



Department of Energy
Washington, DC 20585

November 13, 2007

Dr. Stephen M. Younger
President and General Manager
National Security Technologies, LLC
P.O. Box 98521 M/S NSF001
Las Vegas, Nevada 89193-8521

Dear Dr. Younger:

The Department of Energy's (DOE) Office of Enforcement conducted an evaluation of the deficiencies described in Noncompliance Tracking System (NTS) Report NTS-NSO--NST-NTS-2007-0002, *Unplanned Radiological Exposure during Borehole Activity*. Our evaluation included reviews of the associated critique and root cause analysis reports, and the related corrective action plan. Based on our evaluation, we have concluded that violations of 10 C.F.R. 835, *Occupational Radiation Protection*, occurred when the National Security Technologies (NSTec) Borehole Management Project personnel were preparing to gain access to the wellhead at a post-shot crater in Area 9 at the Nevada Test Site.

On April 30, 2007, while preparing to gain access to a borehole, for the purpose of determining contamination levels for planned borehole plugging, eight workers were contaminated with plutonium. After realizing that the Radiation Work Permit (RWP) suspension limits were exceeded, stop work authority was executed because of failures in work planning and control, removable contamination became airborne both during work and after the suspension of the work. Exposures ranged up to 380 mrem for the affected workers. Problems related to the job hazards analysis, work planning, timely processing of radiological smears, and work controls at the site contributed to the exposures.

The NTS report described a breakdown in your compliance with certain occupational radiation protection requirements associated with the closure of borehole U-9z PS #2. Your report concluded that implementation of occupational radiation protection requirements were ineffective in protecting the involved personnel.

Based on concerns identified through your critique and root cause analysis, the following corrective actions were identified by your organization, to include:

- Conduct a review by the As Low As Reasonably Achievable (ALARA) committee of site-specific RWPs for those boreholes with higher risks and include the use of mockups and engineering controls. This will support campaigning remaining boreholes based on risk, not geographic location.

- Contact Lawrence Livermore National Laboratory for calculations of the ejected contamination level within the pipe, based on their analysis after the safety test.
- Ensure organizational instruction is adequate in the areas of identification of mockups, engineering controls, and ALARA trigger points.
- Develop site-specific work package(s) and RWP(s) to complete closure of borehole U-9z PS #2 including an engineered closure system to place the borehole in a long-term safe condition.
- Acquire portable High Efficiency Particulate Air ventilation units with certified aerosol tests.
- Evaluate options for portable alpha Continuous Air Monitors for outside environmental operations.
- Ensure Radiation Control Technician qualification program adequacy.

Our office views the failures in your radiation protection program as serious radiological safety issues that require your prompt attention. Additionally, this event could have been prevented if known radiological hazards associated with this borehole had been adequately analyzed and controlled. However, in light of NSTec's efforts in the identification of deficiencies, and in consideration of the comprehensive scope of your root cause analysis report and subsequent corrective actions, the Office of Enforcement has determined that no formal enforcement action will be taken at this time.

In conjunction with the National Nuclear Security Administration and the DOE Nevada Site Office, we will continue to monitor NSTec's initiatives to improve radiological safety performance.

No response to this letter is required. Should you have any questions, please contact me at (301) 903-2178 or have your staff contact Mr. Richard Day at (301) 903-8371.

Sincerely,



Arnold E. Guevara
Director
Office of Enforcement
Office of Health, Safety and Security

cc: Terry Knight, NSTec