

# 2009 Monthly ES&H Campaign: January

## Utility Avoidance



During the last calendar year Bechtel Communications suffered 12 utility hits in its markets throughout the United States. Fortunately no one was hurt because of these incidents, but each had the potential to cause serious injury or death, lawsuits and liability for service disruption, and did cause a delay in operations and its related increased costs. Unfortunately, despite investigations and communications on the importance of lesson learned, the number of utility hits has not improved over a three year period.

Failure to follow the Bechtel's Utility Avoidance requirements was the common denominator among the 12 incidents. Some involved machine digging and others hand digging with one involving a saw cut in concrete. Most were outside, but one was in a facility basement. Many involved owner installed utilities such as Romex lines. A number of different general contractors and Bechtel personnel were involved in the incidents.

The common denominator of failing to follow Utility Avoidance procedures took various faces. Most involved striking private utilities which were not located, and in some cases not even looked for. Other than having "Miss Utility" locate "public" utilities up to the meters, little additional effort was made in most cases to locate "private" utilities despite evidence that they existed. Romex to a parking lot lights, a pipe from a trailer to a septic tank, propane supply line and buried telco lines inside compounds, and a hydraulic line supplying an elevator were struck despite obvious evidence they were in the work area. In some cases owner provided information and/or as-built drawings were incorrect. In all cases, available methods for locating were not used.

### **Work scopes requiring appropriate subsurface location of all utilities:**

drilling	plowing
core boring	trenching
saw	cutting grading
excavating	demolition
directional boring	any other method of surface penetration

### **Determining the potential for subsurface utilities:**

- All available sources should be used to determine the potential for subsurface utilities including as-built drawings and landlord/property owner/site manager knowledge.
- The General Contractor and Field Coordinator should verify that Phase I and engineering issued drawings (IFC's) are valid and accurate.
- A common sense review of the surrounding area for evidence of unmarked utility services must be made. Water hose bibs, manholes, drains, vent risers, valve caps, gas meters, sprinkler heads, perimeter lighting, pipe cleanouts, etc. in the area indicate the existence of and may help determine the apparent route of utilities.

**Visit the Communications ES&H website for more information.**

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### UTILITY LOCATING

Contacting the area's public utility locating service is as easy in most areas as calling "811," the One-Call number, which will refer your call to the local "Miss Utility" type entity. Adequate notice and clear, "hands-on" identification of the areas where digging is required is necessary for a good result. Having the "locate" ticket in hand prior to any digging, trenching, or excavating is mandatory.

Contacting a 3<sup>rd</sup> party utility locating company for determination concerning privately installed utilities is required. Most of the utility hits this year were not to public utilities. Adequate notice, clear "hands-on" identification, and the report in hand prior to digging are equally important here.

### All utilities must be physically located by the following methods:

- Non-destructive vacuum extracting (potholing) must be used to verify the existence of and determine the exact location of the marked utility
- Other methods that may be used are Ground Penetrating Radar, Subsurface Utility Tracing, Lateral Identification, and Directional Boring Profile mapping.
- When locating underground utilities, non-conductive tools are required for hand digging
- Extra care must be used when locating gas lines.

Mechanically digging without fully implementing the locating requirements above was often a causal factor in this year's utility hits. Mechanical digging requirements must also be met.

### Job Safety Analysis Requirements:

As with all Bechtel work processes, the Job Safety Analysis (JSA) must be completed in explicit detail. Completion of digging/trenching/excavating planning, identifying all risks and hazards, and listing all mitigation plans is necessary for the JSA to be valid and meaningful.

**Utility hits in any form are unacceptable. Failure to follow Bechtel's Utility Avoidance requirements can have serious consequences for the workers and the companies involved.**

**Zero deviation from procedures is required.**

### Sources/for more information:

<http://www.bechtel.com/communications/Safety.html>

<http://www.bechtel.com/communications/assets/files/Environmental/ToolboxSafetyTopics/2008/20081110UtilityHitPrevention.pdf>

<http://www.missutility.net/media/pdf/mddcexcavatormanual.pdf>

<http://www.missutilityofvirginia.com/>

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