

Memorandum

To : ALL STANDARDS BOARD MEMBERS

Date : May 1, 2006

From : **Occupational Safety and Health Standards Board**
Michael J. Manieri, Principal Engineer-Standards

Subject : **Excavations, General Requirements**

The following information is provided in regard to the proposed revisions to the California Code of Regulations, Title 8, Chapter 4, Subchapter 4, Article 6, Section 1541 of the Construction Safety Orders (CSO).

INFORMATIVE DIGEST OF PROPOSED ACTION/POLICY STATEMENT OVERVIEW

This rulemaking is in response to a serious accident that took place on November 9, 2004, in Walnut Creek, California when a high-pressure petroleum pipe was punctured during an excavation. An explosion and fire was ignited by several welders who were working in proximity to the excavation resulting in five deaths and injury to employees.

The Division of Occupational Safety and Health (Division) conducted a six-month investigation which concluded that one of the principal causes of the accident was not determining the precise location of a high-pressure combustible fuel pipeline prior to conducting excavation activities. The excavation constructor's backhoe struck and punctured the pipeline, which resulted in the explosion and fire.

The Division's accident investigation findings were discussed on June 10, 2005, at the Senate Select Committee on Bay Area Infrastructure: Informational Hearing on Pipeline Explosion, convened by State Senator Tom Torlakson, D-Antioch at the Walnut Creek City Hall. The meeting was attended by representatives from East Bay Municipal Utility District (EBMUD), the Division, the Occupational Safety and Health Standards Board (Board), Associated General Contractors of California (AGC California), Office of the State Fire Marshal and the Engineering and Utility Contractors Association (EUCA). The meeting also provided time for public comment.

On July 26, 2005, the Board staff convened an advisory committee meeting consisting of subject matter experts in the fields of excavation, construction, subsurface installation detection, underground utility owners/operators, design engineers, utility companies and a relevant cross section of labor representatives including those representing the laborers who died in the November 9, 2004, Walnut Creek explosion and fire. The consensus of the one-day meeting was that a smaller, focused subcommittee should be convened to consider proposed amendments to California's excavation standards contained in Section 1541 of the CSO.

On September 28, 2005, the Board staff convened a subcommittee meeting to consider proposed amendments to CSO Section 1541. This committee included (1) representatives from labor including the Operating Engineers, International Brotherhood of Electrical Workers (IBEW), Laborers International Union of North America (LIUNA), (2) utility companies, (3) AGC

California, (4) local jurisdiction installation owners, (5) design engineers and (6) EUCA. The one-day meeting resulted in a consensus proposal. The full advisory committee was sent a copy of the proposal for review and comment. Several comment letters were received by Board staff and evaluated by Division and Board staff. The Board and Division staff's review of the committee's comment letters resulted in further revisions to the proposal and a decision that further meetings were unnecessary.

This proposal clarifies that Section 1541 applies to subsurface facilities such as sewer, telephone, fuel, electric and other subsurface facilities as specified. This proposal contains new language referencing portions of the California Government Code (GC) Section 4216 necessary to ensure excavators understand their responsibilities prior to digging. GC Section 4216 contains statutory requirements that excavators are to comply with. The proposal also contains new language addressing meet and confer procedures between excavators and owner/operators of high priority (risk) subsurface facilities, as the proposal defines, such as high-pressure petroleum pipelines when excavation is to occur within 10 feet of or in conflict with high priority facilities. The proposal also clarifies the definition of a qualified subsurface installation locator in terms of training and addresses required action by excavators who discover or cause damage to subsurface facilities. Board staff relied on a number of notable industry consensus guidelines such as the Common Ground Alliance (CGA), Best Practices, Version 2.0 and the National Utility Locating Contractors Association (NULCA) and the California Department of Transportation, Policy on High and Low Risk Underground Facilities Within Highway Right of Way-January 1997.

Section 1541. General Requirements.

This section contains Title 8 requirements addressing various safety issues pertaining to excavations which include but are not limited to: safeguarding employees from hazardous surface encumbrances, work involving underground installations including estimating their location, responsibilities of regional notification centers (RNC) to notify both RNC members and non-members of an excavation at least two working days prior to the proposed work, determination of the exact location of subsurface installations when the excavation is proposed in proximity to the subsurface installation, access and egress to and from excavations, means of egress, hazardous atmospheres, emergency rescue, protection from water accumulation, stability of adjacent structures, and the protection of employees from loose rock or soil.

Subsection (b)(1)

Amendments for clarity are proposed for subsections (b)(1) through (b)(4) to delete use of the term "underground" and replace it with "subsurface" to be consistent with Government Code (GC) Section 4216(j). Another amendment is proposed for subsection (b)(1) to clarify that the "approximate" rather than "estimated" location of subsurface installations is to be determined prior to excavation. The effect of the proposed amendments would be to clarify to the employer that consistent with the GC subsurface requirements, the excavator is to determine the approximate location of subsurface utilities prior to digging.

