TECHNICAL PROGRESS REPORT

Quarterly Report

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Submitted by:

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DISCLAIMER

ABSTRACT

A temporary installation of Transtek's in-mine communications system in the Lake Lynn mine was used in the mine rescue training programs offered by NIOSH in April and May 2002.

We developed and implemented a software program that permits point-to-point data transmission through our in-mine system. We also developed a wireless data transceiver for use in a PLC (programmed logic controller) to remotely control long-wall mining equipment.

The USPTO (United States Patent and Trademark Office) issued Transtek patent No. US 6,370,396 B1 titled "Facility-Wide Communication System and Method" dated April 9, 2002.

TABLE OF CONTENTS

RESEARCH, DEVELOPMENT, AND EXPERIMENTAL

We added a point-to-point data channel to our in-mine system. This makes possible data communication through our system between two remotely located computers. Furthermore, we demonstrated the transmission through our system of the temperature measured by a sensor to a remotely located computer screen.

We have built and demonstrated the use of wireless data transceivers to control long-wall equipment by a remotely located PLC (programmed logic controller).

Work is continuing to complete the industrial type wireless through-the-earth communication system. The system functions all right with handset-type and panel-type microphones and speakers. Work is in progress to incorporate radios (walkie-talkies) into the system. This requires additional means to assert the receiving radio transceiver's push-to-talk signal to retransmit through rf energy the message that is being received through the earth.

The United States Patent and Trademark Office (USPTO) issued Transtek patent No. US 6,370,396 B1 titled "Facility-Wide Communication System and Method" dated April 9, 2002. Transtek filed an additional divisional application to cover additional aspects of the system.

Our underground mining communication system was used by NIOSH in its mining rescue teams training programs in April and May, 2002. The system was very helpful in the teams work. NIOSH is urging Transtek to permanently install its through-the-earth and in-mine systems in the Lake Lynn mine for NIOSH's use and for demonstration to mine owners and mine operators.

RESULTS AND DISCUSSION

We proceeded in the development of through-the-earth and in-mine systems. We added data communication to our voice communication systems. In-mine systems were installed in underground stone mines to the satisfaction of the mine operators. Inquiries are coming in for installations in coalmines. This requires MSHA approval. We started to proceed along these lines.

NIOSH used our in-mine communication system in its mining rescue training program at Lake Lynn. The system turned out to have been very helpful to the rescue teams . NIOSH is urging us to permanently install our system in the Lake Lynn mine. Additionally, Transtek developed a concept to adapt its communication method to an additional system especially designed for rescue teams. The system will be associated with the rescue team's life-line. Again, NIOSH urges Transtek to proceed with the system.

CONCLUSIONS

Transtek's systems have stirred much interest in potential users as well as in NIOSH. NIOSH wants to demonstrate the systems to mine operators and encourage them to acquire our systems.