



FEMA

US&R PROGRAM DIRECTIVE – 2019-001

April 1, 2019

FOR: National Urban Search & Rescue Response System
Task Force Representatives and Program Managers

FROM: Fred Endrikat, Chief
Urban Search and Rescue Branch

SUBJECT: US&R Program Directive 2019-001 – Gasoline Powered Equipment Storage

Implementation Date: April 1, 2019;

Re-issue Date: September 30, 2022

During the National Urban Search and Rescue (US&R) Response System (the System) Safety Unit's investigation of the storage incident detailed in GM 2018-122, it was discovered that there have been multiple System task forces that have experienced similar events. Since that GM was issued additional information has been received, including manufacturers' proper storage instructions for gasoline powered equipment. This Program Directive updates information and required actions related to the storage of gasoline or gasoline-mix powered equipment.

REQUIRED ACTIONS

All System task forces shall immediately review the manufacturers' storage and carrying requirements for all gasoline, or gasoline-mix powered equipment. They shall then follow the recommendation outlined in the GM 2018-122 *CO-TF1 Hardigg Case Petrogen Explosion (Blue Sheet)* to include the updated information and immediately ensure that all gasoline, or gasoline-mix powered equipment is stored and carried in well ventilated containers.

The final location of where this information should reside in System policy documents has yet to be identified, but once that is determined it will be incorporated into future revisions of the appropriate documents.

Any questions or concerns should be directed to: Mike Davis at michaelb.davis@fema.dhs.gov or (202) 826-5594; or Jim Colston (Safety Unit Chair) at Colston.Jim@gmail.com or (760) 532-2012.

Attachments:

Blue Sheet - CO-TF1 - 12052018 Hardigg Case Petrogen Explosion

cc:

US&R Strategic Group

US&R Advisory Group

US&R Branch Staff

FEMA Regional/Federal/International ESF #9 Representatives

Summary Report of an Incident Within an Incident or Near Miss Event



BLUE SHEET

CO-TF1 Hardigg Case Petrogen Explosion

0941, December 5, 2018

Major Event

Training

Transportation

Central

SUMMARY

On December 5th, 2018, at 0941, the CO-TF1 Logistics Team was conducting Air Readiness Module training. Two members were working on top of a stack of Hardigg boxes, dragging the boxes from a fork lift to the top of the stack. One of the boxes contained Petrogen hoses and equipment and when it was dragged it exploded, causing a significant laceration on one member's forehead. The cause of the laceration was a metal latch that separated from the box during the explosion and the member required ambulance transport to the hospital. The other member sustained minor facial abrasions and burns and did not require medical treatment.

The Hardigg box contained the Petrogen hoses as well as other components, to include the strikers for igniting the torch when in use. The box did not contain Petrogen cylinders. Members reported feeling static shocks from the boxes throughout the training. The fire investigation revealed that the cause of the explosion was the ignition of gasoline vapors within the box, due to either a static shock from dragging the box, or a spark from a striker that may have been jostled within the box. The source of the gasoline vapors was the Petrogen hose lines.

The Blue Sheet is a brief summary report of any IWI event intended to provide factual information within 24-hours after that event occurs. To that end, it is published and distributed System wide to improve situational and safety awareness. Information contained within may be subject to revision as further investigation is conducted, and other reports and/or documents are received. The Blue Sheet shall be required for all events regardless of a Major Event Review Team (MERT) activation. A Blue Sheet may warrant a Safety Stand Down for dissemination of the information to assigned personnel.

RECOMMENDATIONS FOR IMMEDIATE CORRECTIVE ACTIONS

1. Store Petrogen equipment in well ventilated containers.
2. Ensure that Petrogen hose lines are purged according to manufacturer's recommendations.
3. Examine all storage boxes, equipment, and materials within the cache, looking for and correcting potentially similar circumstances.
4. After fact finding CO-TF1 found a logistics system email from 2007 stating the hazards of keeping Petrogen equipment in an air tight container. CO-TF1 recommends that the Program Office and Advisory Organization establish a system-wide protocol for disseminating safety notices. These notices, along with General Memoranda, could include safety recommendations, procedural requirements, Annual Readiness Evaluation "highlights", or other methods for ensuring that all Task Forces are made aware of safety issues and are in compliance with recommendations or requirements as appropriate.
5. After fact finding with other task forces CO-TF1 found that TX-TF1 stores their Petrogen in an expanded steel ventilated case (pictured below). CO-TF1 feels that this is a best practice that needs to be sent out to the system.



PHOTOS/SITE DIAGRAMS/MAPS

This is the Hardigg case containing Petrogen lines and equipment. Note the failed corners of the case. Note the missing latches that became shrapnel. All of the latches failed.



PHOTOS/SITE DIAGRAMS/MAPS

The members were working on top of this ARM pallet. In the photo the damaged Hardigg box is right behind the power cable that is hanging from the ceiling. Note the landing place of the box top at the bottom of the photo. The other boxes on top of the pallet are jumbled because they were quickly set aside to assist the injured member off the top of the stack. The stack height was approximately eight feet.

