September 2009 Electrical Safety Occurrences

There were 17 electrical safety occurrences for September 2009:

- 2 resulted in shocks
- 1 resulted in a burn injury
- 12 involved inadequate lockout/tagout (LOTO)
- 10 involved electrical workers and 7 involved non-electrical workers
- 7 occurrences involved subcontractors
- 7 occurrences resulted from inadequate job planning
- 5 involved severing an energized conductor

September proved to be a very painful month for electrical safety. After fairly good performance during the summer months, we seemed to have let our guard down as we enter fall. There were two electrical shocks that involved non-electrical workers who came in contact with defective equipment in the performance of their normal work. Of the 16 shocks this year, 13 involved non-electrical workers. We need to work to reduce these numbers. As was seen in the previous month, the reports continue to indicate a weakness in hazardous energy control. Of the 12 LOTO events, 7 involved the failure to follow hazardous energy control procedures, 4 involved less than adequate job planning, and 1 involved inadequate drawings. Work around energized electrical components should never be considered routine. Integrated Safety Management must be applied if we are to accurately identify hazards and correctly control exposure to the workers. A serious arc event caused a worker to spend a painful night in a burn center. This should be a call to action to take necessary steps to prevent these types of events from happening in the DOE workplace. The data shows that a plateau may have been reached and additional effort may be needed to force continued improvements.

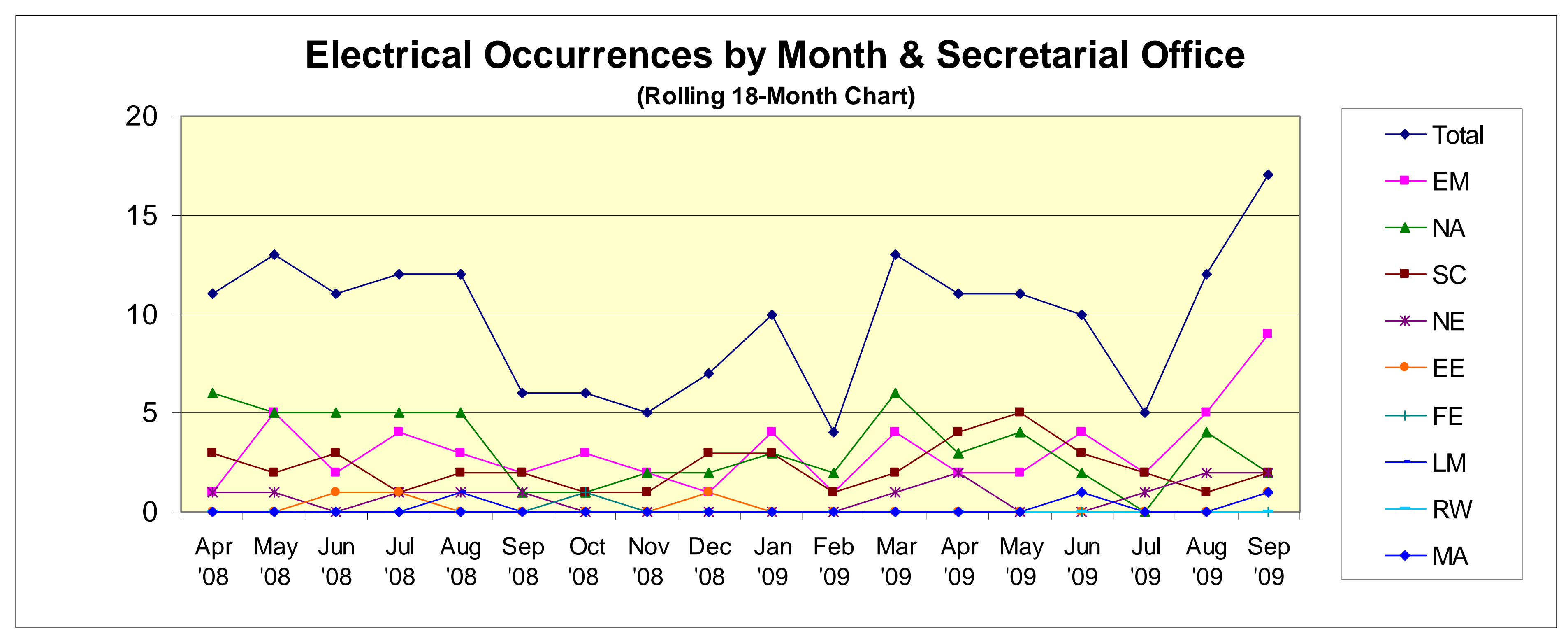
In compiling the monthly totals, the search initially looked for occurrence discovery dates in this month (excluding Significance Category R reports), and for the following ORPS "HQ keywords":
01K – Lockout/Tagout Electrical, 01M - Inadequate Job Planning (Electrical),
08A – Electrical Shock, 08J – Near Miss (Electrical), 12C – Electrical Safety

Using the key words above, 18 events were identified. One event was screened out as not being related to electrical safety. This event involved a lack of job planning that resulted in the inadvertent loss of power to radiation monitors. 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
August-09	12	3	0	0
September-09	17	2	1	0
2009 total	94 (avg. 10.4/month)	16	2	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

Nine months through the calendar year, the average rate of electrical safety occurrences in 2009 is 10.4 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 – September 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	EE-GO--NREL-NREL-2009-0007	The conduit housing on an energized 120-VAC wiring was cut when a subcontractor was drilling through a concrete floor.		X	X					X			?
2	EM---WGI-G2H2-2009-0001	An arc flash was generated upon cutting a 480 volt electrical line.	X		X			X	X		X		?
3	EM-ID--BBWI-AMWTF-2009-0013	Worker performed work near energized receptacles with covers removed.		X					X				0
4	EM-ID--CWI-BIC-2009-0006	D&D workers cut an energized 110-volt wiring for a light fixture after an electrician told them it was de-energized.		X					X		X		?
5	EM-RL--CPRC-GPP-2009-0015	An electrician discovered an exposed energized 480-volt conductor.	X						X				?
6	EM-RL--CPRC-WESF-2009-0001	Electrical conductors left in unsafe condition.	X						X				0
7	EM-RP--BNRP-RPPWTP-2009-0020	Worker failed to follow energy control procedure by resetting a switch inside a control panel without applying a LOTO.		X					X				0
8	EM-SR--PSC-SWPF-2009-0009	Electrician discovered unauthorized modification resulted in an emerged male plug on the load side of a cord.	X										0
9	NA-SR--SRNS-KAREA-2009-0008	Energized components discovered during LOTO.	X						X				0
10	EM-SR--SRNS-SIPS-2009-0008	Electrician receives burn injuries while troubleshooting energized electrical equipment.	X		X		X	X	X				3500
11	MA-HQ--GPHQ-DOEHQ-2009-0006	Worker received electrical shock from the frame of an appliance.		X	X	X							330
12	NA--LASO-LANL-FIRNGHELAB-2009-0015	Workers severed energized 480 volt conductors while cutting concrete.		X						X			50
13	NA--SS-SNL-CASITE-2009-0003	Workers disconnected equipment without LOTO.	X		X				X				0
14	NE--ID-BEA-MFC-2009-0004	Worker cut energized 120 volt conductor.	X		X				X		X		?
15	NE-ID--BEA-SMC-2009-0011	Worker entered a de-energized 480-volt panel to reset overloads without required PPE.	X						X				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]
16	SC--PNSO-PNNL-PNNLBOPER-2009-0015	Worker received electrical shock while attempting to start a band saw.		X		X							?
17	SC--PNSO-PNNL-PNNLBOPER-2009-0016	Consultant performed hands-on work without following hazardous energy controls.	X		X				X				?
	TOTAL		10	7	7	2	1	2	12	2	3		

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/penetration, (7) CUT/D = cutting or drilling, (8) VEH = vehicle event, (9) ES = electrical severity

Electrical Safety Occurrences – September 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	EE-GO--NREL-NREL-2009-0007	The conduit housing on an energized 120-VAC wiring was cut when a subcontractor was drilling through a concrete floor.						X	X			3	2C(2)
2	EM---WGI-G2H2-2009-0001	An arc flash was generated upon cutting a 480 volt electrical line.	X					X	X			3	2C(2)
3	EM-ID--BBWI-AMWTF-2009-0013	Worker performed work near energized receptacles with covers removed.		X				X		X		3	2C(2)
4	EM-ID--CWI-BIC-2009-0006	D&D workers cut an energized 110-volt wiring for a light fixture after an electrician told them it was de-energized.	X	X				X	X			3	2C(2)
5	EM-RL--CPRC-GPP-2009-0015	An electrician discovered an exposed energized 480-volt conductor.						X		X		3	2C(2)
6	EM-RL--CPRC-WESF-2009-0001	Electrical conductors left in unsafe condition.						X		X		3	2C(2)
7	EM-RP--BNRP-RPPWTP-2009-0020	Worker failed to follow energy control procedure by resetting a switch inside a control panel without applying a LOTO.		X				X		X		3	2C(2)
8	EM-SR--PSC-SWPF-2009-0009	Electrician discovered unauthorized modification resulted in an emerged male plug on the load side of a cord.						X		X		3	2C(2)
9	NA-SR--SRNS-KAREA-2009-0008	Energized components discovered during LOTO.		X				X		X	X	3	10(2)
10	EM-SR--SRNS-SIPS-2009-0008	Electrician receives burn injuries while troubleshooting energized electrical equipment.		X		X		X	X		X	2	2A(6)
11	MA-HQ--GPHQ-DOEHQ-2009-0006	Worker received electrical shock from the frame of an appliance.						X	X			3	10(2)
12	NA--LASO-LANL-FIRNGHELAB-2009-0015	Workers severed energized 480 volt conductors while cutting concrete.		X				X	X			3	2C(2)
13	NA--SS-SNL-CASITE-2009-0003	Workers disconnected equipment without LOTO.						X		X		3	10(2)
14	NE--ID-BEA-MFC-2009-0004	Worker cut energized 120 volt conductor.		X				X	X			3	2C(2)
15	NE-ID--BEA-SMC-2009-0011	Worker entered a de-energized 480-volt panel to reset overloads without required PPE.						X		X	X	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]
16	SC--PNSO-PNNL-PNNLBOPER-2009-0015	Worker received electrical shock while attempting to start a band saw.						X	X			2	2C(1)
17	SC--PNSO-PNNL-PNNLBOPER-2009-0016	Consultant performed hands-on work without following hazardous energy controls.						X		X		3	2C(2)
	TOTAL		2	7		1		17	8	9	3		

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 54395 OR(s) with 57713 occurrences(s) as of 10/14/2009 7:01:50 AM
Query selected 17 OR(s) with 17 occurrences(s) as of 10/14/2009 12:11:40 PM

Download this report in Microsoft Word format.

