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FACSIMILE TRANSMITTAL SHEET

TO: MS. FONTAINE	FROM: MIKE BERUBE
COMPANY: STRATA WORLDWIDE	DATE: 11/28/2011
FAX NUMBER: 202 693 9441	TOTAL NO. OF PAGES INCLUDING COVER: 11
PHONE NUMBER: 770 321 2519	SENDER'S REFERENCE NUMBER:
RE: RIN 1219-AB65	YOUR REFERENCE NUMBER:

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

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Comments of:
Strata Proximity Systems LLC

Submitted to:
Mine Safety and Health Administration

In Response to:
MSHA Proximity Detection Public Hearings for Public Comments

Submitted by:
Mike Berube
Chief Operations Officer
Strata Worldwide LLC

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November 28, 2011

Office of Information and Regulatory Affairs
Office of Management and Budget
New Executive Office Building
725 17th Street, NW
Washington, DC 20503
Attn: Desk Officer for MSHA

Ms. Roslyn Fontaine
Acting Director
Mine Safety and Health Administration
Office of Standards, Regulations, and Variances
1100 Wilson Boulevard
Arlington, VA 22209-3939

Re: RIN 1219-AB65

Dear Ms. Fontaine:

This letter serves as the response of Strata Proximity Systems, LLC (SPS) to MSHA's request for public comments on the proposed rule on proximity detection. SPS is an affiliate company of Strata Products Worldwide, LLC and Strata Safety Products, LLC. SPS is the largest proximity detection provider to the underground coal industry with over approximately 300 systems and estimated 10,000 PWD's installed and running today. SPS proximity detection and collision avoidance systems are operating on 8 different types of heavy equipment globally in underground coal, hard rock, and surface mining. In underground coal SPS has systems installed and running on:

- Shuttle Cars, 16 and 20 ton both AC and DC drive
- Coal Haulers, battery DC drive
- Roof Bolters, single and double boom
- Feeder Breakers, single and three way dump

- Continuous Miners, place change and full face both AC and DC drive
- Load Haul Dumps, diesel
- Scoops, battery
- Front end loaders
- Haul Trucks
- Light duty vehicles
- Dozer
- Dragline
- Drills

SPS supports the proposed rule, but offers the following comments as potential improvements to the final regulation.

1. **Installation timeframe**

   Proposed Rule: Section 75.1732 (a)

   SPS Comment: We would like to provide separate time estimates for system installations in three different environments; underground, on the surface on mine property, in a rebuild or manufacturing facility.

   We would also like to outline our training process and time allocated to training.

   We believe that this information will provide value in helping MSHA to determine the proper time frame for installation. We do believe that 18 months is a difficult requirement to meet based on rebuild cycles, the time required for training, and the lead time required to coordinate schedules with the multiple parties involved when installing new systems on active mining equipment.

Installation Time

a. Underground

The following items need to be coordinated and completed by the Mine management to ensure a successful installation.

- Machine taken out of service on the section and moved to a serviceable area
- Power available on machine
- All covers removed from machine
- Machine degreased and washed so that cables can be routed from front to back and from left to right so that cables can be run through the machine

- Onsite welding machine with mine personnel to complete the welding
- Mine personnel to assist in the following items:
    - Mounting of the hardware
    - Wiring of the electrical system
    - Routing of the cables
    - Assistance of the Site Acceptance Test (SAT) for the functional test of the Proximity System
- **Install time 48 hours**

b. <u>On the surface on mine property</u>

The following items need to be coordinated and completed by the Mine management to ensure a successful installation.

- Machine taken out of service on the section and moved to a serviceable area
- Power available on machine
- All covers removed from machine
- Machine degreased and washed so that cables can be routed from front to back and from left to right so that cables can be run through the machine
- Onsite welding machine with mine personnel to complete the welding
- Mine personnel to assist in the following items:
    - Mounting of the hardware
    - Wiring of the electrical system
    - Routing of the cables
    - Assistance of the Site Acceptance Test (SAT) for the functional test of the Proximity System
- **Install time 32 hours**

c. <u>Rebuild or manufacturing facility</u>

The following items need to be coordinated by the mine management and completed by the rebuild or manufacturing facility to ensure a successful installation.

