

Nature of Request and Public Interest Statement

By the instant application ("Application For Permanent Authority"), Phelps Dodge Corporation d/b/a Phelps Dodge Mining Company ("Phelps Dodge") requests that the Commission grant a two year experimental license to permit Phelps Dodge to operate the facilities (the "Facilities") specified herein.

Effective April 1, 2004, the Commission granted special temporary authority ("STA") to Phelps Dodge to operate the subject Facilities. See File No. 0145-EX-ST-2004 (WB9XWG) (copy of authorization attached). However, because the slope stability experiments involving these Facilities will continue well beyond the expiration of the STA, Phelps Dodge is filing the instant Application For Permanent Authority.¹

1. Purpose of the Operation

The instant Application For Permanent Authority seeks continued authority to test on a trial basis a new product known as the Slope Stability Radar (SSR) system designed and manufactured by GroundProbe Pty. Ltd. of Australia. The SSR is a tool for monitoring the movement characteristics of a slope or open pit mining highwall. Although these units are currently being employed in Australia, Indonesia, and South Africa, Phelps Dodge requests authority from the Commission to test the functionality and reliability of this technology in the context of its open pit mines in the United States, and to compare SSR computed slope deformation information against existing technology. Phelps Dodge notes that during the initial testing phase of the SSR, it will be leasing the technology from GroundProbe. Should the tests

¹ It is noted that except as provided below, the instant Application For Permanent Authority specifies the same technical parameters as the STA. First, the ERP for the 919-928 MHz link has been corrected to read 1.93 Watts. The maximum transmitter output for these frequencies is 1 Watt, and the maximum antenna gain is 6 dBi, with 1 dB cable losses. This equates to an ERP of 1.93 Watts. Second, authority to operate the SSR at the following three additional Phelps Dodge locations is being requested because each of these new sites presents special challenges to the tested equipment, which are critical to determining the adaptability, breadth and risk reduction capabilities of this technology: (i) Claypool, AZ – the soil at this mine site is much more soil-like in its properties than the others, which results in much greater velocities of earth movement, and there are significantly higher levels of "toe-heave" (i.e., pressure and movement on the pit floor due to the weight of the pit walls) at this site and Phelps Dodge would like to determine whether the extent to which the SSR technology can anticipate and monitor this phenomenon; (ii) Morenci, AZ – due to the commencement of the monsoon season in the Morenci area, Phelps Dodge would like to use the Morenci mine site to determine the usefulness of the SSR technology in monitoring pit walls in severe weather, and to monitor for "wedge failures" that appear to be disproportionately plaguing this site; and (iii) Chino, NM – this site contains an ancient landslide area, which is characterized by enormous (i.e., many tons) boulders lying atop very fine material, creating a risk for Phelps Dodge employees that the SSR technology may assist in anticipating. Accordingly, due to the special circumstances present at these additional sites, and the fact that Phelps Dodge is not seeking to increase the number of units authorized (i.e., only one unit will be moved among the authorized sites) the addition of these three additional locations to the application is in the public interest, convenience and necessity.

be successful, Phelps Dodge would pursue the possibility of purchasing the technology and becoming both the owner and the operator of the technology.

The unit is positioned between 50 to 850 meters from a highwall and will transmit radar and receive reflected radar from the face of the highwall to a single 0.93 m diameter parabolic antenna. These scans are repeated over time and the resulting information processed to determine the deformation of the highwall (precision: ± 0.2 mm std. dev.). The on-board computer system compares the measured deformation characteristics of the wall against user defined criteria and transmits point-to-point radio communication from the remote field unit (SSR) to an engineering office location for analysis and action. A graphic displaying the SSR, and a diagram of the scanning procedure, is set forth after this narrative exhibit.

2. Public Interest Showing

This program may enhance the safety of U.S. miners working in proximity to high cut slopes. Open pit mine slopes pose hazards to those working in proximity to those walls. Current methods of monitoring open pit slopes involve the placement and continuous survey of prism targets or the use of slide wire extensometers; both of these methods allow for discrete point monitoring of a slope only where you can safely manage the placement of the devices. The SSR system provides broad area coverage of a slope without the need for manufactured targets in the area of coverage. Although weather has posed problems for existing slope monitoring methods resulting in loss of information, the use of this radar technology offers a method of acquiring information on slope movement 24 hours a day in virtually all weather conditions. The use of this device will enhance safety and productivity of open pit mines by expanding the information base on which safety and planning decisions are made. Use of radar technology in this manner is not currently in place in the U.S. today.

