NE-ID--BEA-SMC-2011-0012 NOTIFICATION

Occurrence Report
After 2003 Redesign

Specific Manufacturing Capability

(Name of Facility)

Uranium Conversion/Processing and Handling

(Facility Function)

Idaho National Laboratory — Battelle Energy Alliance, LLC

(Site) (Contractor)

Name: Mike Park
Title: SMC Operations Manager **Telephone No.:** (208) 526-6665

(Facility Manager/Designee)

Name: GRIFFIN, KARL W
Title: STAFF SPECIALIST **Telephone No.:** (208) 526-4168

(Originator/Transmitter)

Name: Karl Griffin **Date:** 08/30/2011

(Authorized Classifier (AC))

1. Occurrence Report Number: NE-ID--BEA-SMC-2011-0012

Unexpected equipment status leads to contact with a Class IV laser beam

2. Report Type and Date: NOTIFICATION

	Date	Time
Notification:	08/31/2011	19:28 (ETZ)
Initial Update:		(ETZ)
Latest Update:		(ETZ)
Final:		(ETZ)

3. Significance Category: 2

4. Division or Project: SMC

5. Secretarial Office: NE - Nuclear Energy, Science and Technology

6. System, Bldg., or Equipment: Manufacturing Class IV Laser

7. UCNI?: No

8. Plant Area: TAN 629

9. Date and Time Discovered: 08/30/2011 11:05 (MTZ)

10. Date and Time Categorized: 08/30/2011 11:15 (MTZ)

11. DOE HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

12. Other Notifications:

Date	Time	Person Notified	Organization
08/30/2011	11:25 (MTZ)	James Geringer	DOE-ID
08/30/2011	11:45 (MTZ)	Jeff Shadley	DOE-ID

13. Subject or Title of Occurrence:

Unexpected equipment status leads to contact with a Class IV laser beam

---

14. 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.

---

15. Description of Occurrence:

During the performance of Work Order 80021212, which was preventative maintenance for a 2000 hour run time on a Class IV laser, an SMC electrician received second degree burns to the middle and ring fingers on his left hand.

The qualified electricians that were performing the preventative maintenance work order were in the process of aligning the mirrors on a Laser Optics Telescope when the event took place. In preparing to align the mirrors, the electricians selected the program parameters as instructed in the procedures. The electricians verified the settings within the program and proceeded to install a target by hand, into the required location to take a paper shot. This tests the alignment of the laser beam to ensure it is reflecting properly off the mirrors. To activate the invisible beam the technician then steps outside of the nominal hazards zone boundary and using both hands turns the key and pushes the button on the hand held pendant. When placing the target into place, the electrician left hand came into contact with an unexpected, unfocused energized 2500 watt beam and was burned. Further investigation is required to determine why the beam was energized.

After the critique an evaluation of the equipment was conducted to establish if the laser was in the correct mode and that the pendant was in the right position as stated by the maintenance personnel. The laser was found to be in the proper mode and the pendant was in the correct position. Further diagnostics are needed to determine cause and further corrective actions.

8/30/2011 Event Timeline
1105 – Notification to SMC Maintenance Manager of injury/event
1110 – Notification to SMC Deputy Operations Manager of Injury/event

1110 – Notification to SMC Operations Manager of injury/event
1110 – Notification to SMC Division Director
1115 – Categorized event as 2(c)1, Category 2 in accordance with LWP-9301, Event Investigation and Occurrence Reporting
1125 – DOE-ID SMC Facility Rep was notified
1145 – Notification to Nuclear Operations Deputy Laboratory Director was made by NFM/SMC Operations Manager
1145 – Notification to DOE-ID SMC Program Manager was made by SMC Division Director
1500 – Critique Began
1605 – Critique Ended
1645 – Walkdown of equipment and boundaries to determine events.

---

16. Is Subcontractor Involved? No

---

17. Operating Conditions of Facility at Time of Occurrence:

Routein Operation

---

18. Activity Category:

02 - Maintenance

---

19. Immediate Actions Taken and Results:

High power was immediately turned off by the maintanence Person In Charge (PIC).
Equipment was placed in safe configuration.
Management was informed and all required notifications were made. Scene was isolated to preserve the scene by roping off and posting the area. Employee was transported to CFA Medical.
SMC DOE-ID Fac Rep was notified at 1125 hrs.
All Maintenance activities were stopped for work on beam components for all lasers.

---

20. ISM:

1) Define the Scope of Work
2) Analyze the Hazards
3) Develop and Implement Hazard Controls
4) Perform Work Within Controls

---

21. Cause Code(s):

A5B2C08 - Communications Less Than Adequate (LTA); Written Communication Content LTA; Incomplete / situation not covered

---

22. Description of Cause:

Work order did not address the specific task being performed.

---

23. Evaluation (by Facility Manager/Designee):

The employee was taken to CFA medical for evaluation. That evaluation diagnosed a second degree burn to the middle and ring fingers of his left hand. CFA Medical applied burn ointment and a dressing and returned the employee to SMC There is a restriction to left hand use as tolerated. Keep wound dressing clean and dry. There was no equipment or facility damage.

---

24. Is Further Evaluation Required?: Yes

If YES - Before Further Operation? No

By whom? Maintenance Mgr.

By when?

---

25. Corrective Actions
Local Tracking System Name: ICAMS

---

26. Lessons Learned:

---

27. Similar Occurrence Report Numbers:

SC--SSO-SU-SLAC-2009-0021
EE-GO--NREL-NREL-2005-0001
NA--LASO-LANL-CHEMLASER-2004-0001

---

28. User-defined Field #1:

E100

29. User-defined Field #2:

---

30. HQ Keyword(s):

08C--OSHA Reportable/Industrial Hygiene - Industrial Hygiene Exposure
08D--OSHA Reportable/Industrial Hygiene - Injury
12H--EH Categories - Injuries Requiring Medical Treatment Other Than First Aid
13A--Management Concerns - HQ Significant (High-lighted for Management attention)
14L--Quality Assurance - No QA Deficiency

---

31. HQ Summary:

On August 30, 2011, during the performance of preventative maintenance for a 2,000 hour run time on a Class IV laser, a Specific Manufacturing Capability (SMC) electrician received second degree burns to the middle and ring fingers on his left hand. The qualified electricians were in the process of aligning the mirrors on a Laser Optics Telescope when the event took place. In preparing to align the mirrors, the electricians selected the program parameters, as instructed in the procedures. They verified the settings within the program and proceeded to install a target by hand into the required location to take a paper shot. This procedure tests the alignment of the laser beam to ensure it is reflecting properly off the mirrors. To activate the invisible beam a technician then steps outside of the nominal hazards zone boundary and,

using both hands, turns the key and pushes the button on the hand held pendant. When placing the target into place, the electrician's left hand came into contact with an unexpected, unfocused energized 2,500 watt beam and was burned. The high power was immediately turned off by the maintenance Person in Charge and the laser was placed in a safe configuration. The electrician was taken to Central Facilities Area medical and was treated for the burns to his fingers and was released to SMC with restrictions. Further investigation is required to determine why the beam was energized.

---

32. DOE Facility Representative Input:

---

33. DOE Program Manager Input: