



Department of Energy

Washington, DC 20585

October 24, 2011

Dr. Samuel Aronson
President
Brookhaven Science Associates, LLC
Brookhaven National Laboratory
40 Brookhaven Avenue
Upton, New York 11973-5000

WEL-2011-01

Dear Dr. Aronson:

The Office of Health, Safety and Security's Office of Enforcement and Oversight evaluated a worker injury that occurred at the Brookhaven National Laboratory (BNL) on March 3, 2011, when a BNL building and grounds utility worker was cutting a tree with a chainsaw while elevated 20 feet above ground in an aerial lift. An approximately eight foot long, 18-inch diameter, 520-pound section of tree trunk fell unexpectedly toward the worker and compressed the worker's right arm against the top railing of the aerial lift basket. The worker underwent surgery for the injuries, was hospitalized for more than five days, and was unable to work for an extended period. On May 20, 2011, Brookhaven Science Associates (BSA) reported the worker safety and health noncompliances associated with this event, including deficiencies in hazard analysis and abatement as well as worker training, to the Department of Energy (DOE) through a Noncompliance Tracking System report.

The Office of Enforcement and Oversight evaluated the circumstances surrounding the event, the DOE Accident Investigation Board report and BSA's corrective action plan and identified several potential violations of 10 C.F.R. Part 851, *Worker Safety and Health Program*. The potential violations of hazard identification and assessment, hazard prevention and abatement, and worker training requirements represent weaknesses that BSA should address to prevent recurrence of this type of injury. Specifically:

- BSA did not identify and assess hazards to workers performing tree felling work, including cutting large sections of trees from an aerial lift.
- BSA did not provide workers with procedures or an appropriately detailed work plan for tree trimming work that identified and controlled potential hazards to workers (consistent with BSA's Standards Based Management System Subject Area *Work Planning and Control for Experiments and Operations*, subsection 2.4, *Permit Planned Work Hazard Identification, Analysis, and Control*).
- BSA's Facilities and Operations procedure EP-ES&H-006H, *Craft Screen Criteria for Work Permit*, incorrectly categorized all tree trimming work at BNL as low



hazard/low risk work, which given the large tree sections involved in this activity and the use of an aerial lift, resulted in a deficient job hazard evaluation and work controls. While not invoked as a mandatory requirement by Part 851, BSA could have employed the safe work practices from the applicable industry standard (ANSI Z133-1-2006, *American National Standard for Arboricultural Operations – Safety Requirements*) as a basis for developing the appropriately detailed work plan.

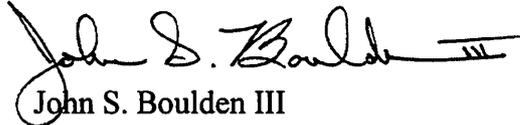
- BSA did not implement appropriate controls for the hazards inherent in tree felling work, such as applying safe tree cutting methods for the 18-inch diameter tree limb. The tree limb fell in an unanticipated direction, i.e., toward the worker operating the chainsaw, thus causing the injury to the worker's right arm. In addition, the aerial lift was positioned such that the cut section of tree trunk fell toward the worker in the aerial lift. Furthermore, in this event, workers were not wearing chainsaw chaps and face shields, which BSA required through the job risk assessment JRA-SI-SITEMAINT-16, "Cutting Tools Operations."
- BSA did not provide formal training that would have provided workers with information on performing tree felling work safely in an aerial lift or otherwise ensure that workers possessed the needed skills or knowledge of safe tree felling work practices involving large tree sections to enable them to recognize and control potential hazards associated with tree felling work.

The Office of Enforcement and Oversight is issuing this enforcement letter to BSA to convey concerns about the work planning and control deficiencies revealed by this event as they relate to DOE worker safety and health requirements. Since 2007, there have been two previous events at BNL that involved tree felling operations. Corrective actions resulting from these events were not effective in enabling adequate identification and control of the potential hazards of tree felling operations, and they did not prevent the serious injury to the BSA worker on March 3, 2011.

DOE acknowledges that BSA responded promptly in developing a corrective action plan that addressed the potential violations of Part 851 listed above and incorporated the judgments of need identified in the DOE Accident Investigation Board report. Additionally, BSA is merging the corrective actions from this incident into the Blueprint project, a long-term, laboratory-wide plan for continuous improvement that includes safety and operational performance. In conjunction with the Brookhaven Site Office and the Office of Science, we will continue to monitor BSA's initiatives to improve worker safety related performance.

No response to this letter is required. If you have any questions, please contact me at (301) 903-2178, or your staff may contact Kevin Dressman, Director, Office of Worker Safety and Health Enforcement, at (301) 903-0100.

Sincerely,

A handwritten signature in black ink, appearing to read "John S. Boulden III". The signature is written in a cursive style with a horizontal line at the end.

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

cc: Michael Holland, BHSO
Charles Dimino, BSA