuration at the time of the incident. However, cables in compartment B were not physically discharged as intended to address any accumulated residual electrical energy.

The worker was immediately escorted to the Central Facilities Area (CFA) medical facility by the INTEC Maintenance Director who was present at the job site. The worker was released by medical staff with no restrictions. A fact finding meeting convened on Thursday July 30, 2009 at 13:00. Appropriate notifications were made to DOE-ID.

A work order and clearance tags had been issued to trouble-shoot the loss of power to the eastside of the plant. Preparation for the clearance included a review of applicable prints. Workers opened a sectionalizing switch to isolate the power supply to PSS-FPG-120. They then opened FIS-FPG-19 in CPP-1771 to isolate another downstream load side from PSS-FPG-120. Another downstream isolation was installed on the load side from PSS-FPG-120. Load side isolations for a clearance are not normally required, but were installed to protect workers from any portable generators that might back feed the system while trouble-shooting was in progress.

Electricians installed the isolations and temporary grounds as specified in their clearance. They then performed zero energy checks on the portion of the system they had isolated to confirm there was no power being supplied to it. With the system isolated as required by the clearance, electricians opened compartments A, B & C. Blown fuses were observed in compartment A and compartment B on the B and C phases. Recognizing the potential for a residual electric charge on these lines associated with the blown fuses, electricians used a temporary grounding conductor to discharge the lines in compartment A on the B and C phases. Though the electricians intended to perform the same process in compartment B, to discharge any residual electric charge, this was not completed. The investigation of this event will determine how this occurred.

The Idaho Nuclear Technology and Engineering Center (INTEC) is a U.S. Department of Energy (DOE) facility. INTEC is located within the boundaries of the Idaho National Laboratory (INL). CH2MHill WG Idaho (CWI), is the clean up contractor for the INTEC and the INL. The mission of the INTEC is nuclear technology and engineering research and development, interim storage of spent nuclear fuel, and processing and interim storage of liquid radioactive waste.

<b>Cause Description:</b>	
<b>Operating Conditions:</b>	Trouble-shooting was in progress.
<b>Activity Category:</b>	Maintenance
<b>Immediate Action(s):</b>	1. Replace fuses and check for additional faults (cables, transformers, etc.).

	<p>2. Isolate faulted equipment with a new clearance.</p> <p>3. Perform a electrical severity calculation for the electrical shock.</p> <p>4. Evaluate changes to work control process as appropriate.</p>						
<b>FM Evaluation:</b>							
<b>DOE Facility Representative Input:</b>							
<b>DOE Program Manager Input:</b>							
<b>Further Evaluation is Required:</b>	<p>Yes.          Before Further Operation? No          By Whom: J. J. Hobbes          By When:</p>						
<b>Division or Project:</b>	Idaho Cleanup Project						
<b>Plant Area:</b>	CPP-1771						
<b>System/Building/Equipment:</b>	CPP-1771						
<b>Facility Function:</b>	Balance-of-Plant - Site/outside utilities						
<b>Corrective Action:</b>							
<b>Lessons(s) Learned:</b>							
<b>HQ Keywords:</b>	<p>08A--OSHA Reportable/Industrial Hygiene - Electrical Shock          08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance          12C--EH Categories - Electrical Safety          14E--Quality Assurance - Work Process Deficiency</p>						
<b>HQ Summary:</b>	<p>On July 30, 2009, INTEC Power Operations (IPO) Electricians were called to report to the Idaho Nuclear Technology &amp; Engineering Center in response to a plant wide power failure. Troubleshooting work commenced on the eastside of the plant in response to a power failure near CPP-1771 on PSS-FGP-120. While removing a fuse during troubleshooting, an IPO electrician received an electrical shock. All measures were in place to establish a safe troubleshooting configuration at the time of the incident. However, cables in compartment B were not physically discharged as intended to address any accumulated residual electrical energy. The electrician was immediately escorted to the Central Facilities Area medical facility where medical staff released the electrician with no restrictions. A fact finding meeting was convened.</p>						
<b>Similar OR Report Number:</b>							
<b>Facility Manager:</b>	<table border="1"> <tr> <td>Name</td> <td>J. J. Hobbes</td> </tr> <tr> <td>Phone</td> <td>(208) 533-3406</td> </tr> <tr> <td>Title</td> <td>INTEC Maintenance Director</td> </tr> </table>	Name	J. J. Hobbes	Phone	(208) 533-3406	Title	INTEC Maintenance Director
Name	J. J. Hobbes						
Phone	(208) 533-3406						
Title	INTEC Maintenance Director						

