



Kewaunee Nuclear Power Plant  
Operated by Nuclear Management Company, LLC

March 23, 2005

NRC-05-038

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Kewaunee Nuclear Power Plant  
Docket 50-305  
License No. DPR-43

Kewaunee Containment Equipment Hatch Interference Presentation Data Request

- Reference:
- 1) Letter from Mark A. Satorius (NRC RIII) to Craig Lambert (NMC), "Preliminary Significance Determination For A Greater Than Green Finding (NRC Inspection Report 50-305/2004-09) – Kewaunee Containment Equipment Hatch Interference," dated February 18, 2005
  - 2) Letter from Craig Lambert (NMC) to Document Control Desk, "Kewaunee Containment Equipment Hatch Interference Data," dated March 12, 2005
  - 3) Letter from Craig Lambert (NMC) to Document Control Desk, "Kewaunee Containment Equipment Hatch Interference Supplemental Data," dated March 13, 2005

Nuclear Regulatory Commission (NRC) Inspection Report 50-305/2004-09 documented an issue associated with prompt closure of the containment equipment hatch at the Kewaunee Nuclear Power Plant (KNPP). In Reference 1, the NRC provided the Nuclear Management Company, LLC, (NMC) with the NRC's preliminary significance determination for the performance deficiency and offered NMC an opportunity to present our perspectives prior to finalization of the NRC's significance determination.

NMC requested a Regulatory Conference to present our perspectives on the facts and assumptions used. This Regulatory Conference was held on March 17, 2005, at the NRC Region III Headquarters. During that conference, the NRC requested additional information to help determine the final risk significance of this issue. Enclosure 1 contains the requested information.

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If you have any comments or questions, please contact Mr. Gerald Riste of my staff at (920) 388-8424.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.



Craig W. Lambert  
Site Vice-President, Kewaunee Nuclear Power Plant  
Nuclear Management Company, LLC

Enclosure (1)

cc: Administrator, Region III, USNRC  
Project Manager, Kewaunee, USNRC  
Resident Inspector, Kewaunee, USNRC  
Public Service Commission of Wisconsin

**ENCLOSURE 1**  
**REQUEST FOR INFORMATION**  
**DURING THE MARCH 17, 2005 OPEN EQUIPMENT HATCH**  
**REGULATORY CONFERENCE AT**  
**REGION III HEADQUARTERS**  
**KEWAUNEE NUCLEAR POWER PLANT**  
**NUCLEAR MANAGEMENT COMPANY, LLC**

**DOCKET NO. 50-305**

- 1. Does KNPP exclude testing and maintenance of the Technical Support Center Diesel Generator during refueling outages? What is the historical availability of the TSC diesel during outages? Have we ever taken the TSC diesel out of service during an outage?*

**NMC Response to 1**

**Does KNPP exclude testing and maintenance of the Technical Support Center Diesel Generator during refueling outages?**

Kewaunee Nuclear Power Plant (KNPP) does not exclude periodic testing of the Technical Support Center (TSC) Diesel Generator (D/G) during refueling outages (RFO). Repetitive TSC D/G testing is performed during RFO's to prevent exceeding the allowed grace period for testing. If TSC D/G testing was required to ensure that the allowed grace period would not be exceeded, then the testing would be performed during the RFO. The testing frequency for load testing is monthly and KNPP has tested the TSC D/G twelve times during refueling outages since 1997.

Routine preventative maintenance on the TSC D/G is not scheduled during refueling outages since the TSC D/G maintenance activity is designated "A" Mode which means the activity is to be performed on-line.

**What is the historical unavailability of the TSC diesel during outages?**

The TSC D/G is scheduled to be available during refueling outages with the exception of when the TSC D/G is being tested. The testing of the TSC D/G requires it to be placed in parallel with the grid. During the testing time, typically four hours, the TSC D/G has historically been considered unavailable. During this test, the TSC D/G actually is available since, if an actual event occurred, the D/G would be loaded on the bus as required.

Between the years 1997 to 2005, there were 12 monthly tests that occurred during an outage. Additionally, the TSC D/G was unavailable six instances due to maintenance occurring (see below). Combining the unavailability time due to testing and maintenance, there was a total of 102.7 hours unavailable out of a total of 9795 total outage hours, which gives an unavailability of  $1.05 \times 10^{-2}$ , given the conservative assumption that the test renders the diesel unavailable. Given the more realistic assumption that testing does not make it unavailable, the unavailability is  $7.21 \times 10^{-3}$ .

