




Department of Energy

Washington, DC 20585

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MEMORANDUM FOR DISTRIBUTION

FROM:


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ENVIRONMENTAL MANAGEMENT

SUBJECT: Electrical Safety Performance Challenges and Goals

The Department of Energy (DOE) recently initiated a year-long program focused on improving electrical safety performance. Elements of this program include tracking and trending performance in electrical safety, developing plans to strive for improvement, a quarterly status report to the Deputy Secretary, and identifying sites that have excellent performance records and "Best Practices." The purpose of this memorandum is to direct the actions necessary to effectively implement the Deputy Secretary's program.

Attached are the results of a review of electrical safety events for the Office of Environmental Management (EM). The review notes that the activities most often engaged in during these events are the more common "landlord" functions rather than "deactivation and decommissioning" work. While it is encouraging that our programmatic work is not responsible for most of these events, as the largest landlord in DOE, our focus needs to include the more routine functions on site. Additionally, the review points to the "personnel error" as the largest causal factor.

I appreciate that the large variety in our programmatic activities creates different challenges in safely executing programmatic work and in safely managing and administering our sites. Accordingly, the approach taken to improve our performance in electrical safety needs to be tailored to the conditions at each site. The process I am directing below allows managers the flexibility to determine the causes of electrical events unique to each site and to develop specific plans targeting those problems.

I expect each field office to carry out the following actions:

- 1) Review performance data for electrical safety at each site.
- 2) Determine the underlying causes and activities that result in electrical safety issues.
- 3) Develop and approve an action plan to improve performance that is tailored to the unique conditions found at each site.



The review and approved action plans are due by September 30, 2004. If you have any questions, please call me at (202) 586-7709 or Patrice M. Bubar, Deputy Assistant Secretary for Integrated Safety Management and Operations Oversight, at (202) 586-5151.

Attachment

Distribution:

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**Electrical Safety Review of the
Environmental Management
Program**

**Deputy Assistant Secretary for
ISM and Operations Oversight**

EM-3.2

DOE Electrical Safety Program

- **On April 20, Deputy Secretary established new electrical safety goals.**
- **DOE will focus attention on electrical safety by:**
 - **May 2004 named "Electrical Safety Month"**
 - **Measure current performance**
 - **Metrics to track improvement**
 - **Identify best practices and performers**

EM Electrical Safety Status and Issues

- Initial EH review shows EM significantly above DOE average for electrical safety events.
- DOE improvement in electrical safety dependent on EM improvement
- EM electrical review investigates D&D vs. Landlord
- EM reviews cause codes
- EM reviews Site performance
- EM electrical safety improvement plan

Electrical Safety Data

- Using EH search methodologies (HQ Buzzwords)
- Timeframe CY 2002, CY 2003 and CY 2004 thru May 24

	2002	2003	2004
DOE ORPS	2114	1799	664
EM ORPS	1357 (64% of DOE)	1045 (58% of DOE)	361 (54% of DOE)
DOE Electrical	133	128	67
EM Electrical	73 (55% of DOE)	59 (46% of DOE)	29 (51% of DOE)
DOE Electrical D&D	18 (12% of DOE Electrical)	17 (10% of DOE Electrical)	11 (19% of DOE Electrical)
EM Electrical D&D	16 (21% of EM Electrical)	13 (22% of EM Electrical)	8 (28% of EM Electrical)

HQ Buzzwords:

Before 2330 ORPS re-design:

Lock out/Tagout Electrical (O1S)
 Inadequate Planning Electrical (O1U)
 Electrical Shock (O8B)
 Electrical Near Miss (O8M)

After 2003 ORPS re-design:

Lock out/Tagout Electrical (O1K)
 Inadequate Planning Electrical (O1M)
 Electrical Shock (O8A)
 Electrical Near Miss (O8J)

Impact of D&D on Electrical Safety

What is the impact of D&D on the EM Electrical safety Rate?

Look at the EM percentage of DOE Electrical Safety ORPS reports with and without D&D

	2002	2003	2004
With D&D	54.8%	46.1%	50.1%
Without D&D	49.6%	41.1%	45.6%

Conclusion:

EM has a high rate due to landlord activities.

The EM rate is not driven by D&D activities.

D&D is a significant factor (particularly at closure sites), but not dominant.

Remove D&D Activity coded reports from both EM and DOE electrical safety reports

Thus, for example, 2002

Total DOE Electrical 133

Total DOE D&D 16

Total DOE without D&D 117

Total EM Electrical 73

Total EM D&D 15

Total EM without D&D 58

EM percent of DOE Electrical Safety Reports

With D&D: $73/133= 54.8\%$

Without D&D $58/117=49.6\%$

EM Site Performance Data

	2002	2003	2004
EM	73	59	29
First	SR (18)	RL (13)	RFO (7)
Second	RFO (16)	SR (11)	SR (7)
Third	ID (10)	ID&OH (10)	RL (6)
Close	ORP (9) OH (8)		OH (4)

Conclusion:

SR and RL (non-closure sites) are high

Electrical Events By Direct Cause

	2002	2003	2004
Personnel Error	53	39	12
Management Error	9	14	19
Defective Part	5	8	1

Conclusion:

Personnel error drives our rates. Corrective actions need to focus on getting workers to do the job right.

Electrical Events By Activity

	2002	2003	2004
Normal OPS	27	15	10
Maintenance	18	13	3
D&D	15	13	8
Construction	11	13	6

Conclusion:

Landlord activities are the primary activity during electrical events

Electrical Shock Events

Data for 2002 thru May 24 2004.

DOE Electrical Shock	43
EM Electrical Shock	15
EM % of DOE	35%

During what activities did EM Shock events occur?

7 during D&D
5 during routine operations (maintenance, cleaning etc)

What were the causes?

4 Defective Equipment
5 Defective Installation
6 Other Poor Conduct of OPS (Personnel error, Management error, etc.)

How many involved LO/TO?

Only 3

How many electrical trades were shocked?

None. Maintenance, operations and custodial personnel only.

Conclusions

EM is the number one contributor to electrical safety events in DOE

But we are also the biggest contributor to ALL ORPS reports.

Is it because of D&D?

No!! Although a noticeable contribution, D&D is not the main contributor to the EM rate. Landlord related events contribute the most to shock events and all electrical events.

How does EM rate on shock events?

EM shock events are at a low rate. They occur during both D&D and routine operations.

What Next for EM

We have high rates because of landlord and D&D activities.

We need actions that address both factors.

Sites need to study what drives their rates and tailor their actions to those factors.