March 2009 Electrical Safety Occurrences

There were 13 electrical safety occurrences for March 2009:

- 1 resulted in electrical DC shock and 2nd degree burn
- 5 involved inadequate lockout/tagout
- 3 involved cutting energized conductors
- 2 occurrences involved excavation
- 5 involved electrical workers and 8 involved non-electrical workers
- 4 occurrences involved subcontractors
- Nearly all reports identified work control failures or inadequate conduct of operations as a contributing cause

March reports indicate an alarming trend resulting from failure to follow a rigorous work control and conduct-of-operations process. Electricity is not very forgiving as demonstrated in a serious shock and burn incident this month. A complacent attitude toward conducting work around energized electrical equipment in a disciplined manner places at risk the significant advances made in electrical safety in the past three years.

In March 2008 there were only 5 events compared to 13 this month. However, the following five months in 2008 averaged 12 events per month. Now is the time to learn from previous years' trends and institute barriers to prevent the projected spike in electrical occurrences.

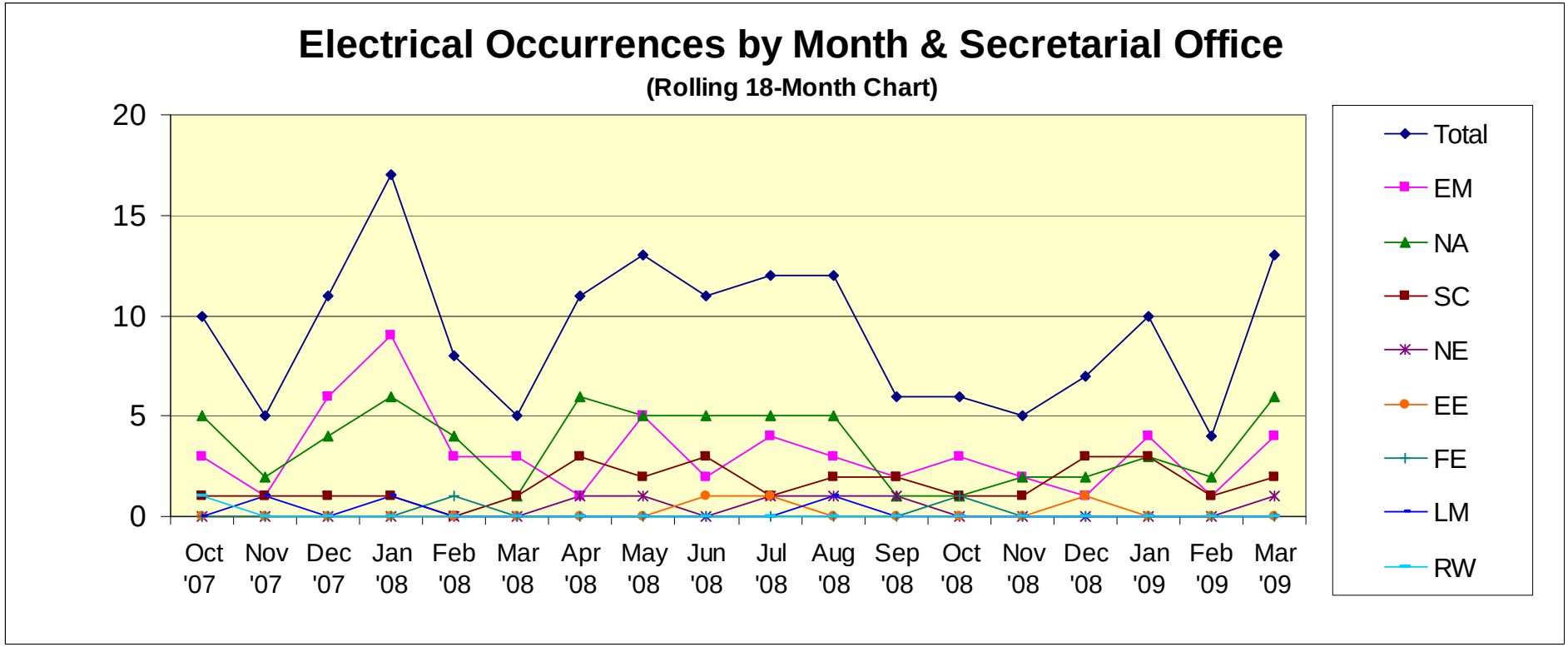
In compiling the monthly totals, the search initially looked for occurrence discovery dates in this month (excluding Significance Category R reports), and for the following ORPS "HQ keywords":
01K – Lockout/Tagout Electrical, 01M - Inadequate Job Planning (Electrical),
08A – Electrical Shock, 08J – Near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

None of the reports provided an ES score. Although the use of the Electrical Severity Measurement Tool in the evaluation of electrical energy events is not required, it's use is strongly encouraged in order to provide a more consistent approach to tracking and trending electrical energy events.

Below is the current summary of 2009 electrical safety occurrences:

Period	Electrical Safety Occurrences	Shocks	Burns	Fatalities
Jan-09	11	2	0	0
Feb-09	4	1	0	0
Mar-09	13	1	1	0
2009 total	28 (avg. 9.3/month)	4	1	0
2008 total	113 (avg. 9.4/month)	26	1	0
2007 total	140 (avg. 11.7/month)	25	2	0
2006 total	166 (avg. 13.8/month)	26	3	0
2005 total	165 (avg. 13.8/month)	39	5	0
2004 total	149 (avg. 12.4/month)	25	3	1

The average rate of electrical safety occurrences in 2009 is 9.3 per month, which is right at the average rate of 9.4 per month experienced in 2008. The 2009 average rate, of course, is based on a very small set of data and is below the 2004 – 2007 average rates.



EE - Energy Efficiency and Renewable Energy, EM - Environmental Management, FE - Fossil Energy, LM - Legacy Management, NA - National Nuclear Security Administration, NE - Nuclear Energy, RW - Civilian Radioactive Waste Management, SC - Science

Electrical Safety Occurrences – March 2009

No	Report Number	Event Summary	EW[1]	N-EW[2]	SUB[3]	SHOCK	BURN	ARCF[4]	LOTO[5]	EXCAV[6]	CUT/D[7]	VEH[8]	ES[8]
1	EM-ORO--BJC-K25GENLAN-2009-0001	A dropped tool resulted in an electrical arc in a transformer vault.	X										?
2	EM-RL--CPRC-PFP-2009-0001	Inadequate identification of a LOTO isolation boundary.	X						X				NA
3	EM-RL--CPRC-SNF-2009-0002	Miss-communication resulted in an unexpected energized overhead line.		X									NA
4	EM-RP--BNRP-RPPWTP-2009-0005	Unprotected bare wires shorted causing a circuit breaker to trip.	X						X				?
5	NA--LASO-GOLA-BOPLASO-2009-0001	A subcontract employee performed energized work without proper authorization.	X		X				X				?
6	NA--LASO-LANL-ACCCOMPLEX-2009-0002	.Worker cuts a bundle of abandon cables, but one was energized at 120 volts.		X					X		X		?
7	NA--LASO-LANL-HEMACHPRES-2009-0005	A subcontract employee received 2nd degree burns resulting from a DC shock.		X	X	X	X						?
8	NA--LASO-LANL-HEMACHPRES-2009-0006	Deviation from the authorized work document results in non-compliant electrical installation.	X										NA
9	NA--LASO-LANL-PHYSTECH-2009-0002	While digging outside the authorized excavation boundary, workers contacted a non-energized communications line.		X						X			NA
10	NA--YSO-BWXT-Y12SITE-2009-0011	Heavy equipment damaged a conduit and conductors inside.		X								X	?
11	NE-ID--BEA-ATR-2009-0006	An electrical panel was discovered to be in an unsafe condition.		X					X				?
12	SC--BSO-LBL-OPERATIONS-2009-0003	A subcontract employee drilled into a conduit containing energized electrical conductors.		X	X						X		?
13	SC--TJSO-JSA-TJNAF-2009-0002	A subcontractor cut an energized conductor during excavation.		X	X					X	X		?
	TOTAL		5	8	4	1	1		5	2	3	1	

Key

(1)EW = electrical worker, (2)N-EW = non-electrical worker, (3)SUB = subcontractor, (4)ARCF = significant arc flash, (5)LOTO = lockout/tagout, (6)EXCAV = excavation, (7)CUT/D = cutting or drilling, (8)VEH = vehicle event, (9)ES = electrical severity

ORPS Operating Experience Report

Production GUI - New ORPS

ORPS contains 54101 OR(s) with 57419 occurrences(s) as of 4/7/2009 6:18:09 AM
Query selected 13 OR(s) with 13 occurrences(s) as of 4/7/2009 10:06:46 AM

Download this report in Microsoft Word format.

