U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-266/84-16(DRSS); 50-301/84-14(DRSS)

Docket Nos. 50-266; 50-301 License Nos. 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: September 10-13, 1984

Inspectors: W. G. Snell — 10/4/84
Team Leader

T. J. Ploski — 10/4/84

J. P. Patterson — 10/4/84

Approved By: M. P. Phillips, Chief — 10/4/84
Emergency Preparedness Section

Inspection Summary

Inspection on September 10-13, 1984 (Report Nos. 50-266/84-16(DRSS); 50-301/84-14(DRSS))

Areas Inspected: Routine, unannounced inspection of the Point Beach Nuclear Power Plant emergency preparedness exercise involving observation by six NRC representatives of key functions and locations during the exercise; and licensee actions on previously-identified exercise weaknesses. The inspection involved 97 inspector-hours onsite by three NRC inspectors and three consultants.

Results: Although no items of noncompliance, deficiencies, or deviations were identified, four exercise weaknesses were identified as summarized in the Appendix.

## DETAILS

1. Persons Contacted

   a. NRC Observers and Areas Observed

      F. McManus, Control Room
      J. Patterson, Technical Support Center (TSC), and Post-Accident Sampling Teams
      J. Pisarcik, Operational Support Center (OSC), and Inplant Teams
      T. Ploski, Emergency Operations Facility (EOF)
      J. Davis, Offsite Radiological Monitoring Teams
      W. Snell, Control room, TSC, EOF
      R. Hague, Control Room, TSC

   b. Wisconsin Electric Power Company

      C. W. Fay, Vice-President, Nuclear Power
      J. Reisenbuechler, Superintendent Technical Services
      J. Knorr, Emergency Planning Coordinator
      R. Link, Superintendent Engineering Quality and Regulatory Services
      T. Koehler, General Superintendent
      I. Blecker, Duty Shift Superintendent
      R. Heiden, Project Engineer, Quality Assurance
      D. Stevens, Assistant Coordinator, Energy Information Center
      G. Rau, Specialist, Nuclear
      C. Krause, Senior Project Engineer, Licensing
      C. Zalewski, Senior Clerk

   The personnel listed above attended the exit interview on September 12, 1984.

2. General

   An exercise of the licensee's Point Beach Nuclear Power Plant Emergency Plan was conducted at the Point Beach Nuclear Power Plant on September 11, 1984, testing the response of the licensee to a hypothetical accident scenario resulting in a major release. Attachment 1 describes the scenario. The exercise was integrated with a test of the Kewaunee and Manitowoc Counties emergency plans. This was a partial-participation exercise for the State of Wisconsin.

3. General Observations

   a. Procedures

      This exercise was conducted in accordance with 10 CFR Part 50, Appendix E requirements using the Point Beach Emergency Plan and Emergency Plan Implementing Procedures used by site and Corporate personnel.

b. Coordination

The licensee's response was coordinated, orderly and timely. If the events had been real, the actions taken by the licensee would have been adequate to permit the State and local authorities to take appropriate actions.

c. Observers

Licensee observers monitored and critiqued this exercise along with six NRC observers and several Federal Emergency Management Agency (FEMA) observers. FEMA observations on the responses of the State and local governments will be provided in a s parate report.

d. Critique

The NRC held a critique after the exercise on September 12, 1984. The NRC identified exercise weaknesses in the critique. In addition, a public critique was held on September 13, 1984, to present both the onsite and offsite findings by the NRC and FEMA representatives, respectively.

4. Specific Observations

a. Control Room

The Control Room personnel demonstrated a good knowledge of the Plant Operating Procedures and Emergency Plan Implementing Procedures (EPIP). The Operating Procedures and EPIPs were frequently checked and rechecked to ensure all required steps were being accomplished. The emergency conditions were identified, assessed, classified, and offsite notifications were initiated in a timely manner. The Control Room personnel were aggressive in attempts to depressurize and cool down the primary system, frequently referring to the plant system diagrams. Control Room personnel took several logical actions which would have probably mitigated the emergency event had it been real, except the scenario would not allow the mitigations.

b. Technical Support Center (TSC)

The activation of the TSC was orderly and timely following the Alert declaration. Command and control was very good as demonstrated by the actions of the Technical Support Manager and the Plant Operations Manager. Announcements, status reports, and TSC staff briefings were good throughout the exercise. A written outline of key topics was addressed in each staff briefing by the Plant Operations Manager who also solicited staff input and questions at each briefing. These briefings were conducted every 30 to 45 minutes.

Status boards were filled in during the initial set-up of the TSC and continuously updated as new information and data became available. Assembly, accountability, and evacuation of non-essential plant personnel were successfully demonstrated with all persons accounted for within approximately 30 minutes. Initial notifications to offsite agencies made from the TSC for each of the emergency class declarations were done within the required 15 minute period.

