

January 11, 2019

Cal/OSHA – Research and Standards Occupational Safety Unit
1515 Clay Street
Ste. 1901
Oakland, Ca. 94612

Attention: Mr. Eric Berg
Deputy Chief – Research and Standards

RE: LACMTA – C1045 – Westside Purple Line Extension 1
Subject: Title 8, Section 8430 – Interpretation and Concurrence

Dear Sir,

Skanska – Traylor – Shea Joint Venture (STS JV) had applied for and had received a variance from Title 8, 8427(b), from here forward considered the “Probe Hole Variance” in December of 2017 (OSHA File No.: 16-V-420). During that process, the Research and Standards Occupational Safety Unit, had significant input into the special conditions that were required for this specific referenced tunneling project.

Among others, Special Condition (9) for the “Probe Hole Variance” requires:

“...Applicant shall ensure that each and all employees in the tunnel has been provided with, and carries on the employee's person, an emergency escape respirator necessary for full evacuation. Each and all such respirators shall be certified, and the subject of user training, in accordance with Section 5144, and adequately protective of employees against carbon monoxide, hydrogen sulfide, oxygen deficiency and other toxic gases that may be encountered in the tunnel. The escape respirators shall be inspected, maintained, and used, as recommended by the manufacturer.”

The Standards Board recognized that the gas on this tunneling project that was the most dangerous was hydrogen sulfide, and as such, wanted to ensure workers have available an oxygen generating self-rescuer in lieu of the typical W-65 filter type which only protects against carbon monoxide gas.

During the application and hearing process for the “Probe Hole Variance”, discussions arose around other sections of the Tunnel Safety Orders, specifically Section 8430, parts (f) and (g) which discuss requirements for self-rescuers.

Section 8430:

(f) A 1-hour self-rescue device approved by MSHA shall be provided and be immediately available for each person underground. Where a person works on or

around mobile equipment, self-rescue devices may be placed in a readily accessible location on such equipment.

(g) In tunnels classified as Gassy or Extrahazardous, self-rescue devices shall be worn or carried by each person underground at all times.

STS considers a TBM as mobile equipment and has placed 1-hour oxygen generating self-rescuers on the TBMs which are readily available to all employees - in compliance with 8430(f).

STS has also ensured that each person underground is also wearing a self-rescuer (10-minute oxygen generating) on their person at all times - in compliance with 8430 (g), and Special Condition 9 of the "Probe Hole Variance".

After a recent general inspection, the Mining and Tunneling Unit in Van Nuys has verbally communicated to STS that we are out of compliance with respect to self-rescuers, in that:

- (a) In Section 8430 (f), a TBM is not mobile equipment and therefore caching the 1-hr self-rescuers is not allowed, and further,
- (b) In Section 8430 (g), the self-rescuer needs to be a 1-hr self-rescuer on the person.

STS opines that:

- (a) While the term "mobile equipment" is not defined in the standard, a TBM is mobile equipment. It is a specialty continuous excavator that moves from point A to point B while removing soil from the earth. "Stationary equipment" is by design anchored into position when being operated in the normal condition, non-transport.
- (b) Section 8430 (g) doesn't specifically call out "1-hr rating" self-rescuer to be worn at all times.

These nuances in terminology and language were discussed in depth and confirmed during the variance process between STS (Richard McLane and John McDonald) and the Standards Board (Eric Berg and Keummi Park). These nuances meant that STS employees could wear smaller 10-minute oxygen generating self-rescuers on their persons, to be compliant with Special Condition 9 of the "Probe Hole Variance", as well as be in compliant with Section 8430 (f) and (g).

The Mining and Tunneling Unit has indicated that STS would have to wear both the 10-minute oxygen generating self-rescuer **and** the 1-hr W-65 self-rescuer. STS takes exception to this as it creates two additional hazards. First, from an ergonomic standpoint, employees would have to carry an additional self-rescuer with added weight, which could lead to a higher frequency of back strains. Second, STS believes that having both self-rescuers, that there is a possibility that in the event of an oxygen

deficient atmosphere, employees could use the wrong self-rescuers, leading to death of the employee.

STS is looking for clear interpretation of Section 8430 (f) and (g) and concurrence that it is working within the current standard as well as the special conditions of the "Probe Hole Variance" from the Research and Standards Occupational Safety Unit.

Please confirm that a TBM is mobile equipment and that caching of 1-hr oxygen generating self-rescuers on the TBMs in readily accessible locations is acceptable.

Please confirm that Section 8430 (g) doesn't specifically call out a 1-hr self-rescuer, but only that a self-rescue device be carried on each person. Further, please confirm that 10-minute oxygen generating self-rescuers meet the intent of this subpart.

If you have any questions or comments, please contact Richard McLane. He can be reached by cell phone at 323-719-1066, or by email at rmclane@traylor.com.

Thank you in advance for your quick review and consideration of our request.

Carl Sandstedt
Project Executive, STS