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**California Underground Facilities Safe Excavation Board  
("Dig Safe Board")**

**April 15, 2019**

**Agenda Item No. 4 (Information Item) – Staff Report**

*Discussion on Implementation of AB 1914*

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***Presenter***

Jennifer Reed

***Background***

AB 1914 was signed into law on September 23, 2018, amending Section 4216.4 of the Government Code to allow for the use of power-operated or boring equipment within the tolerance zone prior to determining the exact location of subsurface installations. This exception to hand tool use is to take effect beginning July 1, 2020 under circumstances and conditions to be determined by the Board through regulations.

The Board faces a statutory deadline of July 1, 2020 for adopting regulations on this matter.

***Discussion***

Stakeholder input gathering has continued, with an online survey going live on March 14<sup>th</sup>. On March 28<sup>th</sup> the Board held a public workshop in Sacramento, inviting open discussion on the implementation of AB 1914. As draft language will need to be presented at the May Board Meeting, this report reviews the status of the regulation development, provides a summary of the outreach results, and prompts Board and public discussion.

**Proposed Draft Regulations Development**

These regulations are approached with the following guiding principles in mind:

- *Safety* - Safe outcomes are preserved or enhanced, relative to baseline of hand tool use
- *Compliance* - Regulated parties are reasonably able to comply
- *Enforcement* - Rules are enforceable
- *Fairness* - Process is fair across regulated parties

The fundamental provision of the proposed regulation can be summarized as follows:

*Power tool use will be permitted following notification through 811, absent operator objection within two working days.*

Core Provisions:

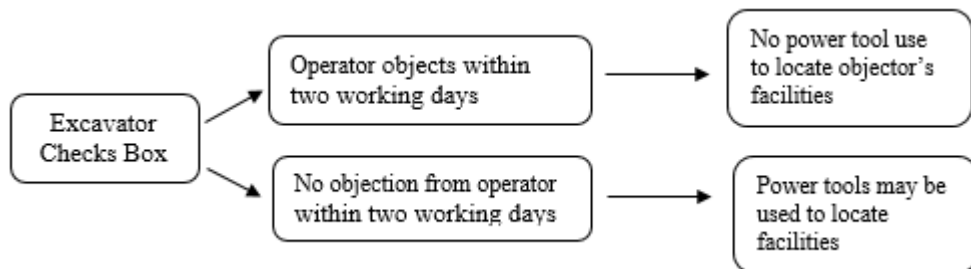
- Defining the Tool – The clay spade has emerged as the only tool identified meeting both elements of the stated need for AB 1914.
  - From 8/30/2018 Assembly Floor Analysis: “The stated need for [AB 1914] is to address the use of hand tools under certain conditions in which the alternative is to use imprecise hand tools such as a pick shovel or digging bar. The mechanical advantage of power equipment is that it eliminates a significant amount of human bending, lifting, twisting and thrusting of tools into soil, all of which are drivers of injury and fatigue.”

- The powered clay spade is capable of more precise application than a pick or a digging bar is capable of,
    - and-
    - The powered clay spade would significantly reduce the human bending, lifting, twisting and thrusting into soil required of workers locating subsurface facilities.
  - Workshop results indicate a need for allowable tools to be narrowly defined, with care taken to prevent manipulation or “customization” of tools beyond the intended configuration(s), for example, by specifying:
    - Bit width/edge
    - Maximum force the tool may exert
    - Power source of the tool
- Defining interaction with the operator – What is it and how is it facilitated?
  - Notification by Excavator + Operator Discretion to Object:
 

