



## Department of Energy

Washington, DC 20585

November 23, 2015

Dr. Doon L. Gibbs  
Laboratory Director  
Brookhaven Science Associates, LLC  
Brookhaven National Laboratory  
40 Brookhaven Avenue  
Upton, New York 11973-5000

WCO-2015-02

Dear Dr. Gibbs:

The Office of Enterprise Assessments' Office of Enforcement completed its investigation into the facts and circumstances associated with the meteorological tower electrical shock event that occurred at the Brookhaven National Laboratory on November 12, 2014. Brookhaven Science Associates, LLC (BSA) documented this event in the Department of Energy's (DOE) Noncompliance Tracking System under report NTS--BHSO-BNL-BNL-2014-0002 dated December 22, 2014.

On November 12, 2014, a tower repair subcontractor worker received an electrical shock to his hands/fingers while replacing a tower diagonal bracing member. While inserting a bolt to secure the end of the replacement diagonal brace, the worker's right hand made contact with the outside surface of an existing electrical outlet box.

The event was significant in that a subcontractor employee received an electrical shock at the approximately 220 foot elevation of the tower. The potential consequences to a worker's health from an electric shock are known to be serious, and access to medical help at this height would be greatly delayed. Also, the potential for unnecessary non-ionizing radiation exposure was high, particularly for workers performing structural repairs near the radio frequency transmitters on the tower.

In accordance with 10 C.F.R. § 851.41, *Settlement*, the Office of Enforcement has elected to resolve any 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 BSA's investigation of the event and a credible corrective action plan.

DOE reserves the right to re-open this investigation if DOE later becomes aware that BSA 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 BSA subsequently determines to be necessary) to prevent recurrence of the identified issues, then the Office of Enforcement may pursue additional enforcement activity. The Office of Enforcement, Office of Science, and the Brookhaven Site Office will continue to closely monitor BSA'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 1 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,

A handwritten signature in black ink that reads "Steven C. Simonson". The signature is written in a cursive style with a large, stylized 'S' at the beginning.

Steven C. Simonson

Director

Office of Enforcement

Office of Enterprise Assessments

Enclosure: Consent Order (WCO-2015-02)

cc: Charles Dimino, BSA  
Frank Crescenzo, SC-BHSO

In the matter of ) Report No. NTS--BHSO-BNL-BNL-2014-0002  
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Brookhaven Science Associates, LLC)  
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) Consent Order WCO-2015-02

CONSENT ORDER INCORPORATING AGREEMENT BETWEEN THE  
U.S. DEPARTMENT OF ENERGY AND BROOKHAVEN SCIENCE ASSOCIATES, LLC

I

Brookhaven Science Associates, LLC (BSA) is responsible for the management and operation of the U.S. Department of Energy's (DOE) Brookhaven National Laboratory (BNL). BSA is the prime contractor under Contract No. DE-SC0012704 (Contract) entered into with the DOE Brookhaven Site Office (BHSO).

II

On November 12, 2014, a BSA subcontractor worker received a 120VAC electrical shock from the surface of an electrical outlet while making structural repairs at the 220-foot elevation of a 280 foot (85m) meteorological (MET) tower. BSA's Facility and Operations Directorate (F&O) established an internal investigation committee after the event. On November 20, 2014, F&O's investigation committee concluded that subcontractor workers could have been exposed to radio frequency (RF) radiation above the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) (2005). After this internal investigation, BSA established an independent investigation committee.

On December 22, 2014, BSA voluntarily reported the potential MET tower electrical shock event noncompliances with 10 C.F.R. Part 851, *Worker Safety and Health Program*, into DOE's Noncompliance Tracking System (NTS) in report NTS--BHSO-BNL-BNL-2014-0002, *Worker Contacts a Hazardous Electrical Energy Source while Performing Structural Repair/Upgrade to Meteorological Tower*.

On February 27, 2015, the independent investigation committee completed the *Independent Investigation of an Electrical Event during Repair of the Meteorological Tower* report, which found that 120VAC electrical outlet system hazards had been identified during previous MET tower structural inspections (October 2011 and February 2012), but were not included in the

work planning and control documents for the shock event. Additionally, the committee confirmed the possibility of subcontractor exposure to RF radiation above the ACGIH TLVs.

