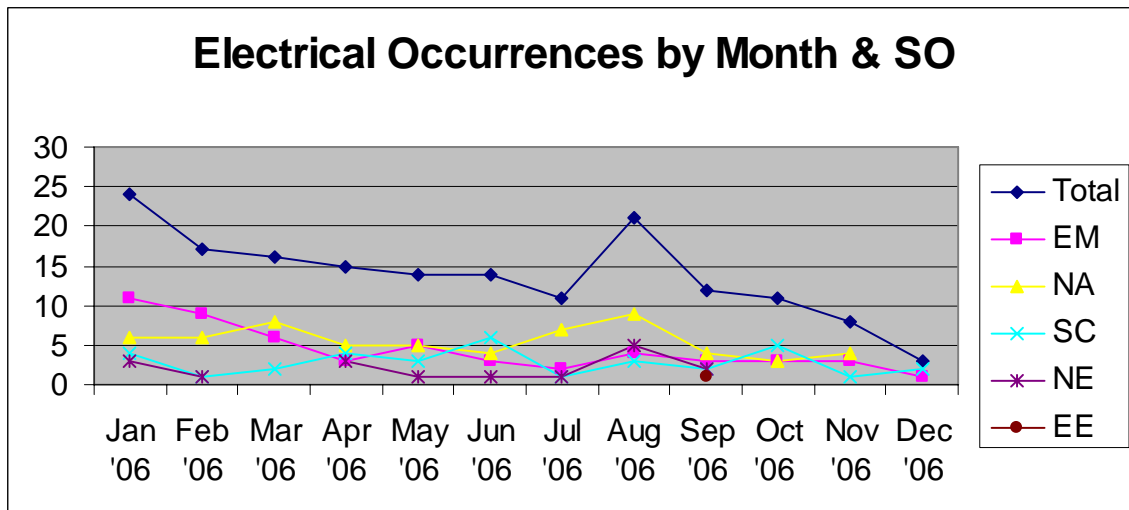


# ELECTRICAL SAFETY OCCURRENCES IN CY 2006

## Rate of Electrical Safety Occurrences

### Trends:

- *DOE facilities experienced 166 electrical safety occurrences in CY 2006 (see Appendices I and II for details). This is near the 165 experienced in 2005, slightly more than the 149 in 2004, and significantly more than the yearly average of 106.5 reported for 2002-2003.*
- *The monthly rate of occurrences generally decreased during 2006 (see chart below). However, there were 16 electrical safety occurrences in January 2007, so the downward trend has not continued since.*



- *There were 26 electrical shocks reported in 2006. This is less than the 39 reported in 2005, near the 25 in 2004 and more than the yearly average of 17.5 per year experienced in 2002-2003.*
- *There were 3 burns from electrical occurrences in 2006, which was less than the 5 experienced in 2005, and the same as the yearly rate for 2004 and 2002-2003. The three burns in 2006 were 1<sup>st</sup> and 2<sup>nd</sup> degree burns resulting from arc flashes. One initiated a Type B Accident Investigation.*
- *41% of the electrical safety occurrences in 2006 were categorized as “Near Miss (Electrical)” by HQ Keywords in ORPS. (In contrast, 68% of the 2005 electrical safety occurrences and 77% of the 2004 electrical safety occurrences were categorized as near misses. The lower percentage of near misses in 2007 is more likely due to a shift in philosophy towards near miss categorization rather than changes in the nature of the occurrences.)*
- *Slightly more than half of the 2006 electrical safety occurrences (i.e., 84 of 166) involved non-electrical workers.*
- *39% of the electrical safety occurrences in 2006 involved subcontractor. (In contrast, only 21% of all 2006 ORPS occurrences involved subcontractors.)*

## Work Activities Associated with 2006 Electrical Safety Occurrences

### Trends:

- *23% of the 2006 electrical safety occurrences involved lockout/tagout issues.*
- *10% involved cutting or drilling activities.*
- *8% involved vehicles striking electrical power lines.*
- *7% involved excavation.*
- *The following is a breakdown of work activities associated with the 2006 electrical safety occurrences, as defined in the ORPS reports:*

<b>ORPS Activity Category</b>	<b>number</b>
Normal Operations (other than Activities listed below)	62
Maintenance	44
Construction	34
Facility Decontamination/Decommissioning	8
Research	8
Facility/System/Equipment Testing	5
Startup	2
Inspection/Monitoring	2
Transportation Onsite	1
<b>Total</b>	<b>166</b>