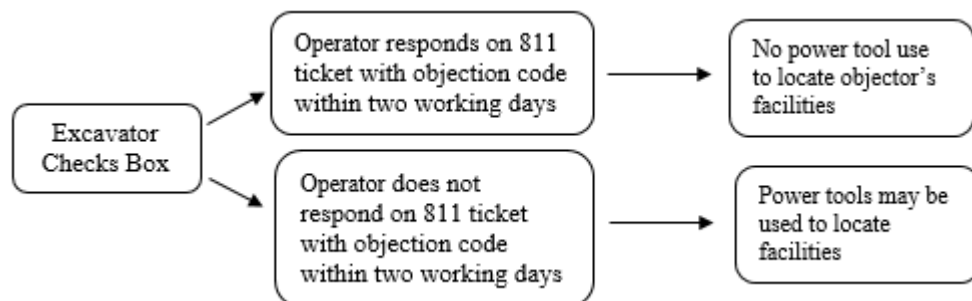
Agreement definitions calling for positive approval by operators present two main challenges. First, such a requirement may incentivize the “operator-only” exemption scenario, since operators may only be comfortable providing positive approval to themselves. Second, it may result in a grey area of agreement like has been observed with the vacuum exception, where lack of objection is largely interpreted as agreement and operators can still say they never agreed. A potential solution would be to replace requiring *operator agreement* with providing *operator discretion to object*.
  - There is broad consensus that the best vehicle for communicating agreement is via the 811 ticket.

How might notification by the excavator + operator discretion to object look utilizing the 811 ticket?

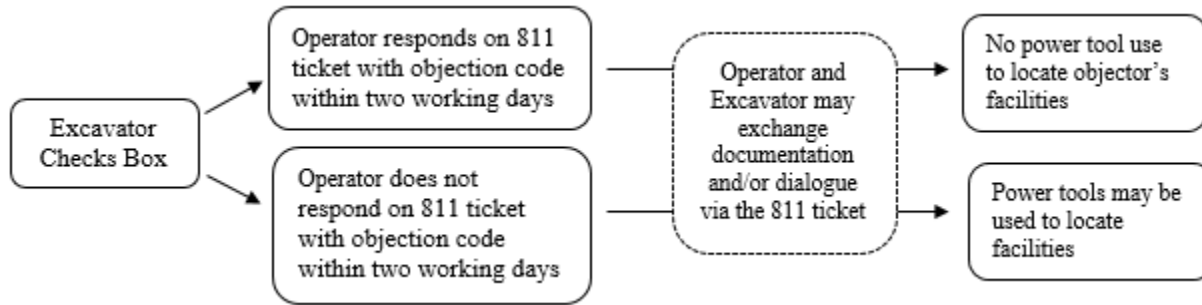
Phase 1: Pre-Electronic Positive Response



Phase 2: Electronic Positive Response



### Phase 3: Enhanced Positive Response



## Outreach

### Survey Results (ongoing)

As of April 8<sup>th</sup>, staff has received 55 survey responses, with oil operators showing the highest participation rate among stakeholder groups. Originally, the survey was scheduled to close April 6<sup>th</sup>, but due to continued interest, the survey will remain open through April 30<sup>th</sup>.

### *Response Trends – Operators:*

Operator responses have been received from Oil (13), Water (8), Gas (4), Telecom (2), Electric (1), as well Operator-Locators (6).

Survey responses from operators so far paint a skeptical, if also complicated, view on the matter of an exception to hand tool use. For example, respondents overwhelmingly answered in ways that spoke against the idea of power tool use in the tolerance zone, prior to determining exact location. However, half of respondents named one or more powered tools they'd like to have the option of using within the tolerance zone, prior to exact location. Similarly, 72% of operator responses stated that a hand tool use exception must include some element of mutual agreement, while at the same time the majority of respondents also indicated in some way a significant reluctance to provide that agreement to excavators. These seemingly contradictory response patterns point to the complexity of the issue and a common sense among operator stakeholders that, although there are many tools that may be used safely, there is a low degree of confidence that many tools would be used safely by any given excavator working around someone else's facilities.

### *Response Trends – Non-Operator:*

Responses have been received from Excavators (14), Locators (4), and other industry roles, including a welder and two engineers.

