August 2009 Electrical Safety Occurrences

There were 12 electrical safety occurrences for August 2009:

- 3 resulted in shocks
- 11 involved inadequate lockout/tagout (LOTO)
- 9 involved electrical workers and 3 involved non-electrical workers
- 7 occurrences involved subcontractors
- 5 occurrences reported resulted from inadequate planning

After a significant reduction in the number of reports in July, August reports spiked to 12. Nearly all reports indicated a weakness in hazardous energy control programs or execution. Four of the events resulted when workers discovered electrical energy after the LOTO boundary had been established. In one of the four cases, the energy was discovered when a worker received a shock. For the second consecutive month, a crane pendant was the source of an electrical shock. This could be a predictive indication that pendants may be exposed to harsh environments and may need additional preventive maintenance. As we enter the final months of the calendar year, we should pay special attention to our LOTO programs. This year has provided evidence that improvement in that critical process may be warranted.

On a positive note, excavation and severed line events continue to track low through the summer season. Continued focus on prevention in these two areas is important for worker safety.

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, 12 events were identified. Please continue to report all events and screen the events using the Electrical Severity Measurement Tool.

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
August-09	12	3	0	0
2009 total	77 (avg. 9.6/month)	14	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

Below is the current summary of 2009 electrical safety occurrences:

Eight months through the calendar year, the average rate of electrical safety occurrences in 2009 is 9.6 per month, which is above the average rate of 9.4 per month experienced in 2008. The 2009 average rate remains below the 2004 – 2007 average rates. Severity remains low, but the number of events continues to be a cause for concern, and should be considered a predictive indicator of more severe occurrences.



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 – August 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 ⁽⁸⁾
1	EM-IDCWI-BIC- 2009-0004	While installing a steel pipe into a monitoring well, a worker received an electrical shock.		Х		Х			Х				180
2	EM-IDCWI- ICPWM-2009-0003	An operator received an electrical shock from a crane pendant.		Х		Х			Х				330
3	EM-RLMSC-FSS- 2009-0001	Subcontractor electricians using a proximity voltage detector from outside the vault, detected energy on a bundle of 480V insulated cables after LOTO established.	Х		Х				Х				0
4	EMRP- WRPS - TANKFARM -2009- 0009	A subcontract electrician received a 120 volt shock during startup testing.	х		Х	X			Х				330
5	EMSR-PSC-SWPF- 2009-0008	Electricians discovered power was supplied to open conductors.	Х						Х				0
6	NALASO-LANL- ADOADMIN-2009- 0002	Access door to 480 volts was left open and unattended	Х		Х				Х				0
7	NALASO-LANL- ADOADMIN-2009- 0003	Electrician performed work without placing a personal locking device on the isolating device.	х		Х								0
8	NASRSO-SRNS- TRIT-2009-0005	Construction electrician discovered electrical energy after LOTO established.	X		Х				Х				0
9	NASS-SNL- NMFAC-2009-0007	Construction electrician dropped a panel cover on an MCC buss.	х		Х				Х				100
10	NEID-BEA-MFC- 2009-0002	Electrician applied LOTO device to wrong circuit.	х		X				X				0
11	NEID-BEA-SMC- 2009-0010	Worker performed work inside relay panel without applying proper LOTO.	Х						Х				0

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 ⁽⁸⁾
12	SCPNSO-PNNL-	Worker performed work near											
	PNNLNUCL-2009-	removed		x					x				0
	0005			21					21				Ŭ
	TOTAL		9	3	7	3			11				

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 – August 2009

No	Report Number	Event Summary	NM ⁽¹⁾	PLAN ⁽²⁾	NEUT ⁽³⁾	70E ⁽⁴⁾	HV ⁽⁵⁾	$LV^{(6)}$	HFW ⁽⁷⁾	WFH ⁽⁸⁾	PPE ⁽⁹⁾	SC ⁽¹⁰⁾	RC ⁽⁸⁾
1	EM-IDCWI-BIC- 2009-0004	While installing a steel pipe into a monitoring well, a worker received an electrical shock.							Х			3	2C(2)
2	EM-IDCWI- ICPWM-2009-0003	An operator received an electrical shock from a crane pendant.						Х	Х			2	2C(1)
3	EM-RLMSC-FSS- 2009-0001	Subcontractor electricians using a proximity voltage detector from outside the vault, detected energy on a bundle of 480V insulated cables after LOTO established.						Х		Х		3	2C(2)
4	EMRP-WRPS- TANKFARM-2009- 0009	A subcontract electrician received a 120 volt shock during startup testing.						Х	Х			2	2C(1)
5	EMSR-PSC- SWPF-2009-0008	Electricians discovered power was supplied to open conductors.						Х		Х		3	2C(2)
6	NALASO-LANL- ADOADMIN-2009- 0002	Access door to 480 volts was left open and unattended		Х				Х		Х		3	2C(2)
7	NALASO-LANL- ADOADMIN-2009- 0003	Electrician performed work without placing a personal locking device on the isolating device.						х		Х		4	10(2)
8	NASRSO-SRNS- TRIT-2009-0005	Construction electrician discovered electrical energy after LOTO established.		X				X		Х		3	2C(2)
9	NASS-SNL- NMFAC-2009-0007	Construction electrician dropped a panel cover on an MCC buss.						X	Х			3	2C(2)
10	NEID-BEA-MFC- 2009-0002	Electrician applied LOTO device to wrong circuit.		х				Х		Х		3	2C(2)
11	NEID-BEA-SMC- 2009-0010	Worker performed work inside relay panel without applying proper LOTO.		Х				Х		Х		3	2C(2)

No	Report Number	Event Summary	NM ⁽¹⁾	PLAN ⁽²⁾	NEUT ⁽³⁾	70E ⁽⁴⁾	HV ⁽⁵⁾	LV ⁽⁶⁾	HFW ⁽⁷⁾	WFH ⁽⁸⁾	PPE ⁽⁹⁾	SC ⁽¹⁰⁾	RC ⁽⁸⁾
12	SCPNSO-PNNL-	Worker performed work near											
	PNNLNUCL-2009-	energized receptacles with		37				37		37		2	
	0003	covers removed.		Х				Х		Х		3	2C(2)
	TOTAL			5				11	4	8			

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 **2**

Production GUI - New ORPS

ORPS contains 54323 OR(s) with 57641 occurrences(s) as of 9/3/2009 1:02:58 AM Query selected 12 OR(s) with 12 occurrences(s) as of 9/3/2009 1:03:48 AM

	Download this report in Microsoft Word format. 💌						
1)Report Number:	EM-IDCWI-BIC-2009-0004 After 2003 Redesign						
Secretarial Office:	Environmental Management						
Lab/Site/Org:	Idaho National Laboratory						
Facility Name:	ICP Demolition and Decom	missioning Activities					
Subject/Title:	Worker Receives Shock Wh	nile Handling Well Pipi	ng				
Date/Time Discovered:	08/24/2009 15:00 (MTZ)						
Date/Time Categorized:	08/24/2009 16:35 (MTZ)						
Report Type:	Update						
Report Dates:	Notification	08/26/2009	18:43 (ETZ)				
	Initial Update	08/26/2009	18:43 (ETZ)				
	Latest Update	08/31/2009	18:06 (ETZ)				
	Final						
Significance Category:	3						
Reporting Criteria:	2C(2) - Failure to follow a p (e.g., lockout/tagout) or a si discovery of an uncontrolled power circuit, steam line, pr discoveries made by zero-er investigations made before 10(2) - An event, condition, the other reporting criteria, I line management to be of sa facilities or activities in the categories should be assigned the potential risks and the co a SC 4 occurrence)	prescribed hazardous en- te condition that results d hazardous energy sou ressurized gas). This cri- nergy checks and other work is authorized to be or series of events that but is determined by the fety significance or of DOE complex. One of ed to the occurrence, ba prrective actions taken.	arce (e.g., live electrical iterion does not include precautionary egin. t does not meet any of e Facility Manager or concern to other the four significance used on an evaluation of (1 of 4 criteria - This is				
Cause Codes:							
ISM:	2) Analyze the Hazards						
Subcontractor Involved:	No						
Occurrence Description:	On August 24, 2009, at approximately 2:30 PM, a Environmental Restoration (ER) well maintenance worker received a minor electrical shock from a 42-foot section of stainless steel piping as it was being						

lowered into a monitoring well.

