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Nebraska Flood-Update on Cooper and Fort Calhoun Nuclear Stations

Jun 23, 2011 Darla Sue Dollman

On June 23, 2011, the U.S. Army Corps of Engineers drastically increased the amount of water released from the Gavins Point Dam into the Missouri.

On June 23, 2011, the Nebraska Emergency Management Agency announced that flood waters along the Missouri River at Plattsmouth, Nebraska, south of Offutt Air Force Base, surpassed previous flood records set in 1993 when they reached 36.03 feet. Nebraska City, Nebraska also surpassed 1993 levels with a record 27.79 feet.

Intimidating, perhaps, but not surprising to the Army Corps of Engineers who announced Tuesday, June 21, 2011, that they would increase the amount of water released into the Missouri River from Gavins Point Dam near Yankton, South Dakota from 155,000 cfs, or cubic feet per second, which was the amount they originally planned to maintain for the rest of the summer, to 160,000 cfs on June 23, 2011, anticipating an average increase of four inches in flood water levels.

Water Levels at Cooper Nuclear Station in Brownville, Nebraska

The Cooper Nuclear Station in Brownville, Nebraska is currently 1 1/2 feet above river levels, but the flood water levels are dropping according to Mark Becker, Media Relations Specialist for the Nebraska Public Power District. If they do rise above safe levels, the plant will go into a cold shutdown with on-site power controlling all safety systems through their back-up diesel generators.

A "cold shutdown" defines a reactor coolant system that is at atmospheric pressure and a temperature below 200 degrees following a reactor cooldown, according to the Nuclear Regulatory Commission website. A reactor cooldown is a decrease in reactor fuel rod temperature brought about by the removal of heat from the reactor's coolant system after the reactor has been shutdown.

The Cooper Nuclear Station remains under Notification of Unusual Event (NOUE), the lowest of the Nuclear Regulatory Commissions four categories used to define emergency situations in communications with nuclear stations. The Notification of Unusual Event was declared on June 19, 2011, due to rising flood waters. In keeping with the NOUE status, there has been no release of radioactive material and no actions required by off-site emergency personnel or the general public.

According to Becker, there are two Nuclear Regulatory Commission inspectors on staff at the plant at all times maintaining constant contact with the National Weather Service and the U.S. Army Corps of Engineers and the station continues to operate at 100%.

The Nuclear Regulatory Commission and the Fort Calhoun Nuclear Power Station

The Fort Calhoun Nuclear Station is located on the west bank of the Missouri River. All nuclear stations receive scheduled performance reviews from the Nuclear Regulatory Commission, including the Fort Calhoun Nuclear Station.

According to a Nuclear Regulatory Commission Annual Assessment Letter for Fort Calhoun Station, published on the NRC.gov website and dated March 4, 2011, the Nuclear Regulatory Commission completed an end-of-cycle performance review for the Fort Calhoun Station on February 10, 2011. The letter states that the NRC review concluded the Fort Calhoun Nuclear Station "operated in a manner that preserved public health and safety and met all cornerstone objectives." However, the letter also mentions "the failure to have adequate procedures to protect the intake structure and auxiliary building from a flood."

The Fort Calhoun Nuclear Station went into a cold shutdown for a scheduled refueling and maintenance outage in early April, 2011. Shortly after the shutdown, they were informed by the Army Corps of Engineers that flood waters might rise above levels where the plant could safely continue to operate and changed their goals from refueling and maintenance to repair, maintenance, and preparation. The Fort Calhoun Station declared a Notification of Unusual Event (NOUE) on June 6, 2011, due to the rising flood waters and will remain in a cold shutdown until the flood waters recede.

However, on June 7, 2011, the Fort Calhoun Nuclear Station also experienced a fire in the electrical switchgear room causing a temporary loss of power to the pump that cools the spent-fuel pool. The fire-suppression system extinguished the fire. Plant operators switched the cooling system to a backup pump 90 minutes later, according to the Omaha Public Power District website. During the interruption, the temperature of the pool increased a few degrees, but the OPPD website states that there was never any danger that the water would reach a boiling point.

Due to the fire, and in accordance with NRC regulations, at 9:40 a.m. on June 7, 2011, the Fort Calhoun Nuclear Station declared an Alert to the Nuclear Regulatory Commission, which is the second in the series of notifications established by the Nuclear Regulatory Commission. At 1:15 p.m., operators declared all appropriate steps had been taken to allow the plant to return to the Notification of Unusual Event (NOUE) status.

Although it is standard procedure for the Nuclear Regulatory Commission to have two inspectors on staff at nuclear stations, on June 22, 2011, the NRC made the decision to increase the inspection staff at the Fort Calhoun Nuclear Station, adding three more inspectors and a branch chief, and providing around-the-clock "coverage of licensee activities" according to their recent press release.

The press release also states that "there is now two feet of water in many areas on-site." According to Victor Dricks, Senior Public Affairs Officer for the Nuclear Regulatory Commission, "There seems to be some misunderstanding regarding the difference between water on-site and water in the plant itself. When we talk about on-site water, we are talking about owner-controlled property, such as parking lots. There is no water inside the berm established around the plant. We believe they have taken all appropriate actions to maintain the safety of the facility."

On-Site Water and the Current Status of the Fort Calhoun Nuclear Station

Jeff Hanson, Manager of Public Information for the Omaha Public Power District, said the on-site water has been in areas, such as the parking lot, since June 6, 2011, when the water levels reached 1004 feet above mean sea level. Hanson also stated that a few mobile homes used for training purposes are in the

on-site flood water areas. However, contrary to rumors about the Fort Calhoun Nuclear Station, absolutely no critical facilities are submerged.

Hanson also explained that flood waters are flowing into a sewage lagoon at the Fort Calhoun Nuclear Station. According to a June 23, 2011 press release by the Omaha Public Power District, a partial bypass was created to divert the flood waters leaking into a sanitary waste water lift station so the water could continue to flow into the sanitary lagoons. Signs in the area instruct personnel to avoid the discharge for health reasons, as well as advising personnel to avoid contact with flood waters, which is sound advice in any flood situation.

When asked if there was any chance of water supply contamination through the flood waters that are on-site, Hanson said, "No, nothing can get into the flood waters from inside the plant. Everything contributing to the operation of the plant is inside of the buildings protected by the aqua dam," referring to the eight foot tall, 16 feet wide rubber dam surrounding the plant. "The substation is protected by an earthen berm," he continued. "There are a lot of people who don't want to believe that the plant is safely protected, but that is the truth."

Mike Jones, Senior Media Specialist for the Omaha Public Power District said, "We've had a lot of calls from people asking about water surrounding the plant. We try to let people know that the plant is water tight. It was designed to handle this type of water. With our current safety measures the plant will remain secure in flood waters up to another eight feet, and the Army Corps of Engineers does not expect the water to increase to levels anywhere near eight feet."

"We have much more safety measures in place than we actually need right now," Jones continued. "Even if the water level did rise to 1014 feet above mean sea level, the plant is designed to handle that much water and beyond. We have additional steps we can take if we need them, but we don't think we will. We feel we're in good shape."

"The plant is still dry," Jones said. "Everything is still safe."

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