- Machine taken out of service on the section and moved to a serviceable area
- Power available on machine
- All covers removed from machine

- Machine degreased and washed so that cables can be routed from front to back and from left to right so that cables can be run through the machine
- Onsite welding machine with personnel to weld from rebuild shop
  - Loading boom to be removed from machine and turned upside down for welding, if an under boom kit is determined to be needed
- Rebuild shop personnel to assist in the following items:
  - Mounting of the hardware
  - Wiring of the electrical system
  - Routing of the cable
  - Assistance of the Site Acceptance Test (SAT) for the functional test of the Proximity System.
- **Install time 20 hours**

Training

d. Class room
   i. Training for all personnel in the section 1-2 Hours
      1. This training will give an over view of the system operation for zones and Personal Alert Device (PAD). This training should be attended by everyone working in our around the proximity systems.

e. Cold Start
   i. Operator Training with personnel 1-2 days underground
      1. This training is hands on to help the machine operators and section personnel understand the lights and warnings given by the machine and the Personal Alert Device (PAD) lights and audible tones.
   ii. Equipment Cold start time 1-2 weeks to include:
      1. Zone orientation: Operation of the proximity system **without** shutting down machine functions. This will allow the machine operator and section personnel to understand the detection zones around the machine.
      2. PAD orientation: The machine operator will also be altered to the zones by warnings and stop conditions by different lights and sounds from the PAD.

f. Hot Start
   i. Operator Training with personnel 1-2 days underground

1. This training is hands on to help the machine operators and section personnel understand the lights and warnings given by the machine and the Personal Alert Device (PAD) lights and audible tones.

ii. Equipment Hot start time 1-2 weeks to include:

1. Zone orientation: Operation of the proximity system while shutting down machine functions. This will allow the machine operator and section personnel to understand the detection zones around the machine while working with a trained instructor.
2. PAD orientation: The machine operator and section personnel will also be alerted to the zones by warnings and stop conditions by different lights and sounds from the PAD.

g. Train the Trainer

i. Class room Training for safety personnel 2-4 hour classroom

1. Presentation
   a. Train-the-Trainer will be given PowerPoint materials that outline the Proximity systems operation.
2. Hands on Training module
   a. Demonstration units are available for hands-on training.

h. Maintenance Training

i. Maintenance training for personnel 2-4 Hrs classroom

1. Theory/Presentation
   a. Theory of system electronics and functionality
   b. Systems operations
   c. Calibration of system
2. Hands-on training
   a. Trouble shooting system hardware
   b. Schematics of system
   c. Fuse locations and amperage
   d. Calibration of system
   e. MSHA daily checks
   f. MSHA weekly checks
   g. PAD trouble shooting

2. <u>Three foot stopping distance</u>

Proposed Rule: Section 75.1732 (b) (1)

SPS Comment: SPS supports the objective of stopping machines within three feet of a miner. However, as a result of varying mining conditions, differences in the operating condition of machines, and variations in the positioning of miner-wearable components of the proximity detection system in relation to machines, we concur with NIOSH's approach: that any rule making that specifies a stopping distance should be "Performance-Based" and account for factors that influence final machine stopping distance once the proximity detection system is activated. A better alternative to stopping distance would be a specification for activation of the proximity system, i.e., the point where the proximity system detects a miner and sends a command to the mining machine to immediately shut down. Changing the standard from stopping distance to system activation would allow the distance to be specified more precisely, without reference to performance based standards.

3. **Three foot distance exception rule for a miner who is remotely operating a continuous miner while cutting rock or coal**

Proposed Rule: Section 75.1732 (b) (1) (ii)

SPS Comment: Technically this can be achieved, but operationally it will likely create confusion. The approach proposed by the rule would require two different types of PWDs; one type for remote miner operators, and one type for non remote miner operators. In a mining environment where multiple miners in a section during a single shift may remotely operate a continuous miner, confusion over PWDs may increase the potential of injury. As a result, we believe that the issue of enabling a remote operator to be able to see properly during a cut sequence is achievable through proper design and installation of a proximity detection system; as evidenced by the design of the SPS system as described more fully below. In the event MSHA determines in the final rule that it is necessary for any mine personnel to be closer than three feet when a mining machine is cutting coal or rock, SPS recommends that this be applied to all mine personnel rather than separate standards for different personnel.

CM operator cut cycle

1. Operator view
    a. A machine operator must work in very close proximity to the machine to view the cutting. This view can be obstructed as concluded in the "Evaluation of work positions used by continuous miner operators in underground coal mines" (Bartels NIOSH).
    b. Operators position themselves in many different locations as to the cut sequence. The sequences may require the operator to turn a cross cut, this can cause an operator to have a shorter view range.
    c. To help aide the operator in repositioning himself while using proximity requires an understanding of the production model. Proximity systems robust design and

unique cabling efforts can locate field generators (hardware) on the loading boom of the machine. This design can allow the zones to move with the loading boom, by using this approach an operator can swing the loading boom away from him and increase his viewing angle while not reducing his safety during production.