The work was suspended by performing a Step Back and proper notifications made.

The worker was escorted to the Central Facility Area (CFA) Medical Facility for evaluation, and was returned to work with no restrictions.

The work was being performed approximately 30-feet from a 13.8 Kilo Volt (keV) line. The safe working distance from power lines described in the work order and per the DOE-standard DOE/STD-1009 required 15-feet minimum distance from the 13.8 lines. Workers were wearing the approved personal protective equipment (PPE), as described in the approved Work Order (WO) # 625734 "Site Wide Well Maintenance", and an approved Idaho National Laboratory (INL) Power Management Permit #214 "Pit 9 High Voltage Work Authorization". INL Power Management had inspected the work area prior to the start of the work to validate the permit requirements.

The scope of the work is to remove existing well piping from monitoring well CFA-1932, repair and re-install well pipe and pump. This work had been ongoing the first half of the day with no anomalies encountered. After lunch workers began re-installation of the well piping according to the work order. Workers had successfully re-installed six (6) section of the 42-foot well piping before this event.

A boom truck was used to facilitate removing and installing the well piping. The boom truck was located 20-feet beyond the well, and perpendicular to the high power transmission line at an approximate distance of 50-feet (away from) from the transmission lines; the truck's boom, with the rigging equipment (sling and load) when the lifted load was vertical and over the well, approached 30-foot distance from the power transmission line.

INL Power Management responded to the scene. Power Management could not determine a specific cause for the shock, but believed the most likely cause was that a static charge was induced (i.e. proximity to the transmission lines, work site is located between two separate power lines, humid air, damp ground, etc.).

Step Back upgrade to a formal "Stop Work".

Corrective actions being evaluated:

- --Ground the Boom truck through the well surface casing,
- --Evaluate grounding well pipe,
- -- INL Power Management to attempt to get voltage readings on equipment

	 with appropriate meters, and Review and revise work control documents based on Lessons Learned(LL) from this event. UPDATE, 08/27/09: Performed voltage testing on the overhead Power Lines in support of the corrective actions from the worker getting shocked while performing well maintenance activities. Electricians detected 1050 volts on the pipes while the cluster was attached using the nylon sling, and only 5 volts with the steel rope rigging. ORPS categorization changed from "Management Concern" to "Personal Safety and Health 2C(2), Sig. Cat 3.
Cause Description:	
Operating Conditions:	Warm moist air from recent rains, sunny skies.
Activity Category:	Maintenance
Immediate Action(s):	Performed a Step Back. Notified Power Management and Management, Initiated a Step Back, per MCP-553, Moved from a Step Back to a Stop Work, Held a Fact Finding.
FM Evaluation:	This incident underscores the importance of evaluating the job hazards in and around the projected job scope in the Work Packages. Even though company procedures and standards in this case gave expected safe distances for working, and were adhered to, additional hazards were encountered in the field. Grounding of the components is a common sense answer to an uncommon event.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	Environmetal Restoration/CERCLA
Plant Area:	field work
System/Building/Equipment:	Monitoring Well CFA-1932
Facility Function:	Environmental Restoration Operations
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	08AOSHA Reportable/Industrial Hygiene - Electrical Shock 12CEH Categories - Electrical Safety 14LQuality Assurance - No QA Deficiency
HQ Summary:	On August 24, 2009, an Environmental Restoration well maintenance worker received a minor electrical shock from a 42-foot section of stainless steel piping as it was being lowered into a monitoring well. The

	work was suspended by performing a Step Back and management notifications were made. The worker was escorted to the Central Facility Area Medical Facility for evaluation, and was released to work with no restrictions. INL Power Management responded to the scene. They could not determine a specific cause for the shock, but believed the most likely cause an induced static charge (i.e., proximity to 13.8 kV transmission lines, humid air, damp ground, etc.). Corrective actions are being evaluated including grounding the boom truck through the well surface casing and consideration of grounding the well pipe. A fact finding meeting was held						
Similar OR Report Number:	Ŭ						
Facility Manager:	NameFrank WebberPhone(208) 533-3562TitleEnvironmental I	NameFrank WebberPhone(208) 533-3562TitleEnvironmental Restoration Director					
Originator:	NameCROFTS, BRYPhone(208) 533-0648TitleISSUES COOR	AN P DINATOR					
HQ OC Notification:	Date Time Person Not	ified Organization					
	NA NA NA	NA					
Other Notifications:	Date Time 08/24/2009 16:35 (MT	Person Notified Or Z) Brad Joseph Davis	ganization DOEID				
Authorized Classifier(AC):	Randall R. Vaden Da	ate: 08/31/2009					
2)Report Number:	EM-IDCWI-ICPWM-	2009-0003 After 2003 Re	edesign				
Secretarial Office:	Environmental Manager	ment					
Lab/Site/Org:	Idaho National Laborato	ory					
Facility Name:	Waste Management Pro	ject Activities and Facilit	ies				
Subject/Title:	Equipment Operator Re - (ARRA)	ceives Electrical Shock Fr	rom Operating A Crane -				
Date/Time Discovered:	08/11/2009 11:15 (MTZ	<u>(</u>)					
Date/Time Categorized:	08/11/2009 12:18 (MTZ	<u>(</u>)					
Report Type:	Notification						
Report Dates:	Notification	08/13/2009	15:34 (ETZ)				
	Initial Update						
	Latest Update						
	Final						
Significance Category:	2						

Reporting Criteria:	2C(1) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or disturbance of a previously unknown or mislocated hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas) resulting in a person contacting (burn, shock, etc.) hazardous energy.
Cause Codes:	
ISM:	2) Analyze the Hazards3) Develop and Implement Hazard Controls
Subcontractor Involved:	No
Occurrence Description:	 While manipulating a crane in building CPP-666, an equipment operator working for Waste Management received an electrical shock. On Tuesday, August 11, 2009 at approximately 11:00 preparing to pull hatch above the FDP cell, in building CPP-666, to prepare for evolution, a Waste Management Equipment Operator was holding the pendant and received an electrical shock. Work involving the crane and hatch pull was immediately stopped, the pendant area roped off, and the crane was de-energized and placed out of service until a troubleshooting work package was developed. The equipment operator's management team supervisor, escorted the equipment operator the Central Facilities Area (CFA) medical office and was kept for a lengthy time under observation. After the medical staff concluded their, the equipment operator was returned to work with no restrictions. While developing the troubleshooting package, Waste Operations Management conducted a walkthrough where from pulling voltage readings, it was discovered a voltage reading taken on the key switch from the crane's control box read 121-volts. After opening the control box cover, a wire was noticed to have been smashed with conductors exposed. The wire was touching a screw on the back of the contact block, which attached to the front end of the switch.
	After this discovery, tape was placed around the smashed wire, pulled slack into the junction box, and left for further review
Cause Description:	show into the junction box, and left for further review.
Operating Conditions:	Waste Management Operations: Hatch Cover Lifting via a Crane
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	1) Worker transported to CFA medical (no restrictions given to worker).

