

HQ USINDOPACOM

JTF-Red Hill

Oil Pressure Door



13 April 2023

This brief is classified:

Markings Removed

Discussion up to:

Markings Removed

Classified by: JTF Red Hill Plans Directorate

Derived from: Multiple Sources

Declassify on:



(U) Most Likely Release - Lower Access Tunnel (LAT) Repacking Scenario – Discharge of 144,000 GAL

REPACKING

Response Actions

•**Scenario:** Only the F-24 and JP-5 RHL Pipelines will be used to transfer the 3 products currently inventoried in RH.

- Flood Barriers will be placed at the (b) (3) (A) and the (b) (3) (A) to direct flow in event of leak or rupture.
- A Control Room Operator (CRO) and an assistant Control Room Operator will be in the control room throughout the entire operation.
- Rovers and supervisors will be on site to verify valve operations, configurations, and pipeline monitoring.
- Spill kits will be pre-staged at various locations in the tunnel.
- Booms around Yard Oiler Non-Propelled (YON) fuel barges and fuel tanker vessels to contain any releases that could occur during repacking/defueling.

(b) (3) (A)

•CRO immediately ceases defueling operations and shuts all Motor Operated Valves (MOVs), limiting fuel spill to the volume in the pipe upstream of the rupture (b) (3) (A)

→ (b) (3) (A)



(U) Most Likely Release - Tank Gallery Defueling – Discharge of ~16,000 GAL to 150,000 GAL

Defueling

- **Scenario:** Pipe rupture occurs in Lower Tank Gallery on a recently repaired length of pipe downstream of tank skin-valves (Double-Block and Bleed Valves) causing a discharge very similar to 06May21 Incident.
- Control Room Operator (CRO) immediately ceases defueling operations and shuts all Motor Operated Valves (MOVs), limiting fuel spill to the volume in the pipes (b) (3) (A)
- Fuel rapidly spills out of rupture and flows towards nearest sump(s) where it is collected

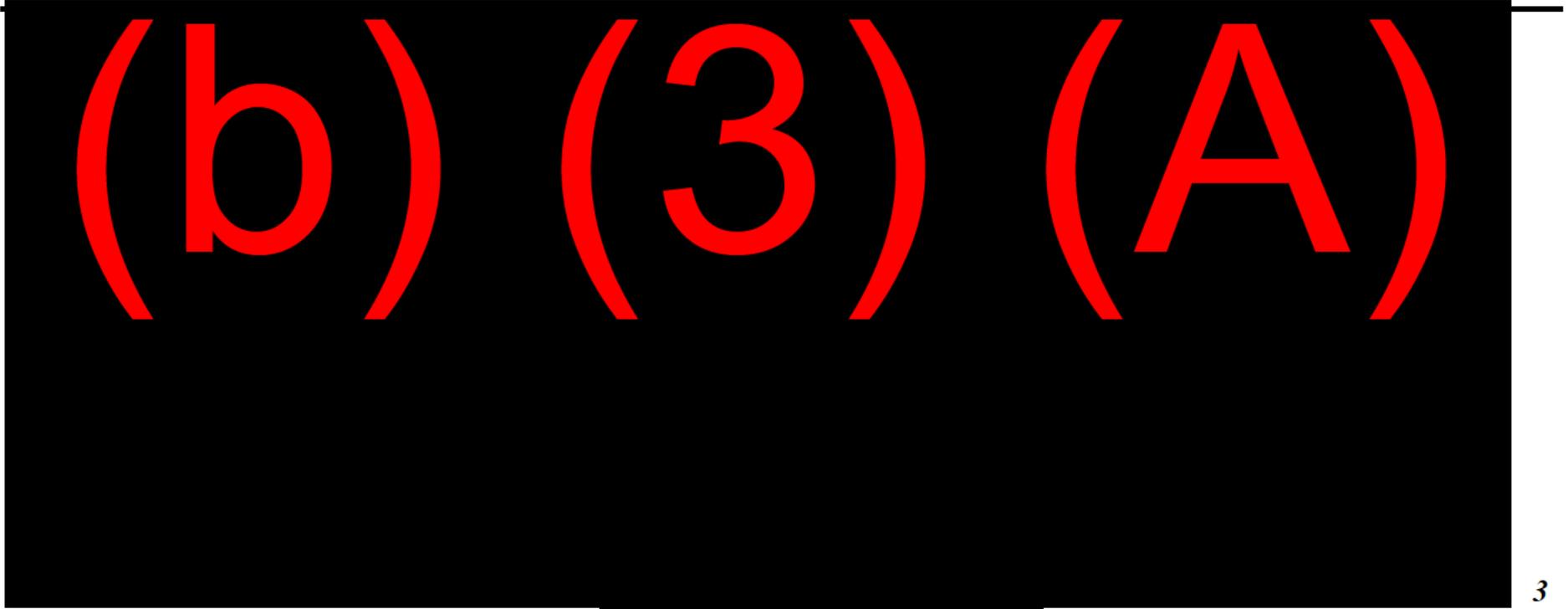
Response Actions

AFFF Retention Line (Data)