## Causes of Electrical Safety Occurrences

### Trends:

- *ORPS reports identified a wide variety of apparent causes for electrical safety occurrences in 2006.*
- *Deficiencies in management policy guidance, job scoping, check of work, and communication were the four most commonly identified apparent causes for the 2006 electrical safety occurrences. These were also the top four apparent causes for the 2004 and 2005 electrical safety occurrences.*
- *56% of the 2006 electrical safety occurrences had “Conduct of Operations” assigned in the HQ Keywords.*
- *“Analyze the hazards,” “develop and implement hazard controls,” and “perform work within controls” were the leading ISM Core Functions cited by ORPS report writers for electrical safety occurrences.*

<b>ORPS Code</b>	<b>Apparent Cause Description<sup>1</sup></b>	<b>CY06 No.</b>
A4B1C01	Management policy guidance / expectations not well-defined, understood or enforced	32
A4B3C08	Job scoping did not identify special circumstances and/or conditions	28
A3B1C01	Check of work was LTA	14
A5B4C01	Communication between work groups LTA	14
A4B3C11	Inadequate work package preparation	12
A5B2C08	Incomplete / situation not covered	12
A3B1C03	Incorrect performance due to mental lapse	10
A3B2C05	Situation incorrectly identified or represented results in wrong rule used	10
A4B3C09	Work planning not coordinated with all departments involved in task	10
A4B5C04	Risks / consequences associated with change not adequately reviewed / assessed	10
A3B3C05	Incorrect assumption that a correlation exists between two or more facts	9
A3B1C06	Wrong action selected based on similarity with other actions	8
A3B3C03	Individual justified action by focusing on biased evidence	8
A3B3C01	Attention was given to wrong issues	7
A3B3C06	Individual underestimated the problem by using past events as basis	7
A4B1C03	Management direction created insufficient awareness of the impact of actions on safety / reliability	7
A4B1C04	Management follow-up or monitoring of activities did not identify problems	7
A1B5C02	Physical environment LTA	6
A2B6C01	Defective or failed part	6
A3B1C04	Infrequently performed steps are performed incorrectly	6
A3B2C02	Signs to stop were ignored and step performed incorrectly	6
A4B1C07	Responsibility of personnel not well defined or personnel not held accountable	6
A4B3C06	Planning not coordinated with inputs from walkdowns/task analysis	6
A4B4C02	Progress/status of task not adequately tracked	6
A4B4C03	Appropriate level of in-task supervision not determined prior to task	6
A6B1C02	Training requirements not identified	6
	(87 other causal "C nodes" identified, in quantities of 1 to 5.)	

1. The distribution of apparent causes in this table does not cover all of the electrical occurrences in 2006. Thirty four of the 166 electrical safety occurrences were reported as Significance Category 4 and thus did not require a causal analysis. Because this analysis was made in early February 2007, there may have been a few occurrences in late 2006 that had not completed their causal analyses, and so their apparent causes are not included in the table above.

<b>ORPS Code</b>	<b>ORPS “HQ Keyword” Description</b>	<b>CY06 No.</b>
01A	Conduct of Operations (miscellaneous)	93
08H	Safety Compliance	88
12C	Electrical Safety	87
07D	Electrical Wiring	77
14E	Work Process	70
08J	Near Miss (Electrical)	68
01M	Inadequate Job Planning (Electrical)	67
11G	Subcontractor	59
12K	Near Miss (Could have been a serious injury or fatality)	55
01Q	Personnel error	47
01B	Configuration Management/Control	41
01R	Management issues	40
01K	Lockout/Tagout (Electrical)	39
01P	Communication	38
13E	Facility Call Sheet	31
08A	Electrical Shock	26
14D	Documents and Records	26
08F	Industrial Operations	25
01F	Training	23
01N	Inadequate Job Planning (Other)	21
01O	Maintenance	21
12I	Lockout/Tagout (Electrical or Mechanical)	20
01G	Inadequate Procedure	19
07C	Power Outage	19
01E	Operations Procedures	15
07E	Electrical Equipment	10
14B	Training and Qualification	10
	(33 other keyword categories with counts between 1 and 9)	

<b>ISM Core Functions Cited for Electrical Occurrences</b>	<b>CY06 No.</b>
Define the Scope of Work	21
Analyze the Hazards	80
Develop and Implement Hazard Controls	67
Perform Work Within Controls	67
Provide Feedback and Continuous Improvement	19
N/A (Not applicable to ISM Core Functions as determined by management review.)	8