	 Crane taken out of service, and area roped off. Troubleshooting maintenance package was developed to check crane's pendant; pinched wire found. Notifications made to DOE-ID and to CWI Sr. Management. Fact Finding meeting held.
FM Evaluation:	 During the fact-finding it was determined this specific incident has not happened before, although numerous equipment problems have previously occurred with this crane. All immediate corrective actions were determined to be in compliance correctly implemented. This event's reporting criteria, with its significance category was derived from using the EFCOG Electrical Severity Measurement Tool: 1) Electrical Hazard Factor - Yellow (moderate hazard - Class 1.2a) - 10 2) Environmental Factor - Dry - 0 3) Shock Proximity Factor - Within Prohibited Approach Boundary - 10 4) Arc Flash Proximity Factor - No Arc Flash Exposure - 0 5) Thermal Proximity Factor - 0 6) PPE/Equipment Mitigation - No reduction factor 7) Injury Factor - Shock (no fibrillation) 3
	Electrical Severity - $10 \times (1 + 0 + 10 + 0 + 0) \times 3 = 330$
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Pat Troescher By When:
Division or Project:	Waste Management Operations
Plant Area:	INTEC
System/Building/Equipment:	INTEC CPP-666, FDP Cell
Facility Function:	Nuclear Waste Operations/Disposal
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	07DElectrical Systems - Electrical Wiring 08AOSHA Reportable/Industrial Hygiene - Electrical Shock

	 08GOSHA Reportable/Industrial Hygiene - Industrial Equipment 12CEH Categories - Electrical Safety 13HManagement Concerns - American Recovery and Reinvestment Act (ARRA) 14LQuality Assurance - No QA Deficiency 							
HQ Summary:	On August 11, 2009, while preparing to pull a hatch above the FDP cell, in building CPP-666, a Waste Management Equipment Operator was holding the crane pendant and received an electrical shock. Work was immediately stopped, the pendant area roped off, and the crane was de- energized and placed out of service until a troubleshooting work package was developed. A voltage reading taken on the key switch from the crane's control box read 121 volts. After opening the control box cover, a wire was noticed to have been smashed with conductors exposed and the wire was touching a screw on the back of the contact block, which attached to the front end of the switch. Tape was placed around the smashed wire and the slack was pulled into the junction box. A fact finding meeting was held.							
Similar OR Report Number:	1. EM-IDCWI-LANDLORD-2008-0006							
	2. EM-IDCWI-LANDLORD-2009-0004							
Facility Manager:	NamePat TroescherPhone(208) 521-8611TitleNuclear Facility Manager, Waste Management Ops							
Originator:	NameALLRED, MATTHEW DPhone(208) 533-6294TitleORPS COORDINATOR							
HQ OC Notification:	DateTimePerson NotifiedOrganizationNANANANA							
Other Notifications:	DateTimePerson NotifiedOrganization08/11/200912:26 (MTZ)Shawn MurphyDOE-ID							
Authorized Classifier(AC):	M. S. Casteel Date: 08/13/2009							
3)Report Number:	EM-RLMSC-FSS-2009-0001 After 2003 Redesign							
Secretarial Office:	Environmental Management							
Lab/Site/Org:	Hanford Site							
Facility Name:	Facility & Site Services							
Subject/Title:	Discovery of Energized Conductors							
Date/Time Discovered:	08/29/2009 11:20 (PTZ)							
Date/Time Categorized:	08/29/2009 12:05 (PTZ)							

Report Type:	Notification									
Report Dates:	Notification	09/01/2009	17:28 (ETZ)							
	Initial Update									
	Latest Update									
	Final									
Significance Category:	3	I	I							
Reporting Criteria	2C(2) - Failure to follow a t	2C(2) - Failure to follow a prescribed hazardous anaroy control process								
Reporting Criteria.	(e.g., lockout/tagout) or a si discovery of an uncontroller power circuit, steam line, pr discoveries made by zero-en investigations made before	(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:	3) Develop and Implement	Hazard Controls								
Subcontractor Involved:	Yes George A. Grant Constructi	Yes George A. Grant Construction								
Occurrence Description:	 On 08/29/2009, at 1120 hou check at a non-permitted eleproximity voltage detector for bundle of 480V insulated car portion of the vault. This way installed and the safe condite Authorization Form (TAF). proximity voltage detector we entry to meet confined space NOTE: This event was initian 10(2c) "An event, condition the other reporting criteria, line management to be of safacilities or activities in the event was re-categorized as 08/31/2009, at 1545 hours. 	 On 08/29/2009, at 1120 hours, while performing a good faith electrical check at a non-permitted electrical vault, subcontractor electricians using a proximity voltage detector from outside the vault, detected energy on a bundle of 480V insulated cables. The cables passed through the lower portion of the vault. This was discovered after the lock and tag was installed and the safe condition checks were documented as per the Tagout Authorization Form (TAF). As a final good faith electrical check, a proximity voltage detector was used on the insulated cables prior to vault entry to meet confined space requirements. NOTE: This event was initially categorized as Significance Category 3, 10(2c) "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." After further evaluation, the event was re-categorized as a Significance Category 3, 2C(2) on 								
Cause Description:										
Operating Conditions:	Planned Electrical Outage									
Activity Category:	Construction									
Immediate Action(s):	 Stopped work. Management was notified. The system and work area was returned to safe condition. 									
FM Evaluation:	The building 480V electrical service was being prepared for an upgrade to the existing electrical that would increase the primary building service									

	panel to 400 amps. The task required the removal of some existing cable and the addition of new higher service rated cable. Removal and reinstallation of the cable required the entry into a large electrical service vault that measured approximately 7' square by 12' deep. Numerous cables pass through this vault feeding multiple buildings. The cables originate in a nearby main switchgear and travel through the vault to various buildings. No service connections and/or cable splices exist in the vault.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? Yes By Whom: K. A. Ekstrom By When: 09/01/2009
Division or Project:	Site Business Management
Plant Area:	400 Area
System/Building/Equipment :	Secondary Electrical System
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01KInadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 11GOther - Subcontractor 12IEH Categories - Lockout/Tagout (Electrical or Mechanical) 14EQuality Assurance - Work Process Deficiency 14GQuality Assurance - Procurement Deficiency
HQ Summary:	On August 29, 2009, while performing a good faith electrical check at a non-permitted electrical vault, subcontractor electricians using a proximity voltage detector from outside the vault, detected energy on a bundle of 480-volt insulated cables. The cables passed through the lower portion of the vault. This was discovered after the lock and tag was installed and the safe condition checks were documented as per the Tagout Authorization Form. As a final good faith electrical check, a proximity voltage detector was used on the insulated cables prior to vault entry to meet confined space requirements. Work was stopped and management was notified. The system and work area were returned to safe condition.
Similar OR Report Number:	
Facility Manager:	Name C. W. Stolle

	Title Manager, Facilities & Land Management							
Originator:	Name DAV	VIS, KENNE						
	Phone (509) 376-3030							
	Title OCC	ÚURRENCE I	NOTIFICATION	CENTER				
HO OC Notification:	Date Time Person Notified Organization							
	Date Time	NA NA NA NA						
		i						
Other Notifications:	Date	Time	Person Notified	Organization				
	08/29/2009	12:25 (PTZ)	C. W. Stolle	MSA				
	08/29/2009	12:25 (PTZ)	L. W. Earley	DOE-RL				
Authorized Classifier(AC):								
			A D.M. 2000, 0000	A 64 2002 F				
4) Report Number:	EM-RPWI	tol Monogom	<u>ARM-2009-0009</u>	Alter 2003 F	kedesign			
Secretarial Office:	Hanford Site	tai Managem	ent					
Lau/Sile/Org:	Tank Forms	5						
Facility Name.	Construction	, Electrician I	Pacaivas Flactric	al Shock Whil	e Performing			
Subject flue.	Construction Electrician Receives Electrical Snock while Performing Construction Acceptance Testing							
Date/Time Discovered:	08/10/2009 10:15 (PTZ)							
Date/Time Categorized:	08/10/2009 15:10 (PTZ)							
Report Type:	Update							
Report Dates:	Notification	1	08/11/200)9	18:25 (ETZ)			
	Initial Upda	nte	08/13/200)9	17:05 (ETZ)			
	Latest Upda	ate	08/13/200)9	17:05 (ETZ)			
	Final							
Significance Category:	2							
Reporting Criteria:	2C(1) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or disturbance of a previously unknown or mislocated hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas) resulting in a person contacting (burn, shock, etc.) hazardous energy.							
Cause Codes:								
ISM:	2) Analyze the Hazards3) Develop and Implement Hazard Controls							
Subcontractor Involved:	Yes American Electric							
Occurrence Description:	On 08/10/2009 at 1015 hours, a construction electrician received an							

