

Date: Wed, 28 Aug 2002 15:42:07 -0700  
From: PHMC\_Lessons\_Learned@rl.gov  
Subject: Green Alert: Using Portable Hydraulic Cutter on Concrete Rebar

**TITLE: Use of Portable Hydraulic Cutter for Metal Concrete Reinforcement Rods**

IDENTIFIER: G-2002-OR-BJCPAD-0801      August 28, 2002

**LESSON LEARNED STATEMENT:** Use of a Portable Hydraulic Metal Cutter reduces hazard concerns associated with other cutting methods and equipment.

**DISCUSSION:** In a project to downsize hundreds of concrete piers and stage them for disposal, the metal reinforcement rods (rebar) had to be cut into manageable lengths for disposal. The length of the concrete piers is approximately 38 feet and each contains four runs of rebar running the entire length of the concrete pier. The rebar varies in diameter from 1/2" to 3/4". In order to stage the rebar for disposal, it must be cut into lengths of roughly five feet. Several methods for cutting the rebar and their associated hazards were evaluated by the project.

**ANALYSIS:** Using an acetylene torch to cut the rebar would involve obtaining a hotwork permit, the presence of combustible gases and the requirement for a fire watch. A gas powered hydraulic shear would require the use of a gasoline generator and electrical power cords. The portable hydraulic cutters are battery powered and pose none of the safety hazards associated with the other methods. After researching portable hydraulic cutters and field testing a unit, the portable method was chosen. In addition to the benefit of reduced hazard, the portable cutter can be easily used in remote areas of the site. The portable hydraulic rebar cutter uses an 18V DC power supply and has the capability of cutting rebar from 1/8" to 3/4" in diameter. Battery life depends on the size of the rebar being cut. On the average, a battery will perform 60 cuts of the 3/4" rebar and 100 cuts of the 1/2" rebar before being replaced. The batteries for the portable units are rechargeable providing continuous and economical power for the cutting tool.

**RESOLUTION/RECOMMENDED ACTIONS:** Investigation of alternative methods of accomplishing work and equipment resulted in the minimizing of hazards and hazard controls required for the project. Taking the time to think through and plan the work contributed greatly to worker safety.

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PRIORITY DESCRIPTOR: Green - Good Work Practice

DOE FUNCTIONAL CATEGORY: Conduct of Operations

BECHTEL JACOBS COMPANY TREND CODE CATEGORY: OP - Conduct of Operations

KEYWORDS: Cutting, Rebar, Concrete

REFERENCES: None

ISMS CODE: Analyze Hazards; Provide Feedback & Continuous Improvement

HAZARD CODE: Other

WORK ACTIVITY: Demolition

**FOLLOW-UP ACTIONS:** Information in this report is accurate to the best of our knowledge. As a means of measuring the effectiveness of this report, please contact the originator of significant actions taken as a result of this report or of any technical inaccuracies you find. Your feedback is appreciated.