1)Report Number:	EM-ORO--BJC-K25GENLAN-2009-0001 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	East Tennessee Technology Park
Facility Name:	ETTP S&M & Cylinders
Subject/Title:	Electrical Arc in K-1210 Transformer Room
Date/Time Discovered:	03/19/2009 12:30 (ETZ)
Date/Time Categorized:	03/19/2009 16:30 (ETZ)
Report Type:	Notification
Report Dates:	Notification: 03/20/2009 14:40 (ETZ) Initial Update: Latest Update: Final:
Significance Category:	1
Reporting Criteria:	10(3) - A near miss, where no barrier or only one barrier prevented an event from having a reportable consequence. One of the four significance categories should be assigned to the near miss, based on an evaluation of the potential risks and the corrective actions taken. (1 of 4 criteria - This is a SC 1 occurrence) Note: An SC 1 occurrence report requires Prompt Notification
Cause Codes:	
ISM:	4) Perform Work Within Controls
Subcontractor Involved:	No
Occurrence Description:	On 3/19/09, three electricians were performing work in the K-1210 electrical vault. As the electrician placed a wrench near a bolt to remove the links off of the power side of a circuit interrupter, he heard a buzz and felt a tingling. He immediately released the wrench. The wrench arced as it contacted the cabinet. Power was lost to buildings fed by the feeder which had shorted out.
Cause Description:	
Operating Conditions:	Shutdown and undergoing surveillance and maintenance (S&M)
Activity Category:	Maintenance
Immediate Action(s):	1) Electrical work being performed in K-1210 was stopped. 2) A safe condition was established.

	3) Worker was taken to medical and confirmed no injuries. 4) Power was restored to the buildings that lost power. 5) A Work Pause was called for all electrical work on high voltage equipment.
FM Evaluation:	The worker involved was very experienced and was fortunate to notice that the equipment was energized before he touched his wrench to the energized circuit. The worker opened the wrong cabinet to perform work. There were two similar cabinets only distinguished by a number. An assumption was made that he had the correct cabinet. The worker was shaken up but not injured; all power has been restored to the buildings that lost power; and a pause was placed on all work on high voltage equipment.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	General Maintenance - Power Ops
Plant Area:	Centrifuge Area
System/Building/Equipment:	K-1210
Facility Function:	Environmental Restoration Operations
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01O--Inadequate Conduct of Operations - Inadequate Maintenance 07C--Electrical Systems - Power Outage 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical) 12K--EH Categories - Near Miss (Could have been a serious injury or fatality) 13E--Management Concerns - Facility Call Sheet 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On March 19, 2009, three electricians were performing work in the K-1210 electrical vault when one electrician opened the wrong cabinet to perform work. As the electrician placed a wrench near a bolt to remove the links off of the power side of a circuit interrupter, he heard a buzz and felt a tingling. He immediately released the wrench. The wrench arced as it contacted the cabinet. Power was lost to buildings fed by the feeder which had shorted out. The worker was shaken up but not injured; all power has been restored to the buildings that lost power; and a pause was placed on all work on high voltage equipment.

Similar OR Report Number:	
Facility Manager:	Name: Steve Smith Phone: (865) 241-6226 Title: Manager of Projects
Originator:	Name: SMITH, MILDRED L Phone: (865) 241-1703 Title: QUALITY ENGINEER

HQ OC Notification:

Date	Time	Person Notified	Organization
03/19/2009	18:16 (ETZ)	Sal Morrone	DOE-HQOC

Other Notifications:

Date	Time	Person Notified	Organization
03/19/2009	12:30 (ETZ)	Jim Hughes	BJC-PM
03/19/2009	12:41 (ETZ)	Larry Perkins	DOE
03/19/2009	14:15 (ETZ)	Michelle McNutt	BJC-FM
03/19/2009	14:20 (ETZ)	Gary Kephart	BJC-ESH
03/19/2009	14:30 (ETZ)	Ron Oglesby	DOE-FR
03/19/2009	14:30 (ETZ)	Mike Harvey	BJC-FM
03/19/2009	14:30 (ETZ)	Mary Mullins	BJC-QA
03/19/2009	14:30 (ETZ)	Steve Smith	BJC-MOP
03/19/2009	14:33 (ETZ)	Hugh Claiborne	BJC-PSS
03/19/2009	18:16 (ETZ)	Jackie Rogers	DOE-ORC
03/19/2009	18:16 (ETZ)	Andy Rose	TEMA
03/19/2009	12:30 (ETZ)	Dispatcher	BJC
03/19/2009	12:30 (ETZ)	Jerry Hopwood	BJC-FM

Authorized Classifier(AC): Doris Frazier Date: 03/20/2009

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2)Report Number:	EM-RL--CPRC-PFP-2009-0001 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Hanford Site
Facility Name:	Plutonium Finishing Plant
Subject/Title:	Inconsistent understanding of the safe work boundary resulted in the preparation of an inadequate tagout for work in Panel F
Date/Time Discovered:	03/16/2009 07:30 (PTZ)
Date/Time Categorized:	03/16/2009 07:30 (PTZ)
Report Type:	Notification

Report Dates:	Notification	03/16/2009	19:21 (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:	1) Define the Scope of Work 2) Analyze the Hazards 3) Develop and Implement Hazard Controls		
Subcontractor Involved:	No		
Occurrence Description:	Summary: On March 16, 2009 at 0730 hours, Senior Management completed follow-up discussions on the results of a Critique Meeting held on March 12, 2009 regarding the development of a less than adequate Tagout Authorization Form to establish a safe work boundary for performing work in Panel F, located in Building 234-5Z, Room 321A. Although the tagout had not been authorized for installation, the Critique Meeting identified some issues of concern determined to be worthy of reporting. Sequence of Events: 2/23/09 to 3/4/09: Work was being done to prepare the Tagout Authorization Form (TAF) for work package 2Z-08-7145, "Install Electrical Power to Zone 1 to 3 Instrument Upgrade". The Controlling Organization TAF Preparer started the preparation of the Lockout Tagout with review of the work scope work documents and facility modification package (FMP). To determine the isolation points, work package 2Z-08-07426, "Investigate Electrical Power Source to Zone 1 to 3 Instruments" was performed. The results of this work package, along with several conversations with the Person-In-Charge (PIC), Electrical Design Authority (DA) and Design DA field walk downs, drawing reviews, and the FMP, were used to develop the TAF for Task 4. The Controlling Organization (CO) TAF Preparer identified 36 locations that required specific Safe Condition Checks for either DC or AC voltage.		

	3/4/09: The TAF was completed and forwarded the Electrical DA with referenced drawings and attachments including available photos for his review of the TAF and electrical isolation points. Through discussions with the Electrical DA on the electrical isolation points and complexity of the Safe Condition Check for Task 4, they agreed that they should validate the controls prior to installation of the locks and tags. 3/5/09: The PIC was notified of the requested change to the work steps to validate all of the electrical isolation points and to include some new personnel protective equipment (PPE) requirements needed to support the work. Work Change Notice WCN-1 was approved and incorporated into the work package. The Electrical DA completed his review and returned the Tagout Authorization Form to the CO TAF preparer. Prior to performing the validation of the electrical isolation points, the CO TAF Preparer gave the TAF to the CO Technical Reviewer to have the technical adequacy of the TAF verified. Two CO Technical Reviewers (an Electrical PIC and an Electrician), reviewed the TAF and signed the Technical Review block on the TAF. 3/06/09: Personnel dressed in the required PPE performed the WCN to check the TAF electrical isolation points. This work was performed and verified that, with the breakers in the off position, voltage was not present at the Safe Condition Check locations specified on the TAF. Following this activity, the Person-In-Charge (PIC) directed the electrician to check the rest of Panel F to verify there was no power within the panel. It was during these additional checks that power was found on fan switch S-10 terminals. This raised the level of interest and additional checks were made. Power was found on the Emergency Shutdown Button PBS-ES-99B terminals and on a terminal strip in the lower east corner terminals 143/144 and 149/150. Although work was not taking place directly on these terminals it would be considered a hazard for contact since the work would be taking place near some of them. Recognizing that a change to the work package and TAF was required, work was stopped and normal configuration was restored. 3/12/09: A Critique Meeting was held to further discuss the issue. During the Critique Meeting it was recognized that various personnel involved in the identification, preparation, and technical review of the Tagout Authorization Form (TAF) had a different mindset regarding what was required in order to establish a safe work boundary. Some believed that the TAF needed to isolate the components that would be worked on within Panel F in Room 321A. Others believed that the TAF needed to isolate power to all potentially exposed terminals within Panel F. Consequently, the TAF only identified the power isolation points for the components to be worked on within Panel F.
Cause Description:	

Operating Conditions:	Does not apply.
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	1. Work was stopped and the configuration restored to normal. 2. A Critique Meeting was held on 3/12/09 at 0900 hours. 3. Work package 2Z-08-07145 was suspended pending modification to correct the TAF.
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:	Plutonium Finishing Plant Closure Project
Plant Area:	200 West
System/Building/Equipment:	Electrical/Bldg. 234-5Z/Room 321A Panel F
Facility Function:	Plutonium Processing and Handling
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01K--Inadequate Conduct of Operations - Lockout/Tagout Noncompliance (Electrical) 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 01R--Inadequate Conduct of Operations - Management issues 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On March 12, 2009, during a critique meeting regarding the development of a less than adequate Tagout Authorization Form (TAF) to establish a safe work boundary for performing work in Panel F, it was recognized that various personnel involved in the identification, preparation, and technical review of the TAF had a different mindset regarding what was required in order to establish a safe work boundary. Some believed that the TAF needed to isolate the electrical components that would be worked on within Panel F, while others believed that the TAF needed to isolate power to all potentially exposed terminals within Panel F. Consequently, the TAF only identified the power isolation points for the components to be worked on within Panel F. The work package was suspended pending modification to correct the TAF.
Similar OR Report Number:	

