

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-266/82-12(DETP); 50-301/82-12(DETP)

Docket Nos. 50-266; 50-301

Licenses No. DPR-24; DPR-27

Licensee: Wisconsin Electric Power Company  
231 West Michigan  
Milwaukee, WI 53201

Facility Name: Point Beach Nuclear Power Plant, Units 1 and 2

Inspection At: Point Beach Site, Two Creeks, WI

Inspection Conducted: May 3-4 and June 15, 1982

Inspectors: *P. C. Lovendale*  
P. C. Lovendale

7/12/82  
Date

*R. L. Hague*  
R. L. Hague

9/14/82  
Date

Approved By: *L. R. Greger*  
L. R. Greger, Chief  
Facilities Radiation  
Protection Section

7/13/82  
Date

Inspection Summary

Inspection on May 3-4 and June 15, 1982 (Reports No. 50-266/82-12(DETP); 50-301/82-12(DETP))

Areas Inspected: Special, announced inspection of the circumstances surrounding an auxiliary operator's unauthorized entry into a high radiation area. The inspection involved 38 inspector-hours onsite by two NRC inspectors.

Results: Two apparent items of noncompliance were identified (failure to control access to high radiation areas - Section 5.a and 5.b, failure to follow approved procedures - Section 7).

## DETAILS

### 1. Persons Contacted

G. A. Reed, Manager, Nuclear Operations  
R. E. Link, Superintendent, Engineering, Quality and Regulatory Services  
R. S. Bredvad, Health Physicist  
C. D. Bolle, Health Physics Supervisor  
R. Mitchell, Shift Superintendent

The inspector also interviewed other licensee employees including the involved auxiliary operator and other operations personnel.

### 2. General

This inspection, which began at 7:00 a.m. on May 3, 1982, was conducted to examine the circumstances surrounding an auxiliary operator's unauthorized entry into the Unit 1 Containment while the unit was operating.

### 3. General Sequence of Events

On April 22, 1982, operations personnel were performing Procedure OP-4D, "Draining the Reactor Coolant System," on Unit 2, which was shutdown. The reactor coolant system was being drained in preparation for steam generator eddy current testing. The Unit 1 turbine hall operator volunteered to assist the auxiliary building operator with the reactor coolant system draining operation. After receiving instructions from the control room, the turbine hall operator mistakenly proceeded to the Unit 1 containment personnel airlock, which he found locked. He then obtained the containment key from the access control point security guard. This key fits security locks to both containments. The turbine hall operator once again proceeded to the Unit 1 (operating) containment personnel airlock, entered the Unit 1 containment, and operated five valves in the vicinity of the pressurizer relief tank (PRT).

When the Unit 1 containment door was opened, an alarm was received in the control room. The Duty Shift Supervisor contacted security and was informed that the turbine hall operator had obtained the containment key. The auxiliary building operator was then summoned and sent to the Unit 1 containment personnel airlock to investigate. Control room personnel also paged the turbine hall operator, but received no response.

After operating the five valves, the turbine hall operator returned to the personnel airlock. The auxiliary building operator informed the turbine hall operator that he had entered the wrong containment and operated the wrong valves. Both operators then reentered the Unit 1 containment and repositioned the valves.

#### 4. Interview with Turbine Hall Operator

On May 3, 1982, the inspectors interviewed the Unit 1 turbine hall operator. He stated that he had been employed at the plant for about two years. Six months of this time was spent working as a radiation control helper and one and one half years as an auxiliary operator. He further stated that he had completed all required training for auxiliary operators including health physics retraining in January 1982. This information was verified from licensee records.

The operator related the following sequence of events which occurred during the midnight shift on April 22, 1982, when he was assigned as the Unit 1 turbine hall operator. He volunteered to assist with the Unit 2 reactor coolant draining procedure in order to expedite the operation and to enable the auxiliary building operator to go on a break. He received instructions from the control room to open the five vent valves in the vicinity of the PRT, an evolution which he had performed at least twice previously.

He had been assigned as auxiliary building operator on the previous day when the Unit 2 containment was locked for the completion of an integrated leak rate test. He was unaware that the Unit 2 containment test had been completed since his last shift and the Unit 2 containment door was unlocked and open. For this reason, he proceeded to the controlled area access control point and requested the "containment key" from the security guard. The security guard issued him the key without checking with the Shift Supervisor. After obtaining the "containment key" he proceeded to the Unit 1 (operating) containment personnel airlock, instead of Unit 2, on the 66 foot level and entered the containment. He then proceeded down the stairway to the 46 foot level and walked around the outer containment perimeter about 45 degrees to the PRT where he operated the five valves and then exited containment using the same route by which he entered. The five valves operated were the four "C" vent valves from the bottom of the steam generators (RC-545C, RC-546C, RC-547, RC-548) and a PRT vent valve (RCV-1). He stated that he did not realize he had entered the wrong containment even though there are physical differences between the two and a significant difference in background noise level caused by the operating reactor coolant pumps. Nor did he hear the control room page him while he was in the Unit 1 containment. When he reached the personnel airlock, he saw the auxiliary building operator holding up two fingers in the outer door window indicating that he was in the wrong containment. Upon seeing the auxiliary building operator signal he immediately realized his error. After a brief discussion, both operators returned to the vicinity of the PRT, and returned the five valves to their proper position. He estimated his total time in containment was about six minutes.

