



## Department of Energy

Washington, DC 20585

April 27, 2016

Dr. Mark Peters  
President and Laboratory Director  
Battelle Energy Alliance, LLC  
Idaho National Laboratory  
2525 North Fremont Avenue  
Idaho Falls, Idaho 83415-3695

WCO-2016-01

Dear Dr. Peters:

The Office of Enterprise Assessments' Office of Enforcement completed its investigation into the facts and circumstances associated with the arc flash event that occurred at the Idaho National Laboratory (INL) on April 23, 2015. Battelle Energy Alliance, LLC (BEA) documented this event in the Department of Energy's (DOE) Noncompliance Tracking System under report NTS-ID--BEA-CFA-2015-0001, *Hierarchy of Hazard Control Selection for Three Year Preventative Maintenance of CFA Substation Vacuum Breakers*, dated May 14, 2015.

On April 23, 2015, three Power Management Group (PMG) electrical linemen were performing a triennial preventive maintenance (PM) activity on a vacuum breaker in the Scoville Substation in the Central Facilities Area. During the PM activity, an energized 12.5 kilovolts (kV) line was contacted, causing an arc flash. Workers fell to the ground, but were not injured. However, the potential consequences to a worker's health from an arc flash are deemed serious. The event was preventable and revealed deficiencies in BEA's hazard identification and assessment procedure, electrical safety program, protective equipment selection process, hazard prevention and abatement procedure, and safety training program.

In accordance with 10 C.F.R. § 851.41, *Settlement*, the Office of Enforcement has elected to resolve potential noncompliances with requirements enforceable under 10 C.F.R. Part 851, *Worker Safety and Health Program*, through execution of a Consent Order. In deciding to enter into this Consent Order, DOE placed considerable weight on BEA's self-critical investigation of the event and credible corrective action plan. Following the event, BEA conducted a common cause analysis of four events in the INL PMG and identified several common issues



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related to human performance, work pressure, and increased risk acceptance. BEA reported these issues into NTS and implemented a series of initiatives to improve safety performance, including providing additional resources for oversight, clarifying roles and responsibilities, bringing the PMG organization into compliance with contractor assurance programs, improving lineman training, improving safety performance monitoring, and conducting thorough assessments to ensure that corrective actions are effective.

DOE reserves the right to re-open this investigation if DOE later becomes aware that BEA provided any false or materially inaccurate information. Further, if there is a recurrence of worker safety and health deficiencies similar to those identified in this Consent Order, or a failure to comply with the terms and conditions prescribed in the Consent Order (or other related actions that BEA subsequently determines to be necessary), then the Office of Enforcement may pursue additional enforcement activity. The Office of Enforcement, Office of Nuclear Energy, and the Idaho Operations Office will continue to closely monitor BEA's implementation of worker safety and health requirements until the issues associated with this Consent Order are fully resolved.

Enclosed, please find two signed copies of the Consent Order. Please sign both, keep one for your records, and return the other copy to the Office of Enforcement within one week from the date of receipt. Please follow all instructions specified in the enclosure. By signing this Consent Order, you agree to comply with all of the terms, including payment of the monetary remedy, specified in section IV of the Consent Order and in the manner prescribed therein.

If you have any questions concerning this Consent Order, please contact me at 301-903-7707, or your staff may contact Mr. Kevin Dressman, Director, Office of Worker Safety and Health Enforcement, at 301-903-0100.

Sincerely,

  
Steven C. Simonson  
Director  
Office of Enforcement  
Office of Enterprise Assessments

Enclosure: Consent Order (WCO-2016-01)

cc: Sherry Kontes, BEA  
Richard Provencher, DOE-ID

In the matter of	) Report No. NTS-ID-BEA-CFA-2015-0001
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Battelle Energy Alliance, LLC	)
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	) Consent Order WCO-2016-01

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

I

Battelle Energy Alliance, LLC (BEA) is responsible for the management and operation of the U.S. Department of Energy's (DOE) Idaho National Laboratory (INL). BEA is the prime contractor under Contract No. DE-AC07-05ID14517 (Contract) entered into with the DOE Idaho Operations Office (DOE-ID).