- 5 Sumps (b) (3) (A) rated at 1,000 GPM
- Max flow rate if more than one sump engaged ~5,000 GPM
- AFFF Retention Tank Capacity: (b) (3) (A)
- AFFF Retention Line Capacity: (b) (3) (A)

Time to extract Fuel utilizing the AFFF Retention Line

- Most Likely (similar to 6 MAY 21)
 - 16,155 GAL → ~6 minutes w/ three pumps engaged
- Maximum Volume able to be extracted
 - 150,000 GAL → ~30 minutes





(U) Most Dangerous Least Likely Release (U) Defueling – Discharge of 4.3M GAL

Defueling

- **Scenario:** A fuel hammer and vacuum caused a 5-inch fracture to the section of piping just North of the Double Block and Bleed Valve.
 - Fuel begins flowing down the Lower Tank Gallery and into the LAT at a rate of (b) (3) (A)
 - Fuel Flow reaches (b) (3) (A) after 18min and is directed down the Harbor Tunnel (HT) by pre-installed flood barriers.
 - (b) (3) (A)

Response Actions

- NAVSUPFLC - The following information is the primary response to the WCD of fuel:
- Utilize existing ground water sump pumps at end of the harbor tunnel and in the Adit 1 fan building to pump as much oil as possible to FORFAC.
 - Install SUPSALV (NAVSEA Contract) supplemental pumps (b) (3) (A) to move oil to (b) (3) (A) at (b) (3) (A) and YON's/barges at (b) (3) (A). Line the sides of the ramp with sandbags or other barricades that direct any oil that exits (b) (3) (A) into the lower yard tunnel. This oil will be recovered up by the pumps.

| Tanks | Inventory GALS | Tanks | Inventory GALS |
|-------------|----------------|-------|----------------|
| (b) (3) (A) | | | |
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| | | | |
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| | | | |

(b) (3) (A)

Probability:
1 in 6,858,711

Causes

- Vacuum
- Over Pressure
- Joint Failure
- Valve Failure
- Pipe Failure
- Operator error

Mitigations

- PITs
- Pipe Repairs
- Tank Equalization Lines
- Updated OPS Plan
- Zone Watch Standers
- Gravity Drain/No Pumps



(U) Oil Pressure Door

Description

- The Oil Pressure Door (OPD) at the bottom of the tank gallery is designed to automatically seal off the tank gallery from the rest of the facility in the event of an oil spill.
- Once activated the oil that is trapped must be removed manually prior to reopening the door.
- The door is not configured for manual/mechanical operation
- **DOH/EPA support the option that is least likely to impact groundwater**

Assessment of Maintaining Oil Pressure Door Operation

Pros:

- Increased safety of personnel in Harbor Tunnel
- The bulk of the fuel contained in the Lower Tank Gallery vice spread throughout the facility during a spill

Cons:

- Difficult to protect elevator shafts (critical fire response egress) from large discharge.
- Lack of access to Lower Tank Gallery will significantly reduce pumping capability leading to prolonged clean-up efforts for any large-scale spill
- CNRH better prepared to combat a fuel spill on the water than on the land
- Trapped oil seeps through porous tunnel base to aquifer
- Immediately Dangerous to Life or Health (IDLH) environment created in the Lower Tank Gallery for responders

Recommendation:

Approve Disabling of the Oil Pressure Door throughout defueling.

Fuel Removal Times

- **Door Open:** 4.3 MGAL ~ **9 hours**; 10.7 MGAL ~ **16 hours**
- **Door Closed:** 4.3 MGAL ~ **4-6 months**; 10.7 MGAL ~ **12-18 months**

| Maintaining Operability of OPD (door able to close) | | | |
|---|--------------|--------------|--------------|
| RISK | LH | SEV | Total |
| Fuel in Tanl Gallery above aquifer seps through porous base and elevator shafts | Likely (4) | Severe (5) | Extreme (20) |
| Limited access to tank gallery/reduced pumping ability | Severe (5) | Severe (5) | Extreme (25) |
| LIDLH environment for responders in tank gallery | Severe (5) | Severe (5) | Extreme (25) |
| Increased safety risk to personnel in HT | Unlikely (2) | Minor (2) | Medium (4) |
| Fuel will flow through HT/Dispersed throughout | Unlikely (2) | Unlikely (2) | Medium (4) |
| Potential for discharge to waterway | Unlikely (2) | Unlikely (2) | Medium (4) |
| Disabling Operability of OPD (OPEN) | | | |
| RISK | LH | SEV | Total |
| Fuel in Tanl Gallery above aquifer seps through porous base and elevator shafts | Unlikely (2) | Minor (2) | Medium (4) |
| Limited access to tank gallery/reduced pumping ability | Unlikely (2) | Minor (2) | Medium (4) |
| LIDLH environment for responders in tank gallery | Likely (4) | Minor (2) | High (8) |
| Increased safety risk to personnel in HT | Likely (4) | Severe (5) | Extreme (20) |
| Fuel will flow through HT/Dispersed throughout | Likely (4) | Minor (2) | High (8) |
| Potential for discharge to waterway | Unlikely (2) | Minor (2) | Medium (4) |

