



**Department of Energy**  
**National Nuclear Security Administration**  
Washington, DC 20585  
October 17, 2002

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DNF SAFETY BOARD

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:

Thank you for your letter to me dated July 19, 2002, conveying the Defense Nuclear Facilities Safety Board's concern over worker protection in the Tritium Extraction Facility (TEF) that is currently in the construction phase at the Savannah River Site (SRS). The National Nuclear Security Administration (NNSA) welcomes the Board's input on this subject and, like the Board, is very interested in enhancing the safety of TEF workers. As you stated in your letter, your staff is working with my staff to explore effective and adequate safety features to provide for worker safety.

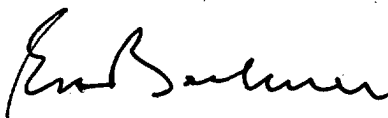
The NNSA is currently taking formal action to add the seismic monitor and alarm system scope to the TEF project as part of the ongoing Title II rebaselining action. It is our conclusion that worker safety can be increased by providing this low-cost advanced notice of a seismic event. This could allow workers to exit the TEF process areas quickly, and minimize their possible exposure to radiological hazards as well as industrial hazards during egress from the buildings.

Prior to final installation of the seismic detection and alarm system in the TEF, the NNSA will test the planned system in the existing 233-H facility at the SRS. We have determined this test is necessary in order to ensure that proven equipment and processes are used in the TEF. Enclosed is a report that describes the 233-H seismic detection and alarm system test plan. Other alternatives to the seismic monitoring system are cost prohibitive, do not provide a significant safety increase to the in-facility worker, are not feasible to retrofit in the facility and, therefore, are not being pursued.



Thank you again for your input and continued support of the NNSA's strategic goals. Should you have any questions or concerns relative to this matter, please contact Ms. Maureen Hunemuller at 803-208-3689.

Sincerely,



Everet H. Beckner  
Deputy Administrator  
for Defense Programs

Enclosure

cc w/enclosure:

M. Whitaker, S-3.1

M. Hunemuller, NNSA-SRSO

## **Tritium Facility 233-H Seismic Monitoring Test Plan**

This plan outlines a proposal for testing a seismic monitoring/alarm system in Tritium Facility 233-H. Personnel will be trained to evacuate the process rooms once the alarm is activated and to await further verbal instructions.

### **Selection of sensor/alarm design concept: ongoing -11/01/02**

This concept uses common sensors (triggers) that alarm existing Tritium Room Air Monitors (i.e., Kanne monitors) in each process room through the Health Protection Programmable Logic Controller (PLC). We will initially evaluate use of the seismic sensors that are already located in 233-H. This evaluation will consider:

- Design/procurement/installation cost
- Robustness of the design
- Ease/frequency of calibration
- Maintenance requirements
- Surveillance requirements
- Operator response (recognition of alarm and action taken)

### **Design/Procurement: 11/01/02 – 02/01/03**

This portion of the project will focus on design of the concept selected above and procurement of any engineered equipment. Included will be instrument design (sensor), electrical design (conduit and cable), and mechanical design (mounting/supports). Also included may be a PLC program-logic design if the existing Kanne system is selected as the alarm output device.

### **Installation/Construction: 02/01/02 – 05/01/03**

This portion of the project will focus on installation of the sensor, conduit, cable, alarms (as necessary), and PLC programming.

### **Procedure Development: 04/01/03 – 06/01/03**

Alarm response procedures will be developed to support the installed equipment.

### **Testing: 06/01/03 – 07/01/03**

Testing of the installed alarms will be conducted.

### **Training: 04/01/03 – 07/01/03**

Training during normal shift training will be conducted. Additionally an Operating Experience Summary will be generated to provide training to support personnel.

**Drills: 07/01/03 – 09/15/03**

Drills will be conducted to assess the response of the facility workers to a simulated earthquake.

**Final Report/Evaluation of Results: 10/15/03**

Once the final report is generated and the results are deemed acceptable, implementation of similar systems in the Tritium Extraction Facility will proceed.