NE-ID--BEA-SMC-2009-0002 FINAL

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: SPELLS, JIMMY L
Title: FACILITY SUPERVISOR **Telephone No.:** (208) 526-6012

(Facility Manager/Designee)

Name: EARL, SCOTT W
Title: **Telephone No.:** (208) 526-6540

(Originator/Transmitter)

Name: Karl Griffin **Date:** 04/13/2009

(Authorized Classifier (AC))

1. Occurrence Report Number: NE-ID--BEA-SMC-2009-0002

Building evacuation due to a small fire on a Class 4 industrial laser.

2. Report Type and Date: FINAL

	Date	Time
Notification:	03/26/2009	13:04 (ETZ)
Initial Update:	04/20/2009	09:58 (ETZ)
Latest Update:	04/20/2009	09:58 (ETZ)
Final:	04/20/2009	09:58 (ETZ)

3. Significance Category: 3

4. Division or Project: SMC

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

6. System, Bldg., or Equipment: Line 7 Laser

7. UCNI?: No

8. Plant Area: TAN-677

9. Date and Time Discovered: 03/24/2009 20:12 (MTZ)

10. Date and Time Categorized: 03/24/2009 20:12 (MTZ)

11. DOE HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

12. Other Notifications:

Date	Time	Person Notified	Organization
03/24/2009	20:12 (MTZ)	Michael Goriup	DOE-ID
03/24/2009	20:12 (MTZ)	Ron Novich	SMC
03/24/2009	20:12 (MTZ)	Stephen Dunn	BEA

13. Subject or Title of Occurrence:

Building evacuation due to a small fire on a Class 4 industrial laser.

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14. Reporting Criteria:

4B(4) - Any facility evacuation, not including a precautionary evacuation, in response to an actual event. If the event fell under another reporting criterion, then evacuation should be reported as well by noting multiple reporting criteria for the single occurrence.

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15. Description of Occurrence:

On 03/24/2009 a small fire started in some insulating material near the cutting head of a Class 4 industrial laser. The fire was quickly extinguished by the operations technicians using a handheld extinguisher. The fire department was notified and personnel evacuated the affected buildings.

Two TAN-677 production technicians at the Specific Manufacturing Capability (SMC) plant were operating the Line 7 Class 4 industrial laser cutting carbon steel. At approximately 1724 hours, the laser lost "standoff." Loss of standoff usually results in blowback of molten materials, sparking, or spatter. The primary technician immediately stopped the process. He then followed the procedure by using the laser control system to move the cutting head into a position where they could inspect it. The two technicians then observed flames in the vicinity of the laser head. The flame was described as the size of a small basketball in the vicinity of the laser head area and yellow in color without noticeable smoke. The one technician turned off the main power disconnect to the equipment while the other technician discharged a portion of an ABC dry chemical extinguisher at the flame. The flame went out in about 2 to 3 seconds with two short blasts of the extinguisher. The total time from first noticing the flame until extinguishment was less than one minute.

The technicians secured the oxygen assist gas to the laser and notified supervision. Their supervision notified the Fire Department by calling the emergency dispatch telephone number. The Fire Department logged the call at 1734 and arrived at TAN-677 at 1740. The Fire Department was briefed at the building entrance by the Shift Supervisor and two

Fire Department personnel entered the building to do an assessment. At 1743, they checked the laser head with a heat sensor gun and found the fire to be completely out with no hot spots. The Fire Department exited the area at 1749.

Concurrent with the Fire Department notification, the SMC guard station received notification of a fire and, in conformance to existing protocols, the guard made a plant-wide announcement that the Fire Department was responding to a fire in Building TAN 677; time of this announcement was approximately 1738. Workers in the TAN 629/677 building evacuated and full accountability was determined at approximately 1739.

On 03/25/2009 SMC Engineering conducted an investigation and found that the source of combustion appears to be a spark arresting curtain that had frayed. The curtain is designed to prevent sparks and spatter from being deposited on the lineal guides the laser head rides on in the vertical axis. The vendor was contacted and commented that this curtain is not mentioned in their preventative maintenance (PM) procedures but it would be a good idea to inspect and replace it as needed.

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16. Is Subcontractor Involved? No

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17. Operating Conditions of Facility at Time of Occurrence:

Normal Operations

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18. Activity Category:

03 - Normal Operations (other than Activities specifically listed in this Category)

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19. Immediate Actions Taken and Results:

Fire was extinguished by operators, Fire Department was called, equipment was made safe and secure, notifications were made, personal statements were gathered, critique was held, event was categorized, investigation of event and extent of conditions review conducted on similar equipment next morning.

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20. ISM:

6) N/A (Not applicable to ISM Core Functions as determined by management review.)

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21. Cause Code(s):

A2B6C04 - Equipment/ material problem; Defective, Failed or Contaminated; End of life failure

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22. Description of Cause:

The cause of this event has been determined to be frayed and or worn out spark arresting material. The material is intended to divert sparks from the laser head ways. The manufacturer's instructions for preventative maintenance do not include the need to inspect the spark arrestor material and replace if worn or frayed. When questioned, the manufacturer admitted they had heard of other cases where this material caught on fire.

The corrective action is to revise the Preventative Maintenance schedule to require inspection of this material on a regular basis and replace when damaged or worn.

23. Evaluation (by Facility Manager/Designee):

There was no significant impact to the plant or production schedules. No fire suppression system was activated, fire was not extinguished by Fire Department, and no facilty mode change was implemented in a nuclear facility. Facility was evacuated in response to an actual event.

24. Is Further Evaluation Required?: No

25. Corrective Actions
Local Tracking System Name: ICARE

1.	Modify the 2,000 hour PM for this equipment to include inspection of the spark arresting curtain for oil saturation, tears and frayed edges. Include inspection of the brushes that contact the spark arresting curtain on either side of the laser head for loss of bristles, damaged bristles or other signs of wear that would detract from their ability to protect the backside of the curtain from sparks, spatter, etc.	
	Target Completion Date: 05/30/2009	**Tracking ID:** ICARE #44018

26. Lessons Learned:

27. Similar Occurrence Report Numbers:

DP-ID--LITC-SMC-1995-0005
EM-RL--PNNL-PNNLNUCL-1994-0062

28. User-defined Field #1:

E120

29. User-defined Field #2:

30. HQ Keyword(s):

01I--Inadequate Conduct of Operations - Safety System Actuation/Evacuation
01O--Inadequate Conduct of Operations - Inadequate Maintenance
03C--Fire Protection and Explosives Safety - Facility Fire
05F--Mechanical/Structural - Corrosion/Material Degradation/EOL
11L--Other - Supplier
12F--EH Categories - Fire Protection
14E--Quality Assurance - Work Process Deficiency
14G--Quality Assurance - Procurement Deficiency

31. HQ Summary:

On March 24, 2009, a small fire started in some insulating material near the cutting head of a Class 4 industrial laser. One

technician turned off the main power disconnect to the equipment while another technician discharged a portion of an ABC dry chemical extinguisher at the flame. The flame went out in about 2 to 3 seconds with two short blasts of the extinguisher. The fire department was notified and personnel evacuated the affected buildings. Investigators found that the source of combustion appears to be a spark arresting curtain that had frayed.

32. DOE Facility Representative Input:

33. DOE Program Manager Input:

34. Approvals:

Approved by: SPELLS, JIMMY L, Facility Manager/Designee
Date: 04/20/2009
Telephone No.: (208) 526-6012