<b>Originator:</b>	Name	LYONS, SAPRENA L.		
	Phone	(208) 351-9075		
	Title	BUSINESS OPERATIONS SPECIALIST		
<b>HQ OC Notification:</b>	Date	Time	Person Notified	Organization
	NA	NA	NA	NA
<b>Other Notifications:</b>	Date	Time	Person Notified	Organization
	07/30/2009	10:40 (MTZ)	C. R. Warren	DOE-ID
<b>Authorized Classifier(AC):</b>	M. S. Casteel      Date: 08/03/2009			

<b>2)Report Number:</b>	<a href="#">EM-RL--PHMC-FSS-2009-0007</a> After 2003 Redesign		
<b>Secretarial Office:</b>	Environmental Management		
<b>Lab/Site/Org:</b>	Hanford Site		
<b>Facility Name:</b>	Facility & Site Services		
<b>Subject/Title:</b>	4734C Electrical upgrade Concerns		
<b>Date/Time Discovered:</b>	07/14/2009 13:00 (PTZ)		
<b>Date/Time Categorized:</b>	07/15/2009 07:00 (PTZ)		
<b>Report Type:</b>	Update		
<b>Report Dates:</b>	Notification	07/17/2009	16:41 (ETZ)
	Initial Update	07/18/2009	12:34 (ETZ)
	Latest Update	07/18/2009	12:34 (ETZ)
	Final		
<b>Significance Category:</b>	3		
<b>Reporting Criteria:</b>	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)		
<b>Cause Codes:</b>			
<b>ISM:</b>			
<b>Subcontractor Involved:</b>	Yes George A. Grant Construction		
<b>Occurrence Description:</b>	On Monday morning, 07/13/09, at approximately 0830 hours, Central Maintenance electricians arrived at Building 4734C to complete a Preventive Maintenance work package related to building rollup doors. Upon arrival they noticed that the outer panel cover was missing from		



	<p>Panel A, a 480/277 VAC electrical power distribution panel. A subcontractor had previously been working on the panel performing an upgrade to the available service. It was determined that at close-of-business on Friday, 07/10/09, the subcontractor had failed to properly re-install the outer panel cover. In order to ensure that a complete assessment of the situation was completed, a critique was held on Tuesday afternoon, 07/14/09. The assessment revealed other management concerns related to the performance of the task. Those being content of the Energized Electrical Work Permit, the lack of adequate Arc Flash Calculations for Panel A being available for inclusion in the Energized Electrical Work Permit and Project Work Document, training standards for sub-contractor personnel, and flowdown requirements to sub-contractors. After further discussions with management, a decision was made to declare the incident occurrence reportable.</p>
<b>Cause Description:</b>	
<b>Operating Conditions:</b>	Normal Operating Conditions
<b>Activity Category:</b>	Construction
<b>Immediate Action(s):</b>	<ol style="list-style-type: none"> <li>1. Upon discovery, the Central Maintenance Electricians installed adequate barricades to prevent others from accessing the area and notified their line supervision.</li> <li>2. Central Maintenance issued a work package to re-install the panel cover and the Electricians performed the re-installation of the panel cover.</li> <li>3. A Stop Work order was issued to the subcontractor and a critique of the incident was performed.</li> </ol>
<b>FM Evaluation:</b>	<p>Further evaluation is necessary relative to the continuance of work activities related to the project. It was determined that Fluor Government Group produce two separate work release documents and present them to the Facility Owner for release signature. The first work release will cover the immediate restart of non-hazardous work activities within the building. THIS ACTION IS COMPLETED AS OF 07/17/09. The second work release will be designated for an upcoming work activity currently scheduled for 07/24/09 which will require a major power outage in 4734C and many surrounding buildings. This second work release will require that Arc Flash Calculations be completed for all affected electrical panels. These calculations documents will be reviewed by Fluor technical experts prior to release of that portion of the work activity.</p>
<b>DOE Facility Representative Input:</b>	
<b>DOE Program Manager Input:</b>	
<b>Further Evaluation is Required:</b>	<p>Yes.  Before Further Operation? Yes  By Whom: K.A. Ekstrom</p>