1)Report Number:	EE-GO--NREL-NREL-2009-0007 **After 2003 Redesign**
Secretarial Office:	Energy Efficiency and Renewable Energy
Lab/Site/Org:	National Renewable Energy Laboratory
Facility Name:	National Renewable Energy Laboratory
Subject/Title:	Energized 120 VAC Line Cut During Floor Penetration
Date/Time Discovered:	09/04/2009 10:40 (MTZ)
Date/Time Categorized:	09/04/2009 12:34 (MTZ)
Report Type:	Notification
Report Dates:	Notification: 09/09/2009 19:01 (ETZ) Initial Update: Latest Update: Final:
Significance Category:	3
Reporting Criteria:	2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.
Cause Codes:	
ISM:	
Subcontractor Involved:	Yes MC Squared
Occurrence Description:	The conduit housing on an energized 120 VAC wiring was cut through when a subcontractor, hired by NREL, was drilling through a concrete floor. There were no worker injuries. The worker had no indication that they had contacted the wiring until the loss of power was reported. Power was lost to outlets running along two of the exterior walls of B16 3rd Floor Large Wing (southwest and northwest walls) affecting office areas only. A utility locate was performed with sonar equipment prior to the drilling activity, no utilities were detected during the locate process.

Cause Description:	
Operating Conditions:	Normal operations
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	The cause of the power outage was traced back to the floor drilling activity. The drilling activity had already been completed. Information about the event was gathered as part of the investigation process.
FM Evaluation:	No one was injured. Power outage was limited to a small portion of the third floor office areas. Office occupants were able to obtain 120 V power by using power strips on the other wall of their offices. No impact to lab activities.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: EHS Office By When:
Division or Project:	Site Operations/Equipment Installation
Plant Area:	DW Bldg 16
System/Building/Equipment:	Denver West Building 16 Conference Room 3A
Facility Function:	Solar Activities
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	07C--Electrical Systems - Power Outage 07D--Electrical Systems - Electrical Wiring 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency 14G--Quality Assurance - Procurement Deficiency
HQ Summary:	On September 4, 2009, a subcontractor hired by NREL cut through a conduit housing energized 120-volt wiring when drilling through a concrete floor. There were no worker injuries. The worker had no indication that the wiring was hit and damaged until a loss of power was reported. Power was lost to outlets that run along two of the exterior walls of Building 16, 3rd Floor Large Wing, which affected office areas only. A utility locate was performed with sonar equipment before drilling and no utilities were detected during the locate process. Information about the event was gathered as part of the investigation process.

Similar OR Report Number:	
Facility Manager:	Name: JORDAN, MAUREEN Y Phone: (303) 275-3248 Title: EHS Office Director
Originator:	Name: OKANE, BARBARA V. Phone: (303) 384-7609 Title: ENVIRONMENTAL H & S SENIOR ES&H SPEC
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 09/04/2009; Time: 12:34 (MTZ); Person Notified: Karen Harness; Organization: DOE-GO
Authorized Classifier(AC):	

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2)Report Number:	EM---WGI-G2H2-2009-0001 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Separations Process Research Unit
Facility Name:	G2/H2 Facilities
Subject/Title:	Electrical Arc Flash at SPRU Disposition Project - ARRA
Date/Time Discovered:	09/18/2009 12:21 (ETZ)
Date/Time Categorized:	09/18/2009 13:45 (ETZ)
Report Type:	Update
Report Dates:	Notification: 09/21/2009 16:58 (ETZ) Initial Update: 09/28/2009 13:00 (ETZ) Latest Update: 09/28/2009 13:00 (ETZ) Final:
Significance Category:	3
Reporting Criteria:	2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.
Cause Codes:	
ISM:	
Subcontractor Involved:	Yes

	Safety and Ecology Corporation
Occurrence Description:	While performing utility isolations in building G2 panel 1-2, in order to achieve a "cold and dark" condition for the established work area, an arc flash was generated upon cutting a 480 volt electrical line. The line was believed to have been deenergized. The work was being performed to a work instruction package which required lockout tagout and zero energy confirmation. Because of the age of the facility and poor configuration control of the facility utility services, full arc flash personal protective equipment for energized electrical hazards was worn. There were no injuries related to this event.
Cause Description:	
Operating Conditions:	No other facility operations or activities were taking place other than the utility isolations.
Activity Category:	Facility Decontamination/Decommissioning
Immediate Action(s):	The area was placed in a safe condition. A fact finding meeting was conducted. Electrical work at the project was suspended. Further investigation of the incident has begun.
FM Evaluation:	Investigation of the incident is continuing.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	SPRU DP URS- Washington Division
Plant Area:	Building G2
System/Building/Equipment:	Building G2 Power Panel 1-2
Facility Function:	Environmental Restoration Operations
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01B--Inadequate Conduct of Operations - Loss of Configuration Management/Control 01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical) 11G--Other - Subcontractor 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 13H--Management Concerns - American Recovery and Reinvestment Act (ARRA) 14D--Quality Assurance - Documents and Records Deficiency 14E--Quality Assurance - Work Process Deficiency 14G--Quality Assurance - Procurement Deficiency

HQ Summary:	On September 18, 2009, while performing utility isolations in building G2 panel 1-2, in order to achieve a "cold and dark" condition for the established work area, an arc flash was generated upon cutting a 480 volt electrical line. The line was believed to have been deenergized. The work was being performed to a work instruction package which required lockout tagout and zero energy confirmation. Because of the age of the facility and poor configuration control of the facility utility services, full arc flash personal protective equipment for energized electrical hazards was worn. There were no injuries related to this event. Electrical work at the project was suspended. Further investigation of the incident has begun.
Similar OR Report Number:	
Facility Manager:	Name: CURCIO, JOSEPH Phone: (518) 630-5163 Title: Facility Manager
Originator:	Name: KNUTSEN, KATHRYN ANN Phone: (518) 630-5176 Title: PROGRAM COMPLIANCE SPECIALIST
HQ OC Notification:	Date: 09/18/2009; Time: 13:50 (ETZ); Person Notified: Dr. Wu; Organization: EM 61
Other Notifications:	Date: 09/18/2009; Time: 12:51 (ETZ); Person Notified: William Hunt; Organization: DOE FR
Authorized Classifier(AC):	

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3)Report Number:	EM-ID--BBWI-AMWTF-2009-0013 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Idaho National Laboratory
Facility Name:	ADVANCED MIXED WASTE TREATMENT FAC
Subject/Title:	Non-Compliance With Hazardous Energy Control Requirements
Date/Time Discovered:	09/01/2009 14:00 (MTZ)
Date/Time Categorized:	09/01/2009 14:45 (MTZ)
Report Type:	Final
Report Dates:	Notification: 09/03/2009 10:11 (ETZ) Initial Update: 09/28/2009 13:38 (ETZ) Latest Update: 09/29/2009 12:09 (ETZ) Final: 09/29/2009 12:09 (ETZ) Revision 1: 10/07/2009 10:06 (ETZ)
Significance Category:	3

Reporting Criteria:	2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.
Cause Codes:	A4B3C08 - Management Problem; Work Organization & Planning LTA; Job scoping did not identify special circumstances and/or conditions A5B4C01 - Communications Less Than Adequate (LTA); Verbal Communications LTA; Communication between work groups LTA
ISM:	1) Define the Scope of Work 2) Analyze the Hazards
Subcontractor Involved:	No
Occurrence Description:	During interior painting of Building WMF-1604, a landlord technician removed electrical receptacle covers and switch plates to facilitate paint application. After the painting was completed, it was identified that energized electrical conductors (110 volts) within receptacles and switch enclosures were exposed and not "finger safe" per NFPA 70 E standards. The workers were within the limited approach boundary without the prescribed controls. In addition, work control documentation and hazard analyses utilized to perform the painting task did not address the potential exposed electrical conductor hazard. A pre-work execution walk down of the area per prescribed procedures was also not conducted which may have identified this specific hazard. No one came in contact with the energized conductors during and following the work activity. The issue was identified by a site engineer who had just previously read a summary of a previous similar occurrence at another DOE facility.
Cause Description:	The scope of work specified on the Janitorial and Landlord Operations Approved Method of Work (AMOW) document and the verbal communication between the Landlord Tech and the Safe System Work Control did not identify that the electrical covers were going to be removed as part of the painting. Further, it is recognized that removing receptacle and switch covers is a common practice for painters. This practice should be addressed as a potential hazard in the hazard assessment and the AMOW. The janitorial and landlord activities hazard assessment and the AMOW do not currently identify such removal of electrical covers as a potential hazard when performing landlord duties such as painting.
Operating Conditions:	Normal
Activity Category:	Maintenance
Immediate Action(s):	Switch plate and receptacle covers were reinstalled by a NFPA 70E qualified person. A fact finding was conducted Wednesday, 9/1/09.
FM Evaluation:	Covers to receptacles and switches are often removed by industrial

	painters prior to repainting activities with out performing hazardous energy isolation. This work is described by Painting contractors as an industrial practice. However, NFPA 70E 2009 and AMWTP procedures do not specifically address this practice and do not provide an exclusion to the requirements of working within the limited approach boundary. This occurrence initiated an AMWTP review of how workers perform activities within the limited approach boundary of uncontrolled hazardous electrical energy sources. The review did not result in any programmatic changes. However the review did increase the awareness level of the work groups at AMWTP. 09/28/09 Update report submitted as Final Report for review. DOEID-FR J. Duplessis has been notified
DOE Facility Representative Input:	The FR reviewed the report and determined that the event is described accurately. The report also accurately describes the causes that led to this event. The FR reviewed the corrective action plan in the contractor's corrective action report #47159 and determined that the corrective actions to be satisfactory. The FR will monitor corrective actions for completion. All corrective actions are to be completed by 12/10/2009. Report reviewed by Jeffrey Duplessis on 9/28/2009. Entered by: DUPLESSIS, JEFFREY D 09/29/2009
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	AMWTP
Plant Area:	WMF-1604
System/Building/Equipment:	WMF-1604
Facility Function:	Nuclear Waste Operations/Disposal
Corrective Action 01:	**Target Completion Date:**12/10/2009 **Tracking ID:**47159
	1. Modify the Janitorial and Landlord Activities Hazard Assessment to cover the hazards and mitigations associated with removal of electrical receptacle covers and other electrical covers. 2. Modify the Janitorial and Landlord Operations Approved Method of Work to cover the hazards and mitigations associated with removal of electrical receptacle covers and other electrical covers. 3. Prepare a lesson learned from this event to share with other DOE facilities.
Lessons(s) Learned:	Stay alert to the dangers that can be present in everyday activities. The practice of removing an outlet cover during painting is commonplace, yet it also presents exposed electrical wiring to individuals. Always be on the look-out for the unanticipated hazards in common activities.

