Operations Challenge 2012

Collection System Event

What we want you to do:

The event simulates connecting a 4-inch PVC lateral sewer to an existing 8-inch PVC sewer pipe while in service (the 'wet' pipe) and the identification of known pipe defects.

- Drill a 4.5-inch diameter hole in the 'dry' PVC pipe.
- Cut out and remove a measured length from both the 'wet' and 'dry' PVC pipes. The section cut from the 'dry' pipe will include the 4.5-inch hole, and will be used to replace the section removed from the 'wet' pipe.
- Install a service saddle connection in the 4.5-inch hole, and secure with hose clamps.
- Install the replacement length of 8-inch PVC pipe SDR 35 (complete with service saddle) into the 'wet' PVC pipe, and secure with flexible repair couplings and hose clamps.
- Identify images of known pipe defects and observations with the correct terminology from the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP).

What we will provide:

- A 6-foot length of PVC pipe strapped to a steel stand, ready for cutting. Water will be flowing through this length of pipe during the event (the 'wet' pipe).
- A 6-foot length of PVC pipe strapped to another steel stand, ready for cutting (the 'dry' pipe).
- Toolbox.
- Hand drill (non-ratcheting brace) with a LENOX 4.5-inch circular cutting blade (model 72L), or equivalent.
- One 4-inch service saddle with attached gasket.
- Four flexible repair couplings.
- Two LENOX saw handles with two 18" PVC saw blades (model HS F180), or equivalent.
- Two speed wrenches with sockets.
- Hose clamps.
- Tape measure and marker*. Teams have the option to use their own tape measure and marker. Additionally, teams have the option to either carry the tape measure and marker into the event on their body or have the items placed in the tool box during the three minute set-up period. However, whichever way the team decides, the tape measure and marker must end the event in the same manner, either on the body or in the tool box. * Separate from the PACP marker.
- Bound, 8.5" x 11" test sheets (stapled at the top left) containing images from the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP).
- Table and privacy blind to view the PACP sheets and a marker to indicate answers.
- Note: In order to best view the printed test sheets, a high quality color printer is recommended.

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What you will be judged on:

- The time taken to complete the event.
- The tightness of your completed connections. The 'wet' pipe connections will be checked for water tightness at 3 psig for 30 seconds.
- The accuracy in identifying PACP pipe defects.
- Compliance with any instructions given or procedures required.
- **Safety**.

Required procedures:

- During the three minute event set-up period prior to the event, each team must ensure that all necessary tools are provided, and that all the tools and equipment to be used in the event are in satisfactory condition. Only the 'wet' may be marked during this pre-event set-up period. The PACP sheets may only be opened during the actual event and not disturbed during the set-up period. Also, during the three minute setup, the marker may be tested on scrap paper and placed anywhere on the PACP table. The marker is to remain at the table at all times.
- Each team member is to wear all* required safety equipment throughout the event, and compete in a safe manner. (* See next bullet)
- * The team member(s) at the PACP table may remove their gloves, but only while working at the PACP table. Gloves may not be removed upon approach to the table and must be put back on prior to leaving the table.
- The straps holding the PVC pipe to the stands may not be loosened during the event.
- The PVC pipe sections strapped to the stands may not be moved laterally by the competitors.
- The team captain will start the event by signaling the judges both visually and audibly.
- The 4.5-inch hole must be drilled in the section originating from the 'dry' PVC pipe, using the hole saw provided.
- The lengths of PVC pipe must be cut out using the LENOX saws provided. All cuts must be completed within the framework of the pipe table.
- The saddle must be mounted to the appropriate replacement PVC pipe section and properly secured in place with the hose clamps provided.
- The PACP test sheets will contain 6 images of known pipe defects with multiple choice answers.
- The sheets will contain a single image per page. Identify the PACP defect in each image using the multiple choice selections provided at the bottom of the sheet. Circle the letter adjacent to your choice.
- The choice made must be distinct and clearly visible. Only one answer will be allowed per sheet. If the answer is changed, then the previous choice must be "x-ed" out and the new choice circled.
- Teams 1 through 9 must remember to write a 0 before their team number, for example; 01, 02, 03 and so on. The score sheet will have a designated box to write the team number.

- All tools must be placed (not dropped or thrown) in the toolbox after use. The toolbox lid is to be closed and latched, and the toolbox must be replaced in its original location. Tools must be placed in the tool box and not thrown.
- The team captain will signal the judges when the event is over.

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The judges will then:

- Record the elapsed time.
- Check the sewer service replacement section for water tightness. The 'wet' PVC pipe will be allowed to fill until water flows from the outlet end. At this point, the discharge valve will be closed and the pressure increased to 3 psi. Time penalties will be added for any leakage that occurs within 30 seconds.
- Verify that the PACP defects were identified properly.
- Add any other penalties incurred during the event to the total score and pass the information on to the Event Coordinator.

What you will provide:

- Hard hat, safety glasses or goggles, safety boots or shoes, protective gloves.
- Enthusiasm!

Remember:

- While sawing activity is occurring on a pipe table, no other activity is permitted on the same table. This means no touching of the pipe or any part of the table. Only one person (at a time) may operate the brace and bit assembly used to drill the 4½ inch hole, with no additional forces being transmitted to the tool in use by any other team member(s).
- Team members may not place their hand inside the hole created by the hole saw while the 'dry' pipe is still being cut.
- No running or jumping.
- No punching of the 4.5 inch hole saw coupon.
- No team member is permitted to be on the sides, or back, of the 'wet' table for safety reasons.
- Team members may reach under and over the wet pipe and table, but no body part may cross the cut ends of the 'wet' pipe. i.e., the pipe is considered continuous, with no ends.
- To prevent excess water spillage, the "cut-out" section of the wet pipe must be inverted 90 degrees, prior to being removed form the wet table