



## Department of Energy

Washington, DC 20585

August 15, 2003

The Honorable John T. Conway  
Chairman  
Defense Nuclear Facilities Safety Board  
625 Indiana Avenue, NW, Suite 700  
Washington, D.C. 20004-2901


Dear Mr. Chairman,

The purpose of this letter is to respond to your letter of July 31, 2003 regarding the glovebox fire that occurred in Building 371 at the Rocky Flats Environmental Technology Site on May 6, 2003. The Department of Energy did not properly investigate the cause of this fire nor fully assess application of lessons learned to future glovebox removal work at Rocky Flats. Specific actions, detailed in the enclosure to this letter, have been initiated that will address these concerns.

The cause of the fire remains to be determined. The contractor has initiated a more thorough investigation of the cause of the fire. We anticipate a final cause and origin report soon, DOE and K-H are implementing corrective actions that will preclude an event of this type in the future, and ensure the continued safety of decontamination and waste packaging activities.

The Department of Energy will continue to keep the DNFSB staff informed of progress being made on the actions addressing your concerns. If you have any questions please call me at (202) 586-7709 or Paul Golan, Chief Operating Officer, at (202) 586-0738.

Sincerely,

  
Jessie Hill Roberson  
Assistant Secretary for  
Environmental Management

Enclosure

cc: Mark Whitaker, DR-1  
Eugene Schmitt, RF



## Response to DNFSB Letter of July 31, 2003 (RFETS Concerns)

Specific actions that will address the concerns identified in your letter are as follows:

- 1) Issue: Assure that the gloveboxes remaining at RFETS do not contain unacceptable amounts of combustibles.

Response: The combustible control program in each nuclear facility at the Site is intended to prevent the accumulation of unacceptable combustibles in the gloveboxes. In this case, the program failed to identify an unacceptable accumulation of combustible materials in Glovebox 8, at least some of which appear to have existed since operations were curtailed in the glovebox in 1986. Although the layout of this glovebox made combustible surveillances difficult (a vertical "dumbwaiter" glovebox with limited visibility), we believe the combustibles accumulated in the glovebox could have been identified and should have been remediated. To assure ourselves that similar conditions do not exist elsewhere on Site, the following actions will be completed:

- a) K-H conduct a walk-down of every glovebox remaining on Site (Buildings 371, 559, and 707). Verify no unacceptable amounts of combustibles exist, and assure that no remaining gloveboxes have the potential for undetected combustible accumulations. Document conclusions.
- b) The DOE RFFO Facility Representatives will independently conduct the same walk-down, and document conclusions by August 31.

- 2) Issue: Identify how the future accumulation of excessive combustibles will be prevented.

Response: The following actions are underway to assure the continued effectiveness of the contractor's combustible control program:

- a) The contractor will perform an assessment of the combustible control program at the Site. Corrective actions will be implemented as appropriate. The assessment will be completed no later than August 28, 2003.
- b) The 371/374 Closure Project will revise the glovebox combustible control program to provide improved control.
- c) The DOE RFFO will direct a TSR-level combustible inspection for non-operational gloveboxes and tanks in the B371 Documented Safety Analysis by August 31.
- d) The DOE RFFO will independently assess the effectiveness of the program on a three-month interval until all gloveboxes have been removed at the Site.

- 3) Issue: Assure that materials used in the cerium nitrate decontamination process are neutralized and disposed of properly.

Response: Cerium nitrate is a known oxidizer, and can present a fire hazard when used improperly. The procedures in use at the Site include provisions for properly

neutralizing materials used in the decontamination process. The contractor has reviewed these procedures and identified areas of improvement that will decrease the likelihood of inadequately neutralizing these materials. Cerium nitrate decontamination activities have been stopped while the procedure is being revised.

Analysis of the material in the glovebox after the fire has identified the presence of cerium, most likely from decontamination activities in previously attached gloveboxes. However, the role of cerium nitrate in the fire on May 6, 2003, if any, remains to be determined. Testing is underway to quantify the affect of cerium nitrate on combustibles, both neutralized and non-neutralized.

The following actions are underway to address this concern:

- a) Suspend cerium nitrate decontamination activities until procedural improvements have been completed.
  - b) Revise cerium nitrate decontamination procedure to improve usability and strengthen the controls on neutralization and disposal.
  - c) The DOE RFFO, will review the appropriateness of the cerium nitrate decontamination procedure and verify procedural compliance.
  - d) Perform U.N. Manual of Tests and Criteria, Section 34, Classification Procedures, "Test Methods and Criteria Relating to Oxidizing Substances" of Division 5.1 testing on cerium nitrate soaked combustibles to determine the affect of treatment, both neutralized and non-neutralized.
  - e) Perform self-heating and ignition temperature testing on cerium nitrate soaked rags as directed by Dr. Craig Beyler.
- 4) Issue: Take measures to ensure that all material and debris from Glovebox 8 are thoroughly analyzed to support the fire investigation and then verified to be properly neutralized for final disposition.

Response: Samples of the debris from the fire have been sampled as directed by the Site fire investigators. These samples included the residual fire suppression water in the glovebox, five solid samples from the debris, and five containers of unknown liquid found in the debris. Chemical analyses of the samples have been completed. Dr. Craig Beyler, the internationally recognized fire investigator retained by the Contractor, is reviewing this data to determine if any additional information is necessary.

All material removed from Glovebox 8 before and after the fire is packaged in waste containers, and remains on Site. The containers have been identified, and will be kept on Site until the activities outlined below have been completed and assurances of the safe final disposition of the containers documented. The decision to reopen any these containers will be based on the results of the testing currently underway. Reopening these containers represents a non-trivial risk to the workers, and will only be performed if necessary. Note that the Contractor's recovery plan developed and implemented after the fire included steps to further neutralize all materials removed from Glovebox 8 using sodium hydroxide prior to placing them into waste containers. Based on this, the DOE, RFFO is confident that no immediate safety hazard currently exists.

Actions being taken are as follows:

- a) Dr. Craig Beyler will determine if additional samples are required to support the cause/origin investigation. If so, samples will be taken in conjunction with any testing necessary to demonstrate safe final disposition of the Glovebox 8 waste as defined in item (c) below.
- b) DOE RFFO will review the process used for recovery following the Glovebox 8 fire to ensure that it would have assured neutralization of glovebox debris by August 31.
- c) Complete testing defined in 3 (c) above to determine the affect of cerium nitrate decontamination on WIPP Waste Acceptance Criteria, both with and without neutralization.
- d) If results of any of these tasks identify a need to reopen packaged waste, the containers will be opened in a safe and appropriate manner.