



“Potential Serious Burning Incident”

Introduction

This Safety Gram is meant to raise awareness of the safe work practices that must be employed in underwater burning operations. Failure to follow basic Safe Work Practices can result in a serious incident with severe or even fatal outcome.

Incident

A saturation diver, while in the process of burning drain holes in a toppled 3-story quarters building created an underwater explosion. The diver was burning drain holes to allow water to escape more quickly when the structure is lifted to the surface, which would facilitate a safer recovery. The safety precautions taken during this procedure included flushing work areas with air, and ensuring that vent holes designed to remove all combustible gases were placed above the work areas. The explosion occurred when the diver changed locations to “enlarge a vent hole”.

Findings

When performing any burning operation the following safety precautions **MUST** be observed:

1. Appropriate verbal communications and use of video monitoring must be employed to ensure the Diving Supervisor knows the diver’s precise position on the structure and to ensure the area is safe for burning.
2. Never burn into an area containing anything but water. While it is prudent to use pneumo or tool air as a method of verification that a vent hole is working as intended, or to flush unknown substances from an area, the air supply must be secured to allow water to fill the area before burning.
3. Clear terminology and communications. Before beginning an operation, all personnel involved should understand the difference between a vent hole and a drain hole. A vent hole is intended to allow pressure, suction, gas and/or hydrocarbons to escape from an area. A vent hole is **NEVER BURNED**; it is always created using cold-cutting methods such as a drill. A drain hole is what is created to allow water to escape from the structure when it is lifted and thus, should be in an area containing water. The two terms should not be used interchangeably, as it may create confusion in the communications between the Diver and the Dive Supervisor.
4. A risk assessment must always be used to determine if burning is the preferred method for the task at hand.