

## Department of Energy

Washington, DC 20585

January 7, 2011

Mr. John J. Grossenbacher  
President and Laboratory Director  
Battelle Energy Alliance, LLC  
2525 North Fremont Avenue  
Idaho Falls, Idaho 83415-3695

NCO-2010-04

Dear Mr. Grossenbacher:

The Office of Health, Safety and Security's Office of Enforcement has completed its investigation into the facts and circumstances associated with the unplanned extremity exposure from an exposed cesium-137 source at the Idaho National Laboratory (INL) Health Physics Instrumentation Laboratory (HPIL). This occurrence was reported in Noncompliance Tracking System report NTS-ID--BEA-CFA-2010-0002, *Health Physics Instrumentation Laboratory Work Control Violations*. The investigation report, dated July 28, 2010, was provided to Battelle Energy Alliance, LLC (BEA) and addressed specific areas of potential noncompliance with U.S. Department of Energy (DOE) nuclear safety requirements established in 10 C.F.R. Part 830, *Nuclear Safety Management*, and 10 C.F.R. Part 835, *Occupational Radiation Protection*.

The Office of Enforcement's investigation identified several nuclear safety deficiencies associated with the unplanned extremity exposure. Deficiencies include procedural inadequacies, failure to follow procedures, and failure to post and control entry to high radiation areas. BEA has taken prompt corrective actions to address the deficiencies at HPIL. The operating procedures have been updated to include room entry instructions, the Gamma Beam Irradiator (GBI) room postings have been updated, and BEA has implemented several modifications to the GBI room that, collectively, should prevent recurrence. Furthermore, BEA senior management recognizes the significance of this event, and is committed to preparing personnel for dealing with events of this kind.

However, because BEA's extent-of-condition review was restricted to HPIL, DOE is concerned that BEA is not taking a sufficiently broad view of potential weaknesses in posting and controlling entry to high radiation areas at other INL facilities. DOE is also concerned that BEA quality processes were not followed during modifications of the GBI room. Finally, given management's responsibilities for employee performance and prevention of recurrence elsewhere, DOE agrees with BEA that supervisors need to improve their oversight of workers and lessons learned from the unplanned extremity exposure should be shared with other DOE facilities.

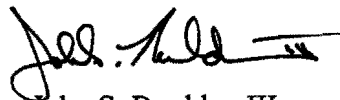


In accordance with 10 C.F.R. § 820.23, the Office of Enforcement has exercised its enforcement discretion to resolve these issues through a Consent Order. DOE reserves the right to initiate enforcement proceedings against BEA if it later becomes known that any of the facts or information provided to DOE regarding the described deficiencies were false or inaccurate in any material way. Further, if there is a recurrence of nuclear safety deficiencies similar to those identified above, or a failure to complete all corrective actions cited in the Consent Order in an effective and timely manner to prevent recurrence of the identified issues, the Office of Enforcement may decide to pursue additional enforcement action. The Office of Health, Safety and Security, the DOE Office of Nuclear Energy, and the DOE Idaho Operations Office will continue to closely monitor quality assurance related performance for this project.

Enclosed are two signed copies of the Consent Order. Please sign both, keep one for your records, and return the other copy to this office within one week from the date of receipt. By signing this Consent Order, BEA agrees to remit a sum of \$85,000, payable to the Treasurer of the United States, in accordance with the directions in section VIII of the enclosed Consent Order and to carry out the actions specified in section III of this Consent Order.

Should you have any questions, please contact me at (301) 903-2178, or your staff may contact Mr. Steven Simonson, Acting Director, Office of Price-Anderson Enforcement, at (301) 903-7707.

Sincerely,



John S. Boulden III  
Acting Director  
Office of Enforcement  
Office of Health, Safety and Security

Enclosure

cc: Richard Provencher, ID  
Alan Wagner, BEA

In the matter of ) Report No. NTS-ID-BEA-CFA-2010-0002  
)  
)  
Battelle Energy Alliance, LLC )  
)  
)  
) Consent Order NCO-2010-04

CONSENT ORDER INCORPORATING AGREEMENT BETWEEN  
U.S. DEPARTMENT OF ENERGY AND BATTELLE ENERGY ALLIANCE, LLC

I

Battelle Energy Alliance, LLC (BEA) is the management and operating contractor for the Department of Energy (DOE) Idaho National Laboratory (INL). BEA operates the INL Health Physics Instrumentation Laboratory (HPIL) at the Central Facilities Area (CFA) to calibrate radiation survey instruments.

