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WASHINGTON DC//CG-543// TO AIG 4901 BT UNCLAS //N05100//  
SUBJ: SAFETY ALERT - CARGO COMPRESSOR ROOM ENTRIES DURING PORT STATE  
CONTROL EXAMS AND LAW ENFORCEMENT BOARDINGS OF LIQUEFIED PETROLEUM GAS  
(LPG  
) CARRIERS.

A. SAFETY AND ENVIRONMENTAL HEALTH MANUAL, COMDTINST M5100.47 B.  
OPERATIONAL RISK MANAGEMENT, COMDTINST 3500.3 C. MARINE SAFETY MANUAL VOL  
I CH 10, COMDTINST M16000.6 (SERIES) D. MARITIME LAW ENFORCEMENT MANUAL  
M16247.1D E. TITLE 46 CODE OF FEDERAL REGULATIONS PART 154 F.  
INTERNATIONAL CODE FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING  
LIQUEFIED GASES IN BULK (IGC) CODE.

1. THE PURPOSE OF THIS SAFETY ALERT IS TO REMIND PERSONNEL OF THE  
POTENTIAL ATMOSPHERIC HAZARDS THAT MAY BE PRESENT DURING LPG CARRIER  
SAFETY AND SECURITY EXAMS AND BOARDINGS. THE IMPORTANCE OF UNDERSTANDING  
RISKS ASSOCIATED WITH HAZARDOUS CARGOS CANNOT BE OVERSTATED. STRONGLY  
RECOMMEND REVIEWING THIS MESSAGE AS WELL AS CG CONFINED SPACE ENTRY POLICY  
WITH PREVENTION AND RESPONSE PERSONNEL DURING THEIR NEXT SCHEDULED  
TRAINING SESSION. FIELD PERSONNEL SHOULD ALSO REVIEW REFS A - D AS THEY  
PROVIDE GOOD GUIDANCE ON USING RISK ASSESSMENTS AND SAFE WORK PRACTICES  
WHILE PERFORMING OPERATIONAL ACTIVITIES ON VESSELS WHERE HAZARDOUS  
ATMOSPHERES MAY BE PRESENT.

2. DURING A RECENT CERTIFICATE OF COMPLIANCE EXAM ON A LPG CARRIER  
TRANSPORTING BUTADIENE A MARINE CHEMIST DETECTED A CONCENTRATION OF  
BUTADIENE IN THE CARGO COMPRESSOR ROOM THAT WAS WELL ABOVE THE ESTABLISHED  
TIME WEIGHTED AVERAGE (TWA) AND SHORT TERM EXPOSURE LIMIT (STEL). THE  
CAUSE WAS CONTRIBUTED TO A CARGO LEAK THAT WAS SAFELY REPAIRED BY THE  
VESSEL'S CREW. THE ATMOSPHERE WAS RECHECKED AND CERTIFIED SAFE BY THE  
MARINE CHEMIST BEFORE COAST GUARD PORT STATE CONTROL OFFICERS (PSCOS)  
ENTERED.

3. COAST GUARD POLICY DOES NOT REQUIRE MARINE CHEMIST CERTIFICATES PRIOR  
TO ENTERING CARGO COMPRESSOR ROOMS AS THEY ARE NORMALLY LOCATED ON OR  
ABOVE THE MAIN DECK, ARE WELL VENTILATED AND ARE ROUTINELY ENTERED BY THE  
VESSEL'S CREW. CARGO COMPRESSOR ROOMS ARE CONSIDERED ENCLOSED SPACES AND  
ARE DEFINED AS GAS DANGEROUS SPACES IN REFS E AND F AS THEY MAY CONTAIN  
OXYGEN DEFICIENT, FLAMMABLE AND/OR TOXIC ATMOSPHERIC HAZARDS DUE TO CARGO  
LEAKS. A THOROUGH RISK ASSESSMENT SHOULD BE COMPLETED WITH APPROPRIATE  
COUNTERMEASURES EMPLOYED TO ENSURE A SAFE ATMOSPHERE BEFORE ENTERING.  
ALTHOUGH CARGO COMPRESSOR ROOMS HAVE FIXED FLAMMABLE GAS DETECTION SYSTEMS  
INSTALLED, THESE SYSTEMS SHOULD NOT BE RELIED ON FOR ENTRY DECISIONS.  
PORTABLE EQUIPMENT SPECIFICALLY DESIGNED FOR TESTING ATMOSPHERES SHOULD BE  
USED TO DETERMINE IF A CARGO COMPRESSOR ROOM IS SAFE TO ENTER.

4. AT A MINIMUM THE RISK ASSESSMENT AND COUNTERMEASURES SHOULD INCLUDE THE  
FOLLOWING:

- A. REVIEW THE MATERIAL SAFETY DATA SHEETS (MSDS) FOR THE CARGO CARRIED AND  
UNDERSTAND THE POTENTIAL HAZARDS.
- B. VERIFY THAT THE INSTALLED FIXED DETECTION SYSTEM IS PROPERLY  
CALIBRATED, OPERATING AS DESIGNED WITH NO CURRENT ALARMS INDICATED.
- C. VERIFY THE CARGO COMPRESSORS ARE OFF.
- D. VERIFY THE CARGO COMPRESSOR ROOM VENTILATION SYSTEM IS IN GOOD  
CONDITION AND OPE RATING PROPERLY FOR AT LEAST 30 MINUTES AFTER THE  
COMPRESSORS ARE OFF.