The operator stated that he had not received turnover information concerning plant conditions on the primary side of the plant, including status of the Unit 2 containment, when he came on shift. He stated that he had no idea why he entered the wrong containment except that he may have done it out of habit because of the numerous

times he had entered the Unit 1 containment during a recently completed outage. He also stated that since he thought he had entered the shutdown unit, he would have performed any operation the control room requested, including operation of the "A" valves which are located inside the loop areas.

5. High Radiation Area Control

The inspector reviewed the licensee's containment access controls for both operating and shutdown conditions.

a. Operating Reactor

Both containments are equipped with alarmed doors. An audible alarm sounds in the control room, but not locally. Visual alarms are located above the containment doors; however, the alarms are not conspicuously visible to an individual while opening the door. The visual alarms are located directly above the head of anyone opening the door so that they would have to step back away from the door in order to see the alarm. On April 22, 1982, when the turbine hall operator opened the Unit 1 outer containment door, an alarm was energized in the control room; however, the local visual alarm was not conspicuous due to its location nor was there a local audible alarm which would have warned the operator that he was entering a high radiation area.

One acceptable method of controlling access to high radiation areas is specified in 10 CFR 20.203(c)(2)(ii), which requires that each entrance or access point to a high radiation area be equipped with a control device which shall energize a conspicuous, visible or audible alarm signal in such a manner that the individual entering the high radiation area and supervision are made aware of the entry. The licensee's access control of the Unit 1 containment did not meet these criteria since the local alarm was not conspicuous.

Another acceptable method of controlling access to high radiation areas consists of locked entrances with a system for exercising positive control over individual entries as specified in 10 CFR 20.203(c)(2)(iii). Technical Specification 15.6 also specifies the use of locked entrances in conjunction with other administrative controls for areas with dose rates greater than 1000 mR/hr. (The dose rates inside the loop areas during reactor operation are estimated to reach about 100 R/hr.) The Unit 1 containment door was locked; however, the lock is not considered an acceptable high radiation area control because plant security is not required to obtain authorization from the Plant Health Physicist or Shift Supervisor before issuing the key and is generally not cognizant of radiological conditions inside containment. According to licensee security personnel, the containment key would be given to any plant employee authorized entry to the controlled area. The locks on the containment doors appear to be used for security purposes and not for controlling access to high radiation areas.

Failure to equip the Unit 1 containment door with a conspicuous visible or audible alarm or a high radiation area lock is considered an item of noncompliance.

b. Shutdown Reactor

After reactor shutdown, high radiation areas within containment are roped off and posted. The containment door remains unlocked, open, and the control device is bypassed. The door posting is changed from a "high radiation area - RWP required" sign to a "radiation area" sign. This allows persons to enter containment without obtaining an RWP, a key, or special permission.

This method of control is in accordance with Technical Specification 15.6.11 and is acceptable for high radiation areas with dose rates between 100 mR/hr and 1000 mR/hr. Areas with dose rates exceeding 1000 mR/hr must be equipped with additional access controls as noted in Section 5(a).

Areas within the Unit 2 containment apparently had dose rates exceeding 1000 mR/hr but were not locked. An example is the regenerative heat exchanger area which had general area dose rates of about 1500 mR/hr. This area was posted and roped off, but was not equipped with locked doors nor was access controlled with a control device or alarm signal in accordance with 10 CFR 20.203(c)(2). Another area was the steam generator, when opened for maintenance. During periods when entries were being made (usually two ten hour shifts), radiation control operators were stationed in the area to control access to these areas. This method of control is allowed by 10 CFR 20.203(c)(4). However, this control method was provided only 20-hours per day. During the remaining four hours, there were no controls other than a rope barricade and posting to control access.

Failure to control access to high radiation areas within Unit 2 in accordance with Technical Specification 15.6.11 or 10 CFR 20.203(c)(2) is considered an item of noncompliance.

6. Potential for Significant Exposure

On April 22, 1982, shift personnel were performing Procedure OP 4D, "Draining the Reactor Coolant System," on Unit 2. Parts of this procedure call for operating eight vent valves (four "A" and four "C" valves) which, when opened, provide a vent path from the primary coolant side of the steam generator to the pressurizer relief tank (PRT). The four "C" valves were opened by the turbine hall operator. These valves are located in the vicinity of the pressurizer relief tank where radiation levels are about 40 mR/hr gamma and 30 mR/hr neutron. The operator estimated his stay time in the area to be about six minutes. A check of the dosimetry worn by the operator revealed that only a minimal dose had been received. His self-reading dosimeter indicated a dose of 30 mrem total for the day.

