WORKING OVER OR NEAR WATER

All employees working over or near water (within 6 feet), where the danger of drowning exists, must wear the issued U.S. Coast Guard approved buoyant work vests or Personal Floatation Devices (PFD). Generally this is not required when working inside a platform protected with a standard guardrail system. At the job superintendent’s discretion, work performed within a standard guardrail system may require the use of buoyant work vests.

Work vests and life jackets must be inspected prior to and after each use. Should any defects that would alter their strength or buoyancy be found, it should be brought to the foreman for a replacement. When working from a fall protection system or when guardrails are installed, work vests or life jackets may not be required.

30-inch (minimum) ring buoys with at least 90 feet of 600-pound capacity line shall be provided and readily available for emergency rescue operations at least every 200 feet along the water’s edge.

The lifesaving skiff shall be immediately available where employees are working over or adjacent to water. The skiff shall be maintained with a motor in working order, equipped with the minimum of a boathook (or pike pole), T-top paddle (or oar), and ring buoy with 90 feet of 600-pound capacity line. The Crew Foreman is responsible to ensure the skiff is equipped with these materials each day before work begins.

Anytime a fall hazard over water exists that exceeds 25 feet a properly designed fall protection system will be utilized. Personal floatation devices may be utilized if there is an unobstructed fall to the water that is 25 feet or less, and the water below is 10 feet or greater in depth.

ACCESS

Proper access must be maintained from derricks to the dock, between barges, and from boats to barges. Extension, step, and job built ladder access should be avoided as a permanent access to barges, piers, docks, and crafts. If ladders are the only option, they must be secured at the top and at a pitch of 1:4. Never use a ladder in the horizontal position. Commercially available aluminum gangways are a good solution for access between barges. Keep gangways clean and free of debris, cords, hoses, and mud. Gangways must be well lit. Secure the top end of the gangway at all times while in use. Inspect all access daily and repair as required. Planning for all operations must include an access plan. Keep spare access gangways on hand for
replacement purposes and unforeseen needs. Each derrick should have a minimum of one permanent access ladder fixed on a side, two ladders would be more appropriate for certain jobsite and work locations. Pocket ladders built into barges and hanging ladders are not to be used as permanent method of access. Tires are never a proper form of access to floating equipment.

Access to the barges and floating plants must be limited to authorized personnel. The marine superintendent may authorize visitor’s tours, but the parties must be escorted by a superintendent or designated crewmember.

**SKIFF OPERATIONS**

There are three different types of skiffs that are operated and maintained on all Kiewit Bridge and Marine Projects. Single engine work skiffs, single engine safety skiffs, and double engine work/survey boats. Designated operators will run all crafts only.

The Kiewit Bridge and Marine designated operator program will be reviewed with all employees prior to skiff operation. A site specific designated operator’s card will be issued and kept on the operator at all times while operating said skiff craft. Local state and government boater operator educational requirements must also be met for an employee to be a legal designated operator.

A designated safety skiff is required on all projects where employees are working on or above water. Per OSHA a designated safety skiff/rescue boat must be capable of being launched by a single person and able to reach the individual(s) needing rescue within 3-4 minutes. The Safety Skiff shall be equipped with the following items:

- Paddle with T-Top
- Life Ring with 90 feet of Throw Rope
- 1 – 10lb ABC rated fire extinguisher
- Boat Hook or Pike Pole
- Anchor with line
- Working Outboard w/ Fuel
- Picking attachments on the skiff with bridle (do not use Molly’s for picking skiffs).
- Hand Rail (Bailey Rail)
- Skiff Capacity stenciled (or welded) on the side of the skiff
- Waterproof Emergency box containing:
  - First-Aid kit
  - Flares
  - Air Horn

(The stated requirements above also apply to all double engine work/survey skiffs)
All derrick barge skiffs will be equipped to be a designated safety skiff. The designated safety skiff may be used to transport people from shore to the crane and back again but it is not to be used as the primary work skiff. If work is to be performed out of a skiff then a second skiff is required. It is the responsibility of the crane crew to keep the outboard on the safety skiff in good running condition.

At a minimum all KB&M work skiffs must be equipped with the following items:

- Paddle with T-Top
- 1 – 10lb ABC Rated Fire Extinguisher
- Skiff Capacity Stenciled (or Welded) on the side of the skiff
- Hand Rail (Bailey Rail)
- Boat Hook or Pike Pole
- Working Outboard with Fuel

Projects that are working over the water but not in the water are still required to have a designated safety skiff ready for deployment at all times. Inflatable rafts may be substituted for aluminum skiffs at District Safety Managers approval. Raft must be stored in a location where they can be easily launched in an emergency, in lieu of having our standard safety skiff.

