

SCP TRIBUNE

Hazards of Inaccessible Spaces

There is always an inherent risk when performing hot work on an inaccessible space because it is difficult if not impossible to see the conditions inside the space. Now imagine performing hot work on an inaccessible space that is filled with concrete and had diesel fuel leak into it from an adjacent fuel tank. This is an actual scenario that was recently encountered on a vessel here in Seattle. The inaccessible space was a void underneath a fish hold and the repairs that needed to be done involved arc-gouging the bottom 1-2 feet off of a vertical half-pipe stiffener in the fish hold, welding a doubler at the base of the stiffener (to the tank top of the inaccessible void), and welding a new replacement 1-2 foot section of half-pipe stiffener. When the stiffener was drilled (because it, too, is an inaccessible space), fuel came pouring out. Then the plug in the manhole for the concrete-filled void under the fish hold was opened and fuel came pouring out of it as well.

Two spaces that should not have had any fuel in them were both full of fuel. Imagine what could have happened if the workers had not drilled the stiffener before starting the hot work? Instead, we were able to drain the stiffener of fuel and pump out as much fuel as possible from the concrete-filled void. After draining, the Marine Chemist stood by with a continuous flow of inert gas while the hot work was being completed.

Two lessons should be taken from this event. One is to never assume that an inaccessible space is safe, even if it's filled with concrete or nowhere near a fuel tank.

Always drill and test the space first. There are several other dangers associated with inaccessible spaces besides unexpected fuel, such as hydrogen gas from rusting, methane gas from the breakdown of organic material, or flammable preservatives coating the inside of the space. The second

lesson is that while filling a void or tank with concrete may be an easy short-term solution for adding permanent ballast, it can cause a lot of problems down the road, especially when that void or tank is adjacent to a fuel tank. Now that the concrete-filled void in this story has fuel in it, it will be very difficult to safely perform hot work on the hull against the void (i.e. inserts, doublers, keel coolers, zincs, etc) because it cannot be cleaned and inerting becomes much less effective with concrete in the void.

Kudos to the SCP in this scenario for being diligent in drilling the inaccessible space before starting hot work. The SCP should always be aware of the hazards of inaccessible spaces as well as the potential problems created by filling tanks with concrete.



Sound Testing's "Mighty Murlocs" wins the Titanic Award!



Boatmates (l to r: Katie Greiff, Craig Trettevik, Joseph Trettevik) of the "Mighty Murlocs" team swim back to the dock after taking an intentional spill overboard to lock in the "Titanic Award - First Boat to Sink" during the Work Boat World Invitational Boatbuilding Competition. The competition was held on the final day of the annual Seattle Maritime Festival Saturday, March 11, 2013, on Pier 66 in Seattle. The four-day festival included a clam chowder cook off, tugboat races and boatbuilding competitions.

(Photo by Jordan Stead, seattlepi.com)

ASK A CHEMIST!

Looking for clarification? Ever wonder why rules are written they way the are?
Ask away! Every month a worthy question will be answered here!



Question:

How do I get “Local Shifting” on the Marine Chemist certificate?

Answer:

If you’ve ever taken the time to read the fine print at the bottom of a Marine Chemist certificate you may have noticed the following statement in the QUALIFICATIONS paragraph: “Movement of the vessel from its specific

location voids the Certificate unless shifting of the vessel within the facility has been specifically authorized on this Certificate.” Local shifting means any movement of the vessel within the facility it is already in. The logic behind this requirement is that certain spaces are likely to experience a change in conditions during the movement of the vessel. Some of the most common spaces that can have a change in conditions during shifting include fuel tanks, cargo tanks, oil tanks, sewage tanks, engine rooms, and pipelines. The most common change in condition that occurs in these spaces is product that was in a pipe is released into the space or tank during the movement of the vessel (a.k.a “run back”).

NFPA 306 gives the following instructions regarding local shifting in section 4.6.2(5): “It is the responsibility of the Certificate requester, vessel owner, or their representative to ensure that the prescribed work is carried out at the original location within the facility for which the Certificate was issued, unless movement is authorized within the facility on the Certificate by the Marine Chemist. If movement is authorized within the facility, a reinspection shall be performed by a competent person. The Marine Chemist shall include on the Certificate the nature of any tests to be performed after the move is complete and prior to beginning work.”

