

August 27, 2004

Mr. Dennis L. Koehl
Site Vice-President
Point Beach Nuclear Plant
Nuclear Management Company, LLC
6590 Nuclear Road
Two Rivers, WI 54241-9516

SUBJECT: POINT BEACH NUCLEAR POWER PLANT, UNITS 1 AND 2
NRC INSPECTION REPORT 0720005/2004-001(DNMS)

Dear Mr. Koehl:

On August 19, 2004, the NRC completed inspection activities associated with the Point Beach Nuclear Power Plant, Units 1 and 2. The purpose of the inspection was to review your design and implementation of modifications to an existing spent fuel storage pad, installation of horizontal storage modules, and removal of a lid from a dry shielded canister. At the conclusion of the inspection activities on August 19, 2004, the NRC inspectors discussed the findings with members of your staff.

This inspection consisted of an examination of dry fuel storage cask activities at the Point Beach Nuclear Power Plant, Units 1 and 2 as they related to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Areas examined during the inspection are identified in the enclosed report. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities in progress, and interviews with personnel.

Based on the results of this inspection, the NRC did not identify any violations.

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D. Koehl

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We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

Kenneth G. O'Brien, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

Docket No. 07200005

Enclosure: Inspection Report 0720005/2004-001(DNMS)

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U.S. Nuclear Regulatory Commission

Region III

Docket No. 07200005

Report No. 07200005/2004-001(DNMS)

Licensee: Nuclear Management Company, LLC

Facility: Point Beach Nuclear Plant, Units 1 & 2

Location: 6610 Nuclear Road
Two Rivers, WI 54241

Dates: June 14-15, and August 18-19, 2004

Inspector: Ross B. Landsman, Project Engineer
Magdalena Dziezic, Reactor Inspector

Approved by: Kenneth G. O'Brien, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Point Beach Nuclear Plant, Units 1 & 2 Point Beach Inspection Report 07200005/2004-001(DNMS)

The purpose of this inspection was to review the licensee's design and implementation of modifications to an existing spent fuel storage pad, and installation of horizontal storage modules at the Point Beach Nuclear Plant. The inspectors also observed the licensee's contractor, PCI Energy Services, demonstrate the removal of a lid from a dry shielded canister.

Construction of an Independent Spent Fuel Storage Installation

- The inspectors determined that the licensee designed and implemented a modification to the existing east concrete storage pad consistent with the requirements included in the Certificate of Compliance. The previously sloped east concrete sloped pad was leveled and aprons were added to the concrete storage pad to support the use of a horizontal dry cask storage system. (Section 1.1)
- The inspectors determined that the licensee properly installed the horizontal storage modules and the installation documentation demonstrated that the horizontal storage modules will be able to perform their intended safety function. (Section 1.2)

Pre-operational Testing of an Independent Spent Fuel Storage Installation

- The inspectors determined that the licensee developed and successfully implemented procedures for the removal of the dry shielded canister inner and outer lids in accordance with the conditions set forth in the Certificate of Compliance. (Section 2.1)

Report Details¹

1.0 Construction of an Independent Spent Fuel Storage Installation (60853)

1.1 Concrete Storage Pad

a. Inspection Scope

The inspectors evaluated the licensee's design and implementation of a modification to an existing Independent Spent Fuel Storage Installation (ISFSI) concrete storage pad to verify compliance with 10 CFR 72 and with the conditions contained in the Certificate of Compliance (CoC). The inspectors also reviewed procedures related to the storage pad construction activities and construction documentation packages to ensure the licensee met procedural requirements and license commitments.

b. Observations and Findings

In 1995, the licensee designed and built the existing ISFSI concrete storage pads at the Point Beach Nuclear Plant to support its use of a vertical dry cask storage design. The as-constructed concrete storage pads included a slight slope to permit water and other precipitation to drain off of the storage pads. Subsequent to these efforts, the licensee chose to use a new system to store the spent fuel beginning in 2004. The new system utilized a horizontal dry cask storage design which required the east concrete storage pad to be leveled in order to facilitate loading and unloading of the dry cask storage canisters.

As a result of the licensee's decision to utilize a different dry cask storage design, the licensee modified the existing east concrete storage pad to removed the slope. The licensee removed the slope by placing a reinforced, 2 to 4 inch, concrete overlay on the existing concrete storage pad. The licensee also constructed a concrete apron around the existing east concrete storage pad to permit an efficient leveling of the trailer used to move the dry shielded canisters and transport casks into position in front of the storage modules. The licensee constructed the concrete apron to support the transfer trailer, the transfer cask, the dry shielded canister, and the horizontal forces that would result from movement of the dry shielded canister into the storage module.

The inspectors determined that the CoC did not include any specific design requirements associated with construction of the ISFSI concrete storage pad. As a result, the licensee designed and constructed the original and modified east concrete storage pad as a commercial grade item. The licensee stated that the concrete storage pad was constructed in accordance with the American Concrete Institute's (ACI) standards. The licensee maintained only limited documentation regarding construction of the concrete pad and apron.

The licensee controlled implementation of the concrete storage pad modifications using a site installation work plan. The site construction engineering organization administratively managed the implementation of these modifications using construction liaison personnel. The inspectors discussed the concrete storage pad modification

¹NOTE: A list of acronyms used in the report is included at the end of the Report Details.

activities with the assigned construction liaison and determined that this individual had limited previous knowledge or experience in the construction of concrete storage pads. However, the inspectors did not identify any concerns associated with the licensee's construction of the modified east concrete storage pad and aprons.

c. Conclusions

The inspectors determined that the licensee designed and implemented a modification to the existing east concrete storage pad consistent with the requirements included in the Certificate of Compliance. The previously sloped east concrete sloped pad was leveled and aprons were added to the concrete storage pad to support the use of a horizontal dry cask storage system.