Facility Manager:	Name: CROCKER, MARK A Phone: (509) 373-0600 Title: PFP CLOSURE MANAGER
Originator:	Name: LEONARD, WILLIAM J Phone: (509) 373-1820 Title: SENIOR OPERATIONS MANAGER
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 03/16/2009; Time: 09:27 (PTZ); Person Notified: Trine, Sandra L; Organization: DOE-RL
Authorized Classifier(AC):	N/A Date: 03/16/2009

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3)Report Number:	EM-RL--CPRC-SNF-2009-0002 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Hanford Site
Facility Name:	Spent Nuclear Fuels Project
Subject/Title:	Overhead Line De-Energized Near Mobile Office (MO) 907 at 100K Area
Date/Time Discovered:	03/24/2009 13:00 (PTZ)
Date/Time Categorized:	03/24/2009 13:00 (PTZ)
Report Type:	Notification
Report Dates:	Notification: 03/25/2009 15:55 (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:	2) Analyze the Hazards
Subcontractor Involved:	No

Occurrence Description:	On 3/18/09, at 0630, Deactivation/Decommissioning/Decontamination/Demolition (D4) workers assigned to mobile office demolition at the 100K Project raised a concern as to whether an overhead power line leading to a light pole located approximately twenty feet from a mobile office (MO-907) was de-energized. The Field Work Supervisor (FWS) instructed the work crew to continue working on debris loadout but not to begin demolition of MO-0907 until the concern had been resolved. At 1000, the FWS contacted the Site Electrical Utilities (EU) organization to request a site visit to determine if the power line was energized. At 1430, EU determined the power line was energized and arrangements were made by the FWS with EU to disconnect the powerline. On 3/19/09, at 0600, EU de-energized the power line and work proceeded with the demolition of MO-907. At 1300, Project management was made aware of the sequence of events and an initial investigation was begun into the event. As a result of the investigation, it was determined that a critique was required to fully understand the circumstances surrounding the event. The critique was scheduled for 3/23/09 (the next working day), and subsequently rescheduled to 3/24/09. On 3/23/09, the work package for mobile office demolition was placed in a partial release status allowing continued removal of debris from the demolition area but not allowing continued demolition of the remaining mobile office. A critique was held at 0830 and a number of issues were identified. The work planning process identified the power lines in the demolition area that were required to be de-energized based on Enhanced work Planning (EWP) sessions and numerous walk downs. The determination was made at that time that the power line and lighting pole adjacent to MO-907 was far enough away that it did not need to be de-energized. This was not consistent with the "Cold and Dark" philosophy that all electrical sources within the demolition area would be de-activated. The FWS did not follow the prescribed work control processes for having the power line de-energized. The work package was not modified to include the changed scope, the work scope was not released through the KW Shift Office, the Balance of Plant (BOP) Supervisor was not notified that a 100K Area plant system was being modified and a Facility Modification Plan (FMP) was not prepared by Engineering prior to performing the work. EU was contacted to perform the work when this work was normally assigned to plant personnel. In their walk down in preparation for or the work, EU incorrectly identified the source of electrical power for the power line to be a 13.8 Kv transfer and used their process for performing hot work to disconnect the power lines while they were energized. The power lines were in fact fed from a disconnect switch that is routinely operated by BOP personnel.
Cause Description:	

Operating Conditions:	Demolition activities associated with removal of mobile office buildings.
Activity Category:	Facility Decontamination/Decommissioning
Immediate Action(s):	An initial event investigation was conducted on 3/19/09. On 3/23/09, at 0730, the work package for mobile office demolition was placed in a partial release status allowing continued removal of debris from teh demolition area but not allowing continued demolition of the remaining mobile office. A critique was conducted on 3/24/09. Required notifications were completed on 3/24/09.
FM Evaluation:	Work was stopped as soon as the concern was raised by workers. At no time were personnel exposed to a hazardous energy source. The area was maintained in a safe condition to allow further investigation to be conducted.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Facility management By When:
Division or Project:	CHPRC/100K Project
Plant Area:	100K
System/Building/Equipment:	Mobile Office 907
Facility Function:	Nuclear Waste Operations/Disposal
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 01P--Inadequate Conduct of Operations - Inadequate Oral Communication 01R--Inadequate Conduct of Operations - Management issues 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12B--EH Categories - Conduct of Operations 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On March 18, 2009, workers assigned to mobile office demolition at the 100K Project raised a concern as to whether an overhead power line leading to a light pole located approximately 20 feet from a mobile office was de-energized. The Field Work Supervisor instructed the Site Electrical Utilities (EU) organization to de-energize the power line without following the work

	planning process, which required a modification to the work package and change in work scope. Work was stopped as soon as the concern was raised.
Similar OR Report Number:	1. None.
Facility Manager:	Name: S. P. Burke Phone: (509) 373-9034 Title: Manager, K West Facility
Originator:	Name: FEIL, RHONDA K Phone: (509) 373-4551 Title: ADMINISTRATIVE SPECIALIST
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	03/24/2009 13:05 (PTZ) T.L. Hissong CHPRC/KB 03/24/2009 13:05 (PTZ) D.J. Riffe CHPRC/KB 03/24/2009 13:05 (PTZ) D.L. Humphreys RL/OOD 03/24/2009 13:05 (PTZ) D.C. Del Vecchio CHPRC/KB
Authorized Classifier(AC):	

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4)Report Number:	EM-RP--BNRP-RPPWTP-2009-0005 **After 2003 Redesign**
Secretarial Office:	Environmental Management
Lab/Site/Org:	Hanford Site
Facility Name:	RPP Waste Treatment Plant
Subject/Title:	Unexpected discovery of an uncontrolled hazardous energy source
Date/Time Discovered:	03/19/2009 14:00 (PTZ)
Date/Time Categorized:	03/19/2009 14:30 (PTZ)
Report Type:	Notification
Report Dates:	Notification: 03/23/2009 11:47 (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:	2) Analyze the Hazards 3) Develop and Implement Hazard Controls
Subcontractor Involved:	No
Occurrence Description:	BNI Electricians reported a circuit breaker tripped in panel LVE-PNL-91001 after two un-connected 120V wiring came into contact with each other. The incident occurred in Building 91 Switchgear facility where Electricians were performing a safety walkdown prior to the facility being inspected by the Electrical Safety Committee. One Electrician noted exposed wiring behind a horizontal beam approximately 8 feet above the floor, just above a bank of electrical panels. A second Electrician retrieved a ladder to perform an inspection and to determine where the wires were coming from. In the process of the inspection, the junction box cover inadvertently pushed two wires together, resulting in the breaker to trip. The wires in this junction box were not taped off or protected with wire nuts. This wiring was part of the uncompleted smoke detector system in the facility. No one was shocked and there were no injures or property damage.
Cause Description:	
Operating Conditions:	Construction
Activity Category:	Construction
Immediate Action(s):	The safety walkdown was stopped; Electricians completed notifications to Safety and Management; and the circuit breaker was secured with a Danger - Do Not Operate tag until a Lockout/Tagout (LO/TO) device could be applied. A LO/TO request was initiated and the Work Control Center applied a LO/TO to circuit breaker #20. Construction Management convened a Fact Finding meeting to ascertain the circumstances of the event. Initiated an investigation.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Michael A Readdy Sr By When:
Division or Project:	WTP Waste Treatment Plant
Plant Area:	600
System/Building/Equipment:	Building 91 smoke detector system
Facility Function:	Nuclear Waste Operations/Disposal
Corrective Action:	

Lessons(s) Learned:	
HQ Keywords:	01S--Inadequate Conduct of Operations - Incorrect/Inadequate Installation 07D--Electrical Systems - Electrical Wiring 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	While performing a safety walk-down in Building 91 Switchgear facility, BNI electricians noted exposed wiring behind a horizontal beam approximately 8 feet above the floor, just above a bank of electrical panels. One of the electricians retrieved a ladder to perform an inspection and determine where the wires were coming from. In the process of the inspection, the junction box cover inadvertently pushed two 120-volt wires together resulting in a circuit breaker trip. The wires in the junction box were not taped off or protected with wire nuts. The wiring was part of an uncompleted smoke detector system in the facility. No one was shocked, and there were no injures or property damage.
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

Other Notifications:

Date	Time	Person Notified	Organization
03/19/2009	14:00 (PTZ)	Max Hammond	BNI/con
03/19/2009	14:00 (PTZ)	Dave Leeth	BNI/con
03/19/2009	14:00 (PTZ)	Miles Stauffer	BNI/con
03/19/2009	14:30 (PTZ)	Jeff Bruggman	DOE/FR
03/19/2009	14:46 (PTZ)	Newell Crary	ONC

Authorized Classifier(AC):	