	 electrical shock while performing Construction Acceptance Testing (CAT) on tank C-104 retrieval equipment in the 156-AZ building. New electrical equipment had been installed for tank C-104 retrieval in panel 106 in the 156-AZ building in the 200 East Area. Installation of the new equipment had been completed and the lock and tag was removed for CAT. All wires in the 106 panel had been "safed off," meaning that they were pulled away from the panel and taped, with the exception of one wire. While preparing to check voltage on equipment near the bare wire, the electrician brushed against the bare wire, and at the same time his arm touched the door of the panel. The electrician felt a small shock. The bare wire was 120 volts and by all indications in the work package was determed at both ends. Why the wire was not safed off is unknown. At 1510, following the critique, facility management categorized this event as a 2C(1) SC-2 occurrence.
Cause Description:	
Operating Conditions:	Does not apply.
Activity Category:	Construction
Immediate Action(s):	The electrician was evaluated by AdvancedMed Hanford and returned to work with no restrictions. The work was stopped and immediate area around panel was barricaded. A lock and tag was installed to isolate electrical power to the 156-AZ building 106 panel. A critique was held.
FM Evaluation:	 Following categorization, the WRPS Project Operations manager requested this event be evaluated against EFCOG's Electrical Severity Measurement Tool [Revision 1, April 16, 2007]. Using the below formula, the Electrical Severity value was 330 resulting in a significance of "Medium" and a recommended ORPS Group 2 Significance Category (SC) of 4. ES (Electrical Severity) = (EHF)*[(1+EF+SPF+AFPF+TPF)*IF] EHF (Electrical Hazard Factor) = 10 EF (Environmental Factor) = 10 SPF (Shock Proximity Factor) = 10
	 AFPF (Arc Flash Proximity Factor) = 0 TPF (Thermal Proximity Factor) = 0 IF (Injury Factor) = 3 UPDATE 8/13/2009 This update is being submitted to correct two typos. 1) The event date in the Description of Occurrence was 8/10/2009 (not 8/9/2009), and 2) The EF (Environmental Factor) should have been 0, not 5.

DOE Facility Representative Input:						
DOE Program Manager						
Input: Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Peggy Hamilton By When:					
Division or Project:	Washington River Protection Solutions, LLC (WRPS)					
Plant Area:	200 East					
System/Building/Equipment	241-C-104 Retrieval/156-AZ/Electrical Panel 106					
Facility Function:	Nuclear Waste Operations/Disposal					
Corrective Action:						
Lessons(s) Learned:						
HQ Keywords:	08AOSHA Reportable/Industrial Hygiene - Electrical Shock 08HOSHA Reportable/Industrial Hygiene - Safety Noncompliance 11GOther - Subcontractor 12CEH Categories - Electrical Safety 14EOuality Assurance - Work Process Deficiency					
HQ Summary:	On August 10, 2009, a construction electrician received an electrical shock while performing Construction Acceptance Testing (CAT) on tank C-104 retrieval equipment in the 156-AZ building. New electrical equipment had been installed for tank C-104 retrieval in panel 106 in the 156-AZ building in the 200 East Area. Installation of the new equipment had been completed and the lock and tag was removed for CAT. All wires in the 106 panel had been "safed off," meaning that they were pulled away from the panel and taped, with the exception of one wire. While preparing to check voltage on equipment near the bare wire, the electrician brushed against the bare wire, and at the same time his arm touched the door of the panel. The bare wire was 120 volts and by all indications in the work package was de-termed at both ends. Why the wire was not safed off is unknown. The electrician was evaluated by AdvanceMed Hanford and returned to work with no restrictions. A critique was held.					
Similar OR Report Number:						
Facility Manager:	NameHamilton, Helen (Peggy) MPhone(509) 372-9945TitleManager, Construction					
Originator:	Name WATERS, SHAUN F					
	Phone (509) 373-3457					
	Title OPERATIONS SPECIALIST					

HQ OC Notification:	DateTimeNANA	Person Notifi NA	ed Organization NA	
Other Notifications:	Date	Time	Person Notified	Organization
	08/10/2009	15:40 (PTZ)	Trump, G. D.	ONC
	08/10/2009	15:51 (PTZ)	Blanchard, C. A.	DOE-ORP
	08/10/2009	15:54 (PTZ)	Reynolds, T. R.	WRPS

Authorized Classifier(AC):

5)Report Number:	EM-SRPSC-SWPF-2009-	EM-SRPSC-SWPF-2009-0008 After 2003 Redesign					
Secretarial Office:	Environmental Managemen	Environmental Management					
Lab/Site/Org:	Savannah River Site	Savannah River Site					
Facility Name:	Salt Waste Processing Facil	lity					
Subject/Title:	Temporary Electrical System	m Ballast Event					
Date/Time Discovered:	08/28/2009 13:30 (ETZ)						
Date/Time Categorized:	08/28/2009 14:56 (ETZ)						
Report Type:	Notification						
Report Dates:	Notification	09/01/2009	13:41 (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:	3) Develop and Implement Hazard Controls4) Perform Work Within Controls						
Subcontractor Involved:	No	No					
Occurrence Description:	On 08/28/2009, while energizing a temporary electrical system for the first time in the SWPF Construction Site's Cylinder Storage structure, an electrical worker discovered an uncontrolled hazardous energy source. Earlier that day electrical workers ran wiring from a breaker panel to a junction box to feed three previously installed fluorescent lighting fixtures. They also ran wiring from the junction box to an on/off switch in the Cylinder Storage building.						

	When the wiring and subsequent walkdown were complete at approximately 1300 hours, the breaker was energized and the light switch was turned to the ON position. When the lights did not come on, the light switch was returned to the OFF position and a lockout was reinstalled. The electrical workers began troubleshooting the first light. After disassembling the light, workers noticed a ballast had been removed and the wires that had been disconnected from the ballast were left with bare copper wire exposed (not insulated). They immediately stopped work at approximately 1330 hours and contacted their foreman. A critique was held.
Cause Description:	
Operating Conditions:	SWPF Construction
Activity Category:	Construction
Immediate Action(s):	 Stopped temporary Electrical work for the Cylinder Storage structure. A lock and tag was placed on the electrical panel located in the Ice House. Following the critique, selected temporary electrical work was allowed to proceed provided involved personnel receive a briefing on management's expectation for wire protection/termination or correct identification for all situations when securing temporary electrical work.
FM Evaluation:	While there were no impacts to the facility, the event had potential to impact the safety of the Individuals working on the Cylinder Storage structures electrical system. The management expectation briefings provided adequate assurance of proper wire terminations for allowing continuation of SWPF construction temporary electrical work.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Const. Safety-Mike Quattro By When:
Division or Project:	SWPF
Plant Area:	SWPF J-Area
System/Building/Equipment	Cylinder Storage structure
Facility Function:	Nuclear Waste Operations/Disposal
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01AInadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous)

	01QInadequate Conduct of Operations - Personnel error 07DElectrical Systems - Electrical Wiring 08HOSHA Reportable/Industrial Hygiene - Safety Noncompliance 12CEH Categories - Electrical Safety 14EQuality Assurance - Work Process Deficiency
HQ Summary:	On August 28, 2009, while energizing a temporary electrical system for the first time in the Salt Waste Processing Facility Construction Site's Cylinder Storage structure, an electrical worker discovered an uncontrolled hazardous energy source. Earlier that day electrical workers ran wiring from a breaker panel to a junction box to feed three previously installed fluorescent lighting fixtures. They also ran wiring from the junction box to an on/off switch in the Cylinder Storage building. When the wiring and subsequent walkdown were complete, the breaker was energized and the light switch was turned to the ON position. When the lights did not come on, the light switch was returned to the OFF position and a lockout was reinstalled. The electrical workers began troubleshooting the first light and noticed a ballast had been removed and the wires that had been disconnected from the ballast were left with bare copper wire exposed (not insulated). They immediately stopped work and contacted their foreman. A critique was held.
Similar OR Report Number:	
Facility Manager:	NameFRENCH, ROBERT FPhone(803) 643-1663TitlePLANT MANAGER

	Inte	PLA	INT MANAG	EK			
Originator:	Name	Name DUKES, HEATHERLY H					
	Phone	Phone (803) 617-9439					
	Title	OPE	RATIONS M	ANAGER			
HQ OC Notification:	Date Time Person Notified Organization						
	NA	NA	NA	NA	1		
Other Notifications:	Da	ate	Time	Person No	tified	Organization	
	08/28	/2009	15:15 (ETZ)	Scott McN	I ullin	DOE-FR	

Authorized Classifier(AC):

6)Report Number:	NALASO-LANL-ADOADMIN-2009-0002 After 2003 Redesign
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Los Alamos National Laboratory
Facility Name:	ADO Administration
Subject/Title:	Subcontractor Performs Unauthorized Energized Electrical Work
Date/Time Discovered:	08/26/2009 08:26 (MTZ)