	By When: 07/24/2009						
<b>Division or Project:</b>	Closure Services & Infrastructure						
<b>Plant Area:</b>	400						
<b>System/Building/Equipment:</b>	4734C/Electrical panel A						
<b>Facility Function:</b>	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)						
<b>Corrective Action:</b>							
<b>Lessons(s) Learned:</b>							
<b>HQ Keywords:</b>	01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01F--Inadequate Conduct of Operations - Training Deficiency 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 01R--Inadequate Conduct of Operations - Management issues 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14B--Quality Assurance - Training and Qualification Deficiency 14D--Quality Assurance - Documents and Records Deficiency 14E--Quality Assurance - Work Process Deficiency 14G--Quality Assurance - Procurement Deficiency						
<b>HQ Summary:</b>	On July 13, 2009, upon arrival at Building 4734C to complete a preventive maintenance work package related to building rollup doors, Central Maintenance electricians noticed that the outer panel cover was missing from Panel A, a 480/277-VAC electrical power distribution panel. A subcontractor had previously been working on the panel to upgrade the available service and had failed to properly re-install the outer panel cover. A Stop Work order was issued to the subcontractor and a critique of the incident was performed. During the critique, other management concerns related to the performance of the task were identified such as the lack of adequate Arc Flash Calculations for Panel A being available for inclusion in the Energized Electrical Work Permit and Project Work Document, training standards for subcontractor personnel, and the flow-down of requirements to subcontractors.						
<b>Similar OR Report Number:</b>							
<b>Facility Manager:</b>	<table border="1"> <tr> <td>Name</td> <td>C.W. Stolle</td> </tr> <tr> <td>Phone</td> <td>(509) 376-9080</td> </tr> <tr> <td>Title</td> <td>Manager, Facilitis &amp; Land Management</td> </tr> </table>	Name	C.W. Stolle	Phone	(509) 376-9080	Title	Manager, Facilitis & Land Management
Name	C.W. Stolle						
Phone	(509) 376-9080						
Title	Manager, Facilitis & Land Management						
<b>Originator:</b>	<table border="1"> <tr> <td>Name</td> <td>CRARY, NEWELL L</td> </tr> <tr> <td>Phone</td> <td>(509) 376-3030</td> </tr> <tr> <td>Title</td> <td>OCCURRENCE NOTIF. CTR. DUTY OFFICER</td> </tr> </table>	Name	CRARY, NEWELL L	Phone	(509) 376-3030	Title	OCCURRENCE NOTIF. CTR. DUTY OFFICER
Name	CRARY, NEWELL L						
Phone	(509) 376-3030						
Title	OCCURRENCE NOTIF. CTR. DUTY OFFICER						

<b>HQ OC Notification:</b>	Date	Time	Person Notified	Organization
	NA	NA	NA	NA
<b>Other Notifications:</b>	Date	Time	Person Notified	Organization
	07/15/2009	07:00 (PTZ)	L.E. Earley	DOE-RL
	07/15/2009	07:05 (PTZ)	R.D. Redekopp	FH
<b>Authorized Classifier(AC):</b>				

<b>3)Report Number:</b>	<a href="#">NE-ID--BEA-HFEF-2009-0002</a> After 2003 Redesign		
<b>Secretarial Office:</b>	Nuclear Energy, Science and Technology		
<b>Lab/Site/Org:</b>	Idaho National Laboratory		
<b>Facility Name:</b>	Hot Fuel Examination Facility		
<b>Subject/Title:</b>	Evaluation of 480V Bus Duct Results in the Declaration of Uncontrolled Hazardous Electrical Energy		
<b>Date/Time Discovered:</b>	07/28/2009 09:15 (MTZ)		
<b>Date/Time Categorized:</b>	07/28/2009 16:30 (MTZ)		
<b>Report Type:</b>	Notification		
<b>Report Dates:</b>	Notification	07/29/2009	16:07 (ETZ)
	Initial Update		
	Latest Update		
	Final		
<b>Significance Category:</b>	3		
<b>Reporting Criteria:</b>	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.		
<b>Cause Codes:</b>			
<b>ISM:</b>			
<b>Subcontractor Involved:</b>	No		
<b>Occurrence Description:</b>	On 07/22/2009, the HFEF DOE FR performed a cask cart observed evolution and noted that workers were able to get very close to the 480V cask cart bus duct and could possibly get their fingers or hand-held tools in contact with the energized portion of the bus. At that time the FR shared this information with a manager on the scene who stated that he believed the design of the bus duct and affixed warning labels were sufficient safety barriers to personnel contact with the energized bus. No further action was taken at that time. On 07/27/2009 at 1130 the HFEF FR discussed the		