II

On March 22, 2010, a radiation generating device (RGD) operator at HPIL entered the Gamma Beam Irradiator (GBI) room while a 1,250 curie cesium-137 radiation source was stuck in the exposed position, resulting in an unplanned extremity exposure to the RGD operator's right hand. The RGD operator exited the GBI room after his electronic dosimeter alarmed. The exposed source returned to the shielded position after approximately 30 minutes without external intervention.

BEA held a critique of the circumstances surrounding the event on March 23, 2010. A causal analysis, which included corrective actions, was completed on April 6, 2010. An extent-of-condition review was completed on April 29, 2010.

The Office of Enforcement's investigation identified several nuclear safety deficiencies associated with the unplanned extremity exposure. Deficiencies include procedural inadequacies, failure to follow procedures, and failure to post and control entry to high radiation areas.

III

BEA voluntarily reported potential noncompliances with DOE nuclear safety requirements to DOE via the Noncompliance Tracking System (NTS) (NTS-ID--BEA-CFA-2010-0002, *Health Physics Instrumentation Laboratory Work Control Violations*). BEA has taken prompt corrective actions to address the immediate deficiencies at the HPIL. However, BEA's extent-of-condition review was restricted to HPIL, and DOE is concerned that BEA is not taking a sufficiently broad view of potential weaknesses in posting and controlling entry to high radiation

areas at other INL facilities. DOE is also concerned that BEA quality processes were not followed during modifications of the GBI room. In recognition of management's responsibility for employee performance, BEA and DOE agree that supervisors need to improve their oversight of workers and that lessons learned from the unplanned extremity exposure should be shared with other DOE facilities. Based on these issues, by signing this Consent Order, BEA agrees to the following:

1. BEA did not examine work activities outside of HPIL for deficiencies in work processes, inadequate procedures, or deficiencies in posting and controlling access to high radiation areas. BEA needs to determine whether these deficiencies also exist in other INL facilities. *BEA will arrange for an independent party (outside of BEA) to determine: why the extent-of-condition review was not extended to INL facilities beyond HPIL; whether deficiencies in entry control and posting of high and very high radiation areas do in fact exist in INL facilities other than HPIL; and whether operating procedures for other RGDs (including accelerators) prohibit entry into exclusion areas while radiation is present and require checking of warning/alarm indicators before re-entry. After the assessment, BEA will enter all identified issues into the Issues and Corrective Action Management System (ICAMS) for corrective action development and tracking.*
2. DOE is concerned that BEA quality processes were not followed when the physical controls for the irradiation systems at HPIL were modified as part of the BEA corrective action process. The quality level determination for the irradiator interlocks was not undertaken until after the modifications were complete. The quality level determination inappropriately determined design control, material acquisition, service acquisition, maintenance and fabrication to be of low importance and risk to worker safety and health. As a result, an evaluation of the manufacturer's quality assurance program has not been conducted and the manufacturer is not on the BEA Quality Suppliers List. The quality level determination focused on the interlocks, rather than the broader physical controls, and did not explicitly identify which physical controls were intended to mitigate the radiological hazards. *BEA will enter the failure to perform a timely, adequate and comprehensive quality level determination for the HPIL irradiator interlocks into ICAMS for corrective action development and tracking. BEA will conduct an extent-of-condition review to identify any programmatic issues related to the quality level determination process and will enter all identified issues into ICAMS for corrective action development and tracking.*
3. During the enforcement conference on September 17, 2010, BEA self-identified the need for supervisors to improve their day-to-day interaction with and oversight of workers, especially in situations where high-hazard equipment is in use. DOE agrees with this conclusion. *BEA will perform an assessment to determine what initiatives are needed to improve the performance of supervision. At a minimum, BEA will develop a company-wide corrective action plan that includes steps to improve day-to-day interaction of supervision with workers, enhance management presence in the workplace, and improve the communication of upper management's expectations to workers.*
4. DOE and BEA agree that the lessons learned from the unplanned extremity exposure at the HPIL should be shared through the DOE Corporate Lessons Learned Database. *BEA will*

*develop lessons learned and submit them to the DOE Idaho Operations Office for concurrence. After concurrence, BEA will submit the final lessons learned to the DOE Corporate Lessons Learned Database.*

#### IV

DOE and BEA have reached agreement on the resolution of this matter. Both have agreed to the issuance of this Consent Order in lieu of further enforcement proceedings on this matter (such as a Notice of Violation with civil penalty). DOE and BEA further agree that, in recognition of BEA's corrective actions to date, the sum to be paid by BEA to resolve this matter is less than what could have been proposed through the formal enforcement process.

