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From: Steve O'Connor NMSS
To: Patricia Eng
Date: Wed, Jun 16, 1999 11:38 AM
Subject: Palisades

Pat,

As you requested, the following is a synopsis of the Palisades event:

On June 9, two occurrences of hydrogen burns took place at Palisades during VSC-24 loading activities. The flame was caused by hydrogen ignited at the outlet of the cask vent line by grinding sparks during welding activities on the structural lid. The vent line (plastic tubing) outlet was located too close to the work area and had become detached from the HEPA filter inlet (secured with duct tape).

On June 10, Region III issued a Preliminary Notification to discuss details of the events. Also on June 10, Palisades put a hold on cask welding activities and assembled an incident response team to examine the root cause of the event. On June 11, Palisades had re-routed the vent line using a braided stainless steel hose with the outlet located farther away from the welding activities and more rigidly affixed connection to the HEPA filter.

Palisades performed re-training of welders and continued the structural-lid welding the afternoon of June 11. A Region III inspector (Landsman) was also present to observe the continuation of welding activities. Welding and NDE of the cask welds were completed without any further incidences.

Let me know if you have any questions. I'll be sure to keep you informed if I hear anything new.

Steve

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PNO-III-99-031 Palisades 1

Preliminary Notification index | News and Information | Main NRC Home Page | E-mail

June 10, 1999

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE PNO-III-99-031

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by Region III staff (Lisle, Illinois) on this date.

Facility
Consumers Power Co.
Palisades 1
Covert,Michigan
Dockets: 50-255

Licensee Emergency Classification
Notification of Unusual Event
Alert
Site Area Emergency
General Emergency
X Not Applicable

Subject: MINOR HYDROGEN BURNS DURING CASK WELDING ACTIVITIES

At about 5:00 p.m., and again at about 7:30 p.m. EDT on June 9, 1999, minor hydrogen burns occurred during welding of the structural lid on a spent fuel storage cask following its loading earlier in the week. These brief hydrogen burns occurred outside the cask at the discharge end of tubing being used to draw gases from the interior of the cask.

The cask was the fourteenth to be loaded at Palisades and the first since cask loading activities resumed. Storage cask loading activities had been halted to address issues identified following a hydrogen burn inside the cask during loading in May 1996 at the Point Beach plant and to address subsequent welding issues involving the Sierra Nuclear VSC-24 cask.

Loading of 24 fuel assemblies into the cask was completed on June 7 and the cask, still containing water for radiation shielding purposes, was removed from the spent fuel storage pool. The inner shield lid had been welded in place, and workers had begun welding the structural lid.

The cask was still filled with water, and the small air space at the top was being ventilated through a small plastic tube to remove any hydrogen being produced in the cask. One end of the tube was connected to the cask and the other to a filtering device. The tubing became separated from the filter, and sparks from the grinding ignited the hydrogen at the discharge end of the tubing. In each instance the welder observed a small flame at the end of the tubing, pinched the tubing, and extinguished the flame.

Work was stopped following the second incident, and the licensee's spent fuel storage cask group was notified. The discharge end of the ventilating tubing was reconnected to the filter unit and work activities were resumed. Plant management was not informed until the morning of June 10, 1999. At that time, a second work halt was imposed by plant management pending further review.

The use of a ventilating system on the cask has been standard practice at Palisades. It is also one of the corrective actions following the Point Beach hydrogen burn event, to prevent a combustible accumulation of hydrogen inside the cask. The hydrogen is produced through a chemical reaction between boric acid in the water inside the cask and the zinc-based coating on the cask interior. As long as the boric acid in the water is present in the cask, hydrogen will be produced. When the welding

is completed, the water will be removed and the cask will be filled with helium.

This hydrogen burning was of minor safety significance. The burning was outside the cask at the discharge of the tubing, and no air was being added to the cask itself that would support ignition of any hydrogen inside the cask. The flames were easily extinguished. No injuries or equipment damage resulted. The presence of hydrogen was an expected phenomenon, and the ventilation system was functioning to prevent the accumulation of a potentially combustible concentration inside the cask.

The NRC resident inspectors will follow the licensee's response to the incident and observe when the licensee resumes work. Also, a special NRC inspection on cask loading activities is ongoing, and a cask team inspector was onsite until after the shield lid weld was completed, although none of the cask team were onsite at the time of the incidents. These incidents will be reviewed when a team member returns to the site to continue the inspection next week.

The State of Michigan was informed. The information in this preliminary notification has been reviewed with licensee management.

Region III (Chicago) learned of these this event at about 8:00 a.m. CDT on June 10, 1999. This information is current as of 12:45 p.m. on June 10, 1999.

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