Survey responses from excavators, locators, and other stakeholder groups speak more strongly in support of an exception to hand tool use, but there are still some respondents in these categories that vigorously object to the use of anything other than hand tools or a vacuum truck for potholing. The safety arguments swing both ways, with some responses characterizing use of powered tools to pothole as needlessly risky, while others responded with the exact same concerns about being forced to use less precise and potentially more damaging sharp edged hand tools. Responses were also more divided on whether mutual agreement should be required, specifically questioning why operator agreement matters if the excavator will be held accountable for any damage regardless.

### Public Workshop

The primary goal going into the public workshop was to generate productive conversation among a representative cross-section of industry stakeholders. That goal was accomplished, with 75 participants, at least 25 of which participated via the webcast. Attendees included third party excavators, representatives from all utility operator segments, as well as engineering and design professionals. Although the workshop was held in Sacramento, a significant number of attendees travelled from Southern California to participate. Discussion was open and candid, with participants expressing their perspectives while also acknowledging

the sometimes conflicting concerns of other stakeholders.

The main tool discussed was the 30 lb pneumatic or electric clay spade, with some divergence of opinion on whether the 60 lb class is equally appropriate. Excavators and personnel from multiple utility segments communicated to the Board that they consider this tool to be necessary in conditions where a vacuum truck is not effective, such as in extremely hard soils, cemented slurry backfill, or when needing to work through concrete encasement to access the facility. Examples of hand tools which might be used to break through such hard ground conditions, such as a pick and a pointed digging bar, were displayed in comparison to a powered clay spade. Proponents emphasized the blunted edge of the spade in comparison to the penetrating edge of the hand tools. The potential for more controlled application of the powered clay spade in comparison to the relatively imprecise application of the hand tools was also emphasized.

The primary argument presented against the clay spade, or in fact any further exception to the hand tool use requirement beyond vacuum excavation, came from the telecommunications perspective. It was widely acknowledged that telecom installations tend to be more vulnerable to damage, particularly direct buried cable. Conversation moved toward potential solutions that would allow for safe and effective excavation of less delicate installations through difficult ground conditions, while also acknowledging the need for due care when approaching comparatively vulnerable facilities. These solutions consisted mainly of variations on mutual agreement, essentially proposing to give the operator some discretion to object to the use of anything other than hand tools in potholing their facilities. Requests were voiced that the Board take care to make the process as fair as possible to all parties.

Training and internal safety policies and procedures were discussed as factors impacting how safely both powered tools and hand tools may be used near subsurface infrastructure. Most present agreed that training is important and that a senior experienced worker should be the person performing the type of work being discussed.

#### Overall Outreach Response

Points of agreement are consistent so far through both the survey results and input received via the public workshop. All interested parties seem to agree that the AB 1914 exception to hand tool use should not be implemented as a means to work past facilities which have not been verified by potholing. Rather, the use of powered tools might only be warranted, when appropriate, as a means of locating facilities to determine conflict.

We hear consensus that vacuum excavation, when possible, is the preferred alternative to hand tool use. Given conditions incompatible with vacuum excavation, the 30 lb pneumatic or electric clay spade tipped roto hammer has been the tool most consistently identified as an acceptable alternative to a hand tool. Roughly 50% of total survey respondents selected this tool, and it dominated discussion at the public workshop.

Additionally, stakeholders are almost unanimously in agreement that boring equipment should not be considered for use within the tolerance zone of conflicting facilities, prior to determining their exact location. A possible exception to that consensus may be scenarios of very deep installations. However, those situations hinge more on the definition of “in conflict” and the concept of a “vertical tolerance zone,” than on the matter of an exception to hand tool use. The Board is examining these issues under its Strategic Activity, “Reasonable Care Standards.”

Lastly, there is significant support indicated across stakeholder perspectives in favor of utilizing the 811 ticket to indicate the excavator’s intention to use powered tools.

Points producing less consensus include: Is mutual agreement necessary, and if so, what should constitute mutual agreement? Should an on-site meeting should be required between the excavator and the operator? Where does the burden of justification fall, between excavator and facility owner; i.e., is it the excavator

who must justify their need for powered tool use, or is it the operator who must justify their objection. Or both? Or neither?