**Distribution of Electrical Safety Occurrences by Secretarial Offices**

**Trends:**

- *In 2006, NA had the largest percentage of electrical safety occurrences of all DOE Secretarial Offices. (In contrast, EM had the largest percentage electrical safety occurrences in 2002 through 2005.)*
- *NE had a significantly larger percentage of electrical safety occurrences in 2006 than it had in 2002 through 2005.*

Sec Office	No.CY06	% CY06	% CY05	% CY04	% CY02 & 03 <sup>1</sup>
NA	61	37%	42%	31%	28%
EM	53	32%	42%	51%	46%
SC	34	20%	13%	14%	18%
NE	17	10%	2%	1%	3%
EE	1	<1%	0%	0%	0%
RW	0	0%	<1%	2%	4%
FE	0	0%	0%	<1%	1%
total	166	100%	100%	100%	100%

1. Percentages based on distribution in slide from [Electrical Safety Occurrences - Overview of Nature, Causes and Frequency, July 27, 2004.](#)

**Distribution of Electrical Safety Occurrences by Operations, Field & Site Offices**

**Trends:**

- *In 2006, electrical safety occurrences happened at most DOE Operations and Field Offices.*
- *Facilities under the Idaho Operations Office experienced the largest number of electrical safety occurrences in CY 2006.*

Operations, Field or Site Office with Electrical Occurrences	No. CY06
Idaho Operations	26
Los Alamos Site Office	19
Richland Operations	15
Sandia Site Office	13
Livermore Site Office	9
River Protection Operations	8
Stanford Site Office	8
Oak Ridge Operations Office	7
Savannah River Operations	7
Brookhaven Site Office	7
Pantex Site Office	7
Y12 Site Office	7
Argonne Site Office	6
Berkeley Site Office	5

Ohio Operations (includes West Valley & Fernald)	4
Pacific Northwest Site Office	4
Kansas City Site Office	3
Carlsbad Field Office	2
NNSA Service Center	2
Fermi Site Office	2
Portsmouth Paducah Project Office	2
Golden Field Office	1
Nevada Site Office	1
Savannah River Site Office	1
Total	166

### **Summary and Conclusions**

The Department-wide number of electrical safety occurrences in CY 2006 was near the same as the number experienced in CY 2005. The monthly totals for CY 2006 showed an encouraging decreasing trend. However, the monthly total for January 2007 rose significantly and so the trend has not continued.

The causes for electrical safety occurrences appear to be the same as identified in several analyses performed in the last few years. (See the reports listed on the HSS Electrical Safety website: <http://www.hss.energy.gov/CSA/Analysis/electrical.html>.) A Special Operations Report (SOR) issued in August 2006 attempted to solicit more detailed causal information but, as of early February 2007, the SOR findings had not been finalized and issued by the Undersecretaries' offices.

While the SOR addresses the operations and training of electrical workers, it is important to note that typically half of the electrical safety occurrences involve non-electrical workers. Online training for non-electrical workers is available at: [http://www.efcog.org/wg/ism\\_estg/elecsafetytng.htm](http://www.efcog.org/wg/ism_estg/elecsafetytng.htm).

## **APPENDIX I – Identification of the 166 electrical safety occurrences in CY 2006.**

ORPS was searched using the following search criteria to “screen-in” electrical safety occurrences:

Discovery dates (not notification dates) were set for dates in 2006. The following ORPS “HQ keywords” were also keyed in the searches.

01K – Lockout/Tagout Electrical  
01M - Inadequate Job Planning (Electrical)  
08A – Electrical Shock  
08J – Near Miss (Electrical)  
12C – Electrical Safety

The initial search yielded 179 occurrences. Each occurrence was next read to see it really involved electrical hazard hazards. “Recurring Occurrences” were discounted to avoid double counting. The following thirteen 2006 occurrences were culled out for the reasons so cited:

1. EM-ID--CWI-LANDLORD-2006-0007, “Deviation from Work Control Procedure” - LOTO is to prevent alarms, voltage was below 28 VAC.
2. EM-ID--CWI-PHASEOUT-2006-0001, “Lock out Tagout Violation on Crane” - LOTO was for crane movement, not electrical hazard.
3. EM-RL--PHMC-GPP-2006-0004, “Incorrect Isolation Information” - LOTO was for a 24V circuit.
4. EM-RL--PHMC-GENERAL-2006-0002, “Repetitive Issue: Hazardous Energy Control/Lockout-Tagout Process” – Recurring Occurrence
5. EM-RL--PHMC-SOLIDWASTE-2006-0009, “Management Concern Related to Compliance with Work Package Requirements” - Hazard was from rotating equipment, not electrical.
6. EM-RL--WCH-GENAREAS-2006-0005, “Recurring Events Associated with Work Control Issues Resulting in Electrical Hazards” - Recurring Occurrence
7. EM-RP--BNRP-RPPWTP-2006-0011, “Subcontractor Violates WTP Procedure” - LOTO violations was for HVAC ventilation, not electrical hazard
8. EM-SR--WSRC-FCAN-2006-0003, “Severed Antenna Tower Ground Cable (U)” - Hazard from lightning strikes, not conventional electrical hazard.
9. NA--LASO-LANL-TARGETFAB-2006-0001, “Failure to follow equipment postings results in confined space violation” - Hazard was confined space, not electrical.
10. NA--PS-BWXP-PANTEX-2006-0051, “Failure to Adhere to BWXT Subcontractor LO/TO Procedures” - LOTO violation was for HVAC ventilation, not electrical hazard.
11. NA--SS-SNL-NMSITE-2006-0004, “Recurring Occurrence Reports Associated with Performance Analysis of Cause Code A4B5C04” – Recurring Occurrence
12. NA--SS-SNL-SNLCORP-2006-0001, “Hazardous Energy Recurring Occurrence” – Recurring Occurrence
13. SC--PSO-PPPL-PPPL-2006-0002, “Lockout/Tagout Violation” - Heat hazard, not electrical.

The screening and culling above yielded the 166 electrical safety occurrences for 2006 that were considered in this analysis.

## APPENDIX II – List of 166 electrical safety occurrences in 2006.

ORPS Report Number	Subject/Title
1 EE-GO--NREL-NREL-2006-0008	Roofing screws penetrate data and electrical conduits
2 EM--LSO-ETEC-GENL-2006-0003	Forklift Damages Electrical Conduit
3 EM--PPPO-PRS-PGDPENVRES-2006-0017	Exterior Bracket Installation Results in Power Interruption in Office Trailer
4 EM--PPPO-UDS-PORTDUCON-2006-0001	Contractor failed to follow requirements of Activity Hazards Analysis
5 EM-CAFO--WTS-WIPP-2006-0004	Worker Received Electrical Shock
6 EM-CAFO--WTS-WIPP-2006-0006	Worker Discovers Energized Wire
7 EM-ID--BBWI-AMWTF-2006-0001	480V Cable Entangled in Snow Blower Blades during Snow Removal Activity Outside WMF-636
8 EM-ID--BBWI-AMWTF-2006-0002	Lighting Panel Damaged During Snow Removal Activities Outside WMF-1604
9 EM-ID--BBWI-AMWTF-2006-0010	Worn Insulation On Heat Trace Terminations Creates Potential Electrical Shock Hazard
10 EM-ID--BBWI-AMWTF-2006-0013	LockOut/Tagout of Incorrect Isolation Point
11 EM-ID--CWI-BIC-2006-0002	Damaged 120 V power cord at TRA-644
12 EM-ID--CWI-FUELCSTR-2006-0002	Electrician Fails to Lockout 110 Volt Energy Sources During Repair Work
13 EM-ID--CWI-FUELCSTR-2006-0018	Work Performed Without Using Flash Calculations Identified in Work Order
14 EM-ID--CWI-LANDLORD-2006-0014	Oven Malfunction Causes Cafeteria Worker to Receive an Electric Shock
15 EM-ID--CWI-RWMC-2006-0001	Snow Removal Equipment Ran Off Road
16 EM-ID--CWI-RWMC-2006-0004	Damaged Electrical Cord During Ice/Snow Removal Activities
17 EM-ID--CWI-TAN-2006-0001	Electrical Cord Severed While Performing Snow Removal
18 EM-OH-FCP-FFI-FEMP-2006-0003	Pipefitter Inadvertently Cuts Live 120-v Double-Insulated Grinder Power Cord
19 EM-OH-FCP-FFI-FEMP-2006-0027	Heavy Equipment Operator Strikes Overhead 13.2 KV Lines while Operating a CAT 375 Excavator
20 EM-OH-WVDP-WVNS-CF-2006-0001	Cut Heat Trace Wire During Removal of Gutter Downspout
21 EM-OH-WVDP-WVNS-UR-2006-0001	Incorrect Conduit Cut during Boiler Demolition
22 EM-ORO--BJC-K25ENVRES-2006-0005	Energized 120 Volt AC Line Cut in K-1401
23 EM-ORO--BJC-X10ENVRES-2006-0003	Lockout/Tagout Violation - Trench 7, ORNL
24 EM-ORO--FWEC-TRUWPFAC-2006-0001	Failure to follow procedure resulted in potential for unsafe work condition
25 EM-RL--PHMC-CSB-2006-0003	Energized Heat Trace Found During Routine Preventative Maintenance
26 EM-RL--PHMC-FFTF-2006-0001	120 volt power found in Motor Control Center EF-2 Breaker Cubicle after safe conditions check had been performed.
27 EM-RL--PHMC-PFP-2006-0003	120-vac circuit discovered energized after the identified breaker was shut off at the lighting panel
28 EM-RL--PHMC-PFP-2006-0021	Extraneous electrical extension cord damaged during demolition activities resulting in a tripped GFCI
29 EM-RL--PHMC-PFP-2006-0024	Performance of High Mast Lighting Drilling prior to hanging Lock & Tag as required by procedure



