

## Module 1 - Discussion Questions

In the following OSHA summaries of accidents involving ammonia, workers experienced symptoms of over-exposure that were severe enough to send them to the hospital. Read the summaries and discuss the questions with your group:

1. At approximately 6:50 p.m. on March 20, 1997, Employees #1 through #6, who worked for a contracted cleaning crew, were exposed to ammonia that was released from a Pump on a refrigeration system. They were transported to the Regional Medical Center, where they were admitted and remained overnight. The pump may have run out of oil, which resulted in a failed gasket. Airborne ammonia concentrations were measured to 31 ppm

2. At approximately 9:45 a.m., the scrape surface heat exchangers developed a leak at a seal in the ammonia lines. The employer shut off the valve within a few minutes and used detector tubes to check ammonia levels. The highest level found was 30 ppm. Employee #1 worked 30 ft directly west of the leak and Employees #2 and #3 worked 40 to 50 ft northwest of the leak. From the time the leak occurred until the employees were taken to the hospital, the employees continued to work, periodically going to a dock area on the other side of the wall where Employees #2 and #3 worked to get fresh air. The workplace was never officially evacuated. Employees #1, #2, and #3 complained of shortness of breath, burning mucous membranes, and chest tightness. The employees went to the nurse's station and subsequently to the hospital, somewhere between 11:00 a.m. and 12:00 noon.

In both of these incidents, ammonia levels were well under the Permissible Exposure Limit set by OSHA. Yet in both of these incidents workers went to the hospital. What could account for this apparent inconsistency?

Why would workers have severe enough symptoms to go to the hospital if the ammonia levels were relatively low?

Is there information missing about how the sampling was done?

Is there information missing about other conditions in the workplace?

In the second incident, workers continued to work, and took breaks on the dock to get fresh air. Would you have handled this situation differently? How?