**MAN OVERBOARD PROCEDURES**

Heightened awareness of man overboard issues is mandated by the weather conditions and strong currents. Man overboard risks will be substantially reduced by the following measures.

Use proper fall protection and PFD’s while working near and over water.

Crew working within areas that are protected by properly designed, constructed, and maintained guardrails may not be required to wear life jackets. All access ramps between barges will have handrails. Persons transiting between areas that are protected by guardrails and open barge decks will be required to wear life jackets 100% of the time.

30 inch minimum ring buoys with at least 90 feet of 600+ pound capacity line shall be provided and readily available for emergency rescue operations at least every 200 feet along the water’s edge.

A lifesaving skiff shall be immediately available where employees are working over or adjacent to water. The skiff shall be maintained with a motor in working order, equipped with a boathook and pike pole, ring buoy with 90’ of rope in a rope bag, and a fire extinguisher. The derrick barge foreman is responsible to ensure the skiff is equipped with these materials each day before work begins.
Use of the buddy system. Crew members must work in direct visual and radio contact with the foreman or crane operator at all times. If direct visual contact is not feasible, two persons must work together on deck. A minimum of two people will work together when working on deck at night.

If someone goes overboard, the following emergency procedure will be followed:

Throw a life ring (bitter end of the line attached on board) to the person overboard. DO NOT JUMP IN AFTER THE PERSON; THE BEST WAY TO SAVE A PERSON OVERBOARD IS TO BE AVAILABLE TO CALL FOR HELP. One crewmember must maintain visual contact with the person overboard at all times. If possible throw a ring buoy with a strobe light to the person or as close to the person as possible, this will help locate them. Launch the life saving skiff and, taking a minimum of two people in the skiff, recover the swimmer. When approaching a person in the water, approach from downstream so that the current brings the swimmer to the boat. Do not underestimate the efforts required to haul someone into the boat. Get help to haul the person aboard.

NIGHT MARINE OPERATIONS

Night operations while working in or around or adjacent to water present a unique set of hazards to personnel.

All crews working on night operations near or on the water will utilize the “buddy system” 100%. All PFD’s will be outfitted with water activated strobe lights and whistles for visual and audible location identification of a downed employee.

The Superintendent will ensure that the night operations work plan and Hazard Analysis addresses the safety issues of working at night. The plan and Hazard Analysis will address, but not be limited to, the following items:

- Reflectivity
- Illumination
- Communications
- Emergency procedures

FALL PROTECTION OVER WATER

When working over or near water (Piers, Wharves, Quay Walls, Barges, Aerial Lifts, Crane Supported Work Platforms, etc.) PFD’s are required for all work unless fall protection is used to eliminate the water hazard.

When working over or near water and the distance from the walking/working surface to the water's surface is 25 feet or greater fall protection is required. PFD’s are not required.
When working over water at a height of less than 25 feet and the water depth is less than 10 feet, the potential fall has an obstruction, or hazards from currents, intakes, machinery or barges, etc. are present fall protection is required and PFD’s are not required.

When working over water at a height of less than 25 feet, the water depth below the walking/working surface is 10 feet or greater, and the potential fall is unobstructed fall protection is not required. PFD’s are required 100% of the time when working in these conditions.

DIVING OPERATIONS

Diving on all projects will be subcontracted but Kiewit Infrastructures West Co. will work side by side with the diving subcontractor in all aspects of the project’s safety program. All Subcontractors shall submit a copy of their Site Specific Safety plan to Kiewit to be reviewed by the Project Manager, Project Safety Manager, and Subcontractor Monitor before any work commences. All Subcontractor Accident Prevention Plans will be kept on site available for review throughout the life of the project and updated as changes are made. Our diving subcontractors will be given a copy of the project Accident Prevention Plan (APP) and Safety Policy Manual at the pre-job safety meeting. All employees shall go through orientation provided by the Kiewit Project Safety Manager and Subcontractor Monitor. The obligation of all contractors and/or subcontractors to comply with applicable statutory safety and health laws, regulations and rules will be covered as well as the Kiewit specific safety policies and procedures that will be required by contract. Subcontractors will be advised that they have the sole and complete obligation to provide a safe and healthful working environment for employees and other persons at the project site, including the traveling public, who may be exposed to the work.