HQ Keywords:	01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01E--Inadequate Conduct of Operations - Operations Procedure Noncompliance 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 01P--Inadequate Conduct of Operations - Inadequate Oral Communication 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On September 1, 2009, during interior painting of Building WMF-1604, a technician removed electrical receptacle covers and switch plates, to facilitate painting, without proper safeguards. After the painting was completed, it was identified that energized electrical conductors (110V) within receptacles and switch enclosures were exposed and not "finger safe" per NFPA 70E standards. In addition, work control documentation and hazard analyses utilized to perform the painting task did not address the potential exposed electrical conductor hazard. No one came in contact with the energized conductors. The issue was identified by a site engineer who had just previously read a summary of a previous similar occurrence at another DOE facility. The switch plate was reinstalled by an NFPA 70E qualified worker. A fact finding meeting was held.
Similar OR Report Number:	1. None
Facility Manager:	Name: GRIFFITH, THEODORE P Phone: (208) 557-7972 Title: PLANT SHIFT MANAGER
Originator:	Name: CHAFFIN, BARBARA A Phone: (208) 557-7228 Title: OPERATIONS SUPPORT OFFICER
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 09/01/2009; Time: 14:50 (MTZ); Person Notified: J. Duplessis; Organization: DOE-IDFR
Authorized Classifier(AC):	

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4)Report Number:	EM-ID--CWI-BIC-2009-0006 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Idaho National Laboratory
Facility Name:	ICP Demolition and Decommissioning Activities

Subject/Title:	Energized 110 Volt AC line Cut without a Zero Energy Verification Being Performed (ARRA)
Date/Time Discovered:	09/29/2009 10:25 (MTZ)
Date/Time Categorized:	09/29/2009 11:00 (MTZ)
Report Type:	Notification
Report Dates:	Notification — 10/06/2009 — 18:03 (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 9/28/09, an asbestos abatement crew was preparing to remove asbestos lagging from a low pressure steam line in the CPP-602 Laboratory facility basement, They placed the required plastic wrapping on the asbestos lagging that was to be removed and noted an overhead light fixture would be a cause of interference for installing the required removal glove bag. The crew asked an electrician in the area if the light fixture was de-energized. The electrician stated that it was based upon his knowledge of work that had been previously performed on the overhead lighting a few weeks earlier. The Electrician then told the Decontamination/Decommissioning (D&D) workers that it would be ok for them to remove the light fixture, the Electrician did not perform a Zero Energy check to verify the status of 110 Volt Alternating Current (VAC) power to the fixture, which is normal practice for Electricians. On 9/29/09, the same individuals on the asbestos abatement crew began installation of the required removal glove bag and based on the discussion with the electrician the previous day, decided to remove the light fixture. They removed the ballast, wiring cover, and then the D&D worker asked for a pair of wire dykes and proceeded to cut the wire when the worker immediately noted a small flash, the worker did NOT receive a shock. The asbestos abatement crew immediately stopped work and contacted their supervision and reported the event.
Cause Description:	

Operating Conditions:	Normal D&D conditions.
Activity Category:	Facility Decontamination/Decommissioning
Immediate Action(s):	Performed step back, notified management and DOE. Held fact finding meeting.
FM Evaluation:	Report submitted one day later due to New ORPS Issues Coordinator.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	CWI D&D
Plant Area:	CPP-602
System/Building/Equipment:	CPP-602
Facility Function:	Environmental Restoration Operations
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical) 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 13H--Management Concerns - American Recovery and Reinvestment Act (ARRA) 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On September 29, 2009, wiring for an energized 110V light fixture was cut resulting in a small flash but no electrical shock to personnel. The light fixture was in the way of an asbestos abatement crew removing asbestos lagging from a low pressure steam line in the CPP-602 Laboratory facility basement. The asbestos abatement crew had asked an electrician in the area if the light fixture was de-energized. The electrician stated that it was based upon his knowledge of work that had been previously performed on the overhead lighting a few weeks earlier. The electrician did not perform a Zero Energy check to verify the status of 110 V power to the fixture. The asbestos abatement crew immediately stopped work and made management notifications.
Similar OR Report Number:	
Facility Manager:	Name: DIAZ, DAVID A. Phone: (208) 533-3714

	Title: SR. CONSULTING TECH SPEC.
Originator:	Name: CROFTS, BRYAN P Phone: (208) 533-0648 Title: ISSUES COORDINATOR

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
09/29/2009	11:00 (MTZ)	Bradley J. Davis	DOEID

Authorized Classifier(AC): Casteel, Michael S. Date: 10/06/2009

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5)Report Number:	EM-RL--CPRC-GPP-2009-0015 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Hanford Site
Facility Name:	Groundwater Protection Project
Subject/Title:	Exposed energized 480 V electrical cable discovered at well head
Date/Time Discovered:	09/25/2009 16:00 (PTZ)
Date/Time Categorized:	09/25/2009 16:18 (PTZ)
Report Type:	Notification

Report Dates:

Notification	09/29/2009	18:27 (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 09/25/2009 at the 100 K Expansion Pump and Treatment facility a construction electrician discovered a 480 volt electrical cable that had been recently run to a extraction well pump was unexpectedly energized. The cable had been connected to the electrical power supply panel but had not

	yet been connected to the well pump. The cable end at the extraction well was not properly protected leaving an exposed conductor. While the circuit was energized no personnel came into contact with the electrical cable. The electrical cable was being installed by construction forces personnel as part of a facility modification.
Cause Description:	
Operating Conditions:	Not applicable
Activity Category:	Construction
Immediate Action(s):	1. The cable was de-energized and a controlling organization lock and tag was installed on pump circuit breaker. 2. A facility walk down was conducted to verify that there were no other new electrical lines unexpectedly energized.
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:	CHPRC Soil & Groundwater Remediation Project
Plant Area:	100 K Area
System/Building/Equipment:	100 K Expansion Pump & Treat Facility
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical) 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On September 25, 2009, at the 100 K Expansion Pump and Treatment facility, a construction electrician discovered an unexpectedly energized 480-volt electrical cable that had been recently run to an extraction well pump. The cable had been connected to the electrical power supply panel but not to the well pump. The cable end at the extraction well was not properly protected leaving an exposed conductor. While the circuit was energized, no personnel came into contact with the electrical cable. The electrical cable was being installed by construction forces personnel as part of a facility modification. The cable was de-energized and a controlling

	organization lock and tag was installed on the pump circuit breaker.
Similar OR Report Number:	
Facility Manager:	Name: Bill Barrett Phone: (509) 373-3985 Title: P&T Operations & Maintenance Manager
Originator:	Name: TURNER, DENNIS M Phone: (509) 376-3417 Title: TECHNICAL ADVISOR
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	09/25/2009, 16:25 (PTZ), Dyan Foss, VP S&GRP 09/25/2009, 16:33 (PTZ), Kerry Schierman, DOR-RL
Authorized Classifier(AC):	

Facility Manager:

Name	Bill Barrett
Phone	(509) 373-3985
Title	P&T Operations & Maintenance Manager

Originator:

Name	TURNER, DENNIS M
Phone	(509) 376-3417
Title	TECHNICAL ADVISOR

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
09/25/2009	16:25 (PTZ)	Dyan Foss	VP S&GRP
09/25/2009	16:33 (PTZ)	Kerry Schierman	DOR-RL

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6)Report Number:	EM-RL--CPRC-WESF-2009-0001 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Hanford Site
Facility Name:	Waste Encapsulation & Storage Fac.
Subject/Title:	Authorized Worker Lockout Device Removed without Equipment being in a Safe Condition
Date/Time Discovered:	09/25/2009 14:00 (PTZ)
Date/Time Categorized:	09/25/2009 14:00 (PTZ)
Report Type:	Notification
Report Dates:	(see below)
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.

Report Dates:

Notification	09/29/2009	14:24 (ETZ)
Initial Update		
Latest Update		
Final		

Cause Codes:	
ISM:	
Subcontractor Involved:	No
Occurrence Description:	On the morning of September 25, 2009 at the Waste Encapsulation Storage Facility (WESF), work was performed at the 225-BG building to electrically disconnect a sump pump. An electrician installed their Authorized Worker Lockout (AWL) and lifted the pump leads. The electrician safed off the electrical leads by taping them together, and then removed their AWL. A stationary operating engineer (SOE) entering the area saw the taped wires and questioned if it was safe to have removed the lockout device from the breaker. Management was informed, work was stopped, and a critique was held to determine if the configuration of the electrical leads met the requirements of DOE-0336, Hanford Site Lockout/Tagout, which requires the Authorized Worker to determine that it is safe prior to removing their AWL. Although the electrician felt it was safe to remove the lockout device, further review and input by the lockout/tagout interpretative authority and safety representatives during the critique determined otherwise. The taped wires should not have been left unprotected with the lockout device removed. There were no injuries or live energy associated with this event. Additionally, the breaker remained in the open position during the time the lockout device was removed.
Cause Description:	
Operating Conditions:	Normal
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	Work was stopped and the electrician AWL was reinstalled until such time that the electrical isolation can be left in a safe configuration. A critique was conducted.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: WESF Operations By When: 11/29/2009
Division or Project:	Waste and Fuel Management Program
Plant Area:	200 West
System/Building/Equipment:	WESF

Facility Function:	Nuclear Waste Operations/Disposal
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On September 25, 2009, after electrically disconnecting a sump pump in the 225-BG building at the Waste Encapsulation Storage Facility (WESF), an electrician safed the electrical leads by taping them together, and then removed their Authorized Worker Lockout (AWL). A stationary operating engineer saw the taped wires and questioned if it was safe to have removed the lockout device from the circuit breaker. The work was stopped and the electrician reinstalled the AWL. A critique was held to determine if the configuration of the electrical leads met the requirements of DOE-0336, Hanford Site Lockout/Tagout, which requires the Authorized Worker to determine that it is safe before removing their AWL. Although the electrician felt it was safe to remove the lockout device, the lockout/tagout interpretative authority and safety representatives determined otherwise. The taped wires should not have been left unprotected with the lockout device removed.
Similar OR Report Number:	
Facility Manager:	Name: Kembel, Monica Phone: (509) 373-1664 Title: Facility Manager
Originator:	Name: LEE, STACY M Phone: (509) 373-0350 Title: OPERATIONS SPECIALIST
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	09/25/2009, 14:29 (PTZ), C H Gunion, DOE RL 09/25/2009, 15:08 (PTZ), R L Smithwick, FH ONC
Authorized Classifier(AC):	

7)Report Number:	EM-RP--BNRP-RPPWTP-2009-0020 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Hanford Site