Date/Time Categorized:	08/26/2009 13:00 (MTZ)						
Report Type:	Notification						
Report Dates:	Notification	08/28/2009	16:12 (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 Co	ontrols					
Subcontractor Involved:	Yes Otis Elevator						
Occurrence Description:	Management Synopsis: At 0826 on August 26, 2009, LANL Safety Oversight discovered an open energized 480 door at the Radiological Laboratory Utility Office Building (RLUOB), which is currently under construction. The panel door had been opened by an Otis Elevator Operator, a subcontractor to Austin Commercial Contractors, LP, who was looking for blown fuses. The work had not been evaluated and hazard controls were not in place. The Chemistry Metallurgy Research Replacement (CMRR) Facility Operations Director (FOD) was notified at 1000. An Austin Commercial Contractors, LP, Root Cause Analysis Meeting was held. Based on information gathered in that meeting, the CMBD FOD determined the event way OBDS any other.						
Cause Description:							
Operating Conditions:	Normal						
Activity Category:	Construction						
Immediate Action(s):	 The panel was immediately barricaded until it could be recovered. An energy control refresher training was conducted with Supervision (to the Foreman level) and the craft. 						
FM Evaluation:							
DOE Facility Representative Input:							
DOE Program Manager Input:							
Further Evaluation is	Yes.						

Required:	Before Further Operation? No By Whom: CAO-PF & FOD By When: 10/09/2009							
Division or Project:	CMRR	CMRR RULOB						
Plant Area:	TA-505	5-400						
System/Building/Equipment	RULOI	RULOB electrical system						
Facility Function:	Balance this Cat	Balance of Plant - Infrastructure (Other Functions not specifically listed in his Category)						
Corrective Action:								
Lessons(s) Learned:								
HQ Keywords:	01MInadequate Conduct of Operations - Inadequate Job Planning (Electrical) 11GOther - Subcontractor 12CEH Categories - Electrical Safety 14EQuality Assurance - Work Process Deficiency							
HQ Summary:	On August 26, 2009, LANL Safety Oversight discovered an open door to an energized 480-volt panel at the Radiological Laboratory Utility Office Building (RLUOB), which is currently under construction. The panel door had been opened by an Otis Elevator Operator, a subcontractor to Austin Commercial Contractors, LP, who was looking for blown fuses. The work had not been evaluated and hazard controls were not in place. The Chemistry Metallurgy Research Replacement Facility Operations Director was notified. The panel was immediately barricaded until it could be covered. An Austin Commercial Contractors Root Cause Analysis Meeting was held. An energy control refresher training was conducted with Supervision (to the Foremen laue) and the super							
Similar OR Report Number:								
Facility Manager:	NameRichard HolmesPhone(505) 606-2389TitleCMRR Facility Operations Director							
Originator:	NameTALLARICO, ANTONIAPhone(505) 665-6988TitleOCCURRENCE INVESTIGATOR							
HQ OC Notification:	Date T NA	Time NA	Person Notifie NA	d Organization NA				
Other Notifications:	Dat	e 2009	Time 15:19 (MTZ)	Person Notified Geraldine Vigil	Organization NNSA			

Authorized Classifier(AC): Antonia Tallarico Date: 08/28/2009

7)Report Number:	NALASO-LANL-ADOA	DMIN-2009-0003 Afte	er 2003 Redesign
Secretarial Office:	National Nuclear Security Administration		
Lab/Site/Org:	Los Alamos National Labor	atory	
Facility Name:	ADO Administration		
Subject/Title:	Management Concern: Subo	contractor LO/TO Non	compliance
Date/Time Discovered:	08/26/2009 08:55 (MTZ)		
Date/Time Categorized:	08/26/2009 13:00 (MTZ)		
Report Type:	Notification/Final		
Report Dates:	Notification	08/28/2009	16:22 (ETZ)
	Initial Update	08/28/2009	16:22 (ETZ)
	Latest Update	08/28/2009	16:22 (ETZ)
	Final	08/28/2009	16:22 (ETZ)
Significance Category:	4		
Reporting Criteria:	the other reporting criteria, but is determined by the Facility Manager or line management to be of safety significance or of concern to other facilities or activities in the DOE complex. One of the four significance categories should be assigned to the occurrence, based on an evaluation of the potential risks and the corrective actions taken. (1 of 4 criteria - This is a SC 4 occurrence)		
Cause Codes:			
ISM:	4) Perform Work Within Co	ontrols	
Subcontractor Involved:	Yes Rosendin		
Occurrence Description:	Management Synopsis: At 1 Metallurgy Research Replace Director (FOD) determine he discovery of a noncomplian 3). A Rosendin employee, p was LO/TO without placing Austin Commercial Contract on information from that me was a management concern. Background: Rosendin is a s Contractors, LP.	300 on August 26, 200 cement (CMRR) Project le had a management co ce with the LANL LO/ erformed work on a pic this own lock and tag of ctors, LP, root cause me ceting, the CMRR FOE	09, the Chemistry ct Facility Operations oncern related to the /TO procedure (P 101- ece of equipment that on the equipment. An eeting was held. Based O determined the event
Cause Description:			
Operating Conditions:	Normal		

Activity Category:	Construction
Immediate Action(s):	1) A peer check of lock placement, documented by the peer checker, to ensure proper LO/TO.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	CMRR RLUOB
Plant Area:	RLUOB
System/Building/Equipment	RLUOB equipment
:	
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01KInadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 11GOther - Subcontractor 12IEH Categories - Lockout/Tagout (Electrical or Mechanical) 14EQuality Assurance - Work Process Deficiency 14GQuality Assurance - Procurement Deficiency
HQ Summary:	On August 26, 2009, the Chemistry Metallurgy Research Replacement Project Facility Operations Director identified a management concern related to the discovery of a noncompliance with the LANL LO/TO procedure. A Rosendin employee, a subcontractor to Austin Commercial Contractors, LP, performed work on a piece of equipment that was under a LO/TO without placing his own lock and tag on the equipment. An Austin Commercial Contractors Root Cause meeting was held. A peer check of lock placement, documented by the peer checker, was performed to ensure proper LO/TO.
Similar OR Report Number:	
Facility Manager:	NameRichard HolmesPhone(505) 606-2389TitleCMRR Facility Operations Director
Originator:	NameTALLARICO, ANTONIAPhone(505) 665-6988TitleOCCURRENCE INVESTIGATOR

HQ OC Notification:	Date Time Person Notifie	d Organization	
		INA	i
Other Notifications:	Date Time	Person Notified Organ	ization
	08/26/2009 15:19 (MTZ)	Geraldine Vigil NN	ISA
Authorized Classifier(AC):	Antonia Tallarico Date:	08/28/2009	
8)Report Number:	NASRSO-SRNS-TRIT-2	009-0005 After 2003 I	Redesign
Secretarial Office:	National Nuclear Security	Administration	
Lab/Site/Org:	Savannah River Site		
Facility Name:	Tritium Facilities		
Subject/Title:	HEC - Hazardous Energy F	Found on Pre-determine	ed Point
Date/Time Discovered:	08/14/2009 11:56 (ETZ)		
Date/Time Categorized:	08/14/2009 12:30 (ETZ)		
Report Type:	Notification		
Report Dates:	Notification	08/17/2009	17:13 (ETZ)
	Initial Update		
	Latest Update		
	Final		
Significance Category:	3		
Reporting Criteria:	2C(2) - Failure to follow a (e.g., lockout/tagout) or a s discovery of an uncontrolle power circuit, steam line, p discoveries made by zero-e investigations made before	prescribed hazardous e ite condition that result ed hazardous energy sourcessurized gas). This cr energy checks and other work is authorized to b	nergy control process s in the unexpected urce (e.g., live electrical riterion does not include precautionary begin.
Cause Codes:	A3B3C05 - Human Perform Based Error; Incorrect assumore facts >couplet - A4B4C06 - Man Job performance and self-c A5B2C07 - Communication Communication Content L	nance Less Than Adeq mption that a correlation agement Problem; Sup hecking standards not p ns Less Than Adequate TA; Facts wrong / requ	uate (LTA); Knowledge on exists between two or ervisory Methods LTA; properly communicated e (LTA); Written irements not correct
ISM:	3) Develop and Implement	Hazard Controls	
Subcontractor Involved:	No		
Occurrence Description:	Construction Electrical rem air monitoring upgrade to the monitor panel. The electric 120 volts on a circuit that h	noved a PANALARM noved a PANALARM noved a PANALARM november of the text of tex	The selay can as part of the selay control room the selay control room the selay control room the selay control se