At 0733, the Control Room identified a potential General Emergency classification based on the loss of main feedwater and no auxiliary feedwater for greater than one hour (EAL No. 6). One hour later at 0833, the TSC classified a General Emergency based on this EAL. Although the licensee was working to restore water throughout this period, the NRC observers thought they could have been more aggressive in trying to establish whether it could be done before the one hour period was up. If it could have been determined that in all likelihood the fixes that were being attempted would not restore feedwater before one hour, the General Emergency should have been declared sooner. However, the precaution was taken by the Control Room as soon as this EAL (No. 6) was identified to augment the Corporate personnel on the Emergency Operations Facility staff who would have to drive from Milwaukee, if the General Emergency were declared.

After the General Emergency was declared, no initial protective action recommendation was made by the TSC. This is contrary to Federal guidance provided on page 1-16 of NUREG-0654, Rev. 1. By definition, conditions that warrant a General Emergency classification mean that releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area. For this reason, NRC guidance states that the minimum protective action recommendation at a General Emergency classification is sheltering out to two miles in all directions and from two to five miles in the three downwind sectors. However, the licensee determined that a protective action recommendation was not warranted based on dose calculations and the fact that no releases were occurring. However, these dose calculation were not based on projected plant conditions. Therefore, dose projections were not actually performed. This will be tracked under Open Item No. 266/84-16-01; 301/84-14-01.

c. Operational Support Center

The OSC was activated in a timely manner and made good utilization of procedures throughout the exercise. Radiation Work Permits were prepared as required and appropriate dosimetry was provided for in-plant teams. However, no procedures were available to analyze vegetation or soil samples for radioactive material content. Procedures for this should be developed. This will be tracked under Open Item No. 266/84-16-02; 301/84-14-02.

There was a general lack of good health physics procedures shown in the OSC for control of environmental samples. For example, not all samples were adequately labelled with information such as sample

volume or sample location; dose rates were not specified on samples for personnel handling; and, there was little concern given to the potential for smearable contamination to be on the outside of the sample containers.

First aid skills as demonstrated by plant personnel for the rescue of the injured person were very good. However, when the ambulance arrived, there was no provision to provide the ambulance staff with dosimetry before proceeding onsite, even though they requested it. Provisions should be made to provide offsite personnel with dosimetry when they must enter the plant site during an emergency. This will be tracked under Open Item No. 266/84-16-03; 301/84-14-03.

Health Physics and Chemistry personnel satisfactorily demonstrated the acquisition of a Post-Accident primary containment air sample and a reactor coolant sample during the exercise. The teams were well trained, methodical, and paid close attention to the procedures. Technique was very good with ALARA considerations evident at all times. Communication between team members and the Control Room was also good.

d. Emergency Operations Facility (EOF)

The EOF was staffed and set up quickly and assumed command and control from the TSC in a timely manner. Habitability in the EOF was maintained with the emergency ventilation system activated. Dosimetry was issued to all personnel and checked every 30 minutes. Habitability was monitored with a continuous air sampler.

At no time during the exercise was access control or personnel accountability maintained at the EOF. The need for access control was demonstrated when several non-essential plant evacuees entered the EOF and had to be escorted out by an exercise player. Provisions should be made to maintain access control and personnel accountability at the EOF. This will be tracked under Open Item No. 266/84-16-04; 301/84-14-04.

Once the EOF assumed responsibility from the TSC, there was still no protective action recommendation until 12 noon when radiation readings from the "B" Steam Generator steam line (RMS Process Monitor 2RE-232) used in the dose calculations indicated that offsite releases exceeded the EPA Protection Action Guides. By this time, the values that were used from 2RE-232 were already one hour old and evacuation time estimates were never considered in the decisionmaking process to evacuate from zero to two miles in all directions. Prior to this recommendation for evacuation, no one ever made a dose projection based on projected plant conditions (see also section 4.b). This is in spite of the fact that between 0900 and 1000 the 3RE-232 readings had increased by almost two orders of magnitude. No attention was given to how high these values were expected to go or how long the release would be expected to last. In addition, a meteorological

forecast was never incorporated into the protective action recommendation discussions. This weakness will be tracked under Open Item No. 266/84-16-01; 301/84-14-01.

Status boards in the EOF appeared to be poorly utilized in that several parameters on the boards were never filled in. In addition, EOF staff modified the status board headings to exhibit the data they wanted to see. A re-evaluation of all the EOF status boards should be made to determine where improvement is needed.

