

June 1, 2000

Mr. M. Reddemann
Site Vice President
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, WI 54241

SUBJECT: NRC INSPECTION REPORT 72-05/2000001(DNMS)

Dear Mr. Reddemann:

On April 13 through May 17, 2000 the NRC completed a special inspection of the loading of the ninth and tenth dry fuel storage casks at your Point Beach Nuclear Generating Plant. The results of this inspection were discussed on May 17 with members of your staff. The enclosed report presents the results of that inspection.

The purpose of the inspection was to observe various portions of the dry fuel cask loading program.

Based on the results of this inspection, no violations of NRC requirements were identified. Overall, the loading of the ninth and tenth dry fuel storage casks was performed well.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response if you choose to provide one, will be placed in the NRC Public Electronic Reading Room (PERR) link at the NRC home page, <http://www.nrc.gov/NRC/ADAMS/index.html>.

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

Sincerely,

/RA/

Bruce L. Jorgensen, Chief
Decommissioning Branch

Docket No.72-05

Enclosure: Inspection Report 72-05/2000001(DNMS)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 72-05

Report No: 72-05/2000001(DNMS)

Licensee: Wisconsin Electric Power Company

Facility: Point Beach Nuclear Plant, Units 1 & 2

Location: 6610 Nuclear Road
Two Rivers, WI 54241

Dates: April 10 through May 17, 2000

Inspector: R. B. Landsman, Project Engineer

Accompanying: R. Zuffa, Illinois Department of Nuclear Safety

Approved By: Bruce L. Jorgensen, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Point Beach Nuclear Generating Plant, Units 1 & 2 Point Beach Inspection Report 72-05/2000001(DNMS)

This special inspection included direct observation by the inspector of various portions of the loading of the ninth and tenth dry fuel storage casks. Portions of all phases of the fuel movement activities were observed. Overall, the loadings were performed well, with only minor complications which were properly addressed.

Report Details

1.0 Loading of the Ninth and Tenth Casks

a. Inspection Scope (60855)

The inspector observed various portions of the loading of the ninth and tenth casks to verify compliance with the applicable sections of the loading procedures.

b. Observations and Findings

All the procedural tasks were completed correctly during the two loadings. Safety concerns were reinforced by the team. Problems that occurred were quickly brought to the attention of management. Sound decisions were made throughout the loading. Radiation protection activities and controls were good. Good communication between workers and health physics personnel was evident, and workers exhibited good radiation worker practices.

During initial work on the ninth cask, while completing the first weld pass after the root pass on the shield lid-to-shell weld, an approximately 1 ½" section of the root pass blew out. This was unanticipated since the internal multi-purpose storage basket (MSB) pressure was to be controlled at approximately 0.5 psi. The differential pressure between the MSB and ambient was adjusted to as close as possible to zero and the root pass and subsequent first pass were completed. This resulted in the welders having to manually grid out the porosity and fill in the area, with additional radiological exposure to the welders and lost time in the loading process. More specific guidance will be placed in the welding procedure for maintaining close to zero pressure during the first pass after the root pass welding on the shield lid-to-shell weld.

During further work on the ninth cask, when the structural lid was placed on top of the previously welded shield lid, the west side was observed to be approximately 1/8" above the top of the MSB shell. The elevation of the top of the structural lid should be even or slightly below the elevation of the top of the MSB shell to obtain the design 3/4" structural lid-to-shell groove weld. The fitup was confirmed to be within design requirements prior to welding the shield lid. This cask was manufactured by a new vendor which, during fabrication, had to mill the shield lid support ring to get the elevation of the lids within specification. It appears that they did not want to remove more than they had to, which resulted in an exact fit on the top and did not provide for any movement of the shield lid during or after welding. The observed difference in elevation was attributed to weld metal shrinkage upon cooling, causing the shield lid to be pulled up. Thru discussions with their welding engineer, this orientation still allowed them to meet code requirements for the 3/4" groove weld, as long as the through wall weld depth dimension, measured from the backing bar top to the top of the shell, was maintained greater than 3/4". This was verified prior to tack welding the backup bar in place. The UT exam of the completed weld passed all the criteria. As a corrective action for the above the licensee will ensure that during fitup the structural lid is below the top of the MSB shell.

Related to this condition, on the ninth cask, a gap existed in the valve access opening in the interface area between the shield and structural lid. By design, a 1/4" fillet weld is to be placed at this interface marker to effect a seal between the two lids. A 3/16" gap was noticed after several passes were made on the structural lid. The design assumes the two lids are in contact and there are no loads imposed upon this fillet weld during a design basis drop accident. With the gap, a load could be postulated on this weld due to the ability of the structural lid to defect during a vertical drop accident. The designer, BNFL-FS, was contacted and a conservative analytical model analyzed which assumed that the structural lid was simply supported at its edges and the entire drop effect was taken by the lid to lid fillet weld. The stress was determined to be below the allowable ultimate (the Service Level D limit). The gap was first filled with weld metal to a depth of 1/16" to 1/8" of material. Then a 3/8" fillet weld was applied as the seal weld. A dye penetrant test of the completed weld passed all the criteria. As a corrective action for this the licensee decided to weld the valve access opening shield lid to structural lid weld before the structural lid to MSB shell weld. This should keep the gap to a minimum.

On the tenth cask, while heating up the structural lid to around 450°F to force heat down into the shield lid (minimum heat of 200°F) in order to make the weld between the two lids in the valve access opening, the gap between the two lids increased from 0.089" to approximately 0.140". This occurred because the structural lid wasn't restrained around its edges as usual and it bowed up. Previously, a couple of weld passes were made around the structural lid before this valve weld was performed so the lid couldn't move. The structural lid was allowed to cool and the gap reduced to the original number. Localized heaters were used instead of the main heaters and the valve access opening was welded successfully.

Continuing on the tenth cask, preheat of the structural lid restrained by the valve opening weld on one side, caused thermal growth in the other direction, more than expected, and sheared a weld wire handle on the top of the backing ring for the structural lid to shell weld. (Note: the weld wire handle allows the welders to pull the backing bar up into position below the weld root gap prior to tack welding it in place.) This resulted in the welders having to manually fill up this area, using stick weld, to properly build the base for the weld. This also resulted in additional radiological exposure to the welders and lost time in the loading process. The licensee is evaluating this situation for future loading and possible fabrication changes for future MSB cask components.

c. Conclusions

The loading of the ninth and tenth casks demonstrated a thorough understanding of the procedures and activities by the cask team. All activities observed by the inspector were performed well.

2.0 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at an exit meeting on May 17, 2000. The licensee did not identify any information discussed as being proprietary.

PARTIAL LIST PERSONS CONTACTED

A.J. Cayla	Manager-Site Services & Assessment
R. Adams	RP Supervisor
J.F. Becka	Supervisor-Dry Storage Group-Site Program
F.A. Flentje	Sr. Regulation & Compliance Specialist
N.L. Hoefert	Manager-Site Programs
T.P. Kirwin	Manager-Production Planning (Acting Plant Manager)
J.E. Knorr	Manager-Regulation & Compliance
J. Lindsay	RP General Supervisor
B.J. O'Grady	Manager-Operations
C.R. Peterson	Director-Engineering

INSPECTION PROCEDURE USED

IP 60855: Operation of an Independent Spent Fuel Storage Installation