

August 31, 2010

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-III-10-015

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. Some of the information may not yet be fully verified or evaluated by the Region III staff.

Facility

Byron Nuclear Power Station
Exelon Generation Co
Byron, Illinois
Docket: 50-454, 50-455
License: NPF-37; NPF-66

Licensee Emergency Classification

Notification of Unusual Event
 Alert
 Site Area Emergency
 General Emergency
 Not Applicable

SUBJECT: INITIATION OF REACTIVE INSPECTION IN RESPONSE TO A FAILURE OF THE MECHANISM THAT COOLS WATER SURROUNDING A CANISTER CONTAINING SPENT FUEL

DESCRIPTION:

On August 29, 2010, Exelon reported to the NRC that a mechanism that cools water surrounding a canister loaded with spent fuel failed when it was left unmonitored on the night of August 28, 2010. The incident occurred during Byron Nuclear Power Plant's initial Independent Spent Fuel Storage Installation (ISFSI) loading campaign.

All spent fuel transfer operations take place inside a building commonly referred to as the fuel handling building. The canister is located inside a radiologically protected area in the fuel handling building. Plant staff loaded the canister with spent fuel inside the transfer cask which is used temporarily while preparing the canister for its final insertion into the storage cask. Once the canister is placed within the storage cask, it is moved to the licensee's ISFSI pad.

By design, a gap exists between the canister and the transfer cask. This gap is filled with water which is cooled by a cooling mechanism designed to remove the heat generated by spent fuel. The canister was left unmonitored during the evening of August 28, 2010. On the morning of August 29, 2010, approximately 12 hours later, plant workers discovered that the cooling mechanism had failed during the night.

The licensee's current safety analysis for the spent fuel cask system requires that the canister temperature be maintained below 125°F while the canister is located in the transfer cask. The loss of cooling to the canister resulted in increased fuel temperatures. According to preliminary assessments provided by the licensee, at no time was the fuel temperature limit exceeded. Radiation monitors in the vicinity of the cask did not alarm.

There is no impact on public health and safety.

Since this is the licensee's first spent fuel loading campaign, the NRC Region III Office has maintained an ISFSI inspector on-site for ISFSI operations since the start of the campaign. The NRC's resident inspectors also provide continuous coverage of site operations on a day to day basis.

The NRC will begin a reactive inspection on September 1, 2010. The inspection will assess the circumstances surrounding the incident and determine why the ISFSI cask was left unmonitored.

The information in this preliminary notification has been reviewed with licensee management and is current as of 5:00 pm (CST) August 31, 2010.

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