II

On April 23, 2015, three Power Management Group (PMG) electrical linemen were performing triennial preventive maintenance (PM) on a vacuum breaker in the Scoville Substation in the Central Facilities Area. The breaker undergoing the PM (breaker B44) was de-energized for inspection and testing activities, while the overhead bus and adjacent breaker (breaker B42) remained energized at 12.5 kilovolts (kV). As an electrical ground cable was being moved from breaker B44 using a six foot long insulated tool, the movement allowed the ground cable to contact the energized 12.5 kV electrical line connecting breaker B42 to the overhead bus.

The contact with the energized 12.5 kV electrical line caused a ground fault and an arc flash that resulted in intense heat and a loud instantaneous noise. The workers fell to the ground after the arc flash, but were not injured. The protective equipment tripped the electrical circuit after 1.2 seconds, causing an outage for approximately 15 minutes before electrical power was re-routed to restore power.

BEA issued a critique of the event on April 23, 2015, to document initial observations and key facts concerning the event.

On May 14, 2015, BEA voluntarily reported the arc flash event noncompliances with 10 C.F.R. Part 851, *Worker Safety and Health Program*, into DOE's Noncompliance Tracking System

(NTS) in report NTS-ID-BEA-CFA-2015-0001, *Hierarchy of Hazard Control Selection for Three Year Preventative Maintenance of CFA Substation Vacuum Breakers*.

On May 19, 2015, BEA completed the *Apparent Cause Analysis Report for the Arc Flash Event Involving Power Management Personnel at Central Facilities Area*, INL/INT-15-35078, Revision 1, May 2015, which identified five corrective actions.

In addition, BEA, with the assistance of a number of independent experts, conducted a common cause analysis of four events between 2012 and 2015 from the INL PMG, including the arc flash incident to address potential systematic organizational weaknesses within the group. The analysis report, INL/INT-15-35627, *Common Cause Analysis of INL Power Management Safety Events and Safety Culture Vulnerability Evaluation* (dated June 22, 2015), noted several common areas of concern, including inconsistent human performance, self-imposed pressure to provide reliable electrical power, and overconfidence in work execution resulting in increased risk acceptance. BEA found that these common themes combined to create an environment in which hazards analysis and controls were given inadequate attention.

As part of the common cause analysis, BEA sponsored a safety culture vulnerability evaluation of the PMG organization and conducted a separate human performance improvement evaluation of the arc flash event. BEA reported the results of these efforts into DOE's Occurrence Reporting and Processing System in report NE-ID-BEA-CFA-2015-0003, *Identification of Recurring Theme within the INL Power Management Group*, along with corrective actions. The corrective actions included implementing organizational changes, providing additional resources for oversight, clarifying roles and responsibilities, bringing the PMG organization in compliance with contractor assurance programs, improving lineman training, improving safety performance monitoring, and conduct of effectiveness assessments to ensure that the corrective actions remain effective.

On July 17, 2015, the DOE Office of Enterprise Assessments' Office of Enforcement notified BEA of its decision to investigate the facts and circumstances associated with potential deficiencies related to the arc flash event. DOE conducted an onsite investigation from September 15 through 17, 2015.

In a September 24, 2015, letter to the Office of Enforcement, BEA requested a Consent Order to settle this matter under investigation.

DOE issued an investigation report on December 7, 2015. On February 29, 2016, an Enforcement Conference was held to review key issues related to the event.

### III

Pursuant to 10 C.F.R. § 851.41, at any time during enforcement proceedings, DOE may resolve any or all outstanding issues with a Consent Order if the settlement is consistent with the objectives of the Atomic Energy Act of 1954, as amended, and worker safety and health requirements enforceable under 10 C.F.R. Part 851, *Worker Safety and Health Program*.

To resolve potential noncompliances of worker safety and health requirements and in consideration of BEA's investigation, causal analyses, and associated corrective actions taken since the submission of the NTS report identified above, which DOE found to be comprehensive and appropriate, DOE has elected to enter into settlement. DOE and BEA have reached agreement to resolve this matter through execution of this Consent Order.

#### IV

Accordingly, the terms of this Consent Order are as follows:

In consideration of the mutual agreements set forth in this section, the sufficiency and adequacy of which are acknowledged by DOE and BEA (hereinafter the "Parties"), the following terms represent agreement by the authorized representatives of the Parties to resolve by settlement the potential noncompliances at BEA, in lieu of an enforcement action that DOE may issue pursuant to 10 C.F.R. § 851.42.