Facility Name:	RPP Waste Treatment Plant
Subject/Title:	Noncompliance with Hazardous Energy Control Process
Date/Time Discovered:	09/10/2009 14:30 (PTZ)
Date/Time Categorized:	09/10/2009 16:30 (PTZ)
Report Type:	Update
Report Dates:	Notification 09/14/2009 19:05 (ETZ) Initial Update 10/12/2009 13:46 (ETZ) Latest Update 10/12/2009 13:46 (ETZ) Final
Significance Category:	3
Reporting Criteria:	2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.
Cause Codes:	A3B2C01 - Human Performance Less Than Adequate (LTA); Rule Based Error; Strong rule incorrectly chosen over other rules -->couplet - A4B5C02 - Management Problem; Change Management LTA; Change not implemented in a timely manner A3B3C06 - Human Performance Less Than Adequate (LTA); Knowledge Based Error; Individual underestimated the problem by using past events as basis -->couplet - A4B5C02 - Management Problem; Change Management LTA; Change not implemented in a timely manner A3B2C02 - Human Performance Less Than Adequate (LTA); Rule Based Error; Signs to stop were ignored and step performed incorrectly -->couplet - NA A3B2C04 - Human Performance Less Than Adequate (LTA); Rule Based Error; Previous success in use of rule reinforces continued use of rule -->couplet - A4B1C01 - Management Problem; Management Methods Less Than Adequate (LTA); Management policy guidance / expectations not well-defined, understood or enforced
ISM:	1) Define the Scope of Work 2) Analyze the Hazards 3) Develop and Implement Hazard Controls
Subcontractor Involved:	No
Occurrence Description:	On September 10, 2009, WTP electricians were performing preventive maintenance on a fire protection water storage tank heating system in Building 84A, Fire Water Pump House. When the tank heaters did not energize as expected during the maintenance activity, the electricians

	obtained assistance from Operations personnel. When an operator arrived and was briefed by the electricians, he suspected the cause of the heaters failing to energize was due to tripped high temperature cutout switches associated with the heaters. The cutout switches have a user-defined set point with a relatively coarse adjustment and it was believed that high ambient temperatures (greater than 100 degrees F) coupled with the tolerance of the device settings may have caused the cutout switches to trip sometime during the summer. The cutout switches have manual resets and are located within a normally energized heater control panel. The operator proceeded on a path to reset the cutout switches. He de-energized the heater control panel, where the switches are located, by opening the corresponding 480 volt circuit breaker located within the fire water pump house. He then had one of the electricians open the door to the heater control panel. The operator verified by visual inspection that one of the high temperature cutout switches had in fact tripped. The operator then reset the cutout switch by depressing the reset button within the heater control panel. An electrician closed the door to the heater control panel and the operator re-energized the heater control panel by closing the corresponding 480 volt circuit breaker. Contrary to the requirements of the WTP work control and hazards analysis procedures, the operator and electrician performed the additional scope of work (resetting the temperature switch) without appropriate work authorization, hazard analysis and control documents, or proper PPE.
Cause Description:	This event was evaluated using a Why Staircase causal analysis. DISCUSSION: A3B2C01 - Strong rule incorrectly chosen over other rules A3B3C06 - Individual underestimated the problem by using past events as basis The prevailing project perception at the time of the event was that the Site Operations organization performs their activities in accordance with operating procedures. This was essentially true; however, there are a number of incidental activities performed by Site Operations that are not specifically addressed by operating procedures. For example, breaker or valve manipulations that may need to be performed for minor system adjustments or troubleshooting that are not part of a system lineup or prescribed system evolution. In the past these activities have been performed on a skill-of-the-operator basis and required no documented authorization to perform. When the operator discovered the tank heater temperature switch in a tripped condition, his mindset was that resetting a switch could be conducted as one of these skill-of-the-operator type activities.

A4B5C02 - Change not implemented in a timely manner (Couplet to A3B2C01 and A3B3C06)

In March through July of 2009, significant changes to the WTP work control program were implemented. One important aspect of these changes was that all Field Work (non-administrative, hands-on activities associated with facilities, structures, systems, and components) would be conducted in accordance with 24590-WTP-GPP-WPHA-001, Work Control and Work Packaging. An exception to this requirement was the operation of systems and equipment in accordance with operating procedures. Therefore, any activities performed by Site Operations that were not specifically addressed by an operating procedure should have been conducted in accordance with a work document per WPHA-001. This requirement was not implemented within the Site Operations organization. The reason it was not implemented is due to the project-wide mindset that Site Operations performs all activities in accordance with operating procedures. This mindset was also propagated by the fact that Site Operations was excluded from the division of responsibilities section (5.1) of WPHA-001. A more thorough review and implementation of WPHA-001 within Site Operations may have generated a heightened awareness of the need for work authorization and hazard controls for the performance of any work.

Corrective actions 5, 10, 11, 12, and 14 address this cause.

A3B2C02 - Signs to stop were ignored and step performed incorrectly (No couplet)

The operator who reset the temperature switch within the panel is extremely knowledgeable on all aspects of hazardous energy control. However, his high level of knowledge of the system and components being worked on coupled with his results-oriented approach to the problem overshadowed his prudent judgment. WTP Operations procedures require operators to contact shift management when abnormalities are encountered, however the operator did not perform this action when he was informed that the tank heaters were not functioning correctly. This was a missed opportunity to obtain a second opinion on the planned course of action.

Before opening the heater control panel door, the electricians explained they couldn’t reset the temperature switches because that work was not within the scope of their preventive maintenance work document. However, when the operator stated the work could be performed under the auspices of an operating procedure, the electrician did not request to see the procedure, get a briefing on the scope of the procedure, or sign on to a task briefing card. The electrician had the correct initial response (that

resetting the temperature switches was outside the scope of his work package) but then proceeded to assist with an expanded or separate scope of work by opening the panel door because he didn't recognize his actions were not compliant with site procedures.

Although the operator felt he had authorization to investigate the cause of the heater malfunction, the electrician's original declination to proceed with investigating and resetting the temperature switches should have served as a sign that the scope of activities, as well as the potential hazard, was growing to a level that would require written instructions and controls. Once the heater control panel was opened and the solution to the problem was clearly in view, the operator's judgment was likely clouded by the fact that he could take a simple action requiring less than a few seconds that would rectify the situation and get the electrician's work back on course.

Corrective actions 1, 2, 4, 6, 7, 8, and 9 address these causes.

A3B2C04 - Previous success in use of rule reinforced continued use of rule

Although the electrician notified the operator that he could not reset the high temperature cutout switches because that scope of work was not addressed in the preventive maintenance work package the electrician was originally working to, he did feel he was in compliance with project procedures when he opened the heater control panel door to provide access for the operator to reset the switches. The electrician thought it was an acceptable practice to open energized panels (the power supply to the panel was open but it was not locked and tagged) without hazard controls in place as long as he didn't perform any work within the panel. During the investigation this was discovered to be a common misconception among personnel who perform electrical work. It was believed that as long as a worker did not break the plane of an electrical panel opening, then no electrical safety precautions were required. This is a philosophy that has been carried over from historical industry practices and is not in keeping with NFPA 70E requirements or the WTP hazard analysis and electrical safety procedures.

A4B1C01 - Management policy guidance / expectations not well-defined, understood or enforced
(Couplet to A3B2C04)

24590-WTP-GPP-WPHA-002, Hazard Analysis and Control, and 24590-WTP-GPP-SIND-056, NFPA 70E - Electrical Safety in the Workplace, require live parts to be placed in an electrically safe condition before an employee approaches nearer than the limited approach or flash protection boundaries. Based on reports of practices on the WTP project these

	procedures have not been adequately enforced with regard to visual inspection of energized electrical panels. When an energized panel is opened, the person opening then panel then becomes encompassed by the limited approach boundary by virtue of their proximity to the panel. The prevailing philosophy among qualified personnel had been that controls were not necessary as long as the worker or equipment did not break the plane of the panel. This incorrect perception by electrical workers was either not identified or not corrected by WTP management. Correction actions 7, 8, 9, and 15 address this cause.
Operating Conditions:	Does Not Apply
Activity Category:	Construction
Immediate Action(s):	Stopped work. Notifications made to Supervision. Initiated an investigation. Held a Fact Finding meeting on September 10, 2009 to ascertain the facts of the event. The operator involved in the event had his qualifications removed pending completion of a re-qualification plan.
FM Evaluation:	Personnel who possess a high degree of knowledge and experience in a given area or are extremely familiar with specific plant equipment can be lured into making improper or biased decisions because of their comfort level with the given situation. This may be especially true when an individual who is typically motivated to accomplish work is faced with an abnormal or troubleshooting type situation. This context can skew the individuals thought processes and the desire to solve a problem can override the normal inclination to comply with requirements. An effective tool for countering this tendency is to obtain assistance or direction from someone who is outside of the immediate situation. In this event the operator should have contacted the Shift Manager before proceeding with any course of action. Obtaining unbiased guidance from someone outside the context of the situation may have prevented this event. Additionally, close management attention is necessary to ensure work practices remain within the bounds of project procedures and policies. This is especially true in the area of safety related procedures where the requirements tend to become increasingly restrictive over time. In this case an unacceptable work practice was allowed to exist unchecked for a significant period.
DOE Facility Representative Input:	
DOE Program Manager Input:	

Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Daniel A. Arrigoni By When:
Division or Project:	WTP Waste Treatment Plant
Plant Area:	600
System/Building/Equipment:	84A, Fire Water Pump House
Facility Function:	Nuclear Waste Operations/Disposal
Corrective Action 01:	**Target Completion Date:**09/15/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	A Management Suspension of Work (24590-WTP-MSOW-MGT-09-0002) for Site Operations field work activities, other than those performed in accordance with approved operating procedures was issued on 9/15/09.
Corrective Action 02:	**Target Completion Date:**09/11/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	The operator involved in the event was disqualified from positions involving performance of field work pending completion of a re-qualification plan.
Corrective Action 03:	**Target Completion Date:**09/15/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	A Just-in-Time Lessons Learned report (JIT-09-010) was generated and issued regarding working only to approved work scope, analysis of hazards, adherence to work control and hazard analysis procedures, and use of proper PPE when operating electrical breakers. Action complete.
Corrective Action 04:	**Target Completion Date:**09/14/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	Read and Discuss training on 24590-WTP-GPP-SIND-056, NFPA 70E - Electrical Safety in the Workplace, was developed and added to the training profiles of the Balance of Facility Operators, Operations Supervisors, and Shift Managers.
Corrective Action 05:	**Target Completion Date:**09/16/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	A list of tasks currently performed by Site Operations personnel that are not explicitly governed by operating procedures was developed. This list will be used to generate the appropriate work authorization and hazard evaluation documents.
Corrective Action 06:	**Target Completion Date:**09/23/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	The Read and Discuss training developed above was completed by Site Operations personnel qualified as Balance of Facility Operator, Operations

