



765 Lindsay Blvd  
Idaho Falls, ID 83402  
Tel: (208) 557-7000  
Fax: (208) 528-9154

May 26, 2004

Mr. Bruce Matthews  
Defense Nuclear Facilities Safety Board  
625 Indiana Avenue, NW, Suite 700  
Washington, DC 20004-2901

Dear *Bruce*

During the recent Board visit to AMWTP you asked if the ventilation equipment on the soft-sided containment used in our liquid absorption process was designated safety significant. You also asked "if not, why not?" You were particularly concerned about the co-located workers outside the tent in Building 635 who were not wearing respirators.

At the time I told you it probably was not, which was confirmed shortly afterwards by Martin Wheeler, our Operations Manager. I pointed out that there would be various controls, including administrative controls such as those relating to the maintenance and testing of the ventilation equipment, that prevent or mitigate the hazard and assure worker safety. You did not seem fully satisfied with the response and I said I would review the safety basis for that particular operation. I have done that.

Our Safety Basis concluded that in the case of accidents relating to the confinement systems for the tent in Building 635, the risk was derived from the combination of 'Anticipated' likelihood and 'Low' consequences, give a risk value below that of concern, as designated in DOE-STD-3009-94. <sup>(1)</sup>

To put this into context, the bounding estimate of the unmitigated dose is 1.1E-03 rem, which actually results from filter failure. This is substantially below the evaluation guideline <sup>(2)</sup> for designating Safety Significant SSC's.

This does not mean, however, that appropriate controls are not in place to assure worker safety. Some of these defense in depth controls are:

- i. Weekly testing of fans & filters
- ii. Weekly inspection of the confinement
- iii. Suitably located continuous air monitors
- iv. Various controls on the drums (source term) such as: all drums vented, only drums < 200 FGE to be placed in containment; only one drum open at a time

- v. The pH will be measured of all liquids being absorbed to ensure compatibility with the aquaset absorbent; only 'aquaset' will be used.

These controls are in addition to the administrative controls implemented through our Radiological Protection Program, Criticality Safety Program, Industrial Safety/Industrial Hygiene Program, Fire Protection Program, and Training Program.

I trust this more fully answers your question. I would be pleased to discuss further if you wish.

Yours Sincerely,



Alan Dobson, General Manager  
Advanced Mixed Waste Treatment Project

- Note 1. The AMWTP accident analysis approach detailed in Chapter 3 of the DSA is based on the guidance in DOE-STD-3009-94.

STD-3009 Section 3.3.2.3.5 'Accident Selection' provides in Figure 3-3 an approach to ranking accidents which was adopted in the AMWTP DSA. This provides a risk value of 1 to 9 for accidents depending on the combination of likelihood (Anticipated, Unlikely, or Extremely Unlikely) and consequences (Low, Medium, or High). The figure in STD-3009 suggests that accidents of risk value 5 to 6 are 'combinations that identify situations of concern' and risk values 7 to 9 are 'combinations of conclusions from risk analysis that identify situations of major concern'. In the case of the accidents relating to the confinement systems for the tent in WMF-635, the risk was derived from the combination of 'Anticipated' likelihood and 'Low' consequences, giving a risk value of 4, and below that of concern. As a result the scenario was not carried forward as a design basis accident or considered for provision of important to safety controls.

Note that 'Anticipated' is a likelihood range corresponding to an event which may occur several times during the lifetime of the facility, taken from STD-3009 table 3-4. 'Low' is a consequence range corresponding to an event with 'minor onsite and negligible offsite impact on the people or the environs' (From STD-3009 Table 3-3). These values were assigned based on the qualitative judgment of the hazard analysis team, using guidance given in DOE-ID-O 420.D.

Note 2. Specific risk guidelines are applied to those accidents for which radiological doses and hazardous material exposures are calculated. These guidelines are given in DOE ID O 420.D are used to determine whether or not Important to Safety systems are required. For example, according to ID O 420.D an anticipated event resulting in a worker dose challenging or exceeding the guideline of 25 rem would be a candidate for provision of Safety Significant SSC(s) as prevention or mitigation.

cc: Ray Daniels, DNFSB  
Brian Edgerton, NE-ID  
Brian Latham, NE-ID  
Bob Stallman, NE-ID  
Rick Provencher, NE-ID  
Penny Pink, BNFL Inc.  
Simon Liley, BNFL Inc.  
Martin Wheeler, BNFL Inc.