	COMPANY Safety Management System	Doc No: AMMONIA
		Initial Issue Date: 04/08/2014
		Revision Date: Initial Version
AMMONIA AWARENESS		Revision No. 0
		Next Review Date: 04/08/2014
Preparation: Safety Mgr	Authority: President	Issuing Dept: Safety
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Purpose

The purpose of this procedure is to advise employees in areas where ammonia is being used and to supply on an awareness level basis about the properties and hazards of ammonia, general guidelines and training requirements.

Scope

This procedure applies to COMPANY operations where employees whose work activities may involve working with or around ammonia. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers COMPANY employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

Responsibilities

Managers and Supervisors

- In coordination with the Safety Manager, develop and implement ammonia awareness training.
- Ensure personnel are aware of work that has the potential of exposure to ammonia.
- Identify possible locations where ammonia in the workplace may be used.
- Inform the Safety Manager of upcoming work involving ammonia, allowing the Safety Manager to provide any necessary monitoring or other required actions.
- Ensure employees comply with the ammonia awareness requirements.

Safety Manager:

- Coordinate annual ammonia awareness training activities.

Employees:

- Comply with the ammonia awareness requirements and direct any questions or concerns to the Safety Manager.
- Attend required annual training.


Procedure

Characteristics of Ammonia

Appearance

Ammonia is a colorless gas under normal conditions. It can be a liquid under pressure. It has a pungent, suffocating odor.

Description

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Ammonia refers to solutions that are 50% ammonia or greater, ammonia anhydrous, and ammonia anhydrous liquefied, unless otherwise specified. Ammonia is a toxic gas or liquid that, when concentrated, is corrosive to tissues upon contact. Exposure to ammonia in sufficient quantities can be fatal. One of the highest production-volume chemicals in the U.S., concentrated ammonia is used in manufacturing, refrigeration, and agriculture (as a fertilizer). Household ammonia is much less concentrated; it rarely causes burns, but it does cause irritation. The lowest level at which humans can detect the odor of ammonia (odor threshold) generally provides sufficient warning of exposure; however, persons with prolonged exposure to ammonia will lose their ability to detect the odor (olfactory fatigue). Ammonia commonly exists as part of a solution.

Health Effects

Some of the potential health effects of ammonia such as burning of the eyes, temporary blindness, coughing, chest pain, etc. Exposure of the eyes to ammonia may cause burning, tearing, temporary blindness and severe eye damage. Exposure of the skin to ammonia may cause severe burns and blistering. Exposure of the respiratory tract (mouth, nose and throat) to ammonia may cause runny nose, coughing, chest pain, severe breathing difficulties, severe burns and death.

Possible ways employees may be exposed to ammonia during their job functions. Some examples may include, but not limited to:

- Working on/near industrial refrigeration machinery rooms, equipment and/or piping
- Working in petroleum refineries
- Working with/near agricultural fertilizer.

Methods of Dissemination:


- Indoor Air: Ammonia can be released into indoor air as a liquid spray (aerosol) or as a vapor.
- Water: Ammonia can be used to contaminate water.
- Food: Ammonia is unlikely to contaminate food due to unpalatable qualities rendered to food.
- Outdoor Air: Ammonia can be released into outdoor air as a liquid spray (aerosol) or as a vapor.
- Agricultural: If ammonia is released into the air as a liquid spray (aerosol), it has the potential to contaminate agricultural products. If ammonia is released as a vapor, it is highly unlikely to contaminate agricultural products.

Routes of Exposure

Ammonia can cause harm if inhaled and/or if it comes into contact with the eyes or skin. High concentrations of ammonia gas, liquid ammonia and solutions of ammonia can cause harm if inhaled or if they come into contact with eyes or skin.

Pre-Job Planning for Ammonia Related Work

Pre-job planning or a site assessment will be conducted prior to starting work and that the assessment will be documented. Documented planning will be conducted for those operations involving potential ammonia exposure

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and this includes anytime an active purge is being applied to a system in or around equipment associated with work. Some planning or assessment elements include:

- All proposed work requires a jobsite visit by the requestor and a unit operator to identify special precautions, equipment status and personal safety equipment requirements.
- The permit must clearly identify all hazards and special personal protective equipment requirements.
- Appropriate signage will be utilized and adhered to. Appropriate signage will include adequate warning as seen below.



Personal Protective Equipment


COMPANY employees will use impervious clothing, gloves and/or face shields if there is a possibility of skin contact with liquid ammonia or vessels containing liquid ammonia. Employees will be provided with and required to use impervious clothing, gloves, face shields and other appropriate protective clothing necessary to prevent any possibility of skin contact with liquid anhydrous ammonia or aqueous solutions of ammonia containing more than 10% by weight of ammonia. Similar precautions should be taken to prevent the skin from becoming frozen from contact with vessels containing liquid anhydrous ammonia.

Training

Employees will be aware of provisions of site specific contingency/emergency plans. Employees will be aware of owners' contingency plans and provisions. Employees must be informed where ammonia is used in the host facility and aware of additional plant safety rules.

COMPANY shall provide training for all affected employees including any COMPANY employee working with or near ammonia and the training shall emphasize:

- The characteristics of ammonia.
- The hazards of ammonia.
- Proper PPE.
- Owner client requirements.

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Documentation of training - Ammonia awareness training shall be documented including dates of training, location of training, employee name and trainer name.