Accordingly, because of the potential safety enhancements that this technology may bring to U.S. mine workers, Phelps Dodge respectfully submits that grant of the instant Application For Permanent Authority is in the public interest, convenience and necessity.

3. Pulse Width/Repetition Rate

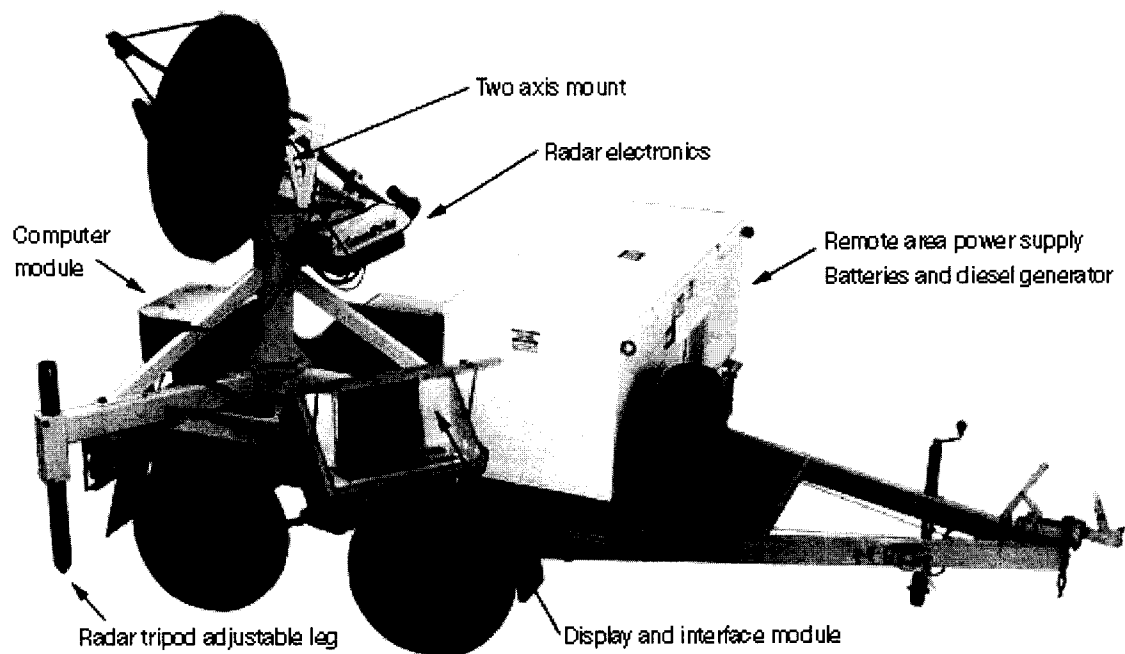
The radar transmission is a spread spectrum signal which is then pulsed to remove reflections from very close range targets. The spread spectrum signal consists of equally spaced spectral lines. The lines are equal amplitude (± 2 dB variation) with the exception of the central line (carrier frequency) which is typically 10 dB higher. The spread spectrum signal is generated by upconverting a baseband signal and retaining both sidebands. Phases of the spectrum lines in the baseband signal are chosen for minimum excursion in the time domain. The spread spectrum signal is then pulsed for range-gating purposes. The radar transmits the above pulsed spread-spectrum wavetrain for 20 ms every 120 ms.

There are two modes of the radar that is changeable depending on the mine application. The waveform specifications for the two modes (Mode 1 and Mode 2) are:

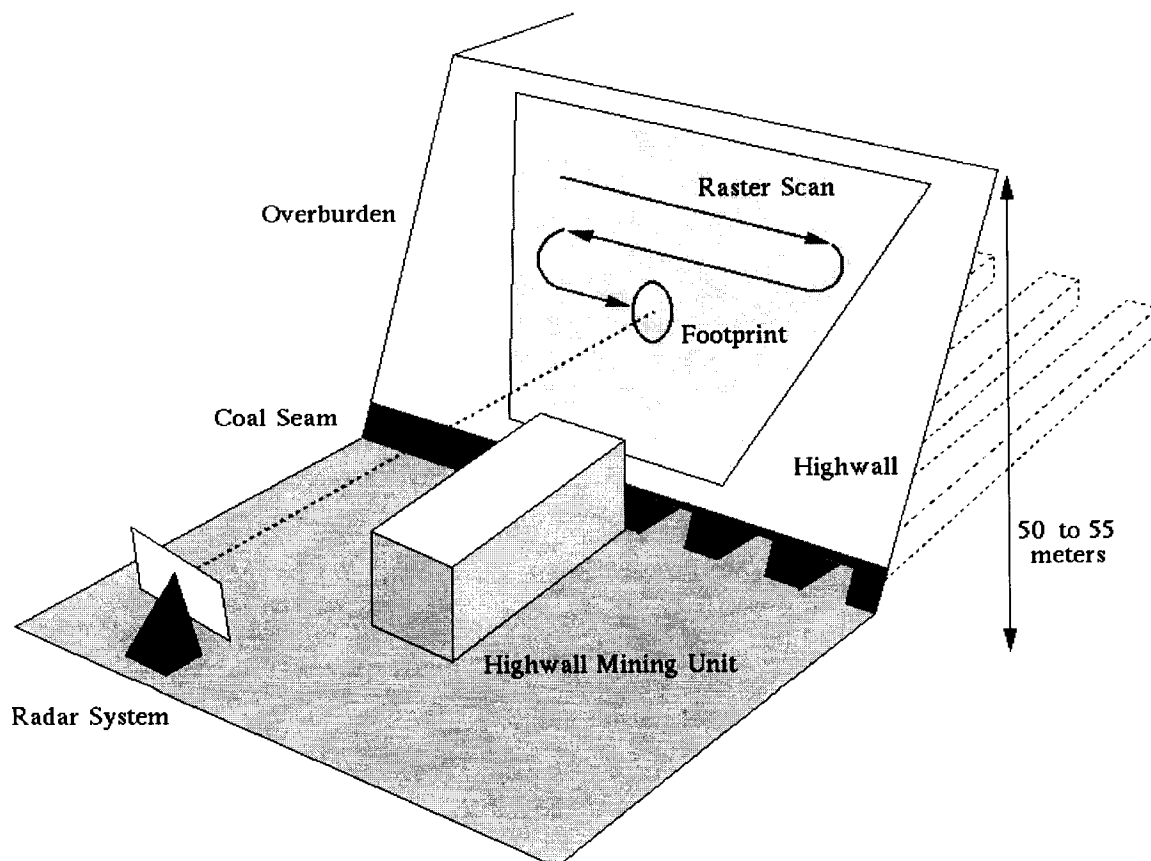
Mode 1: 433 spectral lines spaced by 322.266 kHz resulting in a 139.541 MHz bandwidth. The spread spectrum signal is then pulsed with a pulse width of 2.896 microseconds and with a PRF of 161.867 kHz.

Mode 2: 897 spectral lines spaced by 107.422 kHz resulting in a 96.250 MHz bandwidth. The spread spectrum signal is then pulsed with a pulse width of 4.522 microseconds and with a PRF of 107.107 kHz.

SRR Graphic:



SRR Scanning Procedure:



**United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
SPECIAL TEMPORARY AUTHORIZATION**

EXPERIMENTAL
(Nature of Service)

XD FX MO
(Class of Station)

WB9XWG
(Call Sign)

0145-EX-ST-2004
(File Number)

NAME Phelps Dodge Corporation dba Phelps Dodge Mining Company

This Special Temporary Authorization is granted upon the express condition that it may be terminated by the Commission at any time without advance notice or hearing if in its discretion the need for such action arises. Nothing contained herein shall be construed as a finding by the Commission that the authority herein granted is or will be in the public interest beyond the express terms hereof.

This Special Temporary Authorization shall not vest in the grantee any right to operate the station nor any right in the use of the frequencies designated in the authorization beyond the term hereof, nor in any other manner than authorized herein. Neither the authorization nor the right granted hereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934. This authorization is subject to the right of use of control the Government of the United States conferred by Section 706 of the Communications Act of 1934.

Special Temporary Authority is hereby granted to operate the apparatus described below:

Purpose Of Operation:

Test of radar used for monitoring earth movement in open pit mines.

Station Locations

- (1) Green Valley (PIMA), AZ - NL 31-52-20; WL 111-08-39; MOBILE:
- (2) Bagdad (YAVAPAI), AZ - NL 34-34-57; WL 113-12-11; MOBILE:

Frequency Information

Green Valley (PIMA), AZ - NL 31-52-20; WL 111-08-39; MOBILE:

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
918-928 MHz	FX	175KF1D	150 W (ERP)	
9552.5 MHz	MO	105MP0N	150 W (ERP)	

Bagdad (YAVAPAI), AZ - NL 34-34-57; WL 113-12-11; MOBILE:

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
918-928 MHz	FX	175KF1D	150 W (ERP)	
9552.5 MHz	MO	105MP0N	150 W (ERP)	

This authorization effective April 01, 2004 and
will expire 3:00 A.M. EST October 01, 2004

**FEDERAL
COMMUNICATIONS
COMMISSION**