## Shaping the Regulation

To produce draft language for May, some important questions need to be answered:

- *Q: Should stating an intention to use powered tools and/or objecting to power tool use be contingent upon any specific requirements?*

The answer to this question speaks directly to how “agreement” will be defined, as it pertains to AB 1914 implementation.

Many stakeholders brought up the way the vacuum exception has played out when discussing possibilities for implementing AB 1914, namely the tendency of most excavators to “check the box” by default and the tendency of operators to not comment. From the excavator perspective, there is an advantage to preemptively indicating vacuum use, just in case it is needed. From the operator perspective, there is nothing to be gained by offering positive agreement to the vacuum exception. If the excavator more explicitly forces the question, it may make more sense for the operator to officially comment, but the system as it stands incentivizes avoiding overt agreement between parties: the excavator gets to use the vacuum without operator objection, and the operator gets to say they never agreed to it if something goes wrong, all with minimal resource expenditure to arrive at that result.

In terms of AB 1914, does it matter if excavators similarly always “check the box” for power tool use? Does it matter if an operator objects by default to all power tool use near their facilities? Or would there be benefit in devising a mechanism by which these actions could be made more meaningful? For example, the Board could tie specific requirements to both the use of powered tools to locate and to objecting to the use of powered tools to locate. Along a spectrum of options available to the Board, there is the option of not tying any requirements to either the use of powered tools or an operator’s objection to their use. Toward the middle of the spectrum, Board requirements could simply become part of the project record. Further along the spectrum, the Board could require record of addressing specific requirements be provided to the other involved parties. Even further, the Board could require that both parties create a record of agreement to power tools use, such as through a form signed by both parties.

Ultimately, the Board has broad discretion to implement AB 1914, and the question of defining the type of excavator – operator interaction required is fundamental to the type of regulation that will be produced.

- *Q: How does the Board envision enforcement of these regulations, and how might the Board know what effect these regulations end up having?*

If an accident happens, what would the Board want to see? Possibilities might include:

- “Justification for Use” document:
  - Powered tool configuration and supporting technique(s) to be used
  - Soil/Ground conditions indicated for use
  - Trained worker to operate tool
  - Facility type to be located
- “Justification for Objection” document
  - Facility type and material
  - Installation details (direct buried, encased, etc.)
  - Facility purpose (critical function, etc.)
  - Operator rationale for rejecting use of powered tools to locate
- Excavator training policy and training records

In the future, what kind of information might provide insights into how these regulations are affecting safety?

### Challenges & Opportunities

Data inadequacies and fragmented standards limit the Board's tools to develop regulations implementing AB 1914. For example:

- There has been little visibility into the actual circumstances surrounding use of powered tools prior to confirming exact location, beyond what may have surfaced in isolated damage investigations.
  - Publicly available data which might help guide this regulatory task is lacking. As concluded in the 2018 Strategic Activity, "Baseline Safety Assessment," the Board will likely need to identify data needs during the development phase of this rulemaking.
  - Generally, what data has been collected has been following accidents. Little data exists on outcomes that don't involve damage or don't rise to the level of investigation.
- There is a lack of clear and widely adopted shared tools for managing risk/safety in the industry, particularly in terms of what's shared between excavators and operators.
  - Existing industry best practices offer a mixture of safety/liability/compliance angles that perpetuate a siloed mentality of safety ownership.
  - Operators may have complex internal procedures and standards, excavators may adopt certain safety practices through a combination of compliance efforts, OSHA requirements and internal company standards, and third party organizations like the one-call centers and Common Ground Alliance offer safety guidelines within their own spheres.
  - All of these approaches intermingle the various motivations and concerns of the authoring organizations. Shared, open, and widely accepted standards and safety practices specific to excavating around buried infrastructure would be the distillation of those purely safety-oriented elements already present in some or all of these siloed sources, as well as perhaps some elements missing from the current picture.

Keeping these adjacent challenges and their related Board efforts in mind provides an opportunity to implement AB 1914 in a way that is in harmony with the Board's strategic objectives and enforcement philosophy.