The subcontractor is directly responsible for its safety performance and must ensure a safe work environment for all people entering onto this project, including the general contractor, owner, and other subcontractors.

In a marine construction environment the greatest recipe for success in regards to safety is to become one team between all employees onsite, subcontractors and the general contractor. Because the divers will be working so close to our crews and equipment they will be expected to participate in all project safety and toolbox meetings, follow all jobsite specific safety plans, and report all incidents and near misses to the safety department within the shift they occur. While topside on barges or working on land based operations they will be expected to hold the same high regard for the prevention of incidents that Kiewit expects of their own employees. In regards to underwater operations all WISHA, OSHA, and EM 385 diving regulations, along with any company best practices that go above and beyond normal regulations must be considered while the diving subcontractor writes their site-specific accident prevention plan.
TOW LINES AND BARGE LINES

Never stand in the bight, adjacent or in line with a mooring or tow line or any line that is under strain. Derricks will be equipped with good quality barge lines at the start of the project. Inspect the barge lines and replace as required. Ensuring that all floating equipment is equipped with adequate mooring lines is the project’s responsibility and a job cost (including replacement costs of worn out lines). The foreman, derrick operator, and deck engineer is responsible for seeing that barges are properly secured and that the barge lines are in good condition. Special precautions shall also be taken to identify the location of spud and deck winch lines. All permanent wire rope lines on the deck of a barge shall be marked with yellow paint. Communication with the crew members both pre-planned (JHA) and while barges are moving, is vital to the safety of our employees working around deck lines.

SWING RADIUS AND PINCH POINTS

The derricks that are scheduled for the project have adequate clearance between the bottom of the counterweight and the deck to avoid tail swing hazards. Deck gear has been laid out to avoid problems with pinch points and tail swing. Do not place equipment or materials on deck that can interfere with the swing radius of the counterweight. Crew shall not access the operators cab without establishing contact with the operator and obtaining permission to enter. Stairways up to the rotating bed shall be kept chained off and marked as a restricted entry area.

LIGHTING, LIGHTS, AND SHAPES

All derricks have boom lights. Light towers will be used as necessary to provide additional lighting on the barge deck and in the adjacent work area as needed. Provide adequate lighting at all access locations. All derricks, barges, and bridge caissons must be equipped with proper lights and day shapes. All barges will have lights on all four corners at night in addition to the navigation lights on the Gantry. Buoys must be lighted with steady white lights at night. All lights shall be checked for proper operation every day.

COMMUNICATIONS

All derrick barges are equipped with a VHF radio that can be used in any emergency situation. The United States Coast Guard monitors VHF channel #16.

EMERGENCY PROCEDURES

Training shall be conducted to all persons working around the water of the proper procedures to follow in case of an emergency.
Each derrick barge (and marine jobsite) will be equipped with a VHF radio. Unless the person overboard is recovered immediately call the Coast Guard on the VHF radio, channel #16 to alert them of an emergency. In addition, call 911 to have an emergency response team sent to the jobsite.

Be prepared to detail the exact location and heading of the person overboard and brief the Coast Guard and emergency responders on the local conditions of the barges, weather, etc. Follow the directions of the Coast Guard. Notify the job superintendent of the emergency immediately.

All marine jobsites shall have a more in depth and specific emergency procedure for person overboard written into their site specific Accident Prevention Plan. This shall be reviewed with all employees working on site.

NOTICE TO MARINERS

Per US Coast Guard regulations, proper notice to mariners must be issued prior to moving onsite and updated with changes to the mooring plan. Project management is responsible for issuing the notice to mariners.

WAKE WATCH GUIDELINES

When a shore crane is used to hoist work onto floating equipment, or when a floating derrick is hoisting onto a land based structure or another barge there is potential for passing boat traffic to have a safety impact. Movement due to the wake can catch workers off guard with serious potential. If the operation has obvious potential for injury or equipment damage an employee shall be designated as spotter to watch for any wake producing marine traffic. “NO WAKE ZONE” signage should be used if conditions dictate at the work site.

PUBLIC SAFETY

Keep proper navigation lights in place on buoys, barges, and bridge structures. Maintain proper notice to mariners. Be aware of private vessels transiting the area. Be prepared to call vessels via VHF radio and give them five blasts on the air horn if they are entering the work zone. Posting signs on the deck of barges is the proper way to warn the public of submerged anchor wires or other hazards and warn them to stay clear – 500 feet. Posting of “Construction Zone” signs should also be used to warn the general boating public of jobsite hazards.