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5)Report Number:	NA--LASO-GOLA-BOPLASO-2009-0001 **After 2003 Redesign**
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Los Alamos Site
Facility Name:	Balance of Plant Los Alamos Site Office
Subject/Title:	Energized Work Performed Without Proper Permits or PPE

Date/Time Discovered:	03/17/2009 14:00 (MTZ)
Date/Time Categorized:	03/24/2009 17:00 (MTZ)
Report Type:	Notification
Report Dates:	Notification 03/25/2009 17:25 (ETZ) Initial Update Latest Update Final
Significance Category:	3
Reporting Criteria:	2C(2) - Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.
Cause Codes:	
ISM:	
Subcontractor Involved:	Yes VJ Technologies
Occurrence Description:	MANAGEMENT SYNOPSIS: On March 17, 2009, at approximately 1400, at Technical Area 54 (TA-54), Area G, a technical representative from VJ Technologies, assisting the Central Characterization Project (CCP) effort to analyze an equipment failure, deviated from the approved integrated work document (IWD) work control (WC) process, resulting in non-analytical work being performed on an energized system. A critique was held on March 18, 2009, but, as CCP is directly contracted by the Department of Energy (DOE), supporting the Carlsbad Waste Isolation Pilot Project (WIPP), LANL deferred the reporting to WIPP. On March 23, 2009, Los Alamos National Laboratory (LANL) management accepted responsibility of the ORPS reportability of this event and the FOD categorized the event as Group 2, Subgroup C, Criteria 2, Significance Category 3. This event neither resulted in a personal injury nor any long term programmatic or facility impacts. BACKGROUND: As part of the LANL CCP operations, radiographic imaging of waste drums is performed using a real-time radiography (RTR) unit. On March 9, 2009 one of the RTR units failed to start (RTR-2) and troubleshooting efforts were ineffective in re-starting the system; whereby it was determined that a technician (W1) from the equipment manufacturer, VJ Technologies, would need to perform further diagnostics. The RTR-2 unit was de-energized and a lock-out/tag-out (LO/TO) was placed. On March 17, 2009, W1 was escorted into TA-54, Area G to perform

	diagnostics on the RTR-2 unit, under supervision of a qualified CCP RTR operator (W2) trained to LANL work processes and controls. Work initially proceeded according to the approved IWD, including placement and removal of LO/TO and zero energy checks under the LANL work control program. At approximately 1400 hours, following an unsuccessful attempt to start the RTR-2 unit, W1 deviated from the approved IWD and performed troubleshooting work on the unit while it was energized (e.g., voltage measurements, plugging/unplugging cables). W1 did not respond to warnings from W2 to not proceed with the intended actions. The consequence of W1's actions resulted in work being performed outside the IWD scope of work, without proper work permits, and without electrical personal protective equipment (PPE). Work on the RTR-2 unit was concluded, the unit was de-energized and a LO/TO was placed. A Stop Work (SW) was not declared, however W2 reported the unauthorized work to the CCP supervisor, who determined that W1 would not be allowed to continue work on the RTR-2 unit. On March 18, 2009, at approximately 0800 hours, W1 was escorted off LANL property. At 1100 hours, the CCP Project Manager notified the Environment and Waste Management Facility Operations (EWMO) Manager. A critique was held at 1630 hours but, as CCP is directly contracted by the Department of Energy (DOE), supporting the Carlsbad Waste Isolation Pilot Project (WIPP), LANL deferred the reporting to WIPP. On March 23, 2009, Los Alamos National Laboratory (LANL) management, in consultation and agreement with DOE Los Alamos Site Office (LASO) and the WIPP Site Office, accepted responsibility of the ORPS reportability of this event and the FOD categorized the event as Group 2, Subgroup C, Criteria 2, Significance Category 3. This event was initially categorized and an ORPS Event Notification Report was submitted by the WIPP Facility. The ORPS Notification Report EM-CAFO--WTS-WIPP-2009-0005 has been cancelled.
Cause Description:	
Operating Conditions:	Normal
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	1. The RTR-2 unit was administratively locked out. 2. All troubleshooting of the RTR-2 unit was suspended. 3. All CCP maintenance operations were suspended.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No

	By Whom: ESH-OFF, EWMO FOD By When: 05/08/2009
Division or Project:	Environmental Waste Management Operations
Plant Area:	TA54
System/Building/Equipment:	RTR-2 Unit
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) 01O--Inadequate Conduct of Operations - Inadequate Maintenance 01T--Inadequate Conduct of Operations - Willful Violation 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 11L--Other - Supplier 12I--EH Categories - Lockout/Tagout (Electrical or Mechanical) 14E--Quality Assurance - Work Process Deficiency 14G--Quality Assurance - Procurement Deficiency
HQ Summary:	On March 17, 2009, a subcontract worker from VJ Technologies, performing equipment failure diagnostics of the real-time radiography (RTR-2) unit, deviated from the integrated work document and began troubleshooting work while the equipment was energized. The subcontractor's actions were outside the scope of the approved integrated work document and without proper work permits. The worker was not wearing electrical personal protective equipment. The subcontractor did not respond to an operator's warnings not to proceed. All troubleshooting of the RTR-2 unit was suspended.
Similar OR Report Number:	
Facility Manager:	Name: Steve Clemmons Phone: (505) 667-0336 Title: EWMO Facility Operations Director
Originator:	Name: TALLARICO, ANTONIA Phone: (505) 665-6988 Title: OCCURRENCE INVESTIGATOR
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 03/25/2009; Time: 13:50 (MTZ); Person Notified: David George; Organization: NNSA
Authorized Classifier(AC):	Antonia Tallarico Date: 03/25/2009

6)Report Number:	NA--LASO-LANL-ACCCOMPLEX-2009-0002 **After 2003 Redesign**
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Los Alamos National Laboratory
Facility Name:	Accelerator Complex
Subject/Title:	Removal of Legacy Equipment Results in Unexpected Discovery of Energized Conductor
Date/Time Discovered:	03/25/2009 09:50 (MTZ)
Date/Time Categorized:	03/25/2009 12:55 (MTZ)
Report Type:	Notification
Report Dates:	Notification: 03/30/2009 17:39 (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:	
Subcontractor Involved:	No
Occurrence Description:	NOTE: Due to LANL Snow Closure on Friday March 27, 2009, this Notification is submitted one business day late. MANAGEMENT SYNOPSIS: On March 25, 2009, an Accelerator and Operations Technology Mechanical Design Engineering (AOT-MDE) staff member at Los Alamos Neutron Science Center (LANSCE) attempted to cut into a bundle of electrical cables within an electrical rack that was believed to have been de-energized. At least one cable was energized at 110 volts and sparks resulted. No injuries or electrical shock resulted. The rack containing the energized cables was immediately barricaded to prevent access, and management was notified. The rack and the power panel supporting the rack were examined by the AOT Division and Facilities Operations Director (FOD) Electrical Safety Officers to determine the source of electrical power, and all sources of power to the rack were locked and tagged out. Proper notifications were made. The FOD declared this event reportable on March 25, 2009.

	BACKGROUND: At approximately 0950 on March 25, 2009, an AOT-MDE staff member supporting the Materials Test Station (MTS) site preparation project that is removing legacy equipment from Building MPF-3M (Area A) at LANSCE attempted to cut a bundle of electrical cables that was believed to have been de-energized. The cables were located in an electrical rack on the south side of the interior mezzanine catwalk of Area A. The rack is legacy equipment from the nuclear physics program that ended in the late 1990s. At least one cable was energized at 110 volts and sparks resulted. One other AOT-MDE worker was present. There were no injuries or electrical shock. The workers barricaded the mezzanine catwalk and reported the incident to management. The specifics of the event were evaluated through the Electrical Severity Ranking Tool Analysis, resulting in an electrical severity of medium significance. Removal of these legacy cables on the mezzanine was not part of the scope of work for Dixie Electric Membership Corporation (DEMCO), the LANL primary subcontractor executing the Area A site preparation work. Removal of legacy cables in Area A has been an on-going effort undertaken by LANL AOT-MDE. The AOT-MDE staff member had previously disconnected cables in approximately 30 similar racks in Area A throughout the past year without incident. Power to the other racks had been supplied through a plug-type connection that was disconnected prior to removal of the cables. In 2008, craft electricians had isolated power to much of Area A, including racks of this type. However, in December 2008, in order to ensure freeze protection, the electricians were directed by facility personnel to return power to the panel feeding the rack involved in this incident. This returned power to an electrical outlet within the rack that was fed by romex cable from the power panel. The presence of a hard-wired source of power to the rack was unknown to the staff member who cut into the cable on March 25, 2009. This configuration was different than the other racks that the staff member had previously disconnected. Notifications were made to the FOD, the DOE Los Alamos Site Office (LASO) Facility Representative, as well as line management. The FOD declared this event to be ORPS reportable on March 25, 2009, Group 2, Subgroup C (2), Significance Category 3. A critique was held on March 26, 2009. AOT Division and Occurrence Investigation will conduct a joint HPI-based investigation.
Cause Description:	
Operating Conditions:	Normal
Activity Category:	Facility Decontamination/Decommissioning
Immediate Action(s):	1) The area was barricaded. 2) The relevant power panel was locked and tagged out. 3) Proper notifications were made to line management, FOD, and DOE.

