United States Government **Department of Energy**

memorandum

DATE: October 14, 1997 (Revised - 10/16/97)

REPLY TO ATTN OF: EH-53 (R. Sastry, 301-903-4664)

SUBJECT: Chemical Safety Concerns / Search of Occurrence Reporting and Processing System (ORPS)

TO: Distribution

Significant Occurrences

September, 1997

Class 1:

None

Class 2:

Hanford - Workers exposed to chemical odor, one exhibited symptoms

Additional:

There were two waste drum overpressurization occurrences at Paducah. A shock-sensitive chemical was unexpectedly discovered at Oak Ridge. Emergency lighting failed when power was lost during explosives processing at Los Alamos.

These occurrences are further described below with additional information, including Occurrence Report (OR) numbers, provided in the Attachment.

A search of ORPS for occurrences having chemical safety relevance conducted for the month of September 1997 produced 26 reports representing potential chemical safety concerns. These occurrences are listed in the Attachment. There were five occurrences categorized as "Unusual" with the remainder identified as "Off- normal". The Office of Environmental Management (EM) was Cognizant Secretarial Office (CSO) for 14 occurrences; Defense Programs (DP) reported seven; Energy Research (ER) had three; and Nuclear Energy (NE) two. The CSO designation may change after the distribution of this monthly memorandum, and this change will be reflected in Quarterly and Annual Reviews.

In order to determine which chemical safety occurrences represent more important (significant) Levels of Concern, a classification scheme has been developed. The definitions of these Classes are as follows:

Class 1 Occurrences characterized by an injury or exposure requiring hospital treatment, or confirmed, severe environmental effect; also occurrences that had the potential to cause these effects with all safety barriers down, except, for example, that no one was nearby to be injured or exposed, or escaped in time, or the climatic conditions were favorable;

Class 2	Occurrences characterized by minor injury (first aid) or exposure, or minor environmental damage; also occurrences that were near misses (where one additional safety barrier remained to prevent consequences) to those in Class 1;
Class 3	Potential precursors to the occurrences in Class 1 or 2;
Class 4	Minor occurrences such as leaks, spills, or releases, which may be significant in their frequency of occurrence though not in their consequences.

There was one Class 2 occurrence reported during September. There were 14 Class 3 occurrences. Among the Class 3 occurrences, in addition to those noted previously, was the use of a non-approved vacuum cleaner for explosive service at Livermore. A fire was ignited during sampling for combustible vapors at Savannah River. Leaking PCBs were discovered at Livermore and Savannah River. Violations of DOT shipping regulations were noted at Pantex, Los Alamos, INEEL, and Argonne.

Summary of Class 2 Occurrence:

Employees Transported to Hospital after Detecting Odor (EM) (RL--PHMC-KBASINS-1997-0020) On September 22, several workers detected an odor in a support building. They notified the site safety officer, who confirmed the odor and had the building evacuated. The Patrol Operation Center and Hanford Fire Department (HFD) responded. HFD determined that the odor originated with an overcharging battery on a scissor lift. One worker complained of nausea and a headache, and was transported to Kadlec Medical Center for observation. As a precautionary measure, the remaining seven workers who had been exposed to the odor were also sent to the hospital for observation. After evaluation at the hospital, all workers were released to return to work with no restrictions. HFD secured the charging unit and set up ventilation fans in the facility.

Special Information:

It is worth noting that two occurrences involving overpressurized drums at the Paducah Gaseous Diffusion Plant were reported in September. One involved the discovery of a spill of radioactive nitric acid waste mixture from a ruptured drum in a waste storage facility (ORO--LMES-PGDPENVRES-1997-0008), and the other involved the lid of a drum containing PCB waste blowing off when the locking ring was loosened (ORO--LMES-PGDPENVRES-1997- 0009). According to the first occurrence report, this event illustrates the potential for pressurized drums "to rupture violently and spread wastes within the immediate building area." In the second instance, which took place during "routine" sampling, the lid was blown about one to two feet into the air; fortunately no injuries nor release occurred. In the monthly report for July 1997, I noted a Class 2 occurrence (ORO--LMES-Y12WASTE-1997-0005) wherein an employee was struck in the face by a drum lid in a nearly identical incident. Are we in the DOE complex learning **and applying** lessons from these occurrences? I have seen no evidence that we are. I urge you again to review and apply the information summarized in the July 1997 report regarding chemical storage and compatibility concerns in your facilities.

Additional information regarding these occurrences and others will be discussed in an upcoming Quarterly Review. As occurrence reports are finalized, lessons learned will be communicated.

[Signature of]

Rama Sastry
Office of Field Support

Attachment

Note to Distribution:

This report is distributed via e-mail either as a WordPerfect or a text file. Please contact **John Usher** (516-344-2096, Fax: 516-344-3957, E-mail: usher@bnl.gov) at Brookhaven National Laboratory to be placed on e-mail distribution. If you want to receive hardcopy, please contact John Usher who will make every effort to accommodate you.

The DOE Chemical Safety Program homepage is now available. The Internet address for this site is http://tis-hq.eh.doe.gov/web/chem_safety/. This report is accessible using the Chemical Occurrences link via the homepage.

Web conversion by: John Usher
Web page design: Joseph Kahn