As part of the independent investigation, the committee completed a causal factor analysis. BSA subsequently issued a document entitled *Met Tower Investigation Corrective Action Plan* (Corrective Action Plan) on March 31, 2015, to address and prevent, or significantly reduce, the recurrence of identified work planning failures. These corrective measures focus on addressing significant deficiencies related to F&O's work planning and control process, specifically in the areas of work planning and work package preparation. DOE considers BSA's causal analysis to be thorough and credible, and the Corrective Action Plan appears to address each of the causal factors associated with the incident.

On May 21, 2015, the DOE Office of Enforcement notified BSA of its decision to investigate the facts and circumstances associated with potential deficiencies related to the MET tower electrical shock event. DOE's onsite investigation was conducted from July 27 through 30, 2015.

In a July 1, 2015, letter to the Office of Enforcement, BSA requested a Consent Order to settle this matter under investigation.

### 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 BSA's investigation, causal analyses, and associated corrective actions taken since the submission of the NTS reports identified above, which DOE found to be comprehensive and appropriate, DOE has elected to enter into settlement. DOE and BSA 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 BSA (hereinafter the "Parties"), the following terms represent agreement by the authorized representatives of the Parties to resolve by settlement the potential noncompliances at BNL, in lieu of an enforcement action that DOE may issue pursuant to 10 C.F.R. § 851.42.

1. BSA shall:
  - a. Fully implement each of the measures described in the document entitled: *Met Tower Investigation Corrective Action Plan* (Corrective Action Plan) dated March 31, 2015, by the due dates specified for each corrective action.

- b. Provide quarterly written updates on the status of corrective actions to the Office of Enforcement and BHSO.
  - c. Notify the Office of Enforcement and BHSO in writing of any corrective action that requires an extension to the due date at least 30 calendar days before the due date.
  - d. Notify the Office of Enforcement upon completion of all actions specified in the Corrective Action Plan (item 1.a. above).
  - e. Provide to BHSO, the DOE Office of Science, and the Office of Enforcement copies of the results of the effectiveness review identified in the Corrective Action Plan (action item 22).
2. BSA shall conduct an assessment of its non-ionizing radiation program to confirm compliance with applicable requirements and effective implementation of the program elements. BSA shall transmit the results of the assessment to the Office of Enforcement and BHSO.
3. BSA shall pay the amount of \$50,000, 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.
4. BSA agrees to return a signed copy of this Consent Order, within one week from the date of receipt, to the address provided in item 6 below.
5. The effective date of this Consent Order shall be the date upon which BSA signs this Consent Order.
6. BSA shall remit the monetary remedy of \$50,000 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
7. This Consent Order shall constitute a full and final settlement of the potential noncompliances identified in the referenced NTS report, subject to the following: (a) BSA's payment of the monetary remedy in accordance with item 6 above; and (b) BSA's completion of all actions set forth in items 1 and 2 above to the satisfaction of the Office of Enforcement.
8. 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 BSA 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 BSA relating to the development and implementation of corrective actions, including costs associated with the effectiveness review required under item 1 above, may be considered allowable costs under the Contract.

9. 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 5 above), DOE becomes aware of any false or materially inaccurate facts or information provided by BSA; (b) there is a recurrence of worker safety and health deficiencies similar to those identified above; or (c) BSA fails to complete all actions identified in items 1 and 2, above, in a timely and effective manner to prevent recurrence.
10. Any modification to this Consent Order requires the written consent of both Parties.
11. BSA 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.
12. 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.
13. This Consent Order shall become a Final Order after the signed copy, referenced in item 4 above, is filed by the Office of Enforcement's Office of the Docketing Clerk.

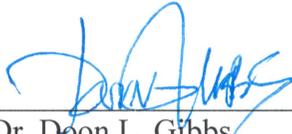
On behalf of my respective organization, I hereby agree to and accept the terms of the foregoing Consent Order.

FOR U.S. Department of Energy

FOR Brookhaven Science Associates, LLC

 Date 11/23/2015

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

 Date 11/25/15

Dr. Doon L. Gibbs  
President and Brookhaven Laboratory Director  
Brookhaven Science Associates, LLC  
Brookhaven National Laboratory