The four "A" valves are located about eight feet up the side of the steam generators. This area is an extremely high radiation area during plant operation. Based on surveys taken twenty feet below the steam generator during power operation, it is estimated that the general area dose rates in the vicinity of the "A" valves may be as high as 100 R/hr.

Once inside the Unit 1 containment, the operator had access to all areas. There were no postings or locked gates which would have prevented him from entering the loop areas.

As noted in Section 4, the turbine hall operator stated that he would have entered the loop areas to operate the "A" valves, as required by procedure, if he had been asked to do so. Performance of this portion of the procedure would take an estimated ten minutes which would have resulted in a whole body exposure in excess of the 3.0 rem quarterly whole body limit specified in 10 CFR 20.101.

#### 7. Adherence to Procedures

Review of this incident identified several instances of failure to follow procedures associated with the operator's mistaken entry into the Unit 1 containment. Procedures violations include:

- a. The turbine hall operator entered the Unit 1 containment without utilizing a time card and time recorder system to record the entry as required by Procedure HP 10.7. This procedure must be followed when entering either a shutdown or operating unit.
- b. The turbine hall operator entered the Unit 1 containment which is a high radiation area with radiation levels greater than 1000 mR/hr, without a radiation work permit, without using the "buddy system" or notifying the Duty Shift Supervisor, and without a high range dosimeter as required by Procedure HP 2.7, "Radiation Work Permits."
- c. Area surveys of the containment were not conducted before the operators entered as required by Procedure HP 8.2, "Radiation Surveys."
- d. Performing the valve operations on Unit 1 rather than the intended Unit 2 was not in accordance with Procedure OP-4D.

These procedure violations are considered noncompliance with Technical Specification 15.6.8, which requires adherence to approved procedures.

#### 8. Operational Conditions

The operator stated that, had he been asked, he would have performed Step 4.8 of Procedure OP-4D, rather than Step 4.25. Had he done so, he would have entered the loop area and likely exceeded the quarterly whole body dose limit, but there would have been no immediate consequences on the operation of the plant. Step 4.8 of Procedure OP-4D

calls for the opening of pressurizer vent valve RC-535, reactor vessel vent valve RC-500 and steam generator vent valves RC-545A, RC-547A, RC-546A, and RC-548A. The lines immediately downstream of RC-535 and RC-500 are blank flanged during operation, and in the case of the steam generator vents there are additional downstream valves which were shut. Therefore, the opening of the valves specified in Step 4.8 would not have caused a significant radioactive release to containment or a depressurization of the plant.

In discussions with licensee personnel, it was determined that it is routine procedure to call on the Unit 1 turbine hall operator to occasionally assist other operators in the performance of tasks. The Unit 1 turbine hall operator normally has the the least responsibilities associated with his watchstation. Formal turnovers have not been considered necessary because the operator is not assuming responsibility for the watch. Also the operators rotate each day between the three auxiliary operator watchstations, which keeps them somewhat familiar with plant conditions. In this case, the Unit 1 turbine hall operator had the Primary Auxiliary Building watch the day before, and the only condition which had changed was the opening of the Unit 2 containment.

#### 9. Enforcement Meeting

An enforcement meeting was held on June 23, 1982, to discuss the unauthorized entry into the Unit 1 containment, problems which contributed to the event, and the apparent items of noncompliance. The meeting, held at the Region III office, was attended by Mr. J. G. Keppler, Regional Administrator, NRC, Region III and Mr. C. W. Fay, Director, Nuclear Power Department, Wisconsin Electric Power Company, and members of their staffs.

The major problems identified during the special inspection were discussed with the licensee. These included: inadequate access controls of containment high radiation areas, use of nonplant specific operating procedure, inadequate communications capabilities within Unit 1 containment, failure of the turbine hall operator to be alert to plant conditions, and re-entry into Unit 1 containment by two operators without proper radiological surveys and controls.

Licensee representatives discussed corrective measures resulting from the incident, including installation of new containment locks so that each containment will have a separate key and implementation of a requirement that the security guard obtain authorization from the shift supervisor before issuing a containment key, but noted that the operator's lack of attentiveness to plant conditions was a major contributor to this occurrence.

Region III personnel agreed with the licensee's assessment of the operator's attentiveness but stressed the need for improvements in the areas noted above. The licensee's proposed corrective actions were generally responsive to NRC concerns.

In attendance at the enforcement meeting were:

U.S. Nuclear Regulatory Commission

J. Keppler, Regional Administrator  
C. Norelius, Director, Division of Engineering and Technical Programs  
R. Spessard, Director, Division of Resident and Project Programs  
R. Warnick, Director, Enforcement and Investigation Staff  
J. Miller, Chief, Technical Inspection Branch  
J. Streeter, Chief, Projects Branch 2  
R. Greger, Chief, Facilities Radiation Protection Section  
R. Hague, Senior Resident Inspector - Point Beach  
P. Lovendale, Radiation Specialist  
P. Pelke, Reactor Inspector

Wisconsin Electric Power Company

C. Fay, Director, Nuclear Power Department  
G. Reed, Manager, Nuclear Operations  
R. Link, Superintendent, Engineering, Quality and Regulatory