

APPENDIX U-14

**EXECUTIVE SUMMARY OF
INVESTIGATION OF PYOTT BOONE CO
MONITORS**



November 17, 2011

MEMORANDUM FOR NORMAN G. PAGE
Accident Investigation Team Leader

FROM: JOHN P. FAINI 
Chief, Approval and Certification Center

SUBJECT: Executive Summary of Investigation of Pyott Boone CO
Monitors Recovered from Performance Coal Company's Upper
Big Branch – South Mine

The Approval and Certification Center (A&CC), as requested by Upper Big Branch Mine Accident Investigation Team Leader, Norman Page, conducted a laboratory investigation associated with respect to Carbon Monoxide (CO) Monitors recovered from a fatal mine explosion at the Upper Big Branch Mine-South on April 5, 2010.

The components received were:

1. Exhibit No. PE-0207, Pyott Boone Model 2103 CO Monitor, MSHA Sensor Classification G Issue Number 113.
2. Exhibit No. PE-0178, Pyott Boone Model 1703 CO Monitor.
3. Exhibit No. PE-0482, Pyott Boone Model 2103 Partial Circuit Board, Unknown MSHA Approval Number.

The investigation began with preliminary inspection of Exhibit Nos. PE-0207 and PE-0178. The preliminary inspection included documenting visual observations, and photographing as-received conditions of the components. None of the exhibits were operated during the preliminary inspection. The exhibits both presented discoloration and were covered in a black dusty substance. The bottom lower half of the rear of the case was missing on Exhibit No. PE-0178. Exhibit No. PE-0482 was inspected and is a partial Smart Remote CPU Printed Circuit Board (PCB).

The next phase of the investigation included a detailed inspection and performance test of Exhibit Nos. PE-0207 and PE-0178. Both exhibits were able to be powered using a bench power supply. Both exhibits initially reported CO readings when no CO was provided. After calibration, both exhibits reported CO readings correctly at 0 ppm, 50 ppm and 100 ppm. After disassembling and inspecting all the exhibits, no signs of arcing, sparking, or electrical heating were observed.

Exhibit Nos. PE-0207 and PE-0482 were compared to the drawings on file with MSHA.
Exhibit No. PE-0178 is a non-approved and non-permissible CO Monitor; as such, there are no drawings on file with MSHA.