1.2 Horizontal Storage Modules

a. Inspection Scope

The inspectors reviewed the licensee's installation of horizontal storage modules at the ISFSI to verify compliance with the requirements of 10 CFR 72 and with the CoC conditions. The inspectors also reviewed installation procedures and documentation packages to ensure that the licensee met procedural requirements and license commitments.

b. Observations and Findings

The licensee originally designed and constructed the east concrete storage pad to support the use of a vertical storage cask system. As a result, the east concrete storage pad was constructed to a width of 35 feet. The licensee planned to use the modified east concrete storage pad to support a horizontal storage cask system. The horizontal system would include 14 horizontal storage modules. The licensee intended to place the horizontal modules on the concrete storage pad in a back-to-back double array. The physical dimensions of the back-to-back horizontal modules were such that approximately 18 inches at the front of each module would project past the edge of the modified concrete storage pad and onto the newly installed concrete aprons surrounding the modified concrete storage pad. The licensee determined the 18-inch overhang of the horizontal storage modules would not affect the horizontal storage modules' capability to properly store and protect the dry shielded canisters.

The inspectors did not observe the licensee's actual construction of the horizontal storage modules. As a result, the inspectors reviewed the licensee's documentation of the installation activities for the different individual concrete components which collectively comprised the horizontal storage modules, including the heat shields, the dry shielded canister support structure assemblies, the base units, and the roof units. The inspectors determined that the licensee's documentation of the installation activities for the horizontal storage modules was acceptable and demonstrated that the modules would be able to perform their intended safety function.

c. Conclusions

The inspectors determined that the licensee properly installed the horizontal storage modules and the installation documentation demonstrated that the horizontal storage modules would be able to perform their intended safety function.

2.0 Pre-operational Testing of an Independent Spent Fuel Storage Installation (60854)

2.1 Cask Lid Removal

a. Inspection Scope

The inspectors evaluated the licensee's ability to removed the inner and outer covers of a dry shielded canister mockup to verify compliance with the requirements of 10 CFR 72 and with the conditions contained in the CoC.

b. Observations and Findings

The inspectors reviewed the licensee's procedure related to the removal of the inner and outer covers of a dry shielded canister and observed the licensee's contractor, PCI Energy Services, conduct an actual lid removal using a mockup canister. The actual lid removal activity was completed at the contractor's facilities in Lake Bluff, Illinois.

The inspectors determined that the licensee's procedures for the milling and removal of the inner and outer covers contained all of the appropriate attributes to facilitate a proper removal of the two lids, including metal chip control, continuous hydrogen monitoring, and proper fire watch controls. The licensee's contractor used a modified milling machine, which was previously developed to remove the lid from canisters used at the Big Rock Point Nuclear Power Plant, to remove the canister's circumferential weldments. The licensee's contractor also used a plasma arc torch gouging technique to remove the siphon/vent block weldment due to the different configuration of the block weldment. For both of the examples observed, the inspectors determined the licensee's contractor could successfully remove the inner and outer cover lids.

c. Conclusions

The inspectors determined that the licensee developed and successfully implemented procedures for the removal of the dry shielded canister inner and outer lids in accordance with the conditions set forth in the Certificate of Compliance.

3.0 Exit Meeting Summary

The inspectors presented the inspection findings to members of licensee's management on June 15, 2004, at the conclusion of the onsite inspection effort, and on August 19, 2004, during a telephone exit meeting. The licensee did not identify any information as being proprietary.

PARTIAL LIST OF PERSONS CONTACTED

J. F. Becka Dry Storage Supervisor, NMC
J. Rendos Senior Project Manager, Canister Projects, PCI

INSPECTION PROCEDURE USED

IP 60853 On-Site Fabrication of Components and Construction of an ISFSI [Independent Spent Fuel Storage Installation]
IP 60854 Pre-operational Testing of an Independent Spent Fuel Storage Installation

ACRONYMS USED

ADAMS Agencywide Documents Access and Management System
ACI American Concrete Institute
CoC Certificate of Compliance
CFR Code of Federal Regulations
DNMS Division of Nuclear Materials Safety
DSC Dry Shielded Canister
ISFSI Independent Spent Fuel Storage Installation
NRC Nuclear Regulatory Commission
PARS Publicly Available Records

LIST OF DOCUMENTS REVIEWED

Reports of Concrete Compressive Strengths;

Installation Work Plan IWP02-015*Ag, "Modification of ISFSI for NUHOMS Storage System," dated July 1, 2003;

Final Design Basis Report ISFSI URS Job No. 51480-001, dated July 1, 2003;

Plant Change Initiation, "Modification of ISFSI East Cask Storage Pad," dated June 9, 2003;

Transnuclear Design Guidelines Document No. E-19735, Revision 1;

Work Order No. 0304851, "Construction of Concrete Overlay for the East ISFSI Pad and Two Approach Slabs on Both Sides of the East ISFSI Pad to Accommodate the NUHOMS Storage System," dated September 16, 2003;

Work Order No. 0305455, "Install WHSM-01 through WHSM-14 at the ISFSI," dated November 21, 2003;

Transnuclear Specification No. E-19231, Revision 2, "Field Erection of NUHOMS Precast HSM [Horizontal Storage Module] Array," dated September 22, 2003;

DSP31, Revision 1, "HSM [Horizontal Storage Module] Initial Installation," dated November 7, 2003;

10 CFR 72.48 Safety Evaluation No. 721004-078, " HSM [Horizontal Storage Module] Overhang," dated March 29, 2004;

Routine Maintenance Procedure (Draft), "Milling of DSC [Dry Shielded Canister] Inner and Outer Covers," Revision 0.