

TerranearPMC Safety Share

Week of May 9, 2016 – Working on or Near Water

Many projects find us working near water. Historically, the most notable project involving work on or near water was the construction of the Brooklyn Bridge, where cofferdams were used extensively and diving to the depths of the river to locate appropriate foundations for supporting the bridge. Today there are many tunnels and bridges that traverse waterways including the construction of commercial harbors throughout the world. Unfortunately, this type of work is dangerous, where there have been countless fatalities and serious injuries throughout the United States as well as globally. The Occupational Safety and Health Administration (OSHA) has established specific safety standards and clarifications for construction work activities performed during these events. At the same time, there has been some confusion regarding these requirements as such work activities – bridges, tunnels and harbor construction - falls within the OSHA standard for Steel Erection. That is, 29 CFR 1926.750 Subpart R. Yet this section contains no language regarding the hazards and associated controls pertaining to working near or on water.

The bottom line is that there are always unique jobsite situations and safety issues that must be recognized and addressed prior to working over or near water. OSHA standards that address this type of work include lifesaving skiffs, buoyant work vests, and fall protection. Affected personnel must recognize these provisions so that the most obvious hazard associated with working near or on water – that is, drowning, is properly identified. It should be noted that organizations that perform these work activities may have more stringent (protective) safety requirements than that of OSHA or other Federal Standards. This would be identified in their corporate procedures, working specifications and safety policies. It is acceptable for an organization to have more stringent safety requirements than an OSHA standard; however, should an organization work to corporate procedures that do not meet OSHA regulations, even if a company has experienced subject-matter experts to enforce and ensure a high level of safety, it may be considered a serious and willful OSHA violation should an employer knowingly perform such work. This can result in significant monetary penalties for the organization as well as imprisonment for corporate officers (as well as individual monetary fines).

Within 29 CFR 1926, Subpart E (Personal Protective and Life Saving Equipment) is the OSHA standard for “Working Over or Near Water (29 CFR 1926.106).” This regulation states: “Employees working over or near water, where the danger of drowning exists, shall be provided with U.S. Coast Guard-approved life jackets or buoyant work vests. Prior to and after each use, the buoyant work vests or life preservers shall be inspected for defects which would alter their strength or buoyancy. Defective units shall not be used.”

Based on an OSHA Letter of compliance (9/28/1999) OSHA has determined that, when continuous fall protection is used to prevent employees from falling into the water, the employer has effectively removed the drowning hazard, and life jackets or buoyant work vests are not needed. In another letter (8/24/2004), OSHA has insisted that life jackets/vests are required even if the water level is less than 2 feet deep! Their reasoning is based on the scenario of personnel working at an elevated height (OSHA uses the example of 10 feet) and then falling (without fall protection) resulting in a worker becoming unconscious and therefore, susceptible to drowning. Nevertheless, OSHA does not specify a minimum depth where fall protection would be mandatory, the agency does understand that there are several factors that can be relevant to determine whether a danger of drowning exists. These include the type of body of water (i.e., a pool, a river, canal, etc.), depth, presence or absence of a current, height above the water surface, and the use of fall protection.



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While personal fall arrest systems (i.e. full body harness and a properly anchored lanyard with shock absorption capabilities) is considered adequate protection while working over water, OSHA has determined that in such cases as bridge construction, safety nets will not eliminate drowning hazards due to the potential of heavy materials and equipment falling on the nets and causing damage to the nets. This would be considered a potential risk of the net not being able to protect persons from falling through the net. In such cases the personal flotation device and the other applicable requirements of 29 CFR 1926.106 apply.

And should a worker fall into the water, OSHA requires (29 CFR 1926.106(c)) that ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. The distance between ring buoys shall not exceed 200 feet. Another remedial action required by OSHA (29 CFR 1926.106(d)) is the use of lifesaving skiffs. OSHA requires that at least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water and must include the following provisions.

- The skiff must be in the water or capable of being quickly launched by one person.
- At least one person must be present and specifically designated to respond to water emergencies and operate the skiff at all times when there are employees above water.
- When the operator is on break another operator must be designated to provide requisite coverage when there are employees above water.
- The designated operator must either have the skiff staffed at all times or have someone remain in the immediate area such that the operator can quickly reach the skiff and perform rescue services.
- The skiff operator maybe assigned other tasks provided the tasks do not interfere with the operator's ability to quickly reach the skiff.
- A communication system, such as a walkie-talkie, must be used to inform the skiff operator of an emergency and to inform the skiff operator where the skiff is needed.
- The skiff must be equipped with both a motor and oars.

With regard to the number of skiffs required and the appropriate maximum response time, the following factors must be evaluated:

- The number of work locations where there is a danger of falling into water;
- The distance to each of those locations;
- Water temperature and currents;
- Other hazards such as, but not limited to, rapids, dams, and water intakes;

Something must be considered is that in the event a personal flotation device is not worn or malfunctions, permanent brain damage can occur to a drowning victim within three to four minutes due to oxygen deprivation.

Other regulations that present S&H practices and PPE for work on or near water include: 29 CFR 1910, Subpart T (401 – 440) Commercial Diving Operations, 29 CFR 1926, Subpart Y (1071 – 1091) Diving, and Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1 (11/2014) Section 30 Diving Operations.

Never believe that a few caring people can't change the world. For, indeed, that's all who ever have - Margaret Mead