#### V

DOE and BEA agree that the sum paid by BEA to resolve this matter shall not be considered a reimbursable cost. Pursuant to 41 U.S.C. § 256(k) and the implementing provisions of the Federal Acquisition Regulation found at 48 C.F.R. § 31.205-47, *Costs related to legal and other proceedings*, DOE and BEA further agree that all costs incurred by, for, or on behalf of BEA relating to DOE's investigation of the matters covered by this Consent Order shall be treated as unallowable expenses under Contract No. DE-AC07-05ID14517 between DOE and BEA.

#### VI

This Consent Order is issued pursuant to DOE's authority in Section 234A of the Atomic Energy Act of 1954, as amended (42 U.S.C. § 2282a), and the implementing provisions of 10 C.F.R. § 820.23. BEA agrees to pay to the Treasurer of the United States (Account Number 891099), mailed to the Director, Office of Enforcement, U.S. Department of Energy, an amount of \$85,000, reflecting an agreed amount in lieu of any potential Notice of Violation with the imposition of a civil penalty for the nuclear safety deficiencies discussed herein.

#### VII

DOE agrees to refrain from initiating enforcement activity against BEA for any potential violations pertaining to the referenced matters. This Consent Order does not preclude DOE from re-opening the investigation or pursuing enforcement activity: (1) if it later becomes known that any of the facts or information provided regarding the described deficiencies were false or inaccurate in any material way; (2) if there is a recurrence of nuclear safety deficiencies similar to those identified above; or (3) for failure to complete all corrective actions cited in Section III, above, in an effective and timely manner to prevent recurrence of the identified issues.

#### VIII

Accordingly, it is hereby ordered as follows:

1. BEA agrees to return a signed copy of this Consent Order, within 1 week from the date of receipt, to the address provided in Item 2 below.

2. BEA agrees to remit \$85,000 by check, draft, or money order payable to the Treasurer of the United States (Account Number 891099) within 30 days of signing this Consent Order. Payment shall be sent by overnight carrier to the Director, Office of Enforcement, at the following address:

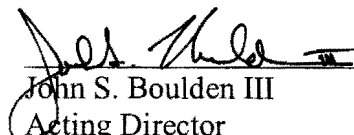
Director, Office of Enforcement  
 Attention: Office of the Docketing Clerk  
 HS-40  
 U.S. Department of Energy  
 19901 Germantown Road  
 Germantown, MD 20874-1290


3. This Consent Order shall completely resolve and serve as a full and final settlement of any and all enforcement activity taken under 10 C.F.R. Part 820 arising from the referenced NTS report and investigation report, upon the fulfillment of each of the following: (1) payment of the monetary remedy by BEA; (2) completion by BEA of all corrective actions cited in Section III of this Consent Order within 180 days from the date that BEA signs this Consent Order; and (3) verification of the effectiveness of all corrective actions cited in Section III of this Consent Order to the satisfaction of DOE Idaho Operations Office.
4. In accordance with 10 C.F.R. § 820.23(d), this Consent Order shall become a Final Order 30 days after the signed copy, referenced in Item 1, is filed by the Office of Enforcement's Office of the Docketing Clerk unless the Secretary of Energy files a rejection of the Consent Order or a Modified Consent Order.
5. BEA waives any and all rights to appeal or otherwise seek judicial review of this Consent Order. DOE and BEA retain the right to judicially enforce the provisions herein by all legal means.

On behalf of my respective organization, I hereby agree to and accept the terms of the foregoing Consent Order.

FOR U.S. Department of Energy

FOR Battelle Energy Alliance, LLC

 Date 1/7/11  
 John S. Boulden III  
 Acting Director  
 Office of Enforcement  
 Office of Health, Safety and Security  
 U.S. Department of Energy

 Date 1/13/2011  
 John J. Grossenbacher  
 President and Laboratory Director  
 Battelle Energy Alliance, LLC