	Supervisor, and Shift Manager.
Corrective Action 07:	**Target Completion Date:**10/06/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	An electrical work pause was conducted to discuss the proper steps to be taken before opening an energized electrical panel. Electricians and other affected personnel were instructed that the terminology break the plane of the panel is not included in nor endorsed by NFPA 70E or WTP procedures and that philosophy is not to be used. Action complete.
Corrective Action 08:	**Target Completion Date:**10/14/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	Issue a bulletin regarding the use of proper controls for opening energized electrical panels including the use of NFPA 70E approach boundaries.
Corrective Action 09:	**Target Completion Date:**10/14/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	Issue a Just-in-Time Lessons Learned report based on the content of the electrical bulletin published for the action above.
Corrective Action 10:	**Target Completion Date:**11/15/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	Evaluate the list of activities performed by WTP Site Operations that are not explicitly governed by operating procedures and issue approved work packages to authorize the scope of work.
Corrective Action 11:	**Target Completion Date:**12/15/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	Perform a follow-up assessment of Site Operations implementation of 24590-WTP-GPP-WPHA-001, Work Control and Work Packaging in accordance with 24590-WTP-GPP-036, WTP Self/Sponsored Assessment
Corrective Action 12:	**Target Completion Date:**12/15/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	Revise / change 24590-WTP-GPP-WPHA-001, Work Control and Work Packaging, to include Site Operations positions in the division of responsibility matrix (Section 5.1).
Corrective Action 13:	**Target Completion Date:**12/15/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	Submit a formal WTP Lessons Learned on this event.
Corrective Action 14:	**Target Completion Date:**12/15/2009 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	Perform an assessment of the application of the WTP work control process. The focus of the assessment will be to verify a consistent

	application of 24590-WTP-GPP-WPHA-001 with respect to the level of activities performed within type 5 work packages across the project.
Corrective Action 15:	**Target Completion Date:**01/31/2010 — **Tracking ID:**24590-WTP- PIER-MGT-09-1401-B
	Perform a follow-up focused assessment of electrical work practices to ensure adequate implementation of electrical safety processes associated with energized electrical panels. This assessment will look at a sampling of field work activities in addition to the level of knowledge of a representative sample of qualified personnel.
Lessons(s) Learned:	This event underscores the need to notify supervision when faced with unusual or unforeseen circumstances. Seeking additional guidance from supervision reduces the likelihood of making improper or biased decisions. A WTP Just-in-Time Lessons Learned report (JIT-09-010) was generated and issued on September, 15, 2009.
HQ Keywords:	01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 01O--Inadequate Conduct of Operations - Inadequate Maintenance 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 14D--Quality Assurance - Documents and Records Deficiency 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On September 10, 2009, an operator, assisting maintenance electricians, did not follow work control procedures during preventive maintenance on a fire protection water storage tank heating system in the Fire Water Pump House. When the tank heaters did not energize as expected, the electricians obtained assistance from the operator, who suspected the heaters failed to energize because of a tripped high temperature cutout switch. The operator de-energized the 480-volt heater control panel, opened the panel door, and reset the tripped cutout switch. The operator's actions were contrary to the facility requirements for work authorization including hazard analysis and control documents. Work was stopped and management notifications were made. A fact finding meeting was held and an investigation was initiated.
Similar OR Report Number:	1. N/A
Facility Manager:	Name: READDY, MICHAEL A Phone: (509) 373-8300 Title: OCCURRENCE REPORT COORDINATOR
Originator:	Name: READDY, MICHAEL A Phone: (509) 373-8300 Title: OCCURRENCE REPORT COORDINATOR

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

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
09/10/2009	14:30 (PTZ)	Max Hammond	BNI/CON
09/10/2009	14:30 (PTZ)	Jeff Bruggeman	DOE/FR
09/10/2009	14:40 (PTZ)	Dave Leeth	BNI/CON
09/10/2009	14:45 (PTZ)	Miles Stauffer	BNI/SA
09/10/2009	17:20 (PTZ)	Newell Carry	ONC

Authorized Classifier(AC):

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8)Report Number:	EM-SR--PSC-SWPF-2009-0009 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Savannah River Site
Facility Name:	Salt Waste Processing Facility
Subject/Title:	Energized Power Cord with Male Plugs Installed On Both Ends
Date/Time Discovered:	09/29/2009 19:00 (ETZ)
Date/Time Categorized:	09/29/2009 20:58 (ETZ)
Report Type:	Notification

Report Dates:

Notification	10/01/2009	17:12 (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:	1) Define the Scope of Work
Subcontractor Involved:	No
Occurrence Description:	On 9/29/09, while plugging lights in for night shift work, an electrical worker discovered an exposed energized male pin and sleeve connector. The electrician noticed that the female end of a power cord had been replaced with the male end of a pin and sleeve connector. Work was

	stopped and the male end of the power cord was tested to determine if it was energized. The exposed conductors (male plug) were found to be energized with 120 volts of power. Back tracking the power cord to the opposite end, it was established that a male plug was also installed on the end of the power cord plugged into the power source. The electrician immediately stopped work and contacted his superintendent. The electrician was directed to immediately unplug the power cord from the 120 volt Ground Fault Circuit Interrupt (GFCI) receptacle located on the bang board and tag it as DO NOT USE. The GFCI receptacle prevented this occurrence from posing a serious shock condition, but was still considered an unsafe condition since a shock was still possible. An extent of condition review was immediately conducted on the seven additional power cords and lights that had been recently changed out with pin and sleeve connectors. These 14 items accounted for all other pin and sleeve connectors in the facility. Each of these power cords and light connectors were inspected and found to be acceptable. A critique was held.
Cause Description:	
Operating Conditions:	SWPF Construction
Activity Category:	Construction
Immediate Action(s):	The cord was tested and found to be energized. The end connected to the power source was immediately unplugged. The power cord and light were tagged out. An extent of condition review was conducted on the seven additional power cords whose manufacturer's connectors were changed out with pin and sleeve connectors. The extent of condition inspection found all remaining cords acceptable.
FM Evaluation:	While there were no impacts to the facility, the event had the potential to impact the safety of the individuals working around the Northwest Base Mat Area.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Chuck Swain

	By When:
Division or Project:	SWPF
Plant Area:	SWPF J-Area
System/Building/Equipment:	Northwest Base Mat Area
Facility Function:	Nuclear Waste Operations/Disposal
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01Q--Inadequate Conduct of Operations - Personnel error 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On September 29, 2009, while plugging lights in for night shift work, an electrical worker discovered an exposed energized male pin and sleeve connector. The electrician noticed that the female end of a power cord had been replaced with the male end of a pin and sleeve connector. Work was stopped and the male end of the power cord was tested to determine if it was energized. The exposed conductors (male plug) were found to be energized with 120 volts of power. The opposite end of the cord had a male plug installed that was plugged into a Ground Fault Circuit Interrupt (GFCI). The electrician unplugged the power cord from the GFCI receptacle located on a bang board and tagged it as DO NOT USE. An extent of condition review was conducted on seven additional power cords whose manufacturer's connectors were changed out with pin and sleeve connectors. The extent of condition inspection found all remaining cords acceptable.
Similar OR Report Number:	
Facility Manager:	Name: FRENCH, ROBERT F Phone: (803) 643-1663 Title: PLANT MANAGER
Originator:	Name: DUKES, HEATHERLY H Phone: (803) 617-9439 Title: OPERATIONS MANAGER
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 09/29/2009; Time: 21:03 (ETZ); Person Notified: Scott McMullin; Organization: DOE-FR
Authorized Classifier(AC):	

9)Report Number:	EM-SR--SRNS-KAREA-2009-0008 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Savannah River Site
Facility Name:	K - Area
Subject/Title:	Failure to Fully Comply with 18Q Procedure 2
Date/Time Discovered:	09/21/2009 12:10 (ETZ)
Date/Time Categorized:	09/21/2009 12:45 (ETZ)
Report Type:	Notification

Report Dates:

Notification	09/23/2009	08:58 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category:	3
Reporting Criteria:	10(2) - An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manager or line management to be of safety significance or of concern to other facilities or activities in the DOE complex. One of the four significance categories should be assigned to the occurrence, based on an evaluation of the potential risks and the corrective actions taken. (1 of 4 criteria - This is a SC 3 occurrence)
Cause Codes:	A3B3C01 - Human Performance Less Than Adequate (LTA); Knowledge Based Error; Attention was given to wrong issues -->couplet - A5B2C08 - Communications Less Than Adequate (LTA); Written Communication Content LTA; Incomplete / situation not covered A3B3C06 - Human Performance Less Than Adequate (LTA); Knowledge Based Error; Individual underestimated the problem by using past events as basis -->couplet - A4B3C08 - Management Problem; Work Organization & Planning LTA; Job scoping did not identify special circumstances and/or conditions
ISM:	2) Analyze the Hazards 3) Develop and Implement Hazard Controls 4) Perform Work Within Controls
Subcontractor Involved:	No
Occurrence Description:	During performance of Lockout/Tagout (L/T) No. 100K-09-143, "Perform PM On 13.8KV Feeder Disconnect #1 In Transformer Room #2". In step 08, E&I personnel removed 2 fuses labeled "POTENTIAL TRANS. SYN. TIE BREAKER SUB 573.1 PHASE 1-2". In step 09, E&I determined voltage to be present at the supply side of the fuse blocks from which fuses had been removed in step 08. The L/T direction was not written to reflect

	anticipation that voltage would be present at the supply side of the fuse blocks; therefore, the fuses were removed outside normal procedure requirements of Manual 18Q, Procedure 2.
Cause Description:	
Operating Conditions:	Normal Operations
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	Discontinued installation of L/T. Fact Finding Meeting was scheduled.
FM Evaluation:	This event is being reported due to the safety significance of the criterion, in that all preventive and personnel protection aspects of the criteria of 18Q, Procedure 2, were implemented in the preparation of the L/T and, as a result, in the performance of this work.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Maintenance/Engineering By When:
Division or Project:	M&O/NMSP
Plant Area:	KAC
System/Building/Equipment:	KAC/NEP
Facility Function:	Plutonium Processing and Handling
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 14D--Quality Assurance - Documents and Records Deficiency 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On September 21, 2009, during performance of a lockout/tagout ("Perform PM on 13.8KV Feeder Disconnect #1 In Transformer Room #2") personnel removed two fuses labeled "POTENTIAL TRANS. SYN. TIE BREAKER SUB 573.1 PHASE 1-2". While performing the next step, personnel determined voltage to be present at the supply side of the fuse blocks from which fuses had been previously removed. The Lockout/Tagout direction was not written to reflect anticipation that voltage would be present at the supply side of the fuse blocks; therefore, the fuses were removed outside normal procedure requirements.

	Installation of the lockout/tagout was discontinued. A fact-finding meeting was scheduled.
Similar OR Report Number:	
Facility Manager:	Name: M. J. Lewczyk Phone: (803) 557-3628 Title: KAC Operations Manager
Originator:	Name: STEPHENS, PAMELA W. Phone: (803) 557-3285 Title: OPERATIONS SUPPORT

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
09/21/2009	13:45 (ETZ)	T. G. Kohler	DOE FR
09/21/2009	13:45 (ETZ)	M. F. Gibson	Ops Mgr
09/21/2009	13:45 (ETZ)	D. W. Bickley	KAC Ops
09/21/2009	13:45 (ETZ)	K. P. Burrows	Sys Eng
09/21/2009	13:45 (ETZ)	M. M. Kinard	EOC
09/21/2009	13:45 (ETZ)	M. J. Lewczyk	KAC Ops

Authorized Classifier(AC): Pamela W. Stephens Date: 09/23/2009

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10)Report Number:	EM-SR--SRNS-SIPS-2009-0008 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Savannah River Site
Facility Name:	Site Infrastructure and Project Systems
Subject/Title:	Arc Flash Burn Injury at 484-D Powerhouse
Date/Time Discovered:	09/23/2009 12:30 (ETZ)
Date/Time Categorized:	09/23/2009 16:00 (ETZ)
Report Type:	Update

Report Dates:

Notification	09/25/2009	15:33 (ETZ)
Initial Update	09/30/2009	15:57 (ETZ)
Latest Update	09/30/2009	15:57 (ETZ)
Final		

Significance Category:	2
Reporting Criteria:	2A(6) - Any single occurrence resulting in a serious occupational injury. A serious occupational injury is an occupational injury that:

	(a) Requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; (b) Results in a fracture of any bone (except simple fractures of fingers, toes, or nose, or a minor chipped tooth); (c) Causes severe hemorrhages or severe damage to nerves, muscles, or tendons; (d) Damages any internal organ; or (e) Causes second- or third-degree burns, affecting more than five percent of the body surface. 10(1) - Any event resulting in the initiation of a Type A or B investigation as categorized by DOE O 225.1A, ACCIDENT INVESTIGATION. Note: This reporting criterion may raise the significance category of an occurrence already reported under separate criteria. Multiple reporting criteria should be noted when appropriate.
Cause Codes:	
ISM:	
Subcontractor Involved:	Yes E2 Consulting Engineers, Inc.
Occurrence Description:	On Wednesday, 09/23/2009, at approximately 1245 hrs, two D Area Power House E2 Consultant Engineering Subcontractor E&I mechanics were troubleshooting the 480V breaker within cubicle B-2-1B when an arc-flash occurred. Three attempts to close the breaker remotely in cubicle B-2-1B had been unsuccessful and E&I was called in to troubleshoot the problem. The E&I Supervisor held a pre-job brief and instructed the mechanics to remove the breaker from cubicle B-2-1B. The E&I mechanics noted that the breaker appeared to be misaligned within the cubicle and placed a metallic torpedo level on the breaker body to confirm alignment prior to racking the spare breaker out. During the evolution the torpedo level fell onto the A phase of the breaker stabs causing an arc-flash event and subsequent fire within the breaker cubicle. The mechanic performing the task received arc flash burns on both left and right forearms, left hand, and face from the arc flash. A Fact Finding Meeting was conducted on 09/24/2009 and corrective actions will be tracked in the Site Tracking Analysis and Reporting (STAR) database as 2009-CTS-008856. This event was originally classified as an ORPS Management Concern,

	10(2), Significance Category 3. After evaluating the extent of the injury, the event has been reclassified as a Personnel Safety & Health, 2A(6), Significance Category 3. After further review, DOE-SR has initiated a Type B Accident Investigation of this event. This meets ORPS Management Concern Criteria 10(1), therefore this additional criteria has been added in the Update Report and the category has been upgraded to Significance Category 2. Investigations into the cause(s) of this event are on-going. In addition to the personal injury, damage to the electrical switchgear caused the D2 boiler to trip off line resulting in diminished capability of the D-Area power house to maintain electrical and steam demands. The SRS Electrical Safety Subject Matter Expert has calculated the electrical severity of this event using guidance developed by the EFCOG/DOE Electrical Safety Subgroup. The calculated severity for this event is 3500 (Extreme Significance). This event scores as follows: Electrical Hazard: 50 (480V); Environment Factor: 0; Shock Proximity Factor: 3; Arc Flash: 10; Thermal Factor: 0; PPE mitigations for shock and arc flash (none used), and Injury Factor:5. Electrical Severity=50(1+0+3+10+0)*5=3500.
Cause Description:	
Operating Conditions:	Normal Operations
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	Coworkers heard the arc flash, recognized the burn injury, and notified supervision. Notifications were made to SRSOC (911 center) and the SRS Fire Department and EMT's responded. The injured employee was transferred by site ambulance to the burn unit at a local area hospital. The employee experienced second degree burns on both forearms and first degree burns on his face. He was hospitalized overnight and underwent treatment Thursday morning 9/24/2009. D Area personnel used a portable fire extinguisher to quickly extinguish the small fire. The SRS Fire Department verified the fire was out within 2 minutes of arrival and cleared the area at 1423 hrs. Immediately after the incident all line management and DOE were notified. Note: Compensatory measures were taken to halt all work involving opening electrical panels without prior senior supervisory review and approval. The area was secured from an operations standpoint to place the facility in

	a safe condition and to maintain incident scene integrity for the investigation. This required some equipment to be shutdown. The incident scene will remain shutdown and secured until further direction from DOE.
FM Evaluation:	The Facility Manager concurs with this report.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? Yes By Whom: D.A. Anderson By When: 10/07/2009
Division or Project:	M&O/ Site Infrastructure and Project Support
Plant Area:	D
System/Building/Equipment:	484-D Powerhouse
Facility Function:	Balance-of-Plant - Site/outside utilities
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 03C--Fire Protection and Explosives Safety - Facility Fire 07B--Electrical Systems - Electrical Distribution 07E--Electrical Systems - Electrical Equipment Failure 08D--OSHA Reportable/Industrial Hygiene - Injury 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 11G--Other - Subcontractor 12H--EH Categories - Injuries Requiring Medical Treatment Other Than First Aid 14E--Quality Assurance - Work Process Deficiency 14G--Quality Assurance - Procurement Deficiency
HQ Summary:	On September 23, 2009, while subcontractor E&I mechanics were troubleshooting a 480-volt circuit breaker within cubicle B-2-1B at the D Area Power House, an arc-flash occurred. The E&I mechanics had noticed that the breaker appeared to be misaligned within the cubicle and placed a metallic torpedo level on the breaker body to confirm alignment before racking (installing) the breaker into the cubicle. While racking in the breaker, the level fell onto the ‘A’ phase breaker stabs causing an arc-flash and fire within the breaker cubicle. D Area personnel used a portable fire extinguisher to quickly extinguish the small fire. The mechanic who was performing the task received second degree burns on both forearms and first degree burns on his face. He was sent to a burn unit at a local hospital and underwent surgery the next morning. The arc flash energy for the

	cubicle exceeded the rating for the protective clothing available on site. The breaker bus should have been de-energized before the task began. An investigation will be performed.
Similar OR Report Number:	
Facility Manager:	Name: D.A. Anderson Phone: (803) 557-8086 Title: Manager, Utilities & Operating Services
Originator:	Name: HAAS, GARY M Phone: (803) 557-4353 Title: LEAD OPERATIONS SPECIALIST - PROGRAM

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
09/23/2009	16:15 (ETZ)	G. Allen	Safety
09/23/2009	16:30 (ETZ)	R.L. Morgan	SRSOC
09/23/2009	16:00 (ETZ)	D.A. Anderson	SIPS
09/23/2009	18:00 (ETZ)	J.J. Hynes	DOE-FR

Authorized Classifier(AC): G.M. Haas Date: 09/24/2009

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11)Report Number:	MA-HQ--GOHQ-DOEHQ-2009-0006 **After 2003 Redesign**
Secretarial Office:	Office of Management
Lab/Site/Org:	DOE Headquarters
Facility Name:	DOE Headquarters
Subject/Title:	Electrical Shock to Cafeteria Worker
Date/Time Discovered:	09/10/2009 10:27 (ETZ)
Date/Time Categorized:	09/10/2009 16:30 (ETZ)
Report Type:	Notification

Report Dates:

Notification	09/10/2009	18:04 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category:	3
Reporting Criteria:	10(2) - An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manager or line management to be of safety significance or of concern to other facilities or activities in the DOE complex. One of the four significance

	categories should be assigned to the occurrence, based on an evaluation of the potential risks and the corrective actions taken. (1 of 4 criteria - This is a SC 3 occurrence)
Cause Codes:	
ISM:	
Subcontractor Involved:	Yes IL Creations - GSA Contractor
Occurrence Description:	On 9/10/09 at approximately 1015 hours, a female, contract cafeteria worker (under contract to GSA) at the Forrestal building received a shock from the frame of a commercial refrigerator while getting items out of the refrigerator. The employee reported to the Health Clinic. Local paramedics were called and the individual was taken to the local hospital where she was treated and later released. An initial investigation revealed a broken light activation switch on the frame with an exposed wire. The commercial refrigerator was taken out of service until repairs can be made. An investigation is in progress.
Cause Description:	
Operating Conditions:	Normal operations
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	1) Paramedics were called. They responded and transported individual to GW Hospital. Individiual was treated and released. 2)The commercial refrigerator was taken out of service until repairs can be made. 3)An investigation was initiated.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: HQ Safety & Health By When:
Division or Project:	GSA Concessions
Plant Area:	FORS Cafeteria
System/Building/Equipment:	Commercial Refrigerator
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	

HQ Keywords:	07D--Electrical Systems - Electrical Wiring 08A--OSHA Reportable/Industrial Hygiene - Electrical Shock 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14L--Quality Assurance - No QA Deficiency
HQ Summary:	On September 10, 2009, a contract cafeteria worker at the Forrestal building received a shock from the frame of a commercial refrigerator while getting items out of the refrigerator. The worker reported to the Health Clinic. Local paramedics were called and the individual was taken to the local hospital where she was treated and later released. An initial investigation revealed a broken light activation switch on the frame with an exposed wire. The commercial refrigerator was taken out of service until repairs can be made. An investigation is in progress.
Similar OR Report Number:	
Facility Manager:	Name: WILLIAMS, CHERYLYNNE K Phone: (202) 586-1005 Title: DIRECTOR, HQ SAFETY, HEALTH, AND SEC
Originator:	Name: WILLIAMS, CHERYLYNNE K Phone: (202) 586-1005 Title: DIRECTOR, HQ SAFETY, HEALTH, AND SEC
HQ OC Notification:	see below
Other Notifications:	see below
Authorized Classifier(AC):	

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
09/10/2009	12:13 (ETZ)	R. Montoya	MA-40
09/10/2009	15:00 (ETZ)	B.Costlow	MA-40

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12)Report Number:	NA--LASO-LANL-FIRNGHELAB-2009-0015 **After 2003 Redesign**
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Los Alamos National Laboratory
Facility Name:	Firing Sites and HE Lab.
Subject/Title:	Energized 480V Conduit Cut During Concrete Floor Penetration
Date/Time Discovered:	09/01/2009 13:35 (MTZ)
Date/Time Categorized:	09/01/2009 15:30 (MTZ)
Report Type:	Notification
Report Dates:	see below

Report Dates:

