Pennsylvania State Fire Academy

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Minimum Standard for Accreditation (MSA)

March 2000

Course Title: Propane Emergencies Awareness (PPEA)

Length of Course: 4.5 hours **Lecture/Lab Breakdown:** 4.5/0

Prerequisites: HMAR or employer's certification at the OSHA/EPA Haz-Mat Awareness level or greater

Referenced Text: NPGA ***Propane Emergencies*** (Hildebrand & Noll, 1999) and NPGA ***Propane Emergencies Facilitator's Guide*** (Callan, 1999)

Course Goal: A student completing this course will be able to recognize the hazards involved in a propane/liquefied petroleum gas emergency and take appropriate response actions at the OSHA/EPA First Responder-Awareness level..

Description of Course: This program has been designed for emergency response personnel (law enforcement, EMS, emergency management, entry-level fire service personnel, public works and transportation employees) whose duties meet the OSHA definition of the Awareness level of hazardous materials response. Students will learn about the basic properties and hazards of propane and liquefied petroleum gases, and will be able to take appropriate actions consistent with the limitations of the Awareness level to protect lives and property during an incident involving propane.

Description of Methodology to be used: (Brief) Lecture and discussion; limited group activities.

Student Equipment/Supply Needs: Pen/pencil and note-taking materials.

Equipment/Audiovisual/Supply Requirements: Classroom w/ usual amenities; TV/VCR with adequate monitors; computer projection capability for use of CD audiovisual package (or conversion of that package to 35 mm slides or overhead transparencies with appropriate projection equipment); NPGA Facilitator's Kit for this course.

(continued)

Course Topical Outline (General):

Time	Content	Instructor Notes
0:30	Unit 1: Welcome/Registration; Introduction & Overview	per ETA/Academy policies
1:30	Unit 3: Physical Properties & Characteristics of Propane	***NOTE:*** Unit 2 material is not taught in the Awareness version of the curriculum.
1:30	Unit 4: Non-bulk Container Design & Construction Features	
1:00	Video	***NOTE:*** Units 5 through 9 are not taught in the Awareness version of the curriculum.

Competency Evaluation Mechanism:

- Direct questioning by instructor during course of class;
- Instructor observation/feedback of student performances during group activities;

Course Objectives (Learning Outcomes):

Upon completion of this course, the student will be able to correctly and, where appropriate, safely:

1.1 Describe the scope and target audience of this course.
1.2 Identify the key players who may become involved in a major propane emergency and explain their role in resolving the emergency.
3.1 List the two major flammable gases extracted in the Liquefied Petroleum Gases (LPG) Industry.
3.2 Describe the two main reasons for odorizing propane.
3.3 Identify 5 basic characteristics of LP gases.
3.4 Describe the three ways propane behaves when stored in a closed container.
3.5 Describe the relationship between heat, temperature, and boiling point as it relates to the storage of propane in a closed container.
3.6 List the 5 basic symptoms of carbon monoxide poisoning.

3.7 List the basic products of incomplete combustion of propane.
3.8 Define the following physical and chemical properties of propane and explain their significance in an emergency.
- 3.8.1 Specific gravity
- 3.8.2 Vapor density
- 3.8.3 Boiling point
- 3.8.4 Expansion ratio

Course Objectives (Learning Outcomes) (continued:

3.8.5 Flammable limits
3.8.6 Ignition temperature

4.1 Define the following terminology as it relates to propane containers.
4.1.1 Container
4.1.2 Non – bulk packaging
4.1.3 bulk packaging
4.1.4 Fixed containers
4.2 Describe the following categories of propane containers.
4.2.1 DOT portable cylinders
4.2.2 DOT portable tanks
4.2.3 ASME mobile motor fuel tanks
4.2.4 ASME stationary tanks

PPEA300

Questions/Comments: Rita Wessel, Curriculum Specialist: Extension 106
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