	same concern with the HFEF FM. The HFEF FM put eyes on the problem and believed it to be questionable enough that action was taken to lock out and place the cask cart out-of-service. On 07/28/2009 at 0915, the HFEF FM and members of the INL electrical safety committee and industrial safety group investigated the issue and concluded that the cask cart 480V bus duct presented an unmitigated electrical hazard.
<b>Cause Description:</b>	
<b>Operating Conditions:</b>	Does not apply.
<b>Activity Category:</b>	Normal Operations (other than Activities specifically listed in this Category)
<b>Immediate Action(s):</b>	Cask cart 480V power was administratively locked out and the cask cart placed in an out-of-service status. INL electrical safety committee and facility engineers have developed a temporary modification that will insulate the bus duct from workers in the area. Modification will be installed 07/30/2009.
<b>FM Evaluation:</b>	
<b>DOE Facility Representative Input:</b>	
<b>DOE Program Manager Input:</b>	
<b>Further Evaluation is Required:</b>	Yes. Before Further Operation? No By Whom: E. W. Papaioannou By When:
<b>Division or Project:</b>	Nuclear Operations
<b>Plant Area:</b>	008 Area/Cask Tunnel
<b>System/Building/Equipment:</b>	Siemens 480V bus duct power to HFEF cask cart
<b>Facility Function:</b>	Uranium Conversion/Processing and Handling
<b>Corrective Action:</b>	
<b>Lessons(s) Learned:</b>	
<b>HQ Keywords:</b>	08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical) 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency
<b>HQ Summary:</b>	On July 22, 2009, the Hot Fuel Examination Facility (HFEF) DOE Facility Representative (FR) noted that workers were able to get very close to the 480V cask cart bus duct and could possibly get their fingers or hand-held tools in contact with the bus energized portion. At that time, the FR shared this information with a manager on the scene who stated that he believed the design of the bus duct and affixed warning labels were sufficient safety barriers to personnel contact with the energized bus. No further action was taken at that time. On July 29, 2009, the FR discussed the same concern with HFEF management. HFEF management had the cask cart placed out-

	of-service with an administrative lockout/tagout. System modifications are planned for July 30, 2009.			
<b>Similar OR Report Number:</b>				
<b>Facility Manager:</b>	Name	PAPAIOANNOU, ERIC W		
	Phone	(208) 533-7868		
	Title	FUEL CONDITIONING FACILITY MANAGER		
<b>Originator:</b>	Name	PAPAIOANNOU, ERIC W		
	Phone	(208) 533-7868		
	Title	FUEL CONDITIONING FACILITY MANAGER		
<b>HQ OC Notification:</b>	Date	Time	Person Notified	Organization
	NA	NA	NA	NA
<b>Other Notifications:</b>	Date	Time	Person Notified	Organization
	07/28/2009	15:00 (MTZ)	R. S. Cain	Ops
	07/28/2009	16:35 (MTZ)	J. Martin	DOE FR
<b>Authorized Classifier(AC):</b>				