	of L/T 234-H-09-19. The PANALARM relay was placed back in the monitor panel and voltage was checked again and none was found. Construction personnel immediately notified the HAOM Shift Manager and the Facility Manager who was present in the control room at the time.
Cause Description:	
Operating Conditions:	The facility was performing normal operations as air monitoring upgrades (Y430 Project) to the facility were in-progress by Construction.
Activity Category:	Maintenance
Immediate Action(s):	Stopped work immediately and notified HAOM Shift Manager/Facility Manager.
FM Evaluation:	Work stopped and preliminary evaluation of events conducted.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Tritium Programs Operation By When:
Division or Project:	SR - WSRC - TRIT
Plant Area:	H-Area / Tritium Fac
System/Building/Equipment	Air Monitoring Electrical / H-Area Old Manufacturing (HAOM)
Facility Function:	Tritium Activities
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01KInadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01MInadequate Conduct of Operations - Inadequate Job Planning (Electrical) 12IEH Categories - Lockout/Tagout (Electrical or Mechanical) 14EQuality Assurance - Work Process Deficiency
HQ Summary:	On August 14, 2009, a Construction Electrical electrician removed a PANALARM relay can as part of the air monitoring upgrade to the facility from the H-Area Old Manufacturing (HAOM) control room monitor panel. The electrician rechecked the work area for voltage and found 120 volts on a circuit that had been safe determined during the installation of L/T 234-H-09-19. The PANALARM relay was placed back in the monitor panel and voltage was checked again and none was found. Construction personnel immediately notified the HAOM Shift Manager and the Facility Manager who was present in the control room at the time. The work was stopped and a preliminary evaluation of the event was conducted.

Similar OR Report Numbe	er: 1. None						
Facility Manager:	Name Ar	Name Arnold, Jeffery C.					
	Phone (80	Phone (803) 208-8493					
	Title H-	Title H-Area Old Manufacturing (HAOM) Shift Ops Mgr					
Originator:	Name HA	ALL, WILLIAN	M R				
	Phone (80	Phone (803) 208-8558					
	Title PR	INCIPLE ENO	GINEER & TECHNI	CAL SUPPO			
HQ OC Notification:	Date	Time	Person Notified Or	ganization			
	08/14/200	9 12:35 (ETZ)	Kuo, Andrew N	INSA FR			
Other Notifications:	Date	Time	Person Notified	Organization			
	08/14/200	9 11:56 (ETZ)	Westergreen, Jeffer	ry Fac Mgr			
	08/14/200	9 12:40 (ETZ)	Utley, Debra	Eng Mgr			
	08/14/200	9 12:40 (ETZ)	Price, Crawford	AOM Dep			
	08/14/200	9 12:40 (ETZ)	Schifer, Lee	AOM			
	08/14/200	9 12:40 (ETZ)	Gentile, Chris	VP TP			
	08/14/200	9 13:03 (ETZ)	Morgan, Roy	SRSOC			
Authorized Classifier(AC):	Campfield	, Kenneth D	ate: 08/17/2009				
9)Report Number:	NASS-S	NL-NMFAC-2	009-0007 After 200	3 Redesign			
Secretarial Office:	National N	luclear Security	Administration				
Lab/Site/Org:	Sandia Na	Sandia National Laboratories - SS					
Facility Name:	SNL NM S	SNL NM Site-wide F & M					
Subject/Title:	Phase to G	round Fault Re ap in MCC Cov	sults when Metal Guver Plates in Bldg, 87	atter Cover is dropped			
Date/Time Discovered:	08/03/200	9 08:00 (MTZ)	6				
Date/Time Categorized:	08/03/200	08/03/2009 10:00 (MTZ)					
Report Type:	Update						
Report Dates:	Notificati	on	08/05/2009	18:36 (ETZ)			
	Initial Up	date	08/05/2009	19:04 (ETZ)			
	Latest Up	date	08/05/2009	19:04 (ETZ)			
	Final						
Significance Category:	3						
Reporting Criteria:	2C(2) - Fa	ilure to follow	a prescribed hazardo	us energy control process			
	(e.g., locko discovery	out/tagout) or a of an uncontrol	site condition that related hazardous energy	esults in the unexpected y source (e.g., live electric			

	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 B&D Electric
Occurrence Description:	On 8/3/09, at approximately 7:30 am, at Building 870, a construction electrician was working on a low-voltage fire protection instrument control system and accidently dropped a 1/8 inch thick metal cover to an 8X40 inch electrical gutter into a 3/16 inch gap located in the top of a 480 volt motor control center (MCC) BBH1 cabinet. The gutter cover came in contact with the Phase C bus bar coupling located at the top of the MCC and the grounded MCC metal exterior resulting in a phase to ground short. The resulting current damaged the copper bus bar coupling and discolored the gutter cover. The subcontractor electrician performing the work reported only a small arc that did not leave the MMC enclosure. The 480 V, 800 amp MCC main breaker tripped followed by the 1200 amp switchboard breaker feeding the building lighting, convenience receptacles, and HVAC systems. The electrician who was performing scoping activities had removed the gutter cover to identify possible routing paths for new conduit and conductors that would be installed as part of the Fire Alarm Upgrade Project. The electrician was replacing the gutter cover when the cover slipped, falling through the gap into the MCC. The electrician was wearing a hard hat, safety glasses, safety gloves, and using an 8' step ladder, when the 1/8" cover slipped out of his hands, falling between a 3/16" gap located at the top of the MCC cabinet, where the different sections of the cabinet are bolted together, contacting a bus bar. There was no impact to safety systems in the building and no shock or burn to the electricial performing the work activity as a result of this incident. Response: An FMOC Electrical Engineer and Maintenance Team Lead responded to the event at approximate 7:55 a.m. followed by two Maintenance Electricians at 8:00. The Maintenance Electricians performed LOTO on Switchboard B and MCC BBH1; the breakers in MCC BBHI were placed in open position and the electrical system was megnered back to the Main Switchboard
	Breaker - no problems identified.

The Electricians switched Main Breaker in Switchboard B to the on position at approximately 8:30 a.m.

The bus bar coupling in MCC BBH1 had some damage and was inspected, cleaned and re-installed

There was no impact to MCC BBH1 cover plates or any internal parts other than minor damage to the bus coupling and scorching of the gutter cover.

The Electricians switched the breaker in MCC BBH1 to the on position at approximately 11:30 a.m., which brought all building systems impacted by the incident back on line.

Analysis:

Arc Flash analysis had been performed on the MCC (NFPA 70E 130.3). The MCC was labeled identifying the available incident energy, the hazard/risk category, Arc Flash Boundary, and Approach Boundary as required by NFPA 70E130.3. The Arc Flash Analysis identified that the MCC has a 1.2 cal/cm^2 Hazard Category 1 when performing energized work on the system.

The electrician was not performing work on the MCC, no MCC covers had been removed, and no bolts on the cover had been loosened. The MCC assembly is rate for a fault of 65 kA.

In June of 2008, a building PM was performed which included PM of MCC BBH1. The PM would include visual inspection of MCC and operation of the MCC breakers, as identified in FMOC OP-301 Standard Preventive Maintenance Guidelines for Low Voltage Electrical Equipment. This PM helps ensure that engineered controls (e.g., grounds and breakers) MCC operate correctly.

The manufacturer's instructions direct the installer to install gasket material up the sides of the MCC between the MCC sections and cut the material off at the top. The installation instructions do not directed the installation of gasket material between the cover plates located on top of the MCC.

The electrician is a nine year Journeyman, with 14 years total experience in construction and has been with the electrical subcontract company for 2 years.