Ultimately it is up to each individual Marine Chemist to authorize local shifting on his/her certificate. Some of the scenarios where the Marine Chemist is more likely to authorize local shifting are listed below:

- i) When the Certificate involves spaces that rarely experience a change in conditions during shifting (i.e. spaces not mentioned in the first paragraph).
- ii) Tanks were cleaned prior to shifting and then inspected after shifting and did not show any signs of run-back.
- iii) Tanks were inspected previously and did not get local shifting authorization and the vessel shifted and the tanks did not show any signs of run-back.

We do our best to ask if you need local shifting authorization, but, if there is even the slightest chance the vessel might need to shift and we forget to ask you, please ask us about it.

After all that explanation, as for most legal questions, there is no black or white answer. Your best bet is to ask!

SCP QUIZ

Congrats to Kevin Nolet of Vigor Shipyards who won a \$25 Claim Jumper gift card for last month’s quiz!

Last Month’s Answers:

The deck cargo barge, Murphy, has been brought up on dry dock and repairs need to be made to the No. 2 center tank. Which adjacent spaces will need to be tested to complete this work?
No.1 (P/CL/S), No.2 (P/S), No.3 (P/CL/S)

During the hot work repairs, a fire watch will be on duty. OSHA 1915 Subpart P outlines fire protection in shipyard employment.

This Month’s Question:

1) Class A fires involve burning materials that leave an ash residue. Examples are (choose all correct answers):

- a. Ropes b. Cardboard
c. Plastics d. Diesel fuel

2) Heavy paint on a bulkhead must be needle-gunned away a minimum of 4 inches from the line planned for a torch-cut.

True or False

3) An example of a Class B fire extinguisher is a Carbon Dioxide (CO₂) extinguisher. **True or False**

Submit your answers to newsletter@soundtestinginc.com (or “reply” to this e-mail) before June 25, 2013. All correct answers will be entered into a random drawing and one person will win a \$25 gift card! One entry per person, please. The correct answer and the winning entry will be published in next month’s issue.

Sound Testing, Inc.

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TRAINING

Shipyard Competent Person



Seattle

3-Day Initial
June 5-7

1-Day Update
June 19

3-Day Initial
July 10-12

OSHA 10 Hour Training



This 10 hour training on 29 CFR 1915 provides methods on recognition, avoidance, abatement, and prevention of safety and health hazards in workplaces specific to the maritime industry.

Strengthen your workplace safety and health today by calling Sound Testing for the next scheduled class.

NEAR-MISS ACCIDENTS

We all have rules to obey, whether driving to work or repairing vessels. Traffic rules come from local government, but our workplace rules have several sources.

Shipyard Competent People are regulated primarily by OSHA's Ship Repair Rules for confined space entry, for hot work safety, and so on.

Marine Chemists get most of our guidance from the National Fire Protection Association (NFPA). The NFPA is very important to us, not only because they regulate the ways we do our work, but also because their mission is to educate the Ship Repair Industry on safe practices.

Here is a very educational "near miss" provided to us by the NFPA that we would like to share with you:

In Baltimore recently a Marine Chemist certified a starboard rubrail and some fuel tank vents "Safe for Hot Work." However, a worker thought the Certificate applied also to the forward bulkhead of the engine room, which it did not. When the worker cut into a fuel line, a super-heated mixture of explosive vapor and burning liquid diesel shot out, catching the engine room on fire with impressive results (click on the link above to see a gallery of photos by Recon Photography).

Locally, last month a Seattle worker didn't realize that it was a fuel pipe he was welding to a frame penetration down in a fishing boat void. As the weld penetrated the thin (1") fuel pipe, the 5,000°F arc instantly vaporized the diesel, which shot back at the worker and set fire to nearby foam. The worker, through sheer athletic ability, was barely able to scramble through frame accesses and up the ladder with the fire burning the cuffs of his jeans.

Had the worker not been so strong and agile he could easily have been the latest foam fire fatality.

A hot work accident which would be fearsome enough on the main deck is the stuff of nightmares when in a confined space.

These recent events reminds us again how important it is that workers pay attention to the instructions of the Competent Person and the Marine Chemist and to double check project details.

It is said that ordinary people learn from their own mistakes and wise people learn from others' mistakes! Let's learn from these "near misses".

Baltimore Tugboat Fire

To see pictures from the 2011 tug boat fire in Baltimore, go to:

http://www.recon2photo.com/BaltimoreCityFire/Fires-2011/101011-Tug-Boat-Fire-Key/19460764_Tk753h#li=1522712187&k=k2pCKns