	4) A critique was held on March 26, 2009. 5) Demolition work on the racks in Area A will not resume until power circuits from the panels have been removed.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: ESH-OFF & FOD By When: 05/11/2009
Division or Project:	LANSCE
Plant Area:	TA53-MPF-3M
System/Building/Equipment:	Electrical Rack
Facility Function:	Accelerators
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical) 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On March 25, 2009, an Accelerator and Operations Technology Mechanical Design Engineering staff member at Los Alamos Neutron Science Center was cutting into a bundle of electrical cables believed to be de-energized within an electrical rack when at least one 110-volt cable sparked. No injuries or electrical shock resulted. The rack containing the energized cables was immediately barricaded to prevent access, and management was notified. In 2008, power was isolated to Area A, including racks of this type; however, in December 2008, in order to ensure freeze protection, power was restored to the panel feeding the rack involved in this incident. The presence of a hard-wired source of power to the rack was unknown to the staff member who cut into the cable.
Similar OR Report Number:	
Facility Manager:	Name: Dan Seely Phone: (505) 665-8363 Title: Facilities Operations Director
Originator:	Name: VOSS, SUSAN J Phone: (505) 667-5979

	Title: OCCURRENCE INVESTIGATOR
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 03/25/2009; Time: 12:55 (MTZ); Person Notified: Bruce LeBrun; Organization: NNSA Date: 03/25/2009; Time: 12:55 (MTZ); Person Notified: John Zavicar; Organization: PAAA
Authorized Classifier(AC):	Susan J. Voss Date: 03/30/2009

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7)Report Number:	NA--LASO-LANL-HEMACHPRES-2009-0005 **After 2003 Redesign**
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Los Alamos National Laboratory
Facility Name:	HE Machining/Pressing Facils
Subject/Title:	Unrecognized Electrical Hazard results in Shock to Employee
Date/Time Discovered:	03/20/2009 14:00 (MTZ)
Date/Time Categorized:	03/20/2009 15:15 (MTZ)
Report Type:	Notification
Report Dates:	Notification: 03/23/2009 17:12 (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. 4B(6) - A facility or operations shutdown (i.e., a change of operational mode or curtailment of work or processes) directed by management for safety reasons.
Cause Codes:	
ISM:	
Subcontractor Involved:	No
Occurrence Description:	On March 20, 2009, an International Applied Technology-Nuclear Counterterrorism Response (IAT-3) employee working at TA-16-300 received a DC electrical shock that entered through his left hand and exited through his abdomen. The shock resulted in second degree burns to the IAT-

	3 worker's left index finger and thumb in addition to a small exit wound on his abdomen. The total area affected by the burn was less that 5% of the employee's body. The IAT-3 worker was initially taken by a co-worker to Occupational Medicine and then transported by ambulance to Los Alamos Medical Center (LAMC) for further evaluation. The IAT-3 worker was released approximately 6 1/2 hours after being admitted to LAMC. Work restrictions, if any, are being evaluated by LANL Occupational Medicine. A critique was held 03/23/2009 and the event was additionally categorized as 4B(6) at 1200 hours.
Cause Description:	
Operating Conditions:	Normal
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	1) Employee was transported to Occupational Medicine by a co-worker and subsequenty transported to LAMC for further evaluation. The employee was released that same day from LAMC; 2) IAT-3 immediately stood down electrical work and subsequently stood down all work pending review, re-authorization and re-release; 3) The first floor of TA-16-300 was secured, barricaded, and posted as "no entry without FOD approval". Entry into the area will be by authorization of the FOD. Security has been informed of this requirement and is being codified in a Standing Order.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: ESH-OFF & FOD By When:
Division or Project:	IAT-3 (Nuclear Counterterrorism)
Plant Area:	TA-16-300
System/Building/Equipment:	Batteries
Facility Function:	Balance-of-Plant - Machine shops
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	08A--OSHA Reportable/Industrial Hygiene - Electrical Shock 08D--OSHA Reportable/Industrial Hygiene - Injury 12H--EH Categories - Injuries Requiring Medical Treatment Other Than First Aid 14L--Quality Assurance - No QA Deficiency
HQ Summary:	On March 20, 2009, an employee working at TA-16-300 received a DC

	electrical shock that entered through his left hand and exited through his abdomen. The shock resulted in second degree burns to the employee's left index finger and thumb in addition to a small exit wound on his abdomen. The total area affected by the burn was less that 5 percent of the employee's body. The worker was initially taken by a co-worker to Occupational Medicine and then transported by ambulance to Los Alamos Medical Center for further evaluation and released. Work restrictions, if any, are being evaluated by LANL Occupational Medicine.
Similar OR Report Number:	
Facility Manager:	Name: R. R. Sharp-Geiger Phone: (505) 667-4246 Title: WFO-Facility Operations Director
Originator:	Name: TALLARICO, ANTONIA Phone: (505) 665-6988 Title: OCCURRENCE INVESTIGATOR
HQ OC Notification:	Date: 03/23/2009 Time: 15:10 (MTZ) Person Notified: DOE Headquarters Organization: DOE
Other Notifications:	Date: 03/20/2009 Time: 15:15 (MTZ) Person Notified: David Stewart Organization: NNSA
Authorized Classifier(AC):	Antonia Tallarico Date: 03/23/2009

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8)Report Number:	NA--LASO-LANL-HEMACHPRES-2009-0006 **After 2003 Redesign**
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Los Alamos National Laboratory
Facility Name:	HE Machining/Pressing Facils
Subject/Title:	Management Concern: Breaker Replacement not in Scope
Date/Time Discovered:	03/26/2009 10:30 (MTZ)
Date/Time Categorized:	03/26/2009 10:30 (MTZ)
Report Type:	Notification/Final
Report Dates:	Notification: 03/30/2009 17:32 (ETZ) Initial Update: 03/30/2009 17:32 (ETZ) Latest Update: 03/30/2009 17:32 (ETZ) Final: 03/30/2009 17:32 (ETZ)
Significance Category:	4
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 4 occurrence)
Cause Codes:	
ISM:	3) Develop and Implement Hazard Controls
Subcontractor Involved:	No
Occurrence Description:	Management Synopsis: Electricians replaced four pre-existing 20 amp breakers in a lighting panel with 30 amp breakers when the work package specified only replacing a single breaker. During the post job walk down by the Engineering Services-System Engineering (ES-SE) Electrical Safety Officer (ESO) and the ES-SE engineer, the breaker replacement was neither in accordance with the work package nor did it meet the National Electrical Code (NEC). The lock out/ tag out (LOTO) to perform the modifications was done in accordance with LOTO requirements. There was no personal, programmatic equipment, or facility impact. The Weapons Facility Operations (WFO) Facility Operations Director (FOD) declared this event as reportable March 26, 2009 at 1030 hours. Background: Pipefitters using a portable 120V TIG welder in the shop area at TA-16-969 were continuously experiencing the tripping of receptacle circuit breaker. On 10/07/2008, in response, the Facility Coordinator (FC) wrote a work request (FSR) to change out the four 20 amp breakers with 30 amp breakers. The work planner initiated the work package process using the FSR. The work planner then issued a work order for scoping the job concurrently with requesting engineering to generate a engineering change notification (ECN: ECN-08-16-969-004). The electrician foreman performed the scoping activity to the FSR. When the ECN was complete, the work planner included those requirements, specifically only one of the 20 amp breaker could be replaced with a 30 amp breaker per NEC, into the work package and Integrated Work Document (IWD). The PIC for the job was the same electrician foreman who did the job scoping using the FSR. The electricians doing the work did a pre-job brief on 01/22/2009. Work was initiated on 01/22/2009. The electricians proceed to replace the breakers as scoped and not according to information in the work package and on the (IWD). The electricians involved stated that they were confused about the scope of the job because the original job scoping activity was completely different than the activity identified in the IWD. The electricians believed that they were two different jobs. On 01/23/2009, the electricians completed the job. On 03/16/2009, the engineer walked down the job using the ECN to ensure

	the job was completed. He determined that the requested work was not performed in accordance with the EC and he believed that there could be a NEC violation. The engineer then notified the facility's ESO and the two of them walked down the job. The engineer and the ESO realized that the work had been performed per the FSR and not the ECN. The ESO also verified that the work violated the NEC. The newly installed breakers were LOTOed in the OFF position to prevent use. This event is similar to "Management Concern: Fire Suppression System Maintenance Results in Work Pause" since in both events the scope of work identified in both work package was exceeded. The corrective actions being developed for "Management Concern: Fire Suppression System Maintenance Results in Work Pause" should mitigate the problems identified with this event.
Cause Description:	
Operating Conditions:	Normal
Activity Category:	Maintenance
Immediate Action(s):	1) The newly installed 30 amp breakers ere LOTOed in the OFF position. 2) An NCR was written identifying the NEC violations (NCR # WFO-09-0004. 3) A new work order was written to address the following: -NCR resolution, - Welding circuit installation as identified in the ECN.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	Breaker replacement
Plant Area:	Shops
System/Building/Equipment:	TA-16-969
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) 01M--Inadequate Conduct of Operations - Inadequate Job Planning (Electrical) 01O--Inadequate Conduct of Operations - Inadequate Maintenance