The Electrical Safety Subject Matter Expert scored the event a 100 based

	on the following data. Hazard Factor (energy): 50 - Environmental factor (dry): 0 - Shock proximity (within the LAB): 1 - Arc proximity (outside the calculated FPB): 0 - Thermal proximity: 0 - Injury (no injury): 1.
Cause Description:	Critique/Fact Finding Performed 8/4/09
Operating Conditions:	Normal
Activity Category:	Construction
Immediate Action(s):	FMOC Maintenance and Electrical Engineering responded
	Initiated investigation
	Installed a sheet metal cover over the 3/16 inch gap on top of the MCC
	An extent of condition survey was performed inspecting MCCs in the equipment room for gaps between MCC top cover plates that could potentially result in a similar incident.
FM Evaluation:	EOC #12426
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Causal Analysis Team By When: 09/17/2009
Division or Project:	4000/Fire Alarm Upgrade
Plant Area:	Tech Area I
System/Building/Equipment	480 Volt Electrical Distribution System/Bldg 870/Mech. Rm
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01AInadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01QInadequate Conduct of Operations - Personnel error 07BElectrical Systems - Electrical Distribution 07CElectrical Systems - Power Outage 11GOther - Subcontractor 12CEH Categories - Electrical Safety 14EQuality Assurance - Work Process Deficiency
HQ Summary:	On August 3, 2009, at Building 870, a construction electrician dropped a 1/8-inch thick metal cover to an 8X40-inch electrical gutter into a 3/16-inch gap located in the top of a motor control center (MCC) BBH1. The

	gutter top of to gro coupli perfor enclos the 12 conve perfor possib install to safe perfor	cover the M und sh und sh ming t sure. T 00 am nience ming s ole rou ed as p ety sys ming t	came in touch CC and the gro ort. The result discolored the he work report he 480 Volt, 80 p switchboard receptacles, and scoping activities ting paths for report of the Fire tems in the built he work activity	ed the Phase C brounded MCC me ing current slight e gutter cover. The ted only a small a 00 amp MCC ma breaker feeding nd HVAC system ies, had removed new conduit and Alarm Upgrade ilding and no sho ty as a result of t	us bar coupl tal exterior r ly damaged he subcontra arc that did r tin breaker to the building hs. The elect the gutter co conductors t Project. The bck or burn to his incident.	ing located at resulting in a p the copper bus ctor electrician tot leave the N ripped followe lighting, rician, who was over to identify hat would be re was no imp to the electrician	the bhase s bar n IMC ed by as y as
Similar OR Report Number:							
Facility Manager:	Name Phon Title	e Carl e (505 ES&	a Lamb) 844-1753 H Coordinator	r - Facilities Man	agement & (Ops Ctr	
Originator:	Name	e LUC	CERO, JEWEL	LEE A			
	Phon	e (505) 845-4727				
	Title	REP	ORTING AD	MINISTRATOR			
HQ OC Notification:	Date	Time	Person Notifie	d Organization	1		
· ·	NA	NA	NA	NA			
Other Notifications:		ate	Time	Person No	tified	Organization	
	08/03	x/2009	08.00 (MTZ)	Iohn Nor	walk	4827	
	08/03	3/2009	08:06 (MTZ)	Debbie Garcia-S	anchez FR	DOE/SSO	
	08/03	3/2009	08:24 (MTZ)	Lynnwood	Dukes	4820	
	08/03	3/2009	08:30 (MTZ)	EOC		4136	
	08/03	3/2009	10:30 (MTZ)	Lynnwood	Dukes	4820	
	08/03	3/2009	10:30 (MTZ)	Debbie Garcia-S	anchez, FR	DOE/SSO	
	08/03	3/2009	08:15 (MTZ)	Jeff Quin	itenz	4800	
	08/03	3/2009	10:30 (MTZ)	Jeff Quin	itenz	4800	
Authorized Classifier(AC):	John Z	Zavadi	1 Date: 08/0	05/2009			1
	NIE II				D. 1		

10)Report Number:	NE-IDBEA-MFC-2009-0002 After 2003 Redesign
Secretarial Office:	Nuclear Energy, Science and Technology
Lab/Site/Org:	Idaho National Laboratory
Facility Name:	Materials and Fuels Complex

Subject/Title:	LO\TO Violation While Working MFC-768 Lighting Upgrade			
Date/Time Discovered:	08/25/2009 07:00 (MTZ)			
Date/Time Categorized:	08/25/2009 07:30 (MTZ)			
Report Type:	Notification			
Report Dates:	Notification	08/26/2009	15:59 (ETZ)	
	Initial Update			
	Latest Update			
	Final			
Significance Category:	3			
Reporting Criteria:	2C(2) - Failure to follow a p (e.g., lockout/tagout) or a sit discovery of an uncontrolled power circuit, steam line, pro discoveries made by zero-en investigations made before w	rescribed hazardous er e condition that results l hazardous energy sou essurized gas). This cri- ergy checks and other work is authorized to b	hergy control process s in the unexpected urce (e.g., live electrical iterion does not include precautionary egin.	
Cause Codes:				
ISM:				
Subcontractor Involved:	Yes Nash Electric			
Occurrence Description:	On 08/25/2009 it was discov a subcontractor in Materials 768 on the Idaho National L the Lockout/Tagout (LO/TO fixture was de-energized and It had been de-energized und subcontractor, who was perf part of MFC-768. Light fixtures were being rep efficient lights under an Ene The work scope for 08/24/20 lights in the switchgear area event was working the night electrician was assigned to p minor maintenance work or shift required four separate s on the 9 emergency lights th circuit (ckt) in the electrical 349 ckt 4. He went to LP-34 matched. He then walked do located and identified a fixtu on to identify the lights on th during his area walkdown w	vered that a light fixture and Fuels Complex (M aboratory (INL), that w) for the work being per 1 there was no exposure ler another LO/TO by forming a different score placed throughout MFC rgy Savings Performan 009 included replacing of MFC-768. The work shift from 1600 to 020 perform LO/TOs for the ler, or green sheet. The simple LO/TOs. When we MFC Electrician ide shop's book of panel d 9 and the directories in pown the switch gear are are that was out. He ture hat circuit. He assumed as burned out and was	e had been replaced by MFC) building MFC- was not isolated under erformed. The light re to hazardous energy. a different pe of work in another C with more energy nce Contract (ESPC). a bank of 9 emergency rk crew involved in this 00. An MFC plant e subcontractor using a e work planned for the performing the LO/TO ntified the panel and lirectories as panel LP- n the book and panel ea where the lights are med the breaker off and d the light that was off on ckt 4 because it was	

	in line with the other lights on the circuit, and he had encountered numerous burned out lights during the project. He applied a simple LO/TO to the LP-349 ckt 4 breaker and then performed a zero energy check at the burned out light, since he wanted to verify it was de- energized when he opened the breaker. The subcontractor Electricians were with the MFC Electrician during this process to verify their isolation boundary and apply their locks and tags over the MFC Electrician LO/TO. The Subcontractor Electricians verified zero energy at each fixture prior to working on the fixture. After the Subcontractor Electricians completed replacing the lights the LO/TO was cleared and ckt 4 breaker was closed. The light which had been out prior to performing the work was still out. Troubleshooting indicated that the light was de-energized by means other than the ckt 4 in LP-349. The light was de-energized by a different LO/TO on ckt 8 in LP-349. There were no injuries or equipment damage as a result of this event, no
Cause Description:	personnel were exposed to a nazardous energy source.
Operating Conditions:	Normal Operations
Activity Category:	Construction
Immediate Action(s):	 Did trouble shooting, verified no energy to the light that was out. Ckt 4 was left in an energized condition. Subcontractor and Construction management were notified. Work was stopped for a Timeout for the Electricians and CFR to discuss the event and continuing work. Construction Management issued a formal stop work on the subcontractor after a critique was held on this event which affects the Lighting Upgrade portion of the ESPC contract.
FM Evaluation:	There were no injuries or exposure to hazardous energy as a result of this event but there may be vulnerabilities which need to be evaluated and addressed prior to continuing work on the Lighting Upgrade.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? Yes By Whom: F&SS By When: 09/14/2009
Division or Project:	Facility Management
Plant Area:	Utilities
System/Building/Equipment :	MFC 768
Facility Function:	Balance-of-Plant - Site/outside utilities