30 EM-RL--PHMC-SNF-2006-0002	Failure to Follow Prescribed Hazardous Energy Control Process at KW Basin
31 EM-RL--PHMC-SNF-2006-0003	Failure to Follow Prescribed Hazardous Energy Control Process at KE Basin
32 EM-RL--PHMC-SNF-2006-0007	Hose-In-Hose Lock and Tag Issue
33 EM-RL--PHMC-SNF-2006-0009	Exposure to Static Electricity While Working Within the Vicinity of High Voltage Power Lines
34 EM-RL--PHMC-SOLIDWASTE-2006-0008	Electrical Cord Pulled Loose from Female Cord Cap of Handheld Portable Equipment
35 EM-RL--PHMC-WESF-2006-0002	Energized Neutral Wire Found During Replacement of Light Ballast
36 EM-RL--WCH-DND-2006-0006	Pipefitter Receives Electric Shock Through Pipe Cut By Portaband Saw
37 EM-RL--WCH-GENAREAS-2006-0003	Electrical Wires Encountered While Digging in the 331 LSL Drain Field
38 EM-RL--WCH-REMACT-2006-0007	Road Grader Disconnects Underground Electrical Cable from Junction Box at 100-N
39 EM-RL--WCH-RISS-2006-0002	Worker Cuts Into Live Electrical Wire During Transite Panel Removal at 105-N Building
40 EM-RP--BNRP-RPPWTP-2006-0002	Configuration Management Discovery
41 EM-RP--BNRP-RPPWTP-2006-0005	Electrical Arc Between Welding Lead and Welding Machine
42 EM-RP--BNRP-RPPWTP-2006-0014	Vendor Violates WTP Lock Out/Tag Out Procedure
43 EM-RP--BNRP-RPPWTP-2006-0019	Tractor/Truck Backs Trailer Over Above Ground (live 480-V) Conduit
44 EM-RP--BNRP-RPPWTP-2006-0026	240-Volt Electrical Line Severed by Descending Scissor Lift
45 EM-RP--CHG-ANALLAB-2006-0002	Forklift Driver Pulls Electrical Junction Box And Conduit From Wall
46 EM-RP--CHG-TANKFARM-2006-0003	Bare Wire In An Existing Excavation In AN Farm Discovered
47 EM-RP--CHG-TANKFARM-2006-0032	Energized Wire Found While Performing Safe To Work Check Of Field Electrical Skid
48 EM-SR--GOSR-GOSR-2006-0002	Temporary Un-energized Power Pole Removal Incident at SRS
49 EM-SR--WSRC-ETP-2006-0001	Unexpected Voltage Found on Plant Air Compressor #1
50 EM-SR--WSRC-HTANK-2006-0001	Discovery of Inadequate L/T Boundary
51 EM-SR--WSRC-HTANK-2006-0010	8Q32 Single Point Lockout (SPLT) Program Nonconformance
52 EM-SR--WSRC-LTA-2006-0004	Voltage Found on Common Neutral Lead after L/T was Established
53 EM-SR--WSRC-SW&I-2006-0003	Employee Receives Electrostatic Discharge
54 EM-SR--WSRC-WVIT-2006-0003	704-S Cafeteria Coffee Maker Electrical Shock
55 NA---GOAL-NNSASC-2006-0001	Failure to Lockout/Tagout by Contractor
56 NA---GOAL-NNSASC-2006-0002	Near Miss with Energized Electrical Circuit
57 NA--KCSO-AS-FMTNM-2006-0002	Discovery of Energized Neutral Wire During Repair of Light Fixture
58 NA--KCSO-AS-KCP-2006-0001	120 Volts AC Electrical Plug Near Miss
59 NA--KCSO-AS-KCP-2006-0006	Damaged Overhead Communications Cable
60 NA--LASO-LANL-ACCCOMPLEX-2006-0001	Workers Discover Uncontrolled Hazardous Energy While Penetrating A Concrete Wall
61 NA--LASO-LANL-ACCCOMPLEX-2006-0006	Unauthorized Electrical Work Results in Near Miss to Injury

