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RSL Fiber Systems Response Summary
MSHA Request for Information to Improve the Health and Safety of Miners and to Prevent Accidents in Underground Coal Mines

(Docket Number MSHA-2014-0029, RIN 1219-AB85)

In February 2015 the Mine Safety and Health Administration (MSHA) issued a Request for Information (MSHA Docket Number MSHA-2014-0029, RIN 1219-AB85) on a number of topics to improve the safety of miners, based on issues raised in reports on the coal dust explosion that occurred at the Upper Big Branch Mine on April 5, 2010 where 29 miners lost their lives.

RSL Fiber Systems submitted comments in response to **section B. Atmospheric Monitoring Systems and New Technology for Remote Monitoring Systems**.

Comments from RSL and other respondents can be found at:

http://www.regulations.gov/#!docketBrowser;rpp=50;so=DESC;sb=docId;po=0;dct=PS%252BSR;D=MSHA-2014-0029

The comments from multiple industry sources confirm that:

- Methane forms in the gob and other inaccessible areas of the mine;
- Since 1976 methane has been responsible for 186 US mining fatalities and innumerable injuries;
- Detection of methane formation and movement is critical for the safety of miners;
- A remote fiber optic detection system is the optimal way to detect methane;
- RSL's system can remain operational indefinitely once the power to the mine is cut off (supported by NIOSH response).

RSL describes two (2) baseline technologies in the response:

1. Remote, self referencing fiber optic methane detection system based on Tunable Diode Laser Spectroscopy (TDLS);
2. Distributed Temperature Sensing (DTS) based on Raman Optical Frequency Domain Reflectometry (OFDR).