	01P--Inadequate Conduct of Operations - Inadequate Oral Communication 01R--Inadequate Conduct of Operations - Management issues 12B--EH Categories - Conduct of Operations 14C--Quality Assurance - Quality Improvement Deficiency 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	Electricians replaced four pre-existing 20-amp circuit breakers in a lighting panel with 30-amp circuit breakers when the work package specified only replacing a single breaker. During the post job walk down, the Electrical Safety Officer determined that the breaker replacement was neither in accordance with the work package nor did it meet the National Electrical Code (NEC). Only one of the 20-amp breakers could be replaced with a 30-amp breaker per NEC. The work request for the job identified changing all four circuit breakers while an engineering change notice identified only changing one circuit breaker. The electricians involved stated that they were confused about the scope of the job because the original job scoping activity was completely different than the activity identified in the Integrated Work Document.
Similar OR Report Number:	1. NA--LASO-LANL-TRITFACLS-2008-0007
Facility Manager:	Name: R.R. Sharp-Geiger Phone: (505) 667-4246 Title: WFO Facility Operations Director
Originator:	Name: TALLARICO, ANTONIA Phone: (505) 665-6988 Title: OCCURRENCE INVESTIGATOR
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 03/26/2009; Time: 10:30 (MTZ); Person Notified: David Stewart; Organization: NNSA
Authorized Classifier(AC):	Antonia Tallarico Date: 03/30/2009

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9)Report Number:	NA--LASO-LANL-PHYSTECH-2009-0002 **After 2003 Redesign**
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Los Alamos National Laboratory
Facility Name:	Physical and Technical Supt.
Subject/Title:	Near Miss: Non-Energized Communication Line Struck during Excavation Work
Date/Time Discovered:	03/24/2009 12:10 (MTZ)
Date/Time Categorized:	03/24/2009 12:15 (MTZ)
Report Type:	Notification/Final

Report Dates:	Notification	03/26/2009	19:51 (ETZ)
	Initial Update	03/26/2009	19:51 (ETZ)
	Latest Update	03/26/2009	19:51 (ETZ)
	Final	03/26/2009	19:51 (ETZ)
	Revision 1	03/31/2009	16:33 (ETZ)
Significance Category:	4		
Reporting Criteria:	10(3) - A near miss, where no barrier or only one barrier prevented an event from having a reportable consequence. One of the four significance categories should be assigned to the near miss, based on an evaluation of the potential risks and the corrective actions taken. (1 of 4 criteria - This is a SC 4 occurrence)		
Cause Codes:			
ISM:	4) Perform Work Within Controls		
Subcontractor Involved:	No		
Occurrence Description:	MANAGEMENT SYNOPSIS: On March 23, 2009, at 1135, outside of Technical Area 3, Building SM-66, while excavating to repair a condensate line, Utilities and Infrastructure (U&I) workers struck a non-energized communication line using mechanical equipment. The workers immediately stopped work and notified their supervisor. The supervisor contacted the TA3-66 facility operations personnel and the Radiological Liquid Waste (RLW) Facility point of contact to determine if any of their operations had been impacted. Both personnel indicated there was no impact to their facilities. Subsequent evaluation found utility locates had been performed prior to the start of the work and an excavation work boundary established. Because the communication line was outside the excavation boundary, the line had not been identified during the utility locates. Further evaluation revealed there were several other communication lines in the direct vicinity with some energized and some not energized. The RLW point of contact indicated these lines were associated with the RLW's monitoring devices. The supervisor subsequently stated when the communication line was struck the work was performed outside of the excavation boundary. Following notification, the Utilities and Infrastructure Facility Operations Director (FOD) Designee categorized the event as sub-threshold reportable. On March 24, 2009, after further review of the event and associated work documentation, the U&I FOD re-categorized the event as a reportable near miss due to a non-compliance with work requirements and the potential of contacting an energized line and impacting the safety of personnel, operations, and the facility. BACKGROUND: The U&I workers were tasked to repair a condensate line leak. An integrated work document was generated for the work including an		

	excavation permit. The supervisor had discussed the area selected for the excavation with the RLW point of contact. The RLW point of contact informed the supervisor that a RLW line was located near the proposed excavation site, but not within the excavation boundary. The supervisor had the utility locates personnel survey the area for any utilities. The utility locates personnel identified one sanitary waste line, a steam line, the condensate line, and an unknown line. Because the RLW and communication lines were outside the excavation boundary, they were not located or marked during the utility locates. As part of the repair work, the workers had to find the flange associated with the condensate line. The workers dug in the excavation work boundary area and did not find the flange. They potholed to the edge of the work boundary and found a 4-6 inch PVC line, which the supervisor assumed was the RLW line. Based on his assumption that the PVC line was the RLW line, the supervisor believed the flange was located near the fire hydrant which was a few feet outside of the excavation boundary. The supervisor authorized the workers to dig outside the excavation boundary using mechanical equipment. The supervisor assumed the RLW line had been located and there were no other lines in the area; however, he had not seen an RLW line in any previous excavation work. Unknowing to the supervisor, the communication lines were located just outside of the excavation boundary and the PVC line was not the RLW line. The utility locates management subsequently indicated RLW lines are usually located above utility lines. Per LANL excavation requirements, if work is required outside of an established excavation boundary, the work should be paused and a new excavation permit submitted to have utility locates performed in the new area. In this instance, a new excavation permit had not been obtained when the work was to be performed outside of the excavation boundary.
Cause Description:	
Operating Conditions:	Normal Operations
Activity Category:	Maintenance
Immediate Action(s):	1. The workers immediately stopped the work and notified their supervisor. 2. After further review of the work and re-authorization, the condensate line repair resumed on March 24, 2009.
FM Evaluation:	
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	Utilities and Infrastructure Division

Plant Area:	TA3-66
System/Building/Equipment:	Communication Line
Facility Function:	Balance-of-Plant - Site/outside utilities
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	07D--Electrical Systems - Electrical Wiring 08F--OSHA Reportable/Industrial Hygiene - Industrial Operations Issues 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical) 12G--EH Categories - Industrial Operations 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On March 23, 2009, while excavating to repair a condensate line, Utilities and Infrastructure workers struck a non-energized communication line using mechanical equipment. The workers immediately stopped work and notified their supervisor. Although utility locates had been performed before the start of the work and an excavation work boundary was established, the communication line was outside the excavation boundary and had not been identified during the utility locates. The supervisor subsequently stated that when the communication line was struck the work was performed outside of the excavation boundary.
Similar OR Report Number:	
Facility Manager:	Name: Andrew Erickson Phone: (505) 667-4222 Title: U&I Facility Operations Director
Originator:	Name: CORDOVA, LUANNA M Phone: (505) 667-0598 Title: DATA ANALYST
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 03/24/2009; Time: 16:36 (MTZ); Person Notified: Notification Line; Organization: NNSA
Authorized Classifier(AC):	Mark Hunsinger Date: 03/26/2009

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10)Report Number:	NA--YSO-BWXT-Y12SITE-2009-0011 **After 2003 Redesign**
Secretarial Office:	National Nuclear Security Administration
Lab/Site/Org:	Y12 National Security Complex
Facility Name:	Y-12 Site
Subject/Title:	Conduit Broken and Power Lost During Sidewalk Replacement
Date/Time Discovered:	03/05/2009 18:17 (ETZ)

Date/Time Categorized:	03/05/2009 20:15 (ETZ)
Report Type:	Final
Report Dates:	Notification 03/10/2009 17:07 (ETZ) Initial Update 04/07/2009 07:18 (ETZ) Latest Update 04/07/2009 07:18 (ETZ) Final 04/07/2009 07:18 (ETZ)
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:	A4B3C08 - Management Problem; Work Organization & Planning LTA; Job scoping did not identify special circumstances and/or conditions
ISM:	4) Perform Work Within Controls
Subcontractor Involved:	No
Occurrence Description:	On March 5, 2009, during an overtime activity to replace an aging section of sidewalk, a compact loader with a hydraulic breaker attachment was maneuvering near a piece of conduit when contact was made with the loaders right front tire. A spotter was being used to ensure the loader did not contact the conduit but the equipment moved too quickly for the spotter to alert the operator to stop in time. The conduit was bent approximately forty-five degrees and broke inside the concrete. The 110-volt power circuit inside the conduit was damaged and the associated circuit breaker tripped off. Work was stopped and personnel were removed from the area. The scene was controlled and no one was allowed reentry until the circuit was confirmed de-energized and locked out. No personnel were injured and no visible sparks were observed when the conduit was damaged. The replacement of the sidewalk was resumed on March 6, 2009, and a formal LOTO was applied to the circuit feeding power to the adjacent equipment. When the damaged conduit and wire were removed and replaced, it was noted that the installed conduit was electrical metallic tubing (EMT) instead of heavy walled rigid conduit that is required for underground installations. The conduit was also installed directly beneath the concrete instead of the depth of over four feet as indicated on the system drawings. Repairs were made using new rigid conduit that was buried below the gravel under the sidewalk. The replacement sidewalk was poured and finished, and the impacted equipment restored to service at 17:45 hours on March 6, 2009.