Corrective Action:		
Lessons(s) Learned:		
HQ Keywords:	01KInadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01MInadequate Conduct of Operations - Inadequate Job Planning (Electrical) 11GOther - Subcontractor 12IEH Categories - Lockout/Tagout (Electrical or Mechanical) 14EQuality Assurance - Work Process Deficiency	
HQ Summary:	On August 25, 2009, it was discovered that a light fixture had been replaced by a subcontractor in the Materials and Fuels Complex (MFC) Building MFC-768, which was not isolated under the Lockout/Tagout (LO/TO) for the work being performed. The light fixture was de- energized and there was no exposure to hazardous energy. The light fixture had been de-energized under another LO/TO by a different subcontractor, who was performing a different scope of work in another part of MFC-768. There were no injuries or equipment damage as a result of this event and no personnel were exposed to a hazardous energy source	
Similar OR Report Number:		
Facility Manager:	NameLively, David B.Phone(208) 533-7438TitleFacility Complex Manager	
Originator:	NameALLEN, JEFFREY KPhone(208) 526-5320TitleOPERATIONS ASSISTANT	
HQ OC Notification:	DateTimePerson NotifiedOrganizationNANANANA	
Other Notifications:	DateTimePerson NotifiedOrganization08/25/200907:00 (MTZ)David LivelyF&SS08/25/200907:10 (MTZ)Scott D McBrideF&SS08/25/200907:30 (MTZ)Scott E. FerraraDOE-ID	
Authorized Classifier(AC):		
11)Report Number:	NE-IDBEA-SMC-2009-0010 After 2003 Redesign	
Secretarial Office:	Nuclear Energy, Science and Technology	
Lab/Site/Org:	Idaho National Laboratory	

Specific Manufacturing Capability Facility Name:

Subject/Title:	Failure to Follow Prescribed Work Control Process					
Date/Time Discovered:	08/27/2009 08:12 (MTZ)					
Date/Time Categorized:	08/27/2009 10:20 (MTZ)					
Report Type:	Notification					
Report Dates:	Notification 09/01/2009		18:53 (ETZ)			
	Initial Update					
	Latest Update					
	Final					
Significance Category:	3					
Reporting Criteria:	2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.					
Cause Codes:						
ISM:						
Subcontractor Involved:	No					
Occurrence Description:	 On Thursday, August 27, 2009, at approximately 7:00 a.m., a Specific Manufacturing Capability (SMC) employee applied a temporary modification on a piece of equipment that was already under a non-electrical LO/TO. This was accomplished by placing a jumper around a relay in an electrical control cabinet. The relay was located in a control cabinet where 480 volts was still present at the line side of the disconnect. The disconnect to the control panel had been isolated for mechanical work only and no zero energy verification had been done to perform electrical work. This modification was made without following the appropriate work control process. In addition, the individual's LO/TO Qualification had expired in March, 2009. Action Taken: At approximately 0845 hours, all activity on the equipment was stopped and equipment was placed in a safe condition. Maintenance personnel were instructed to stop work, release their personal locks, and leave the 					
Cause Description:						
Operating Conditions:	Routine Maintenance					
Activity Category:	Maintenance					
Immediate Action(s):	All maintenance activities of	on the equipment was s	stopped and equipment			

	was placed in a safe condition. Maintenance personnel were instructed to stop work, release their locks, and leave the work area. Critique was conducted at 1200 hours.			
FM Evaluation:	To be determined			
DOE Facility Representative Input:				
DOE Program Manager Input:				
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: M. Park By When: 09/30/2009			
Division or Project:	Idaho National Laboratory (INL)			
Plant Area:	SMC			
System/Building/Equipment	Lockout/TAN-629/Line 10			
Facility Function:	Uranium Conversion/Processing and Hand	ing		
Corrective Action:				
Lessons(s) Learned:				
HQ Keywords:	 01FInadequate Conduct of Operations - Training Deficiency 01KInadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01MInadequate Conduct of Operations - Inadequate Job Planning (Electrical) 01OInadequate Conduct of Operations - Inadequate Maintenance 12IEH Categories - Lockout/Tagout (Electrical or Mechanical) 14BQuality Assurance - Training and Qualification Deficiency 14EOuality Assurance - Work Process Deficiency 			
HQ Summary:	On August 27, 2009, a Specific Manufacturing Capability (SMC) employee applied a temporary modification on a piece of equipment that was already under a non-electrical LO/TO. This was accomplished by placing a jumper around a relay in an electrical control cabinet. The relay was located in a control cabinet where 480 volts was still present at the line side of a disconnect switch. The disconnect to the control panel had been isolated for mechanical work only and no zero energy verification had been done to perform electrical work. This modification was made without following the appropriate work control process. In addition, the individual's LO/TO Qualification had expired in March, 2009. All activity on the equipment was stopped and equipment was placed in a safe condition. A critique was conducted.			
Similar OR Report Number:				
Facility Manager:	Name Park Michael D			

	Phone (208) 526-6555			
Originator:	NameGERDES, ANNETTE WPhone(208) 526-6355TitleOPERATIONS SUPPORT			
HQ OC Notification:	Date Time	Person Notified	l Organization NA	
Other Notifications:	Date 08/27/2009	Time 0 09:15 (MTZ) 0	Person Notified Goriup Michael R	Organization DOE-ID
Authorized Classifier(AC):	Del DeCori	a Date: 09/01	/2009	
12)Report Number:	SCPNSO-	PNNL-PNNLN	<u>UCL-2009-0003</u> A	fter 2003 Redesign
Secretarial Office:	Science			
Lab/Site/Org:	Pacific Nor	thwest National	Laboratory	
Facility Name:	PNNL Nuc	lear Facilities		
Subject/Title:	Noncomplia	ance with Hazard	dous Energy Contr	ol Requirements
Date/Time Discovered:	08/27/2009	11:43 (PTZ)		
Date/Time Categorized:	08/27/2009 13:21 (PTZ)			
Report Type:	Notification			
Report Dates:	Notification		08/31/2009	21:37 (ETZ)
	Initial Update			
	Latest Update			
	Final			
Significance Catagony				
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:	During preparation of room 118 in Building 325 for painting and carpeting, a craftsman (electrician) removed the receptacle covers and switch plates.			

	After the plates were removed and some amount of painting had been performed, it was identified that the electrical conductors that supply the receptacles were energized. Removal of the receptacle covers without de- energizing the circuit(s) or working under an energized electrical work permit is being reviewed to verify consistency and applicability to national codes/standards and requirements of the Standards-Based Management System procedure, "Electrical Equipment and Systems, Working on or Near." No staff received an electrical shock or came in contact with any electrical component.
Cause Description:	
Operating Conditions:	Dry
Activity Category:	Maintenance
Immediate Action(s):	Switch plate and receptacles covers were reinstalled. A critique was held Friday, August 28, 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:	Operational Services Directorate / Nuclear Operati
Plant Area:	300 Area
System/Building/Equipment	RPL (325 Bldg) / Room 118
Facility Function:	Laboratory - Research & Development
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01MInadequate Conduct of Operations - Inadequate Job Planning (Electrical) 08HOSHA Reportable/Industrial Hygiene - Safety Noncompliance 12CEH Categories - Electrical Safety 14EQuality Assurance - Work Process Deficiency
HQ Summary:	On August 27, 2009, during preparation of room 118 in Building 325 for painting and carpeting, a craftsman (electrician) removed the receptacle covers and switch plates. After the plates were removed and some amount of painting had been performed, it was identified that the electrical conductors that supply the receptacles were energized. Removal of the receptacle covers without de-energizing the circuits or working under an energized electrical work permit is being reviewed to verify consistency

	and applicability to national codes/standards and requirements of the Standards-Based Management System procedure, "Electrical Equipment and Systems, Working on or Near." No staff received an electrical shock or came in contact with any electrical component. The switch plate and receptacles covers were reinstalled. A critique was held on August 28, 2009.					
Similar OR Report Number:						
Facility Manager:	Name Kooiker, C. A.					
	Phone (509) 376-5746					
	Title Bldg Manager, Radiochemical Processing Laboratory					
Originator:	Name SMITH, KARLA J					
	Phone (509) 373-6481					
	Title TECH. OPS AND ASSURANCE OFFICE, SPEC				C	
HQ OC Notification:	Date	Гime	Person Notifi	ed Organization		
	NA	NA	NA	NA		
Other Notifications:	Da	te	Time	Person Notified	Organization	
	08/27/	2009	13:21 (PTZ)	Davies, T.	PNSO	
Authorized Classifier(AC):	Pollari	, R. A	Date: 08/	/31/2009		

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