

FATAL ACCIDENT: August 2015

Miner Engulfed After Silo Structural Failure

On August 3, 2015, an eighteen-year-old miner with nine weeks of mining experience was engulfed and buried by the contents of a silo. He was working beneath the structure at the time. The silo collapsed when the inner-cone section failed suddenly and fell, causing the silo walls to split open and the contents to spill out. Emergency medical and technical rescue teams responded immediately to locate and rescue the miner. The initial rescue and recovery attempts were temporarily suspended to stabilize the collapsed silo structure and reduce safety hazards for the rescue workers. Rescue and recovery efforts resumed once the structure was stabilized and the victim's body was recovered on August 4, 2015.

CONCLUSIONS/RECOMMENDATIONS:

- The accident occurred because the silo structure was not maintained in a safe condition. The heads of a significant number of the bolts that connected the discharge hopper were exposed to abrasive wear and corrosion resulting in their inability to support the weight of the hopper and the material stored in the silo (note the bolts in the inset pictures at right).
- No internal inspections of the silo and discharge hopper were conducted since it was constructed in 1993. In 2012, an external inspection was performed to gauge metal thicknesses at multiple areas of the silo and discharge hopper walls. As a result of this inspection, modifications were made to reduce wear on the silo walls. No follow-up inspections of the wear areas or metal thicknesses were performed.
- Recommendations:
 - All structures should be inspected on a regular schedule to assess wear, corrosion, or damage that could affect the safety of miners working on, in, or around them.
 - Mine employees should be trained to identify defects. Any defects found should be reported immediately to the certified mine foreman or mine operator and corrective action taken.
 - Structures found to contain defects that pose an imminent danger to personnel working in or around them or structures having a serious defect that cannot be corrected immediately should have the entrance to the structure, and the surrounding area that could be affected, properly barricaded to prevent entry and access. The area should have appropriate warning signs posted as well.

