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# CALIFORNIA UNDERGROUND FACILITIES SAFE EXCAVATION BOARD

November 13-14, 2023

## Agenda Item No. 42 (Information Item) – Staff Report

*Electronic Positive Response Codes Rewrite Development Update*

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### PRESENTER

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### AUTHOR

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### SUMMARY

During the Board’s November 2022 meeting, the Board discussed the usefulness and clarity of the electronic positive response (EPR) codes and agreed that revising the codes would prove valuable in improving safety. In reviewing how new codes might improve communication, the Ticket Committee and staff began exploring how new codes might be made consistent with a future state of two-way positive response and enhanced positive response. Staff recommends the Board direct the Ticket Committee and staff to continue exploring long-term positive response solutions (such as enhanced positive response and two-way positive response), review how existing EPR codes could be modified to improve safety communications and be consistent with future two-way and enhanced electronic positive response solutions, and develop an outreach plan to solicit stakeholder feedback on these solutions.

### STRATEGIC PLAN

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

2023 Strategic Activity: Review the existing electronic positive response codes and revise or rebrand as necessary to further the goal of effective communication between utility operators and the excavator.

### 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 respond 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 access<sup>1</sup>) or if the excavator and operator have agreed to a phased marking schedule or a later start date and time.<sup>2</sup> 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. The operator is obligated to notify the excavator of the presence of the high priority facility.<sup>3</sup>

In 2019, the Legislature passed AB 1166 (Chapter 453, Statutes of 2019) following the announcement of a California Public Utilities Commission investigation into the falsification of locate and mark records. The bill required every operator to provide an electronic positive response through the one-call center before the legal start date and time.<sup>4</sup> Prior to AB 1166, electronic positive response had been voluntary.<sup>5</sup> 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.

The Board created a Ticket Committee of Members Bianchini and Charland during the July 2021 meeting to address communication between the excavator and operator as mediated by the one-call centers.<sup>6</sup>

The Board identified several concerns regarding the use and meaning of the EPR codes:

- In prior Board meetings,<sup>7</sup> members have expressed concerns with how some of these codes have been used and questioned whether the State is using the correct set of codes.
  - During the Board’s May 2021 meeting, the Board discussed difficulties between excavators and operators about the improper use of EPR codes which factored into the delays of locate and marks of underground utilities.<sup>8</sup>
  - 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.

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<sup>1</sup> [Gov’t Code § 4216.2 \(h\)](#)

<sup>2</sup> Also in [Gov’t Code § 4216.3\(a\)\(1\)\(A\)](#).

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

<sup>4</sup> [Gov’t Code § 4216.3\(c\)\(1\)](#).

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

<sup>6</sup> [July 2021 Board Meeting](#)

<sup>7</sup> Such as [July 13, 2021](#) and [September 13, 2022](#).

<sup>8</sup> Such as [July 2021](#)

- During the Board’s November 2022 meeting, the Board discussed that not all 32 EPR codes were in use and that any duplications and inconsistency in the codes should be removed. The Board indicated that EPR codes should showcase three things: are there facilities in the area? Are the facilities marked? and if it is not marked, when will marking occur? The Board directed the Ticket Committee and staff to review the existing electronic positive response codes and revise as necessary to further the goal of effective communication between utility operators and the excavator.

## DISCUSSION

As EPR codes are being evaluated and revised, the Board’s Ticket Committee and staff seek to understand the relevance and effects of two-way and enhanced positive response. Two-way and enhanced positive response aim to provide additional buried facility information and improve communication between excavator and operator to aid in mitigating facility damage.

### Two-Way Positive Response

Two-way positive response would allow excavators to respond to EPR codes to communicate with operators through the regional notification centers. With two-way positive response, discussion between excavator and operator would be visible and documented from all parties to verify if there was improper EPR code usage. Staff began exploring the benefits and challenges of implementing two-way positive response.

#### Benefits

The benefits of implementing two-way positive response codes include:

- **Better Documentation:** two-way positive response provides a record of interactions between the excavators and operators which is visible to both parties and can be useful for post-incident reviews.
  - **Example:** code 33 says “HIGH PRIORITY LINE IN AREA – ON SITE MEETING REQUIRED” and pursuant to Gov’t code § 4216.2(c), an operator shall notify an excavator about the line and set up an onsite meeting prior to the legal start date and time.<sup>9</sup> If two-way positive response was to be implemented, the ticket would record both excavator and operator responses, allowing both parties to confirm a meeting schedule. This would provide documentation of the actions taken by both parties.
- **Improved Communication:** two-way positive response would assist in improving communication between excavator and operator as it pertains to law due to it providing a process to document mutual agreement and confirmation from both parties.
  - **Example:** currently, there is no mechanism to record mutual agreement through an excavation ticket. In accordance with Gov’t code § 4216.2(b), which permits the excavator and operator to mutually agree to a different notice and start date of an excavation,<sup>10</sup> two-way positive response would allow for the documentation and

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<sup>9</sup> Gov’t code [§ 4216.2\(c\)](#)

<sup>10</sup> Gov’t code [§ 4216.2\(b\)](#)

discussion of mutual agreement. Two-way positive response codes could be used by an excavator to accept or reject an operator's suggested timetable.