<b>4)Report Number:</b>	<a href="#">SC--SSO-SU-SLAC-2009-0015</a> After 2003 Redesign		
<b>Secretarial Office:</b>	Science		
<b>Lab/Site/Org:</b>	Stanford Linear Accelerator Center		
<b>Facility Name:</b>	Stanford Linear Accelerator Center		
<b>Subject/Title:</b>	Live Electrical Cable (Max 60 V. 14 A) Cut During Decommission of BaBar Experiment		
<b>Date/Time Discovered:</b>	07/08/2009 11:00 (PTZ)		
<b>Date/Time Categorized:</b>	07/08/2009 13:30 (PTZ)		
<b>Report Type:</b>	Final		
<b>Report Dates:</b>	Notification	07/09/2009	19:50 (ETZ)
	Initial Update	08/11/2009	13:28 (ETZ)
	Latest Update	08/11/2009	13:28 (ETZ)
	Final	08/11/2009	13:28 (ETZ)
<b>Significance Category:</b>	3		
<b>Reporting Criteria:</b>	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.
<b>Cause Codes:</b>	A5B4C01 - Communications Less Than Adequate (LTA); Verbal Communications LTA; Communication between work groups LTA A3B3C06 - Human Performance Less Than Adequate (LTA); Knowledge Based Error; Individual underestimated the problem by using past events as basis -->couplet - NA
<b>ISM:</b>	2) Analyze the Hazards 3) Develop and Implement Hazard Controls
<b>Subcontractor Involved:</b>	No
<b>Occurrence Description:</b>	On Monday July 6 at approximately 9AM, a worker in the Power Conversion Dept (PCD) cable shop cut a coaxial network cable in two places during the decommissioning of the BaBar experiment. All known systems and circuits at the cuts were locked out, tagged out and zero voltage verification was performed. The cut cable was not identified (per the procedure) "as required to keep", so it was cut. Prior to the cut, it was mistakenly thought that all cables and circuits had been de-energized. This cable carries a maximum of 60V, 14A. At the time of the cuts, the worker thought he saw a spark at the cable, but is uncertain of this. The worker was wearing Category 1 Personal Protective Equipment (PPE) with Class 00 rubber gloves at the time of the cuts.
<b>Cause Description:</b>	Five causal elements were identified: 1) The Tunnel Radio Network, TRN, cables that were cut were adjacent to other cables that had just been cut. 2) The TRN cables were in service and were potentially energized. 3) A very broad clear to cut determination was given to the worker just before the TRN cable cuts were made. 4) The control of hazardous electrical energy testing and lockout was incomplete and did not include the TRN cables which remained energized. 5) The worker had already safely cut 1000s of correctly identified, non-energized cables in the same project .
<b>Operating Conditions:</b>	Does not apply.
<b>Activity Category:</b>	Normal Operations (other than Activities specifically listed in this Category)
<b>Immediate Action(s):</b>	Work was halted and the area secured until the results of the investigation are known. Additionally, the cut cable was photographed and all other trunk and network cables were identified and labeled to avoid a repeat of cutting such cables in other areas of the decommissioning project.
<b>FM Evaluation:</b>	1) The demolition project morning meeting, held each day at 8 am, lacks adequate location identification detail with regard to the cables to be cut and removed that day. 2) The Tunnel Radio Network, TRN, coaxial cable, i.e. SLC net, is not a part of the demolition project scope that was established in February 2009.

	<p>As such, routine network coax cable identification by a knowledgeable person is not typically accomplished as a part of the project.</p> <p>3) Cable clear-to-cut verbal releases given during the work day do not have sufficient confirming detail to avoid mistakes.</p> <p>4) The routine control of hazardous electrical energy was completed and effective for local energy sources but not for all energy sources located in remote building locations.</p> <p>5) The worker had already safely cut 1000s of correctly identified, non-energized cables in the same project . By routinely wearing electrical PPE the worker had no expectation of injury or accident even if cables were inadvertently energized.</p>					
<b>DOE Facility Representative Input:</b>						
<b>DOE Program Manager Input:</b>						
<b>Further Evaluation is Required:</b>	No					
<b>Division or Project:</b>	Engineering and Technical Support (ETS)					
<b>Plant Area:</b>	IR2					
<b>System/Building/Equipment:</b>	IR2 (BaBar Experiment)					
<b>Facility Function:</b>	Accelerators					
<b>Corrective Action 01:</b>	<table border="1"> <thead> <tr> <th>Target Completion</th> <th>Actual Completion</th> </tr> </thead> <tbody> <tr> <td>Date:08/11/2009</td> <td>Date:08/11/2009</td> </tr> </tbody> </table>		Target Completion	Actual Completion	Date:08/11/2009	Date:08/11/2009
Target Completion	Actual Completion					
Date:08/11/2009	Date:08/11/2009					
	Corrective Actions to be tracked locally in SLAC Corrective Actions Tracking System					
<b>Lessons(s) Learned:</b>	<p>1) Project scope needs to be reviewed periodically, not just once. New and existing stakeholders need to be notified as appropriate.</p> <p>2) Demolition projects with only partial demolition required adequate identification of to be saved items as well as to be removed items.</p> <p>3) Effective control of hazardous electrical energy requires continual vigilance to look for more than just one source of energy.</p>					
<b>HQ Keywords:</b>	<p>01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical)</p> <p>01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical)</p> <p>07D--Electrical Systems - Electrical Wiring</p> <p>12C--EH Categories - Electrical Safety</p> <p>14E--Quality Assurance - Work Process Deficiency</p>					
<b>HQ Summary:</b>	<p>On July 6, 2009, a worker cut a coaxial network cable in two places during the BaBar experiment decommissioning. All known systems and circuits at the cuts were locked and tagged out and zero voltage verification was performed. The cut cable was not identified (per the procedure) "as required to keep", so it was cut. Prior to the cut, it was mistakenly thought</p>					