62 NA--LASO-LANL-ADOADMIN-2006-0003	Inadequate Work Verification Results in an Electrical Arc Flash During Switching Process
63 NA--LASO-LANL-ADOADMIN-2006-0006	Lockout/Tagout Violation Identified on Construction Project
64 NA--LASO-LANL-BOP-2006-0001	Contract Worker hits 480V Circuit with Jackhammer
65 NA--LASO-LANL-BOP-2006-0003	Contract Worker hits 120V Circuit with Jackhammer
66 NA--LASO-LANL-BOP-2006-0006	Crane Contact with 480 Volt Buss Bar
67 NA--LASO-LANL-ESHSUPT-2006-0001	Forklift Mast Contacts Overhead Power Line During Transport
68 NA--LASO-LANL-FIRNGHELAB-2006-0001	Electric shock with no injury from contacting live wires inside control chassis
69 NA--LASO-LANL-FIRNGHELAB-2006-0003	Damaged plug strip leads to spark and unexpected discovery of hazardous energy.
70 NA--LASO-LANL-FIRNGHELAB-2006-0004	Worker strikes 120v circuit within modular furniture power pole
71 NA--LASO-LANL-FIRNGHELAB-2006-0005	Arc flash from contacting 480V power within motor control center
72 NA--LASO-LANL-HEMACHPRES-2006-0004	Management Concern; Change of Scope Introduced Unevaluated Hazards
73 NA--LASO-LANL-LANL-2006-0002	Buildings Flooded Due to Excess Rain
74 NA--LASO-LANL-MATSCCMPLX-2006-0001	Worker Cuts Energized Electrical Wire
75 NA--LASO-LANL-PHYSTECH-2006-0007	Upright Vehicle Antenna Mast Snags and Severs Overhead Communication Line During Transport
76 NA--LASO-LANL-PHYSTECH-2006-0008	Unplanned Power Outage Occurs Due to Inadvertent Tripping of Circuit Breaker in the Electrical Distribution System
77 NA--LASO-LANL-TA55-2006-0008	Management Concern: Combination Fluorescent Light and Emergency Light Failed When Test Button was Pushed After Tube Replacement
78 NA--LASO-LANL-TA55-2006-0023	Employee Cut Electrical Cord While the Cord was Plugged Into a 120 Volt Wall Outlet
79 NA--LSO-LLNL-LLNL-2006-0005	Improper Use of a Crimping tool for Electrical Wiring Work
80 NA--LSO-LLNL-LLNL-2006-0008	Building 131 Elevator Replacement - 110V Electrical Arc
81 NA--LSO-LLNL-LLNL-2006-0010	Off-site Warehouse Exit Sign Installation - Electrical Arc
82 NA--LSO-LLNL-LLNL-2006-0017	Near Miss to Electrical Shock
83 NA--LSO-LLNL-LLNL-2006-0033	Electrical Panel LOTO - Management Concern in Building 451
84 NA--LSO-LLNL-LLNL-2006-0038	Electric Outlet with Reverse Polarity and Disconnected Ground Wire (110v) Results in Mild Shock
85 NA--LSO-LLNL-LLNL-2006-0041	Electrical Line Severed (480v) During Building 490 Re-Roof Project
86 NA--LSO-LLNL-LLNL-2006-0050	Electrical Arc Inside Wire-Way Gutter Outside of Building 162
87 NA--NVSO-NST-NTS-2006-0003	Energized Underground Power Lines Cut By Grader
88 NA--PS-BWXP-PANTEX-2006-0012	Cut Electrical Wire at Extraction Well Field
89 NA--PS-BWXP-PANTEX-2006-0020	Failure to Control Known Hazardous Energy
90 NA--PS-BWXP-PANTEX-2006-0030	12-5C Bridge Crane Electrical Short
91 NA--PS-BWXP-PANTEX-2006-0056	Electric Arc at an Abandoned Conduit Containing Energized 208 Volt Wiring
92 NA--PS-BWXP-PANTEX-2006-0073	Unexpected Discovery of Electrical Energy (83 Volts)
93 NA--PS-BWXP-PANTEX-2006-0075	Cut 110 Volt, Three Conductor Wiring, Zone 4 Magazine