- **Example:** code 51 says "MUTUALLY AGREED TO A LATER START DATE AND TIME" and through two-way positive response, both operator and excavator could confirm the schedule. Thus, two-way positive response would improve communication between both parties by providing responses to validate a mutual decision.
- **Additional Clarification:** two-way positive response could handle issues where more details are needed regarding the excavation area for the operator to provide information on buried facilities.
  - **Example:** code 20 says "BAD ADDRESS/INCORRECT STREET/LOCATION INFO - RESEND TICKET REQUESTED." Two-way positive response codes would allow the excavator to provide additional clarification regarding the location of the excavation. This would allow for ticket clarification for all operators and would document that all parties received sufficient information to move forward with providing buried facility location information.

### Challenges

The challenges of implementing two-way positive response codes include:

- **System Development:** the regional notification centers would need to develop system functionality to support the recording and submission of responses between excavator and operator. Currently, there is no system functionality to support two-way positive response so its development and implementation through the regional notification centers would require significant time and resources.
- **Training:** excavators and operators would need training on the usage and meanings of the new codes and the two-way positive response functionality.
- **Complex Communication:** certain responses may cause the excavator and operator responses to go through a cyclical loop of possibilities until mutual agreement is obtained.
  - **Example:** when an excavator proposes a meeting date and time and the operator declines and proposes a different date and time via two-way positive response, this situation might cycle back and forth until an agreement is reached.
- **Compliance:** the Board's Ticket Committee and staff would need to evaluate if statute or regulations would need to be developed and implemented since two-way positive response is currently not a mandated process. Further discussion is needed to determine what standards or guidelines should be followed when using two-way.
  - **Example:** when excavators and operators are communicating back and forth with two-way responses, should it be mandated how long a party each party must respond before a system generated "no response" code.

### **Enhanced Positive Response**

Enhanced positive response allows the operator to include additional facility information

such as pictures or drawings to a ticket to provide clarification of a facilities' location in an excavation area.<sup>11</sup> The documentation provides additional information to the excavator on the location of buried facilities to help reduce the likelihood of damaging them. Staff began exploring some of the benefits and challenges of implementing enhanced positive responses.

### Benefits

The benefits of implementing enhanced positive response include:

- **Improved Safety:** operators providing digital information such as pictures, drawings, and maps can provide excavators with more detailed utility location information to help prevent the likelihood of striking buried facilities and causing damage. The Pipeline and Hazardous Materials Safety Administration (PHMSA) has identified enhanced positive response as a tool that “can vastly improve communication among all involved in the digging and has been shown to reduce damage rates.”<sup>12</sup>
  - **Example:** the excavator can utilize enhanced positive response information like digital maps or sketches to compare against the field markings in the event the markings were altered before the excavator arrived on-site or a utility was not marked. This would assist the excavator in determining the facility location before excavating by looking at the markings in relation to the documentation provided.
- **Improved Communication:** operators conveying additional information about the buried facilities in the excavation area beyond field marks could improve communication between excavators and operators to help minimize misinformation and better facilitate communication.
  - **Example:** Washington Gas has identified enhanced positive response as one of the factors in helping them reduce facility damage from more than 8 strikes every 1,000 locate requests to about 1 every 1,000. They stated the enhanced positive response process provides excavators detailed information about the location and mark of buried facilities.<sup>13</sup>

### Challenges

Some challenges of implementing enhanced positive response include:

- **Resources:** implementing enhanced positive response means increased workload for operators to upload files to tickets.
  - **Example:** uploading documents or providing notes on all tickets including when field marks are completed would require additional time and resources resulting in increased monetary expenses for the operator.
- **Training:** excavators and operators would need training on how to use the system to

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<sup>11</sup> Common Ground Alliance. (2023). [3.31 Enhanced Positive Response](#)

<sup>12</sup> Pipeline and Hazardous Materials Safety Administration. (2017). [A Study on Improving Damage Prevention Technology](#)

<sup>13</sup> Businesswire. (2018, August 07). [Washington Gas Promotes Success of 'Call Before You Dig' Program on National 811 Day](#)

upload, review, download, and search the tickets' enhanced files.