**Have we ever taken the TSC diesel out of service during an outage?**

The TSC D/G has been taken out of service during refueling outages for corrective maintenance, although as stated above this is not typical since the TSC D/G maintenance is an "A" Mode activity (at power) designation. These corrective maintenance items for the TSC D/G were not scheduled items for the outage. The out of service times were a result of problems identified during the TSC D/G testing for preventative maintenance, which required repairs be made to ensure the TSC D/G is available.

Between the years 1997 to 2005, there were six instances where maintenance to the TSC D/G occurred during an outage. These instances are described below:

• 2/19/1997	Abnormal High Oil Temp	35.1 hours
• 2/20/1997	Maintain Oil Temp Switch	7.6 hours
• 3/19/1997	Faulty Oil Level Indication	7.7 hours
• 3/20/1997	Diesel Hunting Issue	3.4 hours
• 4/21/1997	Speed Adjustment Issue	5.5 hours
• 5/21/1997	Fuel Oil Leak	<u>7.0 hours</u>
	Total	66.3 hours

2. *What emergency action level (EAL) would we have entered with a station blackout plus 10 minutes during refueling outage with fuel in the reactor, RCS open pressurizer safety removed and/or reactor vessel head detensioned and containment equipment hatch open? Where would we have been on site accountability?*

## NMC Response to 2

### Event Classification

Ten minutes after a station blackout occurs the operating crew may not have declared an emergency. To ensure plant conditions are properly assessed the operating crew is allowed 15 minutes to make an EAL determination. Although no declaration may have been made, ten minutes after a station blackout, the plant would be between an Alert and a Site Area Emergency (SAE) declaration (both per EAL Chart "E," Loss of Power). The Operating Crew would be making their final assessment whether a diesel generator could be returned to service to power Bus 5 or 6 (ESF Busses).

- The Alert is for a loss of offsite power and a loss of onsite power for less than 15 minutes. If power is returned to Bus 5 or Bus 6 before the 15-minute time frame an Alert should be declared.
- The Site Area Emergency is for a loss of offsite power and a loss of onsite power for greater than 15 minutes. If power is not returned to Bus 5 or Bus 6 within fifteen minutes of the event, a Site Area Emergency should be declared.

In either case, the declaration should be made within 15 minutes of the initiating event.

### Plant Accountability

Plant accountability would be initiated when the Alert or Site Area Emergency were declared. Procedure EPIP-AD-04, "KNPP Response to an Alert or Higher," (Step 5.1.6) directs sounding the plant siren and passing a Plant Public Address announcement having the Emergency Response Organization report to their duty locations and all other personnel report to the nearest assembly area. Short of an event classification or for an Unusual Event, the Shift Manager may direct a plant assembly/accountability be performed any time that he deems necessary. At blackout plus ten minutes, it is estimated that the control room would still be working on the classification and dealing with the loss of power. Pager activation and announcements would not have been made within ten minutes of the start of this event.

The Bigge and plant maintenance crews who were assigned to close the hatch in case of an emergency were briefed to report to the containment coordinator, not accountability. The containment coordinator would give instructions if hatch closure were needed.

### *3. Ensure that our experience has been shared with the industry.*

#### **NMC Response to 3**

Operating Experience event notification OE 20155, "Containment Hatch Closure Interference", was issued on March 10, 2005.

### *4. Walkdown the emergency lighting availability for the possible Bigge personnel locations during the event.*

#### **NMC Response to 4**

A walkdown of the emergency lighting availability for the Bigge personnel shows that there is adequate transit lighting when traveling from the Administration and Training Facility (ATF) lunch room, Annex Lunch Room, or maintenance areas to the hatch or to the Radiation Protection Office (RPO), where entry would be made into containment if needed.

### *5. TSC diesel plant specific failure probabilities and effect on the PRA assessment.*

#### **NMC Response to 5**

The plant specific data for the TSC diesel generator failing to run is as follows:

3 failures in 581.7 hours for a failure rate of  $5.16 \times 10^{-3}$ /hour.

With a mission time of 1.628 hours, this comes out to a failure probability of  $5.15 \times 10^{-3}/\text{hour} \times 1.63 \text{ hours} = 8.40 \times 10^{-3}$ .

Using this data in the current PRA assessment would change the total TSC failure probability from  $6.613 \times 10^{-2}$  to  $6.897 \times 10^{-2}$ .

This would change the total large early release frequency ( $\Delta$  LERF) from  $2.5 \times 10^{-8}$  to  $2.6 \times 10^{-8}$ .