U.S. Department of Energy

Nevada Site Specific Advisory Board

January 13, 2011

Mr. Rob Boehlecke,
Environmental Restoration Project Director
U.S. Department of Energy, Nevada Site Office
P. O. Box 98518
Las Vegas, NV 89193-8518

SUBJECT: Recommendation on Closure of Corrective Action Unit (CAU) 547

Dear Mr. Boehlecke,

The Nevada Site Specific Advisory Board (NSSAB) has reviewed potential closure scenarios for CAU 547. CAU 547 comprises three Corrective Action Sites (CAS): 09-99-06 Player, 02-37-02 Mullet, and 03-99-19 Bernalillo. The primary component of each CAS is piping that contains plutonium, remaining from underground safety tests and which is above the transuranic (TRU) waste limit of 100 nCi/gm.

The NSSAB considered two Corrective Action Alternatives as identified in the Federal Facility and Consent Order:

- Closure in Place (cover with soil and long term monitoring);
- Clean Closure (remove piping and dispose of as transuranic waste).

In your presentations to the NSSAB on November 2, 2010, you indicated a willingness to receive other options for closure alternatives from the NSSAB. We agree that the two Corrective Action Alternatives you recommended are appropriate.

For CAU 547 the NSSAB recommends closure in place. The estimated cost of clean closure is significantly greater than that of closure in place. Closure in place is estimated to cost about $2 - $3 million; the cost estimate for clean closure is about $30 - $35 million. The NSSAB is not persuaded that the stated cost differential, as great as it is, reflects the true costs of clean closure. These costs appear to be only direct economic costs and do not consider the future costs of worker radiation exposure. Exposure to workers in the clean closure scenario is potentially much higher, due to the cutting and handling of as many as 250 segments of contaminated pipe. If the costs to workers of this exposure could be quantified and calculated, we are convinced that the difference in costs would be even greater.

232 Energy Way, M/S 505, North Las Vegas, NV 89030
Phone 702-657-9088 ◇ Fax: 702-295-5300
E-mail: NSSAB@nv.doe.gov ◇ Website Home Page: http://www.nv.energy.gov/NSSAB

The NSSAB concluded that because closure in place can be done safely and at significantly less cost, removal of the piping and disposal as TRU waste as required for clean closure is not warranted. Soil cover with appropriate measures taken to inhibit soil burrowing appears to be a reasonable solution.

The NSSAB does have concerns about the closure in place approach as it pertains to the Player site. It is our understanding that of the three Corrective Actions Sites that make up CAU 547, CAS 09-99-06, the Player site, would require the majority of the funds for clean up. This is not surprising given the length of exposed pipe and its position, with much of it running down the slope wall of a crater. In its evaluation, the NSSAB discussed a number of factors, including the amount of plutonium in the pipe (estimated to be 173gm.), the remote and controlled location, the surrounding area, risks to present and future workers, and the difficulty of creating and maintaining a cover to last for over 1,000 years on an exposed slope.

The NSSAB recommends an independent review of the stability of the soil cover design for the pipe on the slope wall of the Player site as extra assurance of the safety of the approach. This is to ensure that the cover will not significantly erode over time and lessen the level of protection from the plutonium.

Also, the NSSAB recommends that if a method can be found to safely immobilize the plutonium in place in the pipes, its application would be warranted. We recognize that the safety assessment model takes no credit for containment by the pipe, and shows the closure to be safe as judged against exposure to a transient visitor for no more than 80 hours per year. Immobilization of the plutonium in place in the pipes could perhaps provide an additional safety margin. We are concerned, however, that such a method has a high potential of increasing worker exposure by displacing the plutonium and perhaps causing it to become airborne.

Our recommendation is not contingent on the Department of Energy finding a solution to immobilize the plutonium in the pipes. The NSSAB did conclude, however, that if such a method can be found, it would provide additional assurance that the closure in place is safe.

Sincerely,

Walter F. Wegst

Walter F. Wegst,
Chair

cc: M. Nielson, DOE/HQ (EM-13) FORS
C. Alexander Brennan, DOE/HQ (EM-13) FORS
A. Clark, DOE/HQ (EM-13) FORS
K. Snyder, PSG, NNSA/NSO, Las Vegas, NV
C. Lockwood, PSG, NNSA/NSO, Las Vegas, NV
D. Rupp, NREI, Las Vegas, NV
NSSAB Members and Liaisons
NNSA/NSO Read File