

SC--FSO-FNAL-FERMILAB-2012-0005

Update Report

## Occurrence Report

FERMI National Accelerator Lab.(BOP)

(Name of Facility)

Laboratory - Research &amp; Development

Facility Function

FERMI National Accelerator Laboratory

FERMI National Accelerator Lab.

(Name of Laboratory, Site or Organization)

**Name:** Jack Anderson**Title:** Chief Operating Officer**Telephone No.:** (630) 840-3930

(Facility Manager/Designee)

**Name:** BAIRD, DAVID I.**Title:** ESH SPECIALIST**Telephone No.:** (630) 840-3945

(Originator/Transmitter)

**Name:****Date:**

(Authorized Classifier(AC))

**1. Occurrence Report Number:** SC--FSO-FNAL-FERMILAB-2012-0005

NOvA: Block Pivoter Winch Cable Break

**2. Report Type and Date:** Update Report

	<b>Date</b>	<b>Time (MTZ)</b>
<b>Notification:</b>	12/20/2012	10:33
<b>Initial Update:</b>		
<b>Latest Update:</b>		

**3. Significance Category:** 3**4. Division or Project:** NOvA at Ash River**5. Secretarial Office:** Science

**6. System, Bldg., or Equipment:** Ash River NOvA Building - Block Pivoter

**7. UCNI?:** No

**8. Plant Area:** Lower Pit Area

**9. Date and Time Discovered:** 12/06/2012 15:00 CTZ

**10. Date and Time Categorized:** 12/18/2012 10:40 CTZ

**11. DOE HQ OC Notification:**

**12. Other Notifications:**

Date	Time (CTZ)	Person	Organization
12/06/2012	15:00	Bill Miller	UMN
12/11/2012	16:33	Pepin Carolan	DOE-FSO
12/11/2012	16:33	Pier Oddone	FNAL DIR
12/11/2012	16:33	Stephen Webster	DOE-FSO

**13. Subject or Title of Occurrence:**

NOvA: Block Pivoter Winch Cable Break

**14. Reporting Criteria:**

10(2c) - 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 for that facility or other facilities or activities in the DOE complex.

The significance category assigned to the management concern should be based on an evaluation of the potential risks and impact on safe operations. (1 of 4 criteria - This is a SC 3 occurrence)

**15. Description of Occurrence:**

The NOvA project uses a large, project designed "Block Pivoter" that functions as an assembly table for building, rotating, and placing the 28 blocks that comprise the detector. Two hand-operated winches with wire rope are used to complete the last 3-4 inches of rotation to the vertical position. The two winches hold the table vertical until the block pivoter has moved away from the completed block. At that point the winches are operated to let the table pivot out to the 13 degree neutral position and released. Then the hydraulic cylinders can be used to move the table back to its horizontal orientation for the construction of another block.

After the placement of the fifth completed block, and backing of the pivoter away from the detector, two technicians were operating the winches to return the pivoter to the 13 degree neutral position. Each technician was operating a winch independently. The winches are located approximately 40 feet apart. As the technicians operated the winches the load was being carried by only one of the winches, which

was an operator error. As the loaded winch was being turned, the cable, which was crossed over on itself on the drum, unwound slightly, and allowed the table to pivot freely for a short distance. When the cable tightened, it was snapped by the momentum of the heavy table. The table returned to its neutral position, with no damage known, other than to the cable. No injuries occurred. The cable break was an unexpected, unwanted outcome that was the result of the operators not synchronizing the operation of the winches, and of not rewinding the cable tightly onto the drum after the previous block moving operation.

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**16. Is Subcontractor Involved? Yes**

**Name:** University of Minnesota

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**17. Operating Conditions of Facility at Time of Occurrence:**

Normal

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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:**

A stop work order has been issued until the investigation is complete. This includes the implementation of safe procedures and equipment and management's satisfaction with the corrective actions. A Human Performance Improvement style investigative report has been initialized. The damaged winches were taken out of service. An engineering note was written to understand the forces involved with the cable incident. A plan to review the engineering of the system, the procedures and training of the technicians operating the winches was created with lab management and the project to safely move forward.

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**20. ISM Code(s):**

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**21. Cause Code(s):**

**22. Description of Cause:**

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**23. Evaluation (by Facility Manager/Designee):**

Fermilab's Particle Physics Division will work together with the University of Minnesota to investigate and establish meaningful corrective actions and lessons learned.

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**24. Is Further Evaluation Required? Yes**

If YES - Before Further Operation? Yes

By whom? Fermilab and UMN

By when? 12/26/2012

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**25. Corrective Actions:**

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**26. Lessons Learned:**

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**27. Similar Occurrence Report Numbers:**

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**28. User Field #1:**

**29. User Field #2:**

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