- **Example:** operators would need training on how to upload files as well as the different file formats available to upload in. Excavators would need training in learning how to access these documents and how to interpret the information presented to them.
- **Data Standardization:** a standardized format for the documents and information provided by the various utility operators would need to be standardized.
  - **Example:** pictures may need to be taken in a certain orientation to give spatial awareness of the location of buried facilities or drawings should always show buried facility information. Inconsistent formats may confuse excavators in determining facility location.
- **Potential Overlap with Planning and Design Platform:** need to consider what information is best provided in the planning and design process and what is best provided at the time of the standard excavation ticket. The Board has discussed how an online platform could facilitate drawing exchange during the design process. Enhanced positive response may or may not be best accomplished using the same information technology infrastructure.
- **Compliance:** need to evaluate the feasibility of implementing statutory and/or regulatory requirement of enhanced positive response. Further discussion is needed to determine what standards or guidelines should be followed when using enhanced positive response. Based upon staff research, Colorado is the only state that mandated enhanced positive response by law. Common Ground Alliance (CGA)<sup>14</sup> has recognized enhanced positive response as a best practice to improve safety.

## **Best Practices and Other States Ticket Processes**

Staff researched best practices and other states to identify any completed work on enhanced and two-way positive response and any next steps. From staff research, Washington Gas completed a pilot program for enhanced positive response in Washington, D.C. and Maryland. CGA has identified best practices to follow, which include providing additional information to the excavator about a performed locate so they can know more about the utilities and job site prior to dispatching resources to excavate.<sup>15</sup> Enhanced positive response is already in use in Colorado.<sup>16</sup> Staff could not find any evidence or mention of two-way positive response being implemented in other states.

### Best Practices – Common Ground Alliance

CGA Best Practices recommend using enhanced positive response to aid excavators in better understanding the job site and location of facilities to reduce damage to them. This additional knowledge will assist the excavator in planning their excavation and prior to dispatching resources to excavate.<sup>17</sup> CGA states “it is a common practice for utility operators

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<sup>14</sup> Common Ground Alliance. (2023). [3.31 Enhanced Positive Response](#)

<sup>15</sup> Common Ground Alliance. (2023). [3.31 Enhanced Positive Response](#)

<sup>16</sup> Underground Damage Prevention Safety Commission. (2021, October 18). Colorado Revised Statutes 2022 [section 9-1.5-103\(4\)\(a\)\(I\)\(B\)](#)

<sup>17</sup> Common Ground Alliance. (2023). [3.31 Enhanced Positive Response](#)

and contract locators to capture the enhanced information about locates” and sharing it with excavators prior to excavation is with the intention of helping reduce damage to underground facilities and clarifying the location of underground facilities.<sup>18</sup>

### Washington Gas Pilot Program in Washington DC and Maryland

CGA states that Montgomery County in Maryland began a pilot program for enhanced positive response in 2014 and had a successful outcome which prompted the use of enhanced positive response throughout the Washington Gas distribution system.<sup>19</sup> Due to the success of the pilot program, Washington Gas has implemented enhanced positive response for all locate requests in Washington, D.C. and Maryland. Their system includes operators sending markings and pictures to the excavator pertaining to the project. According to excavator feedback from a survey, 88% of excavators “recognized that EPR helps prevent damages.” Also, 88% indicated that a copy of the ticket is useful and 92% said it “provided a safer work environment at the job site.”<sup>20</sup>

### Colorado

In 2021, Colorado implemented enhanced positive response to allow operators to include attachments such as photographs and drawings with positive response to depict the location of underground facilities. The Colorado Revised Statutes of 2021 section 9-1.5-103(4)(a)(I)(B) states that in addition to field marks “the owner or operator shall provide for each of its underground facilities documentation of the location of the underground facilities in the form of a digital sketch, a hand-drawn sketch, or a photograph that includes a readily identifiable landmark, where practicable.”<sup>21</sup> This documentation serves to clarify the location of underground facilities to reduce damaging them and thus, increasing excavation safety. In their ticketing system, file attachments are sent to both excavators and members where excavators can view or download files pertaining to the excavation.<sup>22</sup>

## **RECOMMENDATION**

Staff recommends the Board direct the Ticket Committee and staff to continue exploring long term positive response solutions (such as enhanced positive response and two-way positive response) for EPR, review and revise existing EPR codes consistent with potential future EPR solutions, and develop an outreach plan to solicit stakeholder feedback on these solutions.

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<sup>18</sup> Common Ground Alliance. (2023). [3.31 Enhanced Positive Response](#)

<sup>19</sup> Common Ground Alliance. (2023). [3.31 Enhanced Positive Response](#)

<sup>20</sup> U.S. Environmental Protection Agency. (2017, May). [Introduction of EPR \(Enhanced Positive Response\)](#)

<sup>21</sup> Underground Damage Prevention Safety Commission. (2021, October 18). Colorado Revised Statutes 2022 [section 9-1.5-103\(4\)\(a\)\(I\)\(B\)](#)

<sup>22</sup> Colorado 811. (2020, May 18). Professional Excavator - Viewing and Downloading Attachments on Email Confirmations [Video].

YouTube. [https://www.youtube.com/watch?v=CVOC5lfenZ4&list=PL8w91PyzABGNtj\\_vvE7hJbPXxjlxrh5hJ&index=5](https://www.youtube.com/watch?v=CVOC5lfenZ4&list=PL8w91PyzABGNtj_vvE7hJbPXxjlxrh5hJ&index=5)