Subsection (b)(1)(A)

A new subsection (A) is proposed, consistent with the GC 4216.2, that would prohibit excavation until the area has been marked by the excavator and the excavator has received notification (positive response) from all known subsurface installation owner/operators within the boundaries of the proposed excavation. The effect of the proposed subsection would be to clarify to the employer that a positive response is to be received prior to the start of any excavation.

Subsection (b)(1)(B)

A new subsection (B) is proposed that would require an onsite meeting be held between the excavator and the subsurface installation owner/operator when an excavation is proposed within 10 feet of or in conflict with a high priority subsurface installation as defined within the context of subsection (B). High priority subsurface installations include natural gas pipelines, petroleum pipelines, pressurized sewage pipelines, high voltage electrical supply lines, conductors or cables that have a potential to ground of more than 60,000 volts (60kV), and hazardous materials pipelines that present risk to the employees or the public. The effect of the proposal would require the employer (excavator) to contact any high priority installation owners according to the criteria set forth in subsection (B) and arrange an onsite meeting to determine the most effective methodology for verifying the location of the high priority subsurface installation.

Subsection (b)(1)(C)

A new subsection (C) is proposed that would require all subsurface installation locators to perform location procedures in accordance with the GC sections specified in the text of the proposal. The proposal would also require that locators be trained in accordance with existing Section 1509, Injury and Illness Prevention Program (IIPP), requirements and the minimum training guidelines of the CGA Best Practices, Version 2.0, December 2004, or the NULCA Standard 101, 2001, in order to be deemed qualified. The effect of the proposal may require some employers to revise or enhance their existing IIPP training program to meet the training requirements specified by either the CGA or NULCA training guidelines.

Subsection (b)(1)(D)

A new subsection (D) is proposed that would require all employees to be trained in excavator notification and excavator practices required by this section and applicable portions of the GC as indicated in the proposed text. The effect of the proposed amendment will emphasize and clarify to the employer that consistent with existing IIPP requirements, employees who are involved in excavation operations are to be trained in the requirements set forth in Section 1541 and the relevant portions of the GC.

Subsection (b)(2)

Existing subsection (b)(2) requires all Regional Notification Centers, as defined in the GC, in the areas involved in the excavation and all known owners of subsurface facilities in the area who are not members of the Regional Notification Center to be advised of the proposed excavation

work two days prior to digging. This subsection contains an exception that excludes subsurface installation emergency repair work from the two-day notice requirement. The effect of the proposed amendment would be to clarify that emergency repair work, as defined in the GC, is excluded from the notification requirement described above.

Subsection (b)(3)

Existing subsection (b)(3) requires all excavators that approach the estimated location of subsurface installations to determine the exact location of the installation by safe and acceptable means. Amendments are proposed to include boring operations and replace the term “estimated” with “approximate” consistent with the proposed amendment to subsection (b)(1). The effect of the proposed amendments would clarify to the employer that the exact location of the subsurface installation is to be determined by safe and acceptable means, as defined in the GC, that will prevent damage to the subsurface installation.

Subsection (b)(5)

A new subsection (b)(5) is proposed that would require excavators who cause or discover damage to subsurface facilities to notify the installation owner/operator or the one call center immediately and report the damage to the subsurface installation. The effect of the proposed new language would ensure that damaged subsurface facilities are repaired in order to prevent release of toxic or hazardous materials which could endanger employees and/or the general public, or if left undetected could cause a fire, explosion and/or interruption of vital utilities.

DOCUMENTS INCORPORATED BY REFERENCE

1. Common Ground Alliance (CGA), Best Practices, Version 2.0, Published December 2004.
2. National Utility Locating Contractors Association (NULCA) Standards Committee Standard 101: Professional Competence Standards for Locating Technicians, 2001 First Edition.

These documents are too cumbersome or impractical to publish in Title 8. Therefore, it is proposed to incorporate the documents by reference. Copies of these documents are available for review Monday through Friday from 8:00 a.m. to 4:30 p.m. at the Standards Board office located at 2520 Venture Oaks Way, Suite 350, Sacramento, California.

PETITION

This proposal was not the result of a petition.

ADVISORY COMMITTEE

This proposal was developed with the assistance of an advisory committee. (A list of advisory committee members, attendance sheets, and minutes are attached as Attachment No. 4.)

STRIKEOUT/UNDERLINE DRAFT PROPOSAL

See Attachment No. 1.

INITIAL STATEMENT OF REASONS

See Attachment No. 2.

SIDE-BY-SIDE CODE COMPARISON WITH FEDERAL STANDARD

See Attachment No. 3.

FIRE PREVENTION STATEMENT

This proposal does not include fire prevention or protection standards. Therefore, approval of the State Fire Marshal pursuant to Government Code Section 11359 or Health and Safety Code Section 18930(a)(9) is not required.

Attachments