1. BEA shall complete the following actions:
  - a. Perform a series of targeted assessments, as stated in NTS report number NTS-ID-BEA-CFA-2015-003, *Identification of Recurring Theme within INL Power Management Group*. At a minimum, the assessments shall include a review of laboratory instructions, hazard identification and mitigation and work practices related to one of the following topics: work inside INL substations; work using bucket trucks; work involving ground clusters; and work involving digger derricks. The assessments shall be completed by August 30, 2016, and shall rely on the support of external organizations in the conduct of assessments, as applicable.
  - b. Perform a series of effectiveness assessments, as stated in NTS report number NTS-ID-BEA-CFA-2015-003, *Identification of Recurring Theme within INL Power Management Group*. The first effectiveness assessment of the entire corrective action plan shall be completed no later than August 23, 2017, to ensure the actions remain in place and are sustainable.
  - c. Provide copies of the assessment reports for items 1.a. and 1.b. identified above to the Office of Enforcement and DOE-ID within 30 days of their completion.
  - d. Notify the Office of Enforcement and DOE-ID in writing of any action that requires an extension to the due date at least 30 calendar days before the due date.
2. BEA shall pay the amount of \$60,000, reflecting an agreed upon monetary remedy in lieu of the issuance of an enforcement action with the proposed imposition of a civil penalty pursuant to 10 C.F.R. § 851.42.
3. BEA agrees to return a signed copy of this Consent Order, within one week from the date of receipt, to the address provided in item 5 below.

4. The effective date of this Consent Order shall be the date upon which BEA signs this Consent Order.

5. BEA shall remit the monetary remedy of \$60,000 by check, draft, or money order payable to the Treasurer of the United States (Account Number 891099) within 30 calendar days after the effective date of this Consent Order. Payment shall be sent by overnight carrier to:

Director, Office of Enforcement  
Attention: Office of the Docketing Clerk, EA-10  
U.S. Department of Energy  
19901 Germantown Road  
Germantown, MD 20874-1290

6. This Consent Order shall constitute a full and final settlement of the potential noncompliances identified in the NTS report referenced in Section II of this Consent Order subject to the following: (a) BEA's payment of the monetary remedy in accordance with item 5 above; and (b) BEA's completion of all actions set forth in item 1 above to the satisfaction of DOE.

7. Neither the monetary remedy nor any costs, as defined in the Federal Acquisition Regulation, 48 C.F.R. § 31.205-47, incurred by, for, or on behalf of BEA relating to coordination and cooperation with DOE concerning the investigation of matters covered by this Consent Order shall be considered allowable costs under the Contract. However, costs incurred by, for, or on behalf of BEA relating to the development and implementation of corrective actions, including costs associated with the effectiveness assessment required under item 1.b. above, may be considered allowable costs under the Contract.

8. This Consent Order does not preclude DOE from re-opening the investigation or issuing an enforcement action under 10 C.F.R. § 851.42 with respect to a potential noncompliance if: (a) after the effective date (as defined in item 4 above), DOE becomes aware of any false or materially inaccurate facts or information provided by BEA; (b) there is a recurrence of worker safety and health deficiencies similar to those identified above; or (c) BEA fails to complete all actions identified in item 1, above, in a timely and effective manner to prevent recurrence.

9. Any modification to this Consent Order requires the written consent of both Parties.

10. BEA waives any and all rights to appeal or otherwise seek judicial or administrative review of the terms of this Consent Order. DOE retains the right to judicially enforce the provisions of this Consent Order by all available legal means.

11. This Consent Order is issued pursuant to DOE's authority under Section 234C of the Atomic Energy Act of 1954, as amended (42 U.S.C. § 2282c), and the implementing provisions of Part 851 governing enforcement of worker safety and health requirements at DOE sites.

12. This Consent Order shall become a Final Order after the signed copy, referenced in item 3 above, is filed by the Office of Enforcement's Office of the Docketing Clerk.

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

Steven C. Simonson Date 4/27/16  
Steven C. Simonson  
Director  
Office of Enforcement  
Office of Enterprise Assessments

FOR Battelle Energy Alliance, LLC

Mark Peters Date 5/2/16  
Dr. Mark Peters  
President and Laboratory Director  
Battelle Energy Alliance, LLC  
Idaho National Laboratory