E. REVIEW AND FOLLOW THE VESSEL'S SHIPBOARD OCCUPATIONAL HEALTH AND SAFETY PROGRAM FOR COMPANY MANDATED PROCEDURES TO BE FOLLOWED PRIOR TO ENTERING THE CARGO COMPRESSOR ROOM AND/OR ENCLOSED SPACES.

F. VERIFY THE VESSEL'S OFFICER DESIGNATED TO CONDUCT ATMOSPHERIC TESTING (NORMALLY THE CHIEF OFFICER) HAS ADEQUATE TRAINING AND MAINTAINS GOOD TESTING EQUIPMENT CALIBRATION RECORDS. HAVE THE MAINTAINS GOOD TESTING EQUIPMENT CALIBRATION RECORDS. HAVE THE DESIGNATED OFFICER DEMONSTRATE HIS/HER ABILITY TO CONDUCT CALIBRATION TESTS. ENSURE TEST EQUIPMENT IS NOT EXPIRED (E.G., O2 SENSOR, DRAEGER TUBES).

G. FROM OUTSIDE THE SPACE, WITNESS CARGO COMPRESSOR ROOM ATMOSPHERIC TESTING BY THE DESIGNATED OFFICER IN ACCORDANCE WITH THE SHIPBOARD PROCEDURES. VERIFY ATMOSPHERIC LEVELS ARE WITHIN ACCEPTABLE RANGES AND IF THE VESSEL HAS TOXIC CARGO ONBOARD VERIFY THAT NO TOXIC LEVELS ARE DETECTED.

5. ONCE SATISFIED WITH THE ABOVE ITEMS THE CARGO COMPRESSOR ROOM CAN BE ENTERED WITH REQUIRED PPE IN ACCORDANCE WITH EXISTING POLICY GUIDELINES (EEBA CARRIED, 4 GAS METER ON EACH PERSON ENTERING).

ENSURE THE VENTILATION IS ON AND THE COMPRESSORS ARE OFF. THE DESIGNATED OFFICER SHALL ENTER BEFORE CG PERSONNEL. CREW SAFETY/RESCUE PERSONNEL AND VESSEL'S EMERGENCY/RESCUE EQUIPMENT SHALL REMAIN AVAILABLE OUTSIDE THE SPACE. MINIMIZE THE NUMBER OF CG PERSONNEL ENTERING AND LENGTH OF TIME IN THE COMPRESSOR ROOM.

IMMEDIATELY EVACUATE THE SPACE SHOULD ANY CONDITIONS CHANGE (E.G., VENTILATION SECURED OR COMPRESSOR STARTED).

6. SHOULD THE PSCO OR BOARDING OFFICER DETERMINE A MARINE CHEMIST IS NEEDED AS A RESULT OF THE ASSESSMENT AND/OR INABILITY TO EMPLOY COUNTERMEASURES (E.G., CREW NOT ADEQUATELY TRAINED, TOXIC GAS DETECTED AT ANY LEVEL, EQUIPMENT NOT CALIBRATED, INADEQUATE VENTILATION) THE SPACE SHOULD NOT BE ENTERED BY CG PERSONNEL UNTIL A MARINE CHEMIST OR (IF AT SEA) A GAS FREE ENGINEER VERIFIES THE CARGO COMPRESSOR ROOM IS SAFE FOR ENTRY AND PARAGRAPHS 4.A THRU 4.E HAVE BEEN SATISFIED.

7. NOTE: BUTADIENE IS A TOXIC AND HAZARDOUS SUBSTANCE THAT IS PRODUCED THROUGH THE PROCESSING OF PETROLEUM AND IS MAINLY USED IN PRODUCTION OF SYNTHETIC RUBBER BUT IS ALSO FOUND IN SMALLER AMOUNTS PRODUCTION OF SYNTHETIC RUBBER BUT IS ALSO FOUND IN SMALLER AMOUNTS IN PLASTICS AND FUELS. IN 1996 THE EXPOSURE LIMITS FOR BUTADIENE WERE REDUCED FROM A TWA OF 1000 PPM TO 1 PPM. THE COAST GUARD WILL WORK TO ENSURE REFS E AND F ARE UPDATED ACCORDINGLY.

8. FOR ADDITIONAL INFORMATION CONTACT THE OFFICE OF VESSEL ACTIVITIES (CG-5432), LCDR DAN GAINOR (202) 372-1236 OR THE OFFICE OF ENVIRONMENTAL HEALTH (CG-1132), CDR LAURA WEEMS (202) 475-5216.

9. INTERNET RELEASE IS AUTHORIZED.

10. CAPT ERIC CHRISTENSEN, CHIEF, OFFICE OF VESSEL ACTIVITIES, SENDS.

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