94 NA--PS-BWXP-PANTEX-2006-0113	Release of Hazardous Energy Due to Site Condition
95 NA--SRSO-WSRC-TRIT-2006-0001	Incorrect Performance of UPS #2 Annual Maintenance
96 NA--SS-SNL-1000-2006-0017	Contract Employee Received Shock from Plasma Torch Cutter at the 6710 Welding Shop
97 NA--SS-SNL-12000-2006-0001	Unexpected Discovery of Exposed Live Electrical Circuit at Manzano Non-Nuclear Storage Bunker
98 NA--SS-SNL-12000-2006-0002	Unexpected Discovery of an Uncontrolled Hazardous Energy Source on Air Handler #2 at MBC-H that Damaged Wiring and Components
99 NA--SS-SNL-2000-2006-0003	Defeat of Electrical Interlock
100 NA--SS-SNL-2000-2006-0006	Drilling into Dock Impacted Energized Electrical Wire at WETL, Pantex
101 NA--SS-SNL-2000-2006-0007	Metal Oxide Varistor (MOV) Accelerated Life Tester Electrical Shock in Bldg. 878
102 NA--SS-SNL-3000-2006-0002	Office Worker Receives Shock from Task Light Fixture
103 NA--SS-SNL-6000-2006-0001	Worker Receives a Minor Shock While Testing a Data Acquisition System
104 NA--SS-SNL-CASITE-2006-0002	Unexpected Discovery of an Uncontrolled Electrical Energy Source
105 NA--SS-SNL-CASITE-2006-0004	Building 912 Photo Studio Electrical Shock
106 NA--SS-SNL-NMFAC-2006-0001	Subcontract Electrician Performs Unauthorized Energized Work on 110-Volt #12 Conductors
107 NA--SS-SNL-NMFAC-2006-0002	Asbestos Abatement Worker Receives Shock while Vacuuming in 9990 Containment Area
108 NA--SS-SNL-NMFAC-2006-0008	Electrical Subcontractor Performs Energized Electrical Work in Building 890 Without an Energized Work Permit
109 NA--YSO-BWXT-Y12CM-2006-0002	Subcontractor Employee Shock
110 NA--YSO-BWXT-Y12CM-2006-0004	Cut Conduit at 9996
111 NA--YSO-BWXT-Y12NUCLEAR-2006-0003	Discovery of an uncontrolled hazardous energy source - cover plate missing on an electrical junction box on the Kathabar 3360 control panel.
112 NA--YSO-BWXT-Y12NUCLEAR-2006-0022	Loss of Power to Emergency Notification System Horns and Lights
113 NA--YSO-BWXT-Y12SITE-2006-0001	Dump Truck Snaps Overhead Communication Line Which Contacts Adjacent Power Line
114 NA--YSO-BWXT-Y12SITE-2006-0004	Mear Miss - Electrical Shock to Utilities Operator's Hand
115 NA--YSO-BWXT-Y12SITE-2006-0005	LO/TO Concern Associated with the Compressed Air Upgrade Project (CAUP)
116 NE-ID--BEA-AL-2006-0001	Lockout/Tagout Management Concern
117 NE-ID--BEA-ATR-2006-0001	Near Miss - Snow Removal Activities Snag Energized Temporary 480V Power Cord
118 NE-ID--BEA-ATR-2006-0003	Work Performed Under Lockout/Tagout Without Zero Energy Check Verification
119 NE-ID--BEA-ATR-2006-0011	Discovery of Uncontrolled Hazardous Energy Source
120 NE-ID--BEA-ATR-2006-0013	Energy Discovered in Motor Control Center After Lockout/Tagout
121 NE-ID--BEA-ATR-2006-0017	Work Performed on Sonoxide System Electrical Panel Prior to Zero Energy Checks Being Performed