Adequate communication was maintained throughout the exercise with the Wisconsin Department of Emergency Government (DEG). For recovery, the EOF discussed with the Wisconsin DEG the need to coordinate their field team efforts to take air, soil, and vegetation samples within two miles of the plant before allowing residents to re-enter the area.

e. Site Boundary Control Center (SBCC) Offsite Monitoring

Offsite monitoring teams were dispatched and controlled from the SBCC, which is the building that also contains the EOF. The SBCC did a good job in deploying and communicating with the offsite teams. Teams were well briefed before departing as to where they had to go and the type of samples needed. When returning to the SBCC, the teams were observed to use the step-off pad that was set up and frisked themselves for contamination. One team was observed to not check their equipment before departing and one team did not have a set of procedures.

The main problem noted for the offsite teams was awareness of keeping their own radiation exposures to a minimum. Examples of poor practices observed in this area were as follows: (1) one team made a pass through the plume to find the edges, but failed to note the centerline, necessitating another pass through the plume; (2) a team completed its readings on the centerline of the plume, then proceeded along the centerline to their next location in the plume; and (3) a team taking a continuous 20 minute plume centerline reading, while staying outside their vehicle, rather then getting inside to minimize exposure.

f. Exercise Scenario and Control

The exercise scenario was very good. The scenario provided a challenging series of events that tested the abilities of all participants. The scenario anticipated most player actions which enabled it to stay on schedule with little controller intervention. The use of the computer display for presentation of digital data and graphs with sliding covers for analog data provided a realistic method for presenting data.

5. License Actions on Previously-Identified Items

(Closed) Open Item No. 266/83-18-02; 301/83-17-02: Transfer of command and control between the Control Room and TSC went smoothly, with a formal announcement to the TSC staff when the TSC took control.

(Closed) Open Item No. 266/83-18-04; 301/83-17-04: Observation of the Primary Containment Atmosphere and Reactor Coolant samples demonstrated the teams were well trained and knowledgeable of the tasks to be performed.

(Closed) Open Item No. 266/82-08-03; 301/82-08-03: The Shift Superintendent did a good job of maintaining command and control in the Control Room and did not get to involved with telephone conversations.

6. Exit Interview

The inspectors held an exit interview the day after the exercise on September 12, 1984. The team leader discussed the scope and findings of the inspection.

Attachment: Exercise Scenerio

Time Schedule of Simulated Events

0715 - Plane crash causes loss of offsite AC (Unusual Event Category 8)

0716 - Unit 2 generator trip off line.

0718 Unit 1 runs back to self-sustaining level to ~5% power.

0718 - Unit 2 reactor trip occurs due to turbine overspeed trip signal. However, fails to trip. (Reactor may have tripped due to loss of power to rod control.)

0718 - Unit 2 turbine overspeed causes failure of the #1 low pressure turbine disc & blades. (Unusual Event Category 11)

0718 - Unit 2 "B" steam generator safety 2RV-2006 is sheared off when struck by a turbine disc piece thrown from the #1 LP turbine.

0720 - The 3" aux feed line to the "B" steam generator is broken just inside the containment wall.

0720 - Aux feed valve MOV-4022 has failed shut because check valve 105 has been leaking. (Possible site emergency Category 6. After 0820 site emergency required)

0850 - "B" steam generator empties due to blowdown through the broken safety.

0855 - "A" steam generator atmospheric relief valve (2CV-2016) fails closed. Pressurizer PORV will not open due to no instrument air.

0900 - Two "B" steam generator tubes fail starting at 50 gpm leak ramping to a 500 gpm leak after 30 minutes. (Alert Category 4, 6)

0915 - Steam line monitor 2RE-232 alarms due to .ailed tubes.

0945 - Plant evacuation possible due to airborne activity. Man hurt, obvious location - trips enroute to storeroom from aux feed tunnel.

1000 - 2RE-232 Sping 23 indicate increasing levels of activity.

1015 - Missing man identified. Send out search and rescue team.

1100 - Activity levels on release monitors result in dose projections requiring protective action recommendations (2 mile radius shelter).

1130 - Cool down of reactor coolant system continues with temperatures reaching 350°. RHR recirculation established for continued cool down.

1145 - Protective action recommendations escalate to evacuation for 1-2 mile radius and shelter for 6 miles downwind.

1150 - Repair team opens (MOV-4022) aux feed valve.

- Repair team repairs atmospheric relief valve (2CV-2016). Instrument air begins to work; either because of team or scenario drive.

1300 - Radiation levels offsite stabilize with no escalation of protective actions required.

1330 - RCS temperatures approach 200°F resulting in a reduced release from the broken "B" steam generator safety.

1400 - RCS temperatures at 150° and radiation release from plant is stopped.

1430 -Steam generator "B" temperatures reach 200°F therefore stopping the release

- Recovery organization is organized. (Deescalate to unusual event status.)

1500 - JPIC - News conference discusses accident and reentry procedures for general public.