	that all cables and circuits had been de-energized. This cable carries a maximum of 60V, 14A. At the time of the cuts, the worker thought he saw a spark at the cable, but is uncertain of this. The worker was wearing Category 1 Personal Protective Equipment (PPE) with Class 00 rubber gloves at the time of the cuts. The area was secured and work was halted pending the investigation.			
<b>Similar OR Report Number:</b>	1. None			
<b>Facility Manager:</b>	Name	LOUGEE, LAWRENCE		
	Phone	(650) 926-2997		
	Title	FACILITY MANAGER DESIGNEE		
<b>Originator:</b>	Name	ALBERT, SAMANTHA M		
	Phone	(650) 926-4966		
	Title	TRAINING COORDINATOR		
<b>HQ OC Notification:</b>	Date	Time	Person Notified	Organization
	NA	NA	NA	NA
<b>Other Notifications:</b>	Date	Time	Person Notified	Organization
	07/08/2009	11:00 (PTZ)	Lawrence Lougee	SLAC
	07/08/2009	14:00 (PTZ)	Donald Wilhelm	SSO DOE
<b>Authorized Classifier(AC):</b>				

<b>5)Report Number:</b>	<a href="#">SC--TJSO-JSA-TJNAF-2009-0004</a> After 2003 Redesign		
<b>Secretarial Office:</b>	Science		
<b>Lab/Site/Org:</b>	Thomas Jefferson National Accelerator Site		
<b>Facility Name:</b>	Thomas Jefferson Nat'l Accelerator		
<b>Subject/Title:</b>	FML-09-0728, Pierced Conduit at Hall D Construction Site		
<b>Date/Time Discovered:</b>	07/28/2009 09:00 (ETZ)		
<b>Date/Time Categorized:</b>	07/30/2009 13:00 (ETZ)		
<b>Report Type:</b>	Notification/Final		
<b>Report Dates:</b>	Notification	07/31/2009	09:16 (ETZ)
	Initial Update	07/31/2009	09:16 (ETZ)
	Latest Update	07/31/2009	09:16 (ETZ)
	Final	07/31/2009	09:16 (ETZ)
<b>Significance Category:</b>	4		
<b>Reporting Criteria:</b>	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 4 occurrence)
<b>Cause Codes:</b>	
<b>ISM:</b>	4) Perform Work Within Controls
<b>Subcontractor Involved:</b>	Yes Shoreline Industries
<b>Occurrence Description:</b>	<p>On Monday, July 27, at approximately 1530, a buried, energized electrical conduit was damaged by a backhoe operator working inside the Accelerator fence, as part of the Hall D construction project.</p> <p>The incident was discovered by Jefferson Lab Oversight personnel on the morning of Tuesday, July 28. Notifications were then made to ESH&amp;Q and TJSO, as well as the prime contractor.</p> <p>A joint fact finding meeting was held with the following conclusions:</p> <ol style="list-style-type: none"> <li>1) Work had been performed under a JLab approved dig permit and all appropriate personnel had been briefed on the requirements. Additionally, the activity hazard analysis had been signed by all concerned personnel.</li> <li>2) The soils pile from the excavation was placed too close to the trench, and had significantly obscured the survey markings indicating the location of the buried power line.</li> <li>3) Utility locations had been marked and were visible but the backhoe operator continued to operate in close proximity to these markings, despite twice being cautioned by oversight personnel that the soils pile was too close to the sides of the trench.</li> <li>4) Construction barrier tape had been placed around the trench at the end of the work day, in preparation for a storm. At the time of placement, neither the prime contractor nor Jefferson Lab Oversight personnel were aware of the breached conduit.</li> </ol> <p>Initially, power was not secured for this particular line because the insulation on the power wire within the conduit had been visually verified as undamaged. Additional barriers included the construction tape around the trench and verbal notification to other subcontractors involved with this trenching activity.</p>
<b>Cause Description:</b>	
<b>Operating Conditions:</b>	Normal Construction activities, specifically trenching
<b>Activity Category:</b>	Construction
<b>Immediate Action(s):</b>	<ol style="list-style-type: none"> <li>1) Digging activities were immediately stopped by the backhoe operator and laborer.</li> <li>2) Subcontractor personnel visually confirmed that the inner power wire insulation was not breached, only the conduit.</li> <li>3) Upon discovery by JLab personnel the next morning, work in the area was secured and the prime contractor notified.</li> </ol>

