
California Underground Facilities Safe Excavation Board

November 7-8, 2022

Agenda Item No. 9 (Information Item) – Staff Report

Electronic Positive Response Codes

PRESENTER

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SUMMARY

Electronic positive response was implemented in California through the Dig Safe Act of 2016 (SB 661, Chapter 809, Statutes of 2016), and utility operators were required to use it in 2021 pursuant to AB 1166 (Chapter 453, Statutes of 2019). With several years of experience with the process, the state may wish to consider updating the response options available to operators as several are ambiguous, potentially duplicative, or conflict with statute. The Board may wish to adopt principles for what constitutes an effective electronic positive response code. Staff recommends that the Ticket Committee review the existing codes and consider re-branding the term “electronic positive response” to a message that conveys the value of its use to excavators and utility operators.

STRATEGIC PLAN

2020 Strategic Plan Objective: Improve Accessibility of Buried Infrastructure Location Knowledge and Understanding

2021 Strategic Activity: Improve Excavation and Location Practice Safety

BACKGROUND

Government Code § 4216.3(a)(1)(A) requires a utility operator to respond to an excavation notification in one of three ways:

- 1) Locate and mark
- 2) Provide facility location information
- 3) Advise the excavator that no facilities exist in the area

The operator must provide that response by the legal start date and time, with limited exceptions, such as if the operator cannot access the site (as the excavator is obligated to provide the operator information to assist in access¹) or if the excavator and operator have

¹ [Gov't Code § 4216.2 \(h\)](#).

agreed to a phased marking schedule or a later start date and time.² Upon receiving a § 4216.3(a)(1)(A) response from all operators, an excavator is permitted to begin excavation work under the Dig Safe Act except if the excavation is within 10 feet of a high priority facility, in which case the excavator and operator must have an on-site meeting.³ The operator is obligated to notify the excavator of the presence of the high priority facility.

Following the announcement of a California Public Utilities Commission investigation into the falsification of locate and mark records, the Legislature passed AB 1166 (Chapter 453, Statutes of 2019) to improve locate and mark accountability. The bill required every operator to provide an electronic positive response through the one-call center before the legal start date and time.⁴

Prior to AB 1166, electronic positive response had been voluntary.⁵ To accommodate this voluntary option for operators, the one-call centers of DigAlert and Underground Service Alert of Northern California and Nevada (USA North) were obligated to develop an electronic positive response system. In addition to the technological components, DigAlert and USA North needed to develop standardized response options for operators. These “codes” have continued to be in use (with minor additions) since 2018.

In prior Board meetings,⁶ members have expressed concerns with how some of these codes have been used and also questioned whether the State is using the correct set of codes. During the July 2021 meeting, the Board created a Ticket Committee of Members Bianchini and Charland to address communication between the excavator and operator as mediated by the one-call centers. During the Board’s September 2022 meeting, members discussed how some codes were infrequently used and how, now that the State has two years of experience with mandatory electronic positive response, it might be a good time to evaluate its effectiveness.

DISCUSSION

Some electronic positive response codes are ambiguous, and not all are consistent with statute

Not all of the 32 codes are equally used, and not all of them are consistent with the obligations conferred by California law (**Table 1**).

Available responses highlighted in green represent the responses to an excavation pursuant to statute.⁷ Just because an option is not a statutory response, however, doesn’t mean it doesn’t have value. For instance, the code “14: PARTIALLY MARKED - MORE TIME IS NEEDED” provides

² Also in [Gov’t Code § 4216.3\(a\)\(1\)\(A\)](#)

³ Gov’t Code [§ 4216.2\(c\)](#) and [§ 4216.10\(c\)\(1\)](#).

⁴ [Gov’t Code § 4216.3\(c\)\(1\)](#).

⁵ [SB 661](#) (Chapter 809, Statutes of 2016) made electronic positive response optional for operators.

⁶ Such as [July 13, 2021](#) and [September 13, 2022](#).

⁷ Gov’t Code [§§ 4216.3\(a\)](#) and [4216.2\(c\)](#).

valuable information to the excavator. An excavator could arrive onsite and see that all operators have marked and assume that they are safe to proceed. Code 14 provides information that the entire job has not yet been marked.

On the other hand, some codes—those highlighted in red—imply obligations that do not exist. While “33: HIGH PRIORITY LINE IN AREA - ON SITE MEETING REQUIRED” reflects Gov’t Code § 4216.2(c), the next code “34: FIELD MEET REQUIRED - CONTACT FACILITY OWNER TO SCHEDULE” appears to inappropriately create the additional condition of a field meeting on the excavator’s ability to begin work. While it may be reasonable for the electronic positive response system to facilitate an operator’s field meet *request*, and while excavators may find it in their interest to accommodate these requests for both safety and liability⁸ reasons, it is not appropriate for the electronic positive response system to allow an operator to assert obligations or conditions on an excavator that do not exist.

⁸ [Gov’t Code § 4216.7](#) assigns liability to an excavator who fails to comply with the operator’s requests to protect the subsurface installation as specified by the operator before the start of excavation.

Code	Description	%
1	Clear - No conflict	39.0%
2	Clear - No conflict but privately owned utility on property - Contact private utility owner for locate	0.5%
3	Existing markings adequate	2.9%
4	No markings requested	20.5%
10	Locate area marked	15.7%
11	Locate area marked but abandoned facilities may be in the area	0.0%
12	Locate area marked up to private owned utility - Contact private utility owner for locate	0.4%
13	Locate area marked up to private property	0.1%
14	Partially marked - More time is needed	0.4%
15	Provided facility location information to excavator (4216.3(a)(1)(A)(ii))	0.2%
16	Operator has located and marked all subsurface installations known to be embedded in the pavement	N/A
20	Bad address/incorrect street/location info - Resend ticket requested	0.2%
21	No access to locate area - Resend ticket requested	0.7%
22	No delineation - Resend ticket requested	1.6%
23	Delineated area does not match location request - Resend ticket requested	0.2%
30	Contact facility owner for further info	0.2%
31	Requires stand by at time of excavation - Contact facility owner	0.2%
32	Visible or exposed facility - Contact facility owner if crossing	0.0%
33	High priority line in area - On site meeting required	0.0%
34	Field meet required - Contact facility owner to schedule	0.0%
35	Traffic control required to mark facilities	0.0%
40	Excavator completed work prior to due date	0.1%
41	Excavator no show for meet	0.0%
42	Excavator canceled request	1.4%
43	Excavator not digging within 14 calendar days (preplanning)	0.0%
50	Negotiated marking schedule	1.0%
51	Mutually agreed to a later start date and time (4216.3(a)(1)(A))	0.2%
52	Unable to locate using standard locating techniques	0.1%
53	Scheduled meet with excavator at requested date and time	0.0%
80	Extraordinary circumstances exist - No locate due to weather/emergency/safety conditions	0.2%
990	Member has been granted an extension from the EPR requirement by the Board as defined in 4216 through 12/31/2021	0.0%
999	Member did not respond by required time (system use only)	13.9%

Fully consistent with law

Imposes requirements not in law

Identifies rationale for not fulfilling 4216.3(a)(1)(A) obligations

Implies a failure of excavator to fulfill obligations

States or implies disclaimers

Table 1: Electronic positive response codes with percentage reported to DigAlert from January through June 2022. Codes are color-coded into four categories.

In looking at the use of related response options (**Figure 1**), it appears that some responses inconsistent with statute are more widely used than those consistent with statute. The option “31: REQUIRES STAND BY AT TIME OF EXCAVATION” is much more often used than “33: HIGH PRIORITY LINE – ON SITE MEETING REQUIRED,” even though the latter is consistent with statute and the former is not.

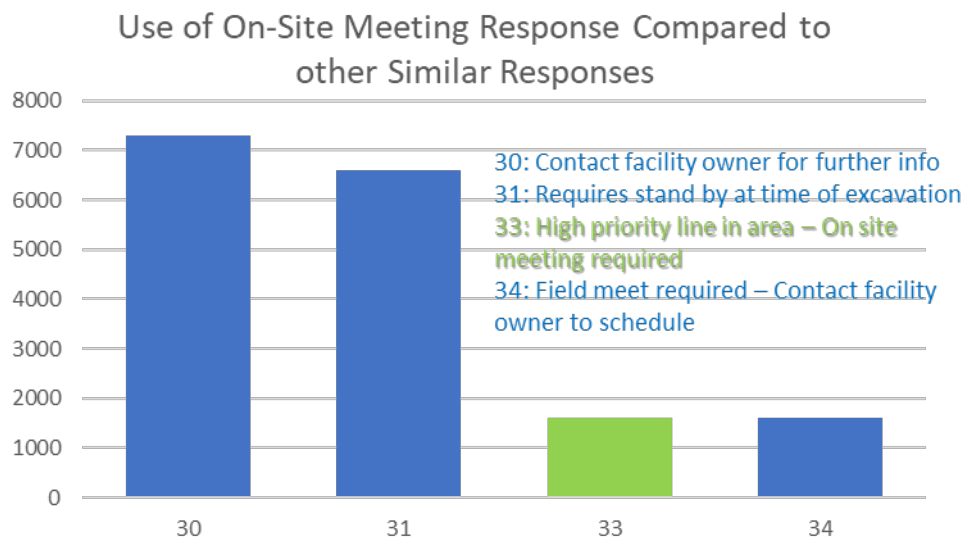


Figure 1: Use of onsite meeting requirement (Government Code Section 4216.2(c)) compared to use of other similar electronic positive response options provided to DigAlert from January through June 2022.

In addition to the use of some codes implying incorrect obligations, others are ambiguous. The code “16: OPERATOR HAS LOCATED AND MARKED ALL SUBSURFACE INSTALLATIONS KNOWN TO BE EMBEDDED IN THE PAVEMENT” leaves much information on the table. It can be presumed that subsurface installations NOT embedded in pavement have also been marked, but it is not clear how an excavator, looking at the marks, is to know which subsurface installations are embedded in pavement and which are not. Other codes, such as “52: UNABLE TO LOCATE USING STANDARD LOCATING TECHNIQUES,” leave it up in the air whether the operator plans to ever locate the facility, or if the operator cannot, whether the operator will comply with its obligations under statute in another manner, such as through provision of maps.⁹

Some of this ambiguity appears to have been recognized by Nevada, who shares its one-call center with California, as our neighbor modified several of its electronic positive response codes in 2021 (**Attachment 1**). “52: UNABLE TO LOCATE USING STANDARD LOCATING TECHNIQUES” has been changed to “52: TROUBLE LOCATE - ADDITIONAL TIME IS REQUIRED,” indicating the locate will in fact be completed. “33: HIGH PRIORITY LINE IN AREA” has been changed to “33: MARKED HIGH PRIORITY LINE IN AREA,” indicating that the operator has marked the line. Other codes have been deleted as redundant, such as “13: LOCATE AREA MARKED UP TO PRIVATE PROPERTY,” and operators are directed to instead use “12: LOCATE

⁹ Gov’t Code § 4216.3(a)(1)(A)(ii).

AREA MARKED UP TO PRIVATE OWNED FACILITY - CONTACT PRIVATE UTILITY OWNER FOR LOCATE.”¹⁰

Ultimately, ambiguity harms both the excavator and the operator, as both need to use electronic positive response as a means of communication.

Appropriateness of codes may be determined through application of principles

Changes made by Nevada in their electronic positive response options appear to consolidate unneeded options and clarify what actions the operator has done or will do. If California is to change its response options, it should develop a set of principles by which it decides what codes are appropriate and what codes are not. Principles for effective communication are often used to ensure uniformity of application in instances where we might want to convey information or concepts in a small message. The United States Army Corps of Engineers sign standards manual includes overarching principles such as that signs

- Be brief and easy to understand; use as few words as possible to communicate the desired message
- Convey no more than one thought or concept
- Have briefer messages for motorists than for those viewed by pedestrians¹¹

Using Nevada’s changes as a starting point, staff proposes the following principles by which to judge the value of an electronic positive response option: that a response option

- Be consistent with legal requirements
- Convey information necessary for the excavator to choose their next step
- Provide information not provided by other response options
- Be unambiguous in the actions taken by the utility operator
- Require minimal context (outside of legal requirements) for recipient to choose their next step

Additionally, together, a set of response options should be “complete” in that they convey all appropriate messages to allow an excavator to take all possible appropriate actions. As a simplistic example: if response codes did not include an option identifying the presence of a high priority facility, the excavator could not take steps to engage in an onsite meeting, and the set of codes could not be considered “complete.”

“Electronic positive response” may deserve re-branding

Statute defines electronic positive response as “an electronic response from an operator to the regional notification center providing the status of an operator’s statutorily required response

¹⁰ [NV Positive Response Codes](#). Accessed October 25, 2022.

¹¹ Army Corps of Engineers, [Sign Standards Manual](#), Volume 1, Section 2, “[Principles and Guidelines](#),” 2006. Note that the manual includes principles for legend, sign type, language, non-English signs, sign design, typography, color, placement, mounting method, materials, and maintenance plan, not all of which are relevant to this discussion.

to a ticket.”¹² The term “electronic positive response,” however, is not clearly descriptive of the concept.

“Positive response” is historical lingo familiar with one-call centers and locate and mark professionals but may not be widely known to the excavating community. Adding the word “electronic” to it appears reasonable, as the transmission method is new to operators. Over the past twenty years, however, a significant amount of business transactions have become electronic. Therefore, the value of the prefix of “electronic” for operator response status updates may have a short shelf life.

In light of the nascent naming conventions of “next gen” electronic positive response, such as “enhanced electronic positive response” and “two-way enhanced electronic positive response,” now might be a good time to re-examine what the purpose and value of electronic positive response is and rename it to something either more descriptive or that promotes its use among excavators and operators.

RECOMMENDATION

Staff recommends that the Board direct staff and the Ticket Committee to review the current California electronic positive response codes using the principles described above, identify those that may merit clarification or removal for duplication or inconsistency with statute, identify areas in which excavator and operator input may be needed, and explore re-branding electronic positive response.

ATTACHMENTS

1. Nevada’s Electronic Positive Response Codes

¹² [Gov’t Code § 4216\(e\)](#).

Attachment 1: Nevada's Electronic Positive Response Codes



Electronic Positive Response (EPR) System Changes NEVADA ONLY



*Code description changes and new codes will be active July 1, 2021.
Codes identified to be deleted will be deleted on September 1, 2021.*

EPR Code	Code Description	Changes Made
1	CLEAR - NO CONFLICT	No changes made
2	CLEAR - NO CONFLICT BUT PRIVATELY OWNED UTILITY ON PROPERTY - CONTACT PRIVATE UTILITY OWNER	Change description to: NO CONFLICT BUT PRIVATELY OWNED UTILITY IN AREA - CONTACT PRIVATE UTILITY OWNER <i>(This code can be used to identify utilities in ground that are not yet accepted by utility operator)</i>
3	EXISTING MARKINGS ADEQUATE	Change description to: SITE VISITED - EXISTING MARKINGS ADEQUATE
4	NO MARKINGS REQUESTED	No changes made
10	LOCATE AREA MARKED	No changes made
11	LOCATE AREA MARKED BUT ABANDONED FACILITIES MAY BE IN THE AREA	No changes made
12	LOCATE AREA MARKED UP TO PRIVATE OWNED FACILITY - CONTACT PRIVATE UTILITY OWNER FOR LOCATE	Change to: LOCATE AREA MARKED UP TO PRIVATE OWNED FACILITY - CONTACT PRIVATE UTILITY OWNER FOR LOCATE (https://www.nulca.org/DirectoryMap/CompanyDirectoryMap)
13	LOCATE AREA MARKED UP TO PRIVATE PROPERTY	Code will be deleted: Use code 12 instead for this purpose
14	PARTIALLY MARKED - MORE TIME IS NEEDED	No changes made
20	BAD ADDRESS/INCORRECT STREET/LOCATION INFO	Change to: BAD ADDRESS/INCORRECT STREET/LOCATION INFO - NEW TICKET REQUIRED
21	NO ACCESS TO LOCATE AREA - RESEND TICKET REQUESTED	Change to: UNABLE TO LOCATE - ADDITIONAL ACCESS REQUIRED - NEW TICKET REQUIRED
22	NO DELINEATION. -RESEND TICKET REQUESTED	Code will be deleted: Use code 24 instead for this purpose
23	DELINEATED AREA DOES NOT MTCH LOCATION REQUEST - RESEND TICKET REQUESTED	Code will be deleted: Use code 24 instead for this purpose
24	WHITE PRE-MARKINGS UNCLEAR - NEW TICKET REQUIRED	New code and description
30	CONTACT FACILITY OWNER FOR FURTHER INFO	Code will be deleted: No longer needed
31	REQUIRES STAND BY AT TIME OF EXCAVATION - CONTACT FACILITY OWNER	No changes made
32	VISIBLE OR EXPOSED FACILITY - CONTACT FACILITY OWNER IF CROSSING	Code will be deleted: No longer needed
33	HIGH PRIORITY LINE IN AREA	Change to: MARKED HIGH PRIORITY LINE IN AREA
34	FIELD MEET REQUIRED	Change to: FIELD MEET REQUIRED - LOCATOR WILL SCHEDULE
40	EXCAVATOR COMPLETED WORK PRIOR TO DUE DATE	Change to: NO MARKS NEEDED - EXCAVATOR CONFIRMED WORK COMPLETED
41	EXCAVATOR NO SHOW FOR MEET	No changes made
42	EXCAVATOR CANCELED REQUEST	No changes made
50	NEGOTIATED MARKING SCHEDULE	No changes made
52	UNABLE TO LOCATE USING STANDARD LOCATING TECHNIQUES	Change to: TROUBLE LOCATE - ADDITIONAL TIME IS REQUIRED
54	COULD NOT CONTACT - TICKET NOT LOCATED - PLEASE CONTACT UTILITY DIRECTLY & UPDATE CONTACT INFO WITH 811	New code and description
80	EXTRAORDINARY CIRCUMSTANCES EXIST - NO LOCATE DUE TO WEATHER/EMERGENCY CONDITIONS	No changes made

Guide

	No Changes Made
	Changes Made to Code/Description

	Code Deleted
	New Code Added