Notification	09/03/2009	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:	Management Synopsis: At 1330 on September 1, 2009, an energized 480V conduit was cut when two workers were performing a Class 2 (> 1.5 inches) penetration into a concrete floor in the basement of Technical Area 15 Building 183 (TA-15-183). Utility locates had been performed, using two different methods, in accordance with LANL procedures. The GPR boundary and four locations with objects were marked. However, the 480V conduit was not identified by either utility locate method. The IWD reflected the potential electrical hazard associated with a blind penetration into concrete and appropriate hazard controls were in place including properly rated dielectric gloves, boots, and Ground Fault Circuit Interrupter (GFCI) protected equipment. The mason who was performing the cut observed a spark and recognized he had hit an energized conduit. He immediately turned off the saw and made the proper notifications. The Facility Operations Manager arrived on scene at approximately 1400 and it was then discovered that a breaker had tripped, which impacted power to a nearby building. The calculated Electrical Severity Score for this event was 50, which is defined as a moderate hazard level. The Electrical Severity Ranking Tool defines scores between 0 and 30 as low hazard, scores between 31 and 330 as moderate hazard, scores between 331 and 3300 as high hazard, and scores greater than 3300 as extreme hazard. There was no impact on worker safety health or the environment as a result of this event. Background: The modification was being performed to install an additional receptacle in the concrete floor. In accordance with the LANL procedure for penetrations, Penetration Operations Safety Program P101-22, two methods of utility locates where used including Ground Penetrating Radar (GPR) and 50/60 Hz induction method. One 4” by 4” area and three other locations were identified as having objects present. Neither locate identified the presence of the 480V conduit. The institutional penetration permit process requires that all available drawings		

	be reviewed to identify documented hazards. In this case, construction drawings associated with the Electrical Infrastructure Safety Upgrade (EISU) were reviewed. Those documents did not indicate the presence of the 480V conduit. The facility drawings, available on the LANL intranet, were not reviewed. These drawings did indicate the presence of a 480V conduit in the area where the penetration was taking place.
Cause Description:	
Operating Conditions:	Normal
Activity Category:	Maintenance
Immediate Action(s):	1) WFO work activities that had been GPR'd or were pending GPR were paused. Each activity is being reviewed using as-built drawings and released on a case-by-case basis. 2) The scene was preserved and access was restricted by locking the building at the end of the day. The circuit was LOTO'd on the morning of 9/2.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: CAO-PF and WFO FOD By When: 10/16/2009
Division or Project:	Electrical Infrastructure Safety Upgrade (EISU)
Plant Area:	TA-15
System/Building/Equipment:	TA-15-183 480V electrical conduit
Facility Function:	Explosive
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01B--Inadequate Conduct of Operations - Loss of Configuration Management/Control 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 07D--Electrical Systems - Electrical Wiring 08F--OSHA Reportable/Industrial Hygiene - Industrial Operations Issues 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12C--EH Categories - Electrical Safety 13A--Management Concerns - HQ Significant (High-lighted for Management attention) 14D--Quality Assurance - Documents and Records Deficiency 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On September 1, 2009, an energized 480V conduit was cut when two

	workers were performing a Class 2 (> 1.5 inches) penetration into a concrete floor in the basement of Technical Area 15, Building 183. Utility location had been performed, using two different methods, in accordance with LANL procedures. However, the 480V conduit was not identified by either utility location method. Work documentation reflected the potential electrical hazard associated with a blind penetration into concrete and appropriate hazard controls were in place including properly rated dielectric gloves, boots, and Ground Fault Circuit Interrupter (GFCI) protected equipment. The mason who was performing the cut observed a spark and recognized he had hit an energized conduit. He immediately turned off the saw and made proper notifications. The calculated Electrical Severity Score for this event was 50, which is defined as a moderate hazard level. There was no impact on worker safety health or the environment as a result of this event. Drawings that were available on the LANL internet showed the conduit but these were not reviewed. Work was paused and an investigation is ongoing.
Similar OR Report Number:	
Facility Manager:	Name: Steven Westerhold Phone: (505) 606-0548 Title: WFO Facility Operations Director Designee
Originator:	Name: HAKONSON-HAYES, AUDREY C Phone: (505) 667-9364 Title: OCCURRENCE INVESTIGATOR
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 09/01/2009; Time: 16:41 (MTZ); Person Notified: Dave Stewart; Organization: NNSA
Authorized Classifier(AC):	Antonia Tallarico Date: 09/03/2009

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13)Report Number:	NA--SS-SNL-CASITE-2009-0003 **After 2003 Redesign**
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Sandia National Laboratories - Livermore
Facility Name:	SNL California Site
Subject/Title:	Management Concerns - Failure to Follow WPC Process for Flow Down of Safety Requirements to On-Site Contractors
Date/Time Discovered:	09/18/2009 13:10 (PTZ)
Date/Time Categorized:	09/18/2009 15:10 (PTZ)
Report Type:	Notification

Report Dates:	Notification 09/22/2009 12:59 (ETZ) Initial Update Latest Update Final
Significance Category:	3
Reporting Criteria:	10(2) - An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manager or line management to be of safety significance or of concern to other facilities or activities in the DOE complex. One of the four significance categories should be assigned to the occurrence, based on an evaluation of the potential risks and the corrective actions taken. (1 of 4 criteria - This is a SC 3 occurrence)
Cause Codes:	
ISM:	
Subcontractor Involved:	Yes JEOL USA Inc
Occurrence Description:	On Friday, September 18, 2009, at approximately 1310 hours, the SNL/CA Electrical Safety Committee Chair notified the Management Notification System because a contractor (vendor) disconnected a scanning electron microscope without proper authorization and failed to follow appropriate procedures. A critique meeting was held with senior management, facility manager, ES&H manager, and Occurrence Management representative, at 1510 hours, and categorized this occurrence as a Management Concern (SC3). During the meeting, the DOE/SSO FR was notified. It was further determined that the flow down of safety requirements to the contractor (vendor) were less than adequate.
Cause Description:	Critique/Fact Finding Performed 9/18/09
Operating Conditions:	Normal
Activity Category:	Maintenance
Immediate Action(s):	The 208VAC was lockout/tagout by SNL/CA electrical personnel. JEOL Technician completed the wrapping and packaging of scanning electron microscope (SEM) for shipment. No further electrical work is necessary to complete the uninstallation of the SEM.
FM Evaluation:	OOPS #11319 A Root Cause Analysis Team is being formed to determine the causal factors leading up to this occurrence and a Final Report will be completed by November 2, 2009.
DOE Facility Representative	

Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Causal Analysis Team By When: 11/02/2009
Division or Project:	8000/JEOL Scan. Electron Microscope Uninstallation
Plant Area:	Other
System/Building/Equipment:	Bldg. 941, Rm. 1105
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01R--Inadequate Conduct of Operations - Management issues 11H--Other - Procurement Deficiency/Defective Items 11L--Other - Supplier 12B--EH Categories - Conduct of Operations 14E--Quality Assurance - Work Process Deficiency 14G--Quality Assurance - Procurement Deficiency
HQ Summary:	On Friday, September 18, 2009, the SNL/CA Electrical Safety Committee Chair notified the Management Notification System that a contractor (vendor) disconnected a scanning electron microscope without proper authorization and failed to follow appropriate procedures. It was further determined that the flow down of safety requirements to the contractor were less than adequate. The 208-VAC was locked and tagged out by SNL/CA electrical personnel. The contractor technician completed the wrapping and packaging of scanning electron microscope (SEM) for shipment. No further electrical work is necessary to complete the un-installation of the SEM. A critique meeting was held.
Similar OR Report Number:	
Facility Manager:	Name: Glenn D Kubiak Phone: (925) 294-3375 Title: Director
Originator:	Name: LUCERO, JEWELEE A Phone: (505) 845-4727 Title: REPORTING ADMINISTRATOR

HQ OC Notification:	<table><tr><td>Date</td><td>Time</td><td>Person Notified</td><td>Organization</td></tr><tr><td>NA</td><td>NA</td><td>NA</td><td>NA</td></tr></table>
Other Notifications:	<table><tr><td>Date</td><td>Time</td><td>Person Notified</td><td>Organization</td></tr><tr><td>09/18/2009</td><td>13:10 (PTZ)</td><td>EOC/OOPS</td><td>EOC/OOPS</td></tr><tr><td>09/18/2009</td><td>13:15 (PTZ)</td><td>Bernie Bernal</td><td>8521</td></tr><tr><td>09/18/2009</td><td>15:10 (PTZ)</td><td>Glenn Kubiak</td><td>8600</td></tr><tr><td>09/18/2009</td><td>15:10 (PTZ)</td><td>Jeff Irwin, FR</td><td>DOE/SSO</td></tr></table>
Authorized Classifier(AC):	Glenn Kubiak Date: 09/21/2009

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14)Report Number:	NE-ID--BEA-MFC-2009-0004 **After 2003 Redesign**
Secretarial Office:	Nuclear Energy, Science and Technology
Lab/Site/Org:	Idaho National Laboratory
Facility Name:	Materials and Fuels Complex
Subject/Title:	Improper LO/TO While Removing Outside Light Fixture
Date/Time Discovered:	09/21/2009 15:00 (MTZ)
Date/Time Categorized:	09/21/2009 17:15 (MTZ)
Report Type:	Update
Report Dates:	<table><tr><td>Notification</td><td>09/23/2009</td><td>18:32 (ETZ)</td></tr><tr><td>Initial Update</td><td>09/24/2009</td><td>09:39 (ETZ)</td></tr><tr><td>Latest Update</td><td>09/24/2009</td><td>18:25 (ETZ)</td></tr><tr><td>Final</td><td></td><td></td></tr></table>
Significance Category:	3
Reporting Criteria:	2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.
Cause Codes:	
ISM:	
Subcontractor Involved:	Yes Electrical Subcontractor
Occurrence Description:	On 9/21/2009 a subcontractor (electrician) was removing an elevated outside light from the Materials and Fuels Complex Building (MFC)-781 and cut the 120V wires which were not de-energized. The two lights and a swamp cooler were being relocated to accommodate a

	solar wall panel which is part of an Energy Savings Performance Contract (ESPC). An MFC Electrician was assigned to perform the Lockout /Tagout (LOTO) and zero energy checks as documented on a complex LOTO. The job was walked down by the MFC Electrician and it was determined that LP-024 Circuit 29 (labeled "outside lights and exit lights") was the proper isolation for the light fixture portion of the work scope. The MFC Electrician visually traced the vertical conduit run along the wall from the main floor. A closer visual examination of the conduit required locking and tagging out the overhead crane which the electrician did not deem necessary. The observed conduit run had an accessible junction box from which to perform zero energy checks. Zero energy checks at the light fixture required disassembly due to the fact that it is controlled by a photocell switch. The junction box was chosen and approved by the Facility Area Supervisor to eliminate the need to disassemble the light fixture for zero energy checks at the light fixture. The LOTO was prepared and executed on 9/17/09, with subcontractor personnel present as required by the recent NORESCO (ESPC) Restart Plan, which requires zero energy checks at the light fixture or an approved alternate method. The Subcontractor initiated work on 9/21/09 after a formal job briefing. Zero energy checks were re-performed at the same locations. The Subcontractor electrician (while wearing a hard hat, safety glasses w/ side shield, short sleeve cotton shirt, and leather gloves) cut the light fixture wires on the outside of the building using an insulated tool. The Subcontractor electrician then relocated to the inside of the building to pull the wires from a secure elevated position when it was noticed that there was another junction box and additional conduit leading to the light fixture. This additional conduit and junction box were located on top of a building structural member and not visible from the main floor. The electrician returned to the outside location and checked for electrical power with a meter and observed 120 volts on the wires that were recently cut. He applied wire nuts on the wire ends and notified his supervisor. Upon notification, Facility Management personnel traced the circuit to LP-024 circuit 27. Circuit 27 was opened, locked and tagged. There were no injuries, arc, arcs or equipment damage as a result of this event.
Cause Description:	
Operating Conditions:	Normal
Activity Category:	Construction
Immediate Action(s):	1-LP-24 Circuit 27 was opened, locked and tagged. A zero energy was performed to verify the absence of voltage at the cut wires. 2-Subcontractor and Construction management were notified. 3-A formal Stop Work for the Contractor's work scope was issued. 4-All F&SS electrical work performed at the MFC by Facility