	<p>4) The subcontractor supervisors involved, as well as the backhoe operator, were permanently removed from the job site by the prime contractor.</p> <p>5) Verbal notification was given to all site workers of the event, as well as the directive that that particular work location was secured until further notice.</p>
<b>FM Evaluation:</b>	
<b>DOE Facility Representative Input:</b>	
<b>DOE Program Manager Input:</b>	
<b>Further Evaluation is Required:</b>	No
<b>Division or Project:</b>	Jefferson Science Associates
<b>Plant Area:</b>	Hall D Const Site
<b>System/Building/Equipment:</b>	12 GeV Hall D Construction Project
<b>Facility Function:</b>	Accelerators
<b>Corrective Action:</b>	
<b>Lessons(s) Learned:</b>	
<b>HQ Keywords:</b>	<p>01T--Inadequate Conduct of Operations - Willful Violation</p> <p>07D--Electrical Systems - Electrical Wiring</p> <p>08F--OSHA Reportable/Industrial Hygiene - Industrial Operations Issues</p> <p>08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical)</p> <p>11G--Other - Subcontractor</p> <p>12K--EH Categories - Near Miss (Could have been a serious injury or fatality)</p> <p>14E--Quality Assurance - Work Process Deficiency</p> <p>14G--Quality Assurance - Procurement Deficiency</p>
<b>HQ Summary:</b>	<p>On July 27, 2009, a buried energized electrical conduit was damaged by a subcontractor backhoe operator working inside the Accelerator fence, as part of the Hall D construction project. The backhoe operator immediately stopped digging. Construction barrier tape was placed around the trench at the end of the day in preparation for a storm. Neither the prime contractor nor Jefferson Lab Oversight was aware of the breached conduit until the next morning. There were no electrical shocks or injuries from this event. Management notifications were made and a fact finding meeting was held. Event investigation noted that the soils pile from the excavation was placed too close to the trench, despite repeated cautioning by oversight personnel, and had significantly obscured the survey markings indicating the location of the buried power line. The subcontractor supervisors involved, as well as the backhoe operator, were permanently removed from the job site by the prime contractor. Verbal notification was given to other subcontractor workers involved with this trenching activity.</p>

<b>Similar OR Report Number:</b>				
<b>Facility Manager:</b>	Name	SMITH, STEPHEN JAY		
	Phone	(757) 269-7007		
	Title	LEAD QUALITY AND SAFETY ENGINEER		
<b>Originator:</b>	Name	SMITH, STEPHEN JAY		
	Phone	(757) 269-7007		
	Title	LEAD QUALITY AND SAFETY ENGINEER		
<b>HQ OC Notification:</b>	Date	Time	Person Notified	Organization
	NA	NA	NA	NA
<b>Other Notifications:</b>	Date	Time	Person Notified	Organization
	07/28/2009	13:00 (ETZ)	Steve Neilson	TJSO
<b>Authorized Classifier(AC):</b>	Smith, Stephen      Date: 07/30/2009			

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