122 NE-ID--BEA-CFA-2006-0001	Underground Electrical Conduit Severed by Subcontractor - INL
123 NE-ID--BEA-FCF-2006-0002	Inadequate Posting for Exposed Electrical Hazard
124 NE-ID--BEA-INLLABS-2006-0002	Personnel Shock at CFA-625 Laboratory 120
125 NE-ID--BEA-MFC-2006-0004	Radioactive Liquid Waste Treatment Facility Lockout/Tagout Administrative Errors - MFC
126 NE-ID--BEA-MFC-2006-0006	Workers Exposed to 120 Volt Electrical
127 NE-ID--BEA-RTC-2006-0006	Energized 2400 V Power Cable Breached During Excavation
128 NE-ID--BEA-SMC-2006-0001	Snow removal activities snag 120 volt power cord
129 NE-ID--BEA-STC-2006-0003	Worker Receives Shock from Light Switch - STC - INL
130 NE-ID--BEA-STC-2006-0004	Tripped Ground Fault - WCB - STC
131 NE-ORO--ORNL-X10HFIR-2006-0006	Phase Rotation Testing - Near Miss
132 NE-ORO--ORNL-X10HFIR-2006-0010	Unauthorized Facility Modification Outside Work Control Process
133 SC--ASO-ANLE-ANLE-2006-0007	Unexpected Energized Shared Neutral Wires While Removing Light Fixture
134 SC--ASO-ANLE-ANLEAPS-2006-0004	Heat Tape Power Wire Unknowingly Energized While Unterminated and Shorts to Ground
135 SC--ASO-ANLE-ANLEAPS-2006-0005	Electrical Transformer Found Unexpectedly Energized After Precautionary LOTO
136 SC--ASO-ANLE-ANLEER-2006-0001	Improper implementation of lockout/tagout requirements for electrical energy
137 SC--ASO-ANLE-ANLEER-2006-0003	Noninjurious Electrical Hand Shock When Switching on Light Fixture Above Glovebox
138 SC--ASO-ANLE-ANLEIPNS-2006-0002	Improper Cord Causes Short Circuit in 110 Volt GFCI Wall Plug
139 SC--BHSO-BNL-AGS-2006-0002	400 Amp Electrical Switch Failure
140 SC--BHSO-BNL-AGS-2006-0003	Unsafe Protection Scheme for Electrical Hazard
141 SC--BHSO-BNL-BNL-2006-0001	Energized Conductor Discovered in Cut Conduit
142 SC--BHSO-BNL-BNL-2006-0009	Exposed Electrical Terminals in Legacy Installed Light Timer
143 SC--BHSO-BNL-BNL-2006-0014	Painter's spackling knife contacts abandoned live electrical wiring
144 SC--BHSO-BNL-BNL-2006-0020	Work on Energized Equipment by Vendor
145 SC--BHSO-BNL-NSLS-2006-0002	Unexpected Energized Cord Cut
146 SC--BSO-LBL-AFRD-2006-0001	Unexpected discovery of electrical current from heater
147 SC--BSO-LBL-ENG-2006-0001	Potential Heater Tape electrical shorting
148 SC--BSO-LBL-OPERATIONS-2006-0004	B55A LOTO violation
149 SC--BSO-LBL-OPERATIONS-2006-0006	Misidentified source of electrical power during precautionary
150 SC--BSO-LBL-OPERATIONS-2006-0007	Management Concern due to Penetration Permit Incidents
151 SC--FSO-FNAL-FERMILAB-2006-0009	Following procedures avoided injury during saw cutting operations
152 SC--FSO-FNAL-FERMILAB-2006-0010	Loose Ground Pin Causes Internal Fault of 250 VAC, 30 amp, 3 phase Connector
153 SC--PNSO-PNNL-PNNLBOPER-2006-0005	Management Concern Related to Hazardous Energy Control
154 SC--PNSO-PNNL-PNNLBOPER-2006-0007	Discovery of Unknown Energy Source and Near Miss to Reportable Injury
155 SC--PNSO-PNNL-PNNLBOPER-2006-	Failure to Follow Hazardous Energy Control at PDL-E

0010	
156 SC--PNSO-PNNL-PNNLBOPER-2006-0019	Management Concern Associated with Electrical Shock
157 SC--SSO-SU-SLAC-2006-0002	Carpenter's Screw Penetrates Romex Wire
158 SC--SSO-SU-SLAC-2006-0004	Working Without Applying Personal Locks andTags
159 SC--SSO-SU-SLAC-2006-0006	Subcontractor Cut Lighting Cable.
160 SC--SSO-SU-SLAC-2006-0007	Subcontractor Cut 110/208V AC Energized Electrical Lines
161 SC--SSO-SU-SLAC-2006-0008	Contractor Cuts Energized 110V Line
162 SC--SSO-SU-SLAC-2006-0009	110V Extension Cord Jacket Nick
163 SC--SSO-SU-SLAC-2006-0011	Equipment Electric Fan Shock
164 SC--SSO-SU-SLAC-2006-0012	Cutting of Energized Electrical Wire
165 SC-ORO--ORAU-ORISE-2006-0001	Exposed Live Electrical Wiring in SC-1 Annex Remodeling Project
166 SC-ORO--ORNL-X10SNS-2006-0001	Near-Miss: Subcontractor Electrician Accidentally Drills Into Energized 480-volt Cable