	The sidewalk replacement was a planned activity and the conduit with the energized circuit inside was known to be in the work area. The conduit had been added approximately fourteen years ago to support new equipment installed adjacent to the sidewalk and a fourteen inch wide section of sidewalk had been removed and replaced to facilitate the installation. The associated drawings indicated the conduit was buried more than four feet below the sidewalk. As the conduit was not to be removed or replaced and no excavation was planned other than to remove and replace the existing sidewalk, an excavation permit was not needed. The sidewalk replacement work was then planned without a Lockout/Tagout (LOTO) activity to remove power from the associated equipment. Administrative controls had been established to a) control the loaders movement around the conduit with a spotter and b) use a manual sledge hammer to remove the fourteen inch patch including the edge of the sidewalk where the conduit emerged. This event was first categorized on March 5, 2009, as a 10-3 Category 3 Near-Miss to a 2C-2 event based on preliminary information. After the critique was performed on March 9 and continued on March 10, 2009, discussions with Y-12 Industrial Safety confirmed there was not an unexpected discovery of an uncontrolled hazardous energy source and thus, no near-miss condition. The event has been recategorized as a 10-2 Category 3 Management Concern because there are lessons to be learned that can be shared with other facilities which may be of value in future similar activities.
Cause Description:	The why staircase technique was utilized to document the analysis. Each step was then evaluated using the DOE Apparent Cause Model. What is the immediate cause? A wheel on the compact loader with a hydraulic breaker attachment being used to break the old sidewalk apart came into contact with a conduit that was protruding from the concrete. (A4-B3-C8; Job scoping did not identify special circumstances and / or conditions) What caused this cause? The spotter who was in charge of alerting the loader operator when contact was imminent, could not get the attention of the equipment operator quickly enough to stop the loader movement as it approached the conduit. (A4-B3-C8; Job scoping did not identify special circumstances and / or conditions) What caused that? Due to noise hazards associated with operation of the hydraulic breaker, double hearing protection was in-use and communication between the operator and spotter was limited to visual signals. (A4-B3-C8; Job scoping did not identify special circumstances and / or

	conditions) Why was that a problem? The area was congested and the operator was also looking about during the movement of the loader and could not focus on the spotter at all times. (A4-B3-C8; Job scoping did not identify special circumstances and / or conditions) Summary: When hazard controls are being developed, engineered controls are always more favorable than administrative ones. In this case, the conduit should have been sturdy enough to withstand minor contact with the loader tire, but it was physically degraded and failed immediately. Had the circuit inside the conduit been isolated with a Lockout/Tagout control, the potential hazard would have been eliminated prior to the conduit being damaged.
Operating Conditions:	The sidewalk was closed to pedestrians.
Activity Category:	Maintenance
Immediate Action(s):	The area was cleared and controlled to prevent reentry Notifications were made to the responsible management, safety and NNSA personnel On-site electrical support was obtained and the circuit was confirmed tripped The circuit was locked and controlled pending repairs
FM Evaluation:	The preparation and planning to perform this work was evaluated and approved by the correct entities and the process chosen to protect the conduit from contact with the compact loader would have been sufficient under normal circumstances. The presence of the hydraulic breaker which required double hearing protection for the operator and spotter, combined with the conduit that was degraded below the level of the concrete and not readily visible to the job planner, supervisor or workers created a condition that negated the established control. In situations where an engineered control such as LOTO is possible, it should be selected as the preferred method. Administrative control to help protect the conduit from physical damage should have also been employed, but it needed to better address an acceptable approach distance and require eye contact between the operator and the spotter prior to movement when the loader was in close proximity to the conduit.
DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	No
Division or Project:	Facilities, Infrastructure & Services
Plant Area:	Protected

System/Building/Equipment:	Building 9949-70
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action 01:	**Target Completion Date:**05/28/2009 **Tracking ID:**Action 1
	Obtain a code review of the repaired conduit and determine if the replacement is within the current electrical code requirements. Completion Evidence: The results of the review and the disposition of any additional action needed.
Corrective Action 02:	**Target Completion Date:**05/28/2009 **Tracking ID:**Action 2
	Markup the existing electrical drawings to indicate the conduit replacement and provide them to the system owner for formal revision. Completion Evidence: Confirmation from the responsible manager that the markup has been completed and provided.
Corrective Action 03:	**Target Completion Date:**05/28/2009 **Tracking ID:**Action 3
	Develop and issue a Lessons Learned to share the events and responses that were a part of this occurrence. Include the need to select engineered controls over adminastrative whenever possible. Completion Evidence: A copy of the Issued Lessons Learned. Cause Addressed: A4-B3-C8
Lessons(s) Learned:	When establishing controls for potential hazards, engineered controls are more positive and should be selected over administrative ones.
HQ Keywords:	01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous) 01B--Inadequate Conduct of Operations - Loss of Configuration Management/Control 01P--Inadequate Conduct of Operations - Inadequate Oral Communication 01Q--Inadequate Conduct of Operations - Personnel error 01S--Inadequate Conduct of Operations - Incorrect/Inadequate Installation 07C--Electrical Systems - Power Outage 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 14D--Quality Assurance - Documents and Records Deficiency 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On March 5, 2009, while maneuvering a compact loader, the right front tire hit a piece of conduit during a sidewalk replacement project, bending the conduit 45 degrees. A spotter was being used to ensure the loader did not contact the conduit but the equipment moved too quickly for the spotter to alert the operator to stop in time. The 110-volt power circuit inside the conduit was damaged and the associated circuit breaker tripped off. The circuit was de-energized and locked out. No personnel were injured and no

	visible sparks were observed when the conduit was damaged. A drawing had incorrectly indicated that the conduit was over 4 feet below the sidewalk.
Similar OR Report Number:	1. None identified.
Facility Manager:	Name: S. R. Finney Phone: (865) 576-5922 Title: Plant Services and Programs Director
Originator:	Name: WILSON, SHIRLEY S Phone: (865) 574-1566 Title: MANAGER, OCCURRENCE REPORTING
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	03/05/2009 20:30 (ETZ) D. S. Afong NNSA FR 03/05/2009 18:17 (ETZ) W. M. Crisp Y-12 PSS 03/05/2009 18:40 (ETZ) S. R. Finney FI&S DM 03/05/2009 19:30 (ETZ) DNFSB Representative DNFSB 03/05/2009 20:30 (ETZ) K. P. Gosnell SAFETY
Authorized Classifier(AC):	C. J. Schermerhorn Date: 04/06/2009

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11)Report Number:	NE-ID--BEA-ATR-2009-0006 **After 2003 Redesign**
Secretarial Office:	Nuclear Energy, Science and Technology
Lab/Site/Org:	Idaho National Laboratory
Facility Name:	Advanced Test Reactor
Subject/Title:	Electrical Panel Found Open with Exposed Energized Components at the Advanced Test Reactor (ATR)
Date/Time Discovered:	03/24/2009 09:30 (MTZ)
Date/Time Categorized:	03/25/2009 12:22 (MTZ)
Report Type:	Notification
Report Dates:	Notification: 03/30/2009 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:	4) Perform Work Within Controls
Subcontractor Involved:	No
Occurrence Description:	At approximately 0930 on March 24, 2009, during a plant walkdown of the ATR, a multi-doored 480 volt electrical panel was found to have one door open several inches. The open door was to a 110 volt lighting panel with several breakers inside and a Lockout/Tagout (LO/TO) hanging on one breaker. The DOE Facility Representative (FacRep) who discovered the open door, opened the door enough to examine the LO/TO, noting that the metal panel covering the breakers did not fully enclose the cubicle, i.e., a few inches were open on the door hinged side of the panel and less than an inch gap on the left side of the panel, exposing the energized conductors and bus bars and the copper ends of the conductors that connected to the bus bars that could be reached if someone put their hand around the opening of the front closure plate. The FacRep learned from workers in the area that the panel was energized. The FacRep pointed out the hazard of exposed energized electrical components to the workers and immediately informed the Shift Supervisor (SS) of the open panel door. The SS had a rope installed around the penl while investigations continued.
Cause Description:	
Operating Conditions:	The ATR was operating at nominal full power for Cycle 144A-1
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	Appropriate levels of BEA management and DOE-ID were informed of this event. The electrical panel with the open door was roped off for further investigation.
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:	ATR Programs
Plant Area:	ATR
System/Building/Equipment:	Advanced Test Reactor, TRA-670
Facility Function:	Category "A" Reactors
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	08H--OSHA Reportable/Industrial Hygiene - Safety Noncompliance 12C--EH Categories - Electrical Safety 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On March 24, 2009, during a plant walkdown of the ATR, a DOE Facility Representative found a door on a multi-doored, 480-volt electrical panel to be open several inches. The open door was to a 110-volt lighting panel with several circuit breakers inside and a lockout/tagout hanging on one breaker. The metal panel covering the circuit breakers did not fully enclose the cubicle, such that exposed energized conductors, buss bars, and the copper ends of the conductors connected to the buss bars could be reached if someone put their hand around the opening of the front closure plate. That area of the panel was energized. The electrical panel with the open door was roped off for further investigation.
Similar OR Report Number:	
Facility Manager:	Name: SCHUEBERT, EDMOND J Phone: (208) 533-4284 Title: ATR OPERATIONS FACILITY MANAGER
Originator:	Name: OWENS, MARJORIE A Phone: (208) 533-4563 Title: ATR OPERATIONS FACILITY ADMINISTRATI
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date: 03/24/2009; Time: 09:30 (MTZ); Person Notified: R. Denning; Organization: DOE-ID
Authorized Classifier(AC):	E. BRUCE CRISWELL Date: 03/30/2009