4. **Testing/Calibration**

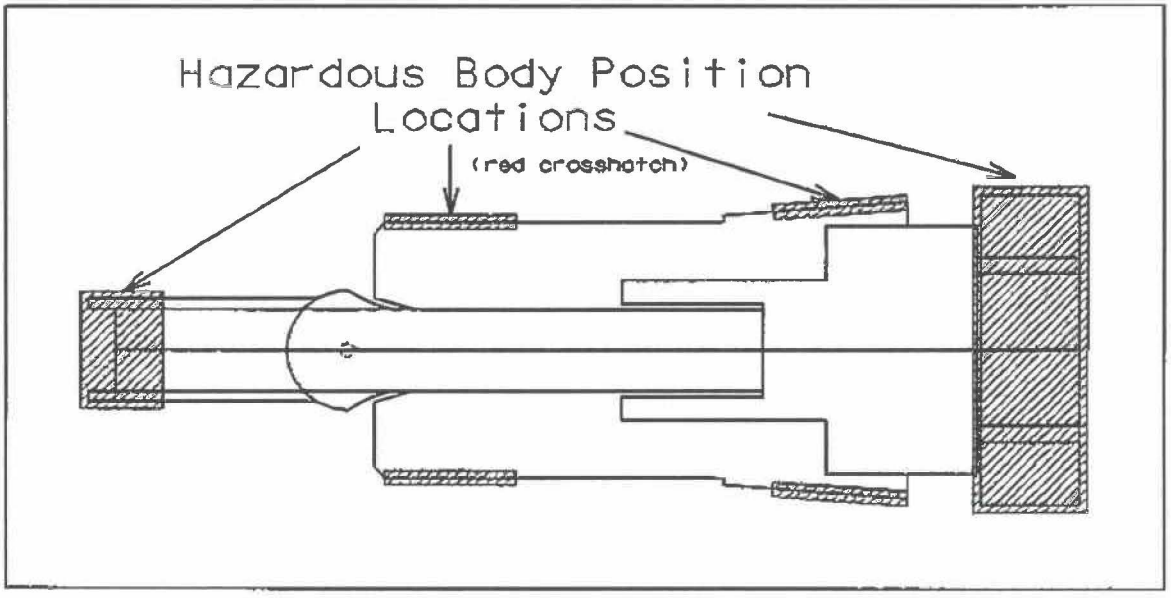
Proposed Rule: Proposed Rule: Section 75.1732 (c) (1) and Section 75.1732 (c) (2)

SPS Comment: Based on testing procedures that have been successfully implemented in South Africa, we suggest the following guidance for a set of test procedures as suggested by NIOSH. SPS concurs with the purposed rule for system examination. Proximity detection systems work in harsh environments and are exposed to damage and explosive methane gas on a daily basis. These systems are vulnerable to damage as a result of the mining conditions. The overall systems should be checked for operations before each shift. This examination should include the machine hardware and the PWDs. Proximity systems should be inherently failed safe to give additional system shut done if machine hardware fails. "Location of Remote Control Victims With Respect to Machine" outlines the hazardous location around the Continuous Miners (Dransite 2011). These hazardous locations are shown below in figure 1 - these locations are the shown to be the areas for concern around the continuous miner. These critical locations of the machine are most dangerous to the personnel. They should be measured and recorded on a weekly examination as described in the purposed rule.

a. Daily
    i. Machine
        1. Check system for full function
        2. Does the machine stop in the prescribed distance?
        3. Check lights on machine for warning and stop zone
        4. Check each generator that it is in working order
    ii. PAD
        1. Check that the PAD gives the correct response to the test station for the zones prior to the shift starting.
        2. Check that PAD sounds off at start of each shift by using a test station prior to the shift starting.
        3. Check the battery voltage at the test station

b. Weekly
   i. Machine
      1. Check system for full function
      2. Does the machine stop in the prescribed distance?
      3. Record the measured distance in the critical pinch points (see below figure 1)
      4. Check hardware on the machine that it is in working order and complies with all State and Federal guidelines for mining.
   ii. PAD
      1. Check that the PAD gives the correct response to the test station for the zones prior to the shift starting.
      2. Check that PAD sounds off by using a test station prior to the shift starting.
      3. Check the battery voltage at the test station
      4. Record the data from the above test

Hazards Locations for Continuous Miner Figure 1



5. **Equipment OEMs, Proximity Detection Suppliers, MSHA A&CC**

SPS Comment: We believe guidelines surrounding the working relationship between Continuous Miner OEMs and proximity detection suppliers need to be defined by MSHA in order to assist industry in meeting MSHA's installation timeline.

We believe that MSHA's Approval and Certification Center needs to establish guidelines on how to streamline approvals such as certification, ramps and field modifications in order to assist industry in meeting MSHA's installation timeline.