Backups





Pump Calculations (4.3M Gallon Scenario) Most Dangerous Least Likely

(b) (3) (A)



Pump Calculations (10.7M Gallon Scenario) Most Dangerous Least Likely – Catastrophic failure

(b) (3) (A)

Four SUPSALV Augment Pumps will extract the Fuel to Hotel Pier in ~16 Hours



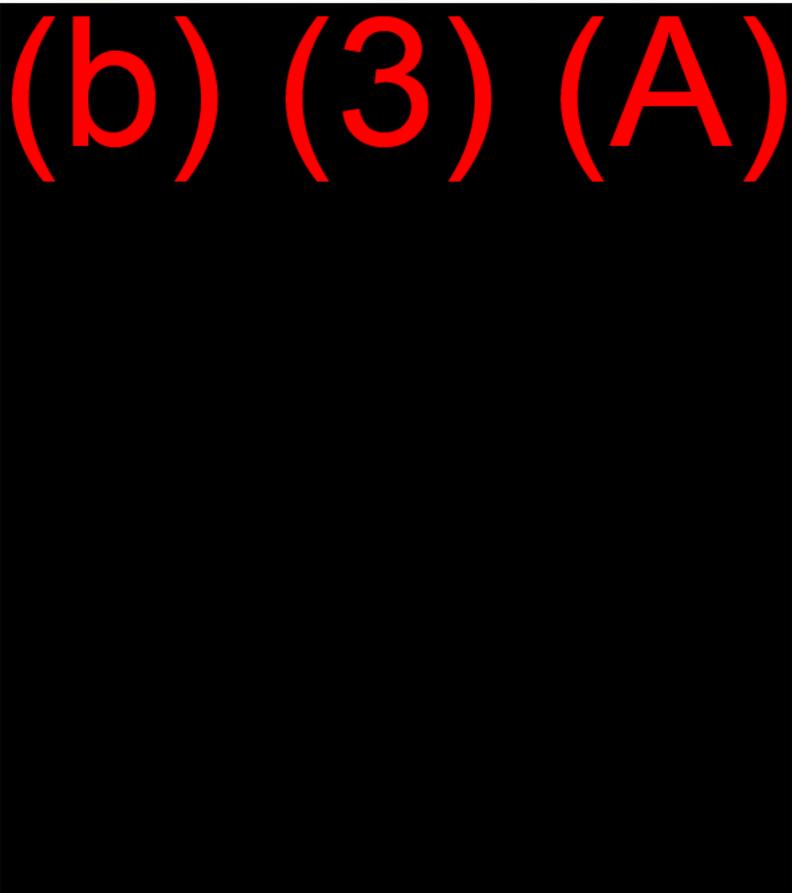
(U) Four SUPSALV Augment Pumps

SUPSALV Augment Pump Info:

- Contracted through NAVSEA
- SUPSALV is one of the Navy's main oil spill response organizations
- Scope of work & estimate complete (b) (3) (A)
- Upon approval, pumps will be installed in the area depicted in yellow with a manifold tying directly into Hotel Pier product lines

- **SCHEDULE:**
 - 14 April: DLA shall MIPR funds to NAVSEA
 - Allowing ~12 weeks for contracting & fabrication
 - 9 July: Pumps & manifold installed prior to 13 July defueling exercise
 - On-call (24/7) mechanic & pumps will remain in place through completion of defueling ~ March

Figure 1: Adit 1 Entrance Ramp and Valve Station 1C (VS-1C)





(U) Most Likely Release (b) (3) (A) - Pipe Rupture (AUG Drill)

SCENARIO #3

Response Actions

- Scenario:** A pressure drop is detected by the Automated Fuel Handling Equipment (AFHE) system in the Under Ground Pump House (UGPH) and a pipe rupture is visually confirmed by operators on the pier.

- IAW 33 CFR 154, Facilities Transferring Oil or Hazardous Material in Bulk. Facility Response Plan (FRP) for CNRH (Spill Checklist/ Actions for pipe rupture):



(b) (3) (A)