	Management has been stopped pending further review of this event and implementation of needed corrective actions.
FM Evaluation:	There was no electrical shock nor other injuries as a result of this event.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? Yes By Whom: F&SS By When: 10/05/2009
Division or Project:	Facility Management
Plant Area:	Utilities
System/Building/Equipment:	MFC 782
Facility Function:	Balance-of-Plant - Site/outside utilities
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 11G--Other - Subcontractor 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 14E--Quality Assurance - Work Process Deficiency 14G--Quality Assurance - Procurement Deficiency
HQ Summary:	On September 21, 2009, a subcontractor electrician was removing an elevated outside light from the Materials and Fuels Complex Building (MFC)-781 and cut the 120V wire which was not de-energized. The two lights and a swamp cooler were being relocated to accommodate a solar wall panel which is part of an Energy Savings Performance Contract . A formal Stop Work for the Contractor's work scope was issued and work performed by Facility Management has been stopped. Further review of this event is pending.
Similar OR Report Number:	
Facility Manager:	Name: Lively, David B. Phone: (208) 533-7438 Title: Facility Complex Manager
Originator:	Name: ASHLEY, HOLLY M Phone: (208) 533-7118 Title: PRINCIPAL TECHNICAL SPECIALIST

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

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
09/21/2009	15:00 (MTZ)	Randy Strong	F&SS
09/21/2009	15:50 (MTZ)	David Mull	F&SS
09/21/2009	15:50 (MTZ)	Scott Ferrara	DOE-ID

Authorized Classifier(AC):

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15)Report Number:	NE-ID--BEA-SMC-2009-0011 **After 2003 Redesign**
Secretarial Office:	Nuclear Energy, Science and Technology
Lab/Site/Org:	Idaho National Laboratory
Facility Name:	Specific Manufacturing Capability
Subject/Title:	Accessing A Control Panel Without Proper Hazard Mitigation
Date/Time Discovered:	09/30/2009 16:40 (MTZ)
Date/Time Categorized:	09/30/2009 17:00 (MTZ)
Report Type:	Notification

Report Dates:

Notification	10/06/2009	19:48 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category:	3
Reporting Criteria:	2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.
Cause Codes:	
ISM:	4) Perform Work Within Controls 5) Provide Feedback and Continuous Improvement
Subcontractor Involved:	No
Occurrence Description:	On Sunday, September 20, 2009, an SMC employee received an indication that a thermal overload trip had occurred on a compressor. Upon receipt of the indication, the SMC employee opened the disconnect (knife switch) for several minutes to see if it would cool and reset itself. The employee followed procedure and had the appropriate training and qualification to perform this action; however, the required electrical PPE for this action was not being worn. The employee then closed the local disconnect and

	noted the trip did not reset. After re-opening the local disconnect, which de-energizing the panel, he proceeded to open the 480 volt electrical panel, access and reset the thermal overloads. There was no LO/TO applied to the disconnect (knife switch). This reset action was reported to SMC Management on Wednesday, September 30, 2009. SMC management then proceeded with the appropriate actions to critique and report this event. The Employee was not exposed to 480V electrical hazard as the local disconnect was in the off position during reset of the overload, however the actions were performed without proper LO/TO, zero energy verification, or required electrical PPE.
Cause Description:	
Operating Conditions:	Routine Operations
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	Beginning September 30, 2009, Operation crews were briefed on the event prior to assuming shift duties. Requirements and expectations were re-emphasized and reinforced at this briefing. A critique was scheduled and held on October 1, 2009 at 10:00 a.m.
FM Evaluation:	To be determined
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	Battelle Energy Alliance
Plant Area:	SMC
System/Building/Equipment:	Manufacturing/TAN-629/Electrical Panel
Facility Function:	Uranium Conversion/Processing and Handling
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On September 20, 2009, a Specific Manufacturing Capability (SMC) employee received an indication that a thermal overload trip had occurred on a compressor. Upon receipt of the indication, the SMC employee opened the disconnect for several minutes to see if it would cool and reset itself. The employee followed procedure and had the appropriate training and qualification to perform this action; however, the required electrical

	PPE for this action was not being worn. The employee then closed the local disconnect and noted the trip did not reset. After re-opening the local disconnect, that de-energized the panel, he proceeded to open the 480V electrical panel, accessed and reset the thermal overloads. There was no lockout/tagout applied to the disconnect. This reset action was reported to facility management and a critique was held. The employee was not exposed to the 480V electrical hazard as the local disconnect was in the off position during reset of the overload. Briefings on this event will be provided to all crews.
Similar OR Report Number:	1. NE-ID--BEA-ATR-2009-0006
	2. NE-ID--BEA-ATR-2009-0007
	3. NE-ID--BEA-SMC-2009-0003
Facility Manager:	Name: Kent Dyet Phone: (208) 526-3336 Title: SMC DEPUTY OPERATIONS MANAGER
Originator:	Name: GERDES, ANNETTE W Phone: (208) 526-6355 Title: OPERATIONS SUPPORT
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 09/30/2009; Time: 17:00 (MTZ); Person Notified: Goriup Michael R; Organization: DOE-ID
Authorized Classifier(AC):	Karl Griffin Date: 10/06/2009

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16)Report Number:	SC--PNSO-PNNL-PNNLBOPER-2009-0015 **After 2003 Redesign**
Secretarial Office:	Science
Lab/Site/Org:	Pacific Northwest National Laboratory
Facility Name:	Energy Research Programs (PNNL)
Subject/Title:	Staff Member Receives Non-Injury 120V Electrical Shock
Date/Time Discovered:	09/24/2009 09:30 (PTZ)
Date/Time Categorized:	09/24/2009 12:27 (PTZ)
Report Type:	Notification
Report Dates:	

Report Dates		
Notification	09/25/2009	18:40 (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:	5) Provide Feedback and Continuous Improvement
Subcontractor Involved:	No
Occurrence Description:	At approximately 0930 hours on Thursday, September 24, 2009, a PNNL staff member received a non-injury electrical shock while attempting to start a band saw located in the Physical Sciences Laboratory (PSL). The PNNL staff member depressed the start button on the band saw, and immediately felt a shock. The band saw is energized by a 120V power source. The staff member called the PNNL Operations Center (375-2400), notified Line Management and was taken to the Onsite medical provider for evaluation. The staff member was released with no restrictions.
Cause Description:	
Operating Conditions:	Indoors, dry conditions
Activity Category:	Maintenance
Immediate Action(s):	A PNNL Electrical Subject Matter Expert and a qualified electrician confirmed 120V was present on the on/off button. The band saw was locked and tagged out of service. Initial investigation results have revealed a buildup of metal fines in the equipment that may have contributed to the shock. An extent of condition is underway and further dissemination of what has been learned is in progress. A critique of the event was held on September 25, 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:	Facility Operations and Maintenance
Plant Area:	RCHN
System/Building/Equipment:	PSL / Room 201
Facility Function:	Balance-of-Plant - Machine shops
Corrective Action:	

Lessons(s) Learned:	
HQ Keywords:	01O--Inadequate Conduct of Operations - Inadequate Maintenance 08A--OSHA Reportable/Industrial Hygiene - Electrical Shock 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On September 24, 2009, a PNNL staff member received a non-injury electrical shock while attempting to start a bandsaw located in the Physical Sciences Laboratory. The staff member depressed the start button on the bandsaw, and immediately felt a shock. The bandsaw is energized by a 120-volt power source. The staff member called the PNNL Operations Center and notified Line Management. The staff member was taken to the onsite medical provider for evaluation and was released with no restrictions. The bandsaw was locked and tagged out of service. Initial investigation revealed a buildup of metal fines in the equipment that may have contributed to the shock. An extent of condition is underway and further dissemination of what has been learned is in progress.
Similar OR Report Number:	
Facility Manager:	Name: Berger, J. E. Phone: (509) 371-7959 Title: Manager, Maintenance and Fabrication Services
Originator:	Name: SMITH, KARLA J Phone: (509) 373-6481 Title: TECH. OPS AND ASSURANCE OFFICE, SPEC
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 09/24/2009; Time: 12:25 (PTZ); Person Notified: Carlson, J. L.; Organization: PNSO
Authorized Classifier(AC):	Sutherland, M. R. Date: 09/25/2009

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17)Report Number:	SC--PNSO-PNNL-PNNLBOPER-2009-0016 **After 2003 Redesign**
Secretarial Office:	Science
Lab/Site/Org:	Pacific Northwest National Laboratory
Facility Name:	Energy Research Programs (PNNL)
Subject/Title:	Consultant Exceeds Work Scope for Electrical Troubleshooting
Date/Time Discovered:	09/30/2009 10:13 (PTZ)
Date/Time Categorized:	09/30/2009 12:28 (PTZ)
Report Type:	Notification
Report Dates:	Notification 10/02/2009 16:39 (ETZ)

	Initial Update		
	Latest Update		
	Final		
Significance Category:	3		
Reporting Criteria:	2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.		
Cause Codes:			
ISM:	4) Perform Work Within Controls		
Subcontractor Involved:	Yes Hatch Electronics		
Occurrence Description:	On Wednesday, September 30, 2009, a consultant was brought into the Applied Process Engineering Lab (APEL) to provide hands-off technical support to PNNL electricians in troubleshooting an electrical problem with the Lepel Induction Power Supplies. During the troubleshooting activities, a PNNL electrician observed the consultant performing hands-on work activities outside of PNNL hazardous energy control requirements.		
Cause Description:			
Operating Conditions:	Indoors / Dry		
Activity Category:	Maintenance		
Immediate Action(s):	The PNNL electrician immediately stopped work and notified the PNNL Operations Center (375-2400). An investigation was initiated by the Building Manager. The equipment was placed in a safe condition. A critique was scheduled for October 1, 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:	Energy & Environment Directorate		
Plant Area:	RCHN Area		
System/Building/Equipment:	APEL / Room 177B		
Facility Function:	Laboratory - Research & Development		

Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01E--Inadequate Conduct of Operations - Operations Procedure Noncompliance 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency 14G--Quality Assurance - Procurement Deficiency
HQ Summary:	On September 30, 2009, a consultant was brought into the Applied Process Engineering Lab to provide hands-off technical support to PNNL electricians in troubleshooting an electrical problem with the Lepel Induction Power Supplies. During the troubleshooting activities, a PNNL electrician observed the consultant performing hands-on work activities outside of PNNL hazardous energy control requirements. The PNNL electrician stopped work and notified facility management. The equipment was placed in a safe condition. A critique was held and an investigation is being conducted by facility management.
Similar OR Report Number:	
Facility Manager:	Name: Herling, D. R. Phone: (509) 375-6905 Title: Manager, Energy Materials
Originator:	Name: POLLARI, ROGER A Phone: (509) 371-7700 Title:
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 09/30/2009; Time: 12:50 (PTZ); Person Notified: Carlson, J. L.; Organization: PNSO
Authorized Classifier(AC):	Pollari, R. A. Date: 10/02/2009

Please send comments or questions to orpssupport@hq.doe.gov or call the Helpline at (800) 473-4375. Hours: 7:30 a.m. - 5:00 p.m., Mon - Fri (ETZ). Please include detailed information when reporting problems.