

Testimony of Mr. Theodore A. Wyka  
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Before the  
Defense Nuclear Facilities Safety Board  
Waste Isolation Pilot Plant (WIPP) Public Hearing  
Walter Gerrells Performing Arts and Exhibition Center,  
4012 National Parks Highway  
Carlsbad, NM

April 29, 2015

I would like to thank Vice Chairperson Roberson and the distinguished members of the Defense Nuclear Facilities Safety Board for the opportunity to be with you here today. I was appointed by Deputy Assistant Secretary for Safety, Security, and Quality Programs in the Office of Environment Management to serve as the Accident Investigation Board (AIB) Chairman to investigate the fire at the U.S. Department of Energy, Waste Isolation Pilot Plant (WIPP) site near Carlsbad, New Mexico, that occurred on February 5, 2014, and then the radiological release event that occurred nine days later on February 14, 2014. The AIB was on the ground for almost 13 months.

For both events, the AIB was appointed to perform an accident investigation and to prepare an investigation report in accordance with Department of Energy Order 225.1B, *Accident Investigations*. The scope of the AIB's investigation was to identify relevant facts; analyze the facts to determine the direct, contributing, and root causes of the event; develop conclusions; and identify Judgments of Need for actions that, when implemented, should prevent recurrence of the accident. Facts relevant to the event were gathered through interviews and reviews of documents and other evidence, including photographs, videos, and other forensic evidence. The AIB also established a hotline at both WIPP and LANL to allow personnel to communicate concerns or other related information to the AIB. Facts were analyzed to identify the causal factors using event and causal factors analysis, barrier analysis, change analysis, root cause analysis, Integrated Safety Management (ISM) analysis, and Human Performance Improvement analysis.

The Accident Investigation reports covering these events were publically issued and discussed at public meetings:

1. Underground Salt Haul Truck Fire at the Waste Isolation Pilot Plant on February 5, 2014, issued March 13, 2014.
2. Phase 1 of the Radiological release Event at the Waste Isolation Pilot Plant on February 14, 2014, issued April 22, 2014.
3. Phase 2 of the Radiological release Event at the Waste Isolation Pilot Plant on February 14, 2014, issued April 16, 2015.

Because access to the underground was restricted following the radiological release event as well as the importance of the conclusions found in the initial part of the radiological investigation to the WIPP recovery efforts, the radiological event investigation was broken into two phases. The first phase, Phase I, focused on how the radiological material was released into the atmosphere. Phase II was performed once limited access to the underground was re-established and focused on how the radiological material was released.

The figures provided below illustrate key points in the summary background.

#### **Underground Salt Haul Truck Fire at the Waste Isolation Pilot Plant, February 5, 2014**

**Root Cause** – The Board identified the root cause of this accident to be the failure of Nuclear Waste Partnership LLC (NWP) and the previous management and operations (M&O) contractor to adequately recognize and mitigate the hazard regarding a fire in the underground. This included recognition and removal of the buildup of combustibles through inspections and periodic preventative maintenance (e.g., cleaning), and the decision to deactivate the automatic onboard fire suppression system.

The Board identified contributing causes to this accident in the following areas:

1. Preventative and corrective maintenance.
2. Fire protection program.
3. Training and qualification of the operators and supervisors.
4. CMR Operations response to the fire, including evaluation and protective actions.
5. Emergency management and preparedness and response.
6. Nuclear versus mine culture.
7. Oversight at all levels.

8. Follow-up on Repeat deficiencies.
9. Conduct of Operations (CONOPS).

### **Phase 1 Radiological Release Event at the Waste Isolation Pilot Plant, February 14, 2014**

**Root Cause** – The Board identified the root cause of Phase I of the investigation of the release of radioactive material from underground to the environment to be NWP’s and CBFO’s management failure to fully understand, characterize, and control the radiological hazard. The cumulative effect of inadequacies in ventilation system design and operability compounded by degradation of key safety management programs and safety culture resulted in the release of radioactive material from the underground to the environment, and the delayed/ineffective recognition and response to the release.

With regard to ventilation system design and operability: the filtration portion of the ventilation system has two HEPA filter bypass isolation dampers that provide a pathway of unfiltered exhaust into the environment. These isolation dampers are not suitable as a containment boundary and reduce the overall efficiency of the HEPA filter system. This condition was never identified by the contractor, CBFO, or Headquarters in any of the revisions and updates to the WIPP safety basis documentation.

The Board identified contributing causes in the following areas:

1. Implementation of the NWP Conduct of Operations Program.
2. Radiation Protection Program.
3. Maintenance.
4. Nuclear Safety.
5. Emergency Management.
6. Site safety culture.
7. Execution of the NWP Contractor Assurance System (CAS) in accordance with DOE O 226.1B, *Implementation of Department of Energy Oversight Policy*, was ineffective. Execution of the CAS did not identify precursors to this event or the unacceptable conditions and behaviors documented in this Phase I report.
8. Oversight at all levels.

I will submit my detailed written testimony for the record, and I'll now be happy to answer any questions you may have.