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October 4, 2019

Construction Information Memorandum No. 6 - 2019

TO: Region Engineers

ATTN: Region Pre-Construction & Area Operations, Construction, & Local Transportation Engineers

FROM: Winston J. Powe, P.E.
State Construction Engineer

RE: Existing Overhead Power and Communication Lines at Bridge Construction Sites

Representatives of the Bridge, Construction, and Materials & Tests Bureaus met with members of the Alabama Road Builders Association and Alabama Bridge Contractors Association to discuss issues concerning the constructability, safety, and the quality construction of our bridge construction projects. One issue of concern affecting all three of these issues was existing overhead power and communication lines and the impact to cranes working near them.

Over the last several years, we have had several projects with overhead power lines that were in the immediate vicinity of a bridge site, whether running parallel or crossing some part of the bridge. For some of these, the lines were eventually relocated. For the rest, the lines remained in-place, and the contractor was expected to work around the conflict. This was addressed by the plans using project notes that were either originally included or added prior-to-letting outlining the requirements to have the lines de-energized. On a couple of these projects, these notes had to be added on Wednesday and Thursday before the Friday letting. Obviously, this last-minute change made it nearly impossible for bidders to do the required coordination with the utility entity to account for this de-energization and costs into the bid. Moreover, it has come to our attention that the option to de-energize lines is not always possible due to OSHA regulations. Thus, in an effort to minimize confusion during the letting process and ensure constructability and provide the safest options for all parties on our bridge construction projects while complying with OHSA Standards, the following paragraphs outline guidance for options on how to address these potential conflicts during plan development:

Horizontal Clearances

- *Option (1)*: Have the existing line relocated a minimum of twenty (20) feet horizontally regardless of the voltage, unless the voltage requires **more** as indicated in the attached table. This is to ensure a minimum clearance for the equipment, load line or load (including rigging and lift accessories) while performing the work.

- *Option (2)*: If the minimum clearances mentioned in Option (1) cannot be achieved through relocation, then confirm with the utility owner if the line can be de-energized and grounded

during the performance of the work. Also ensure that any time/season restrictions are discussed with the utility owner. If this is an option, then provide a project note in the plans providing the contact information and cost to the contractor. An example project note is as follows: ***It shall be the contractor's responsibility to coordinate the work activities near the overhead power lines on this project. If the overhead powerlines need to be de-energized and/or grounded for safety or per regulation, the contractor shall be responsible for the costs to de-energize and re-energize the lines, which is a subsidiary obligation of Item 510C###. The cost to the contractor is $X,XXX.XX for each occurrence. The point of contact for __*__ is (insert name) at ###-###-####.***

- Note 1: If this note is used, the Region Utility Engineer/Manager should contact the Utility Company and notify them that bidders will be contacting them about de-energizing operations.
- Note 2: if the utility entity requires a defined time notice such as 7, 14, 28, etc. calendar days, that requirement shall also be included by adding the following sentence as sentence 2. ***The Contractor must give a __-day notice prior to needing the lines de-energized and/or grounded.***
- Note 3: technically, the affected item or items of work should be what is labeled as being the subsidiary obligation for the costs of de-energization and/or grounding, Example items might be piling, drilled shaft, etc. However, these items are all by the unit and underruns and overruns may not accurately account for the costs and could skew bid history. Thus, using the lump sum superstructure concrete item is recommended.
- * : enter the applicable utility entity such as Alabama Power Company, ABC Electric Cooperative, etc.

Vertical Clearances

If an existing power or communication line spans over the bridge construction site, the upper most part of the contractor's equipment with the boom at true vertical must be twenty (20) feet below the plane of the line or more than the distance provided in the attached table.

- *Option (1)*: Have the line relocated out of the work limits or relocated to run adjacent to the work site while maintaining the horizontal clearances listed above.

- *Option (2)*: Have the line raised as much as possible within the existing alignment. Even with this option, de-energizing and/or grounding of the line may be required for certain operations. If so, the note previously mentioned should be included in the plans. In addition, if the relocation work will not be completed by bid time, a project note informing the prospective bidders that the existing line will be raised, but the alignment will remain the same must be included in the plans. Verbiage may also be included that the contractor should consider the use of low clearance equipment to perform the work. Please note that existing power lines in this manner most likely will present physical limitations in performing the work even if the safety aspects are addressed, which will make Option (1) the only option.

The Construction Bureau's preferred option in both cases would be Option (1) with relocation performed prior to the bridge construction work commencing. This option ensures the utility is not in conflict with the work and gives contractors the opportunity to eliminate delays in their

schedules, which means reduced bids, claims, and project costs. If relocation is not possible and Option (2) is selected, please emphasize the requirement of the utility to coordinate with the contractor for the de-energization. Otherwise, the contractor could still be delayed waiting on the utility entity to cooperate, which puts us back in the position of a potential delay claim. Furthermore, Option (2) also increases the risk to existing poles shifting due to vibration from piling and drilled shaft operations. This risk can result in extra coordination, project costs, and schedule delays.

As always, the Construction Bureau can be consulted during plan development for information such as the possible positioning of cranes during the work to help determine the best available option.

The attachment includes the previously referenced table in addition to the website link for the OHSA requirements in the Code of Federal Regulations, and a list of applicable excerpts addressing the clearances above.

Please ensure that all personnel designing and managing your construction projects are familiar with this matter.

WJP/JLB/BMW/CWH/cwh
Attachment
pc: Mr. George Conner, PE
Mr. Williams Adams, PE
Mr. Tim Colquett, PE
Mr. Ed Phillips, PE
Mr. Clay McBrien, PE
ARBA
AAPA
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Mr. Don Arkle, PE
Mr. Steve Walker, PE
Mr. Terry McDuffie, PE
Mr. Phillip Shamburger
Mr. Mark Bartlett, FHWA
ALBCA
ACIA
File

CIM 6-2019
Existing Overhead Power and Communication Lines at Bridge Construction Sites
October 4, 2019

1926.1408 - Power line safety (up to 350 kV)--equipment operations.

Reference: https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1408

Date: 75 FR 48142, August 9, 2010

Applicable Excerpts:

1926.1408(a)(2)

Determine if any part of the equipment, load line or load (including rigging and lifting accessories), if operated up to the equipment's maximum working radius in the work zone, could get closer than 20 feet to a power line. If so, the employer must meet the requirements in Option (1), Option (2), or Option (3) of this section, as follows:

1926.1408(a)(2)(i)

Option (1)--Deenergize and ground. Confirm from the utility owner/operator that the power line has been deenergized and visibly grounded at the worksite.

1926.1408(a)(2)(ii)

Option (2)--20 foot clearance. Ensure that no part of the equipment, load line, or load (including rigging and lifting accessories), gets closer than 20 feet to the power line by implementing the measures specified in paragraph (b) of this section.

1926.1408(a)(2)(iii)

Option (3)--Table A clearance.

1926.1408(a)(2)(iii)(A)

Determine the line's voltage and the minimum approach distance permitted under Table A (*see* § 1926.1408).

1926.1408(a)(2)(iii)(B)

Determine if any part of the equipment, load line or load (including rigging and lifting accessories), while operating up to the equipment's maximum working radius in the work zone, could get closer than the minimum approach distance of the power line permitted under Table A (*see* § 1926.1408). If so, then the employer must follow the requirements in paragraph (b) of this section to ensure that no part of the equipment, load line, or load (including rigging and lifting accessories), gets closer to the line than the minimum approach distance.

TABLE A—MINIMUM CLEARANCE DISTANCES

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).

Note: The value that follows "to" is up to and includes that value. For example, over 50 to 200 means up to and including 200kV.