12)Report Number:	SC--BSO-LBL-OPERATIONS-2009-0003 **After 2003 Redesign**
Secretarial Office:	Science
Lab/Site/Org:	Lawrence Berkeley Laboratory
Facility Name:	Operations Division
Subject/Title:	B.74 Live Conduit Punctured During Renovation

Date/Time Discovered:	03/20/2009 14:30 (PTZ)
Date/Time Categorized:	03/20/2009 15:10 (PTZ)
Report Type:	Notification
Report Dates:	Notification 03/24/2009 21:10 (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:	2) Analyze the Hazards 3) Develop and Implement Hazard Controls
Subcontractor Involved:	Yes Nibbi Brothers General Contractors
Occurrence Description:	Summary: At 1440 on 03/19/2009, during Building 74 renovation, a subcontractor worker penetrated an electric conduit containing a live circuit. There were no injuries, no electrical arcing, nor other property damages. Details: A Nibbi General Contractor worker was potholing a floor slab in Building 74 Room 200B hallway when he hit and punctured a 3/4-inch electrical conduit. The worker was attempting to locate a drain line below the slab. The potholing was conducted following penetration permit procedures and using an approved chipping hammer. The conduit was tied to reinforcing steel six inches below the slab surface in-between two layers of a composite slab with a total thickness of about 12 inches. The conduit was not identified despite several utility scans before and during the potholing.
Cause Description:	
Operating Conditions:	Indoors, dry, lighted
Activity Category:	Normal Operations (other than Activities specifically listed in this Category)
Immediate Action(s):	- Work was immediately stopped until the condition was analyzed and determined to be safe to proceed. Electricity to the area was shut off.
FM Evaluation:	- A series of utility scans were performed in the area as part of the penetration permit process prior to and during the potholing. An unidentified object was marked in the potholing location. The double floor slab with three layers of rebar and a geotextile mat limited the ability to identify the object.

DOE Facility Representative Input:	
DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Facilities Division By When:
Division or Project:	Facilities Division
Plant Area:	B 74 Room 200B
System/Building/Equipment:	Building 74
Facility Function:	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01B--Inadequate Conduct of Operations - Loss of Configuration Management/Control 07D--Electrical Systems - Electrical Wiring 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14D--Quality Assurance - Documents and Records Deficiency
HQ Summary:	On March 19, 2009, during Building 74 renovation, a Nibbi General Contractor worker penetrated an electrical conduit containing an energized circuit. The subcontractor was potholing a floor slab in Room 200B hallway when he hit and punctured the ¾-inch electrical conduit. Work was immediately stopped and electricity was shutoff to the area. The electrical conduit did not show up on any utility scans. There were no injuries, no electrical arcing, nor other property damages.
Similar OR Report Number:	
Facility Manager:	Name: Jennifer Ridgeway Phone: (510) 486-6339 Title: Division Director
Originator:	Name: MOU, FLORENCE P. Phone: (510) 486-7872 Title: SENIOR ADMINISTRATOR

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
03/20/2009	15:15 (PTZ)	Kim Abbott	BSO

Authorized Classifier(AC):	

13)Report Number:	SC--TJSO-JSA-TJNAF-2009-0002 **After 2003 Redesign**
Secretarial Office:	Science
Lab/Site/Org:	Thomas Jefferson National Accelerator Site
Facility Name:	Thomas Jefferson Nat'l Accelerator
Subject/Title:	FML-09-0401-NEW, Breach of Previously Unknown Live Electrical Line with no Resulting Injury
Date/Time Discovered:	03/31/2009 17:00 (ETZ)
Date/Time Categorized:	04/01/2009 17:11 (ETZ)
Report Type:	Notification
Report Dates:	Notification 04/03/2009 15:49 (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:	5) Provide Feedback and Continuous Improvement
Subcontractor Involved:	Yes Accumark and Hiller Systems Inc.
Occurrence Description:	Summary: A fire protection sub-contractor breached a live electrical cable during excavation. The cable had not been discovered by a Utility location contractor prior to beginning work. The area was isolated and there were no injuries. On Friday, 3-27-09, a contract utility locator, Acumark, was called in to locate utilities for an excavation of abandoned fire protection sprinkler pipe. The Subcontracting Officer Technical Representative (SOTR) for this planned work met with the Acumark technicians to describe the extent of the planned digging, specifying the location and using a survey map to point out known items in the area. The following Monday morning, Hiller Systems, a fire protection sub-contractor, began work in the area, using a mini excavator. During the

	excavation, about 11 AM, three insulated electrical conductors were uncovered. One of the wires was severed and caused a visible arc to the excavator bucket. The cabling had not been identified during the Acumark work the previous Friday, thus it was not marked nor known before the excavation work began. Digging was immediately suspended, the scene preserved, and the JLab electrical coordinator called to advise. The electrical coordinator donned arc flash PPE to measure the potential to ground on the severed conductor, measuring a voltage to ground of 24 Vac. The excavation site was immediately marked with caution tape and the exposed electrical conductor covered with a pylon type plastic insulator. Due to the measurements taken at this time, it was believed that the actions were consistent with JLab's graded approach policy. The electrical coordinator placed a service call Accumark, contract cable locator. Accumark responded in mid-afternoon, tracing the exposed wire to a near-by overhead utility pole. The other end of the wire was traced until the signal abruptly ended, underground, near a driven grounding rod. As stated before, this cable had not been located in the initial work done on Friday, 3-27-09. The electrical coordinator next called the local electrical utility providor, Dominion Power, to come on site and take the appropriate actions. Dominion Power arrived on site the early morning of Wednesday, 4-1-09. The cable was then cut at the pole mounted transformer, verfiying that power was removed at the severed cable. The three abandoned cables at the base of the utility pole were then severed. JLab was notified that the line was in fact 220 Vac single phase power. The revised circumstances of the situation were then communicated to the appropriate JLab and TJSO personnel at about 1200. At 2:45 pm on 4-1-09 the investigation team met at the excavation site to confirm that this information was indeed correct and collect information. Based on these confirmations, an ORPS categorization was then made and communicated to TJSO and JSA management.
Cause Description:	
Operating Conditions:	60 degrees, overcast
Activity Category:	Maintenance
Immediate Action(s):	The excavation site was immediately marked with caution tape and the exposed electrical conductor was covered with a plastic insulator. The cable owner, Dominion Virginia Power, was contacted and requested at the site right away.
FM Evaluation:	
DOE Facility Representative Input:	

DOE Program Manager Input:	
Further Evaluation is Required:	Yes. Before Further Operation? No By Whom: Dave Kausch, JSA By When:
Division or Project:	Jefferson Science Associates (JSA)
Plant Area:	VARC Area
System/Building/Equipment:	Open field behind building 28 (VARC)
Facility Function:	Accelerators
Corrective Action:	
Lessons(s) Learned:	
HQ Keywords:	01B--Inadequate Conduct of Operations - Loss of Configuration Management/Control 07D--Electrical Systems - Electrical Wiring 08F--OSHA Reportable/Industrial Hygiene - Industrial Operations Issues 08J--OSHA Reportable/Industrial Hygiene - Near Miss (Electrical) 11G--Other - Subcontractor 12C--EH Categories - Electrical Safety 14D--Quality Assurance - Documents and Records Deficiency 14E--Quality Assurance - Work Process Deficiency
HQ Summary:	On March 30, 2009, fire protection subcontractor workers cut one of three previously unknown insulated electrical conductors during excavation behind Building 28. One of the cut wires caused a visible arc to the excavator bucket. The line was later determined to carry 220 Vac single phase power. There were no injuries or electrical shock. The cabling had not been identified during previous utility identification by a subcontract utility location service. The area was blocked off and management notifications were made.
Similar OR Report Number:	
Facility Manager:	Name: SMITH, STEPHEN JAY Phone: (757) 269-7007 Title: LEAD QUALITY AND SAFETY ENGINEER
Originator:	Name: SMITH, STEPHEN JAY Phone: (757) 269-7007 Title: LEAD QUALITY AND SAFETY ENGINEER
HQ OC Notification:	Date: NA; Time: NA; Person Notified: NA; Organization: NA
Other Notifications:	Date | Time | Person Notified | Organization

	04/01/2009	08:15 (ETZ)	Steve Neilson	TJSO
Authorized Classifier(AC):	Stephen Smith Date: 04/01/2009			