U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-266/91004(DRSS); 50-301/91004(DRSS)

Docket No. 50-266; 50-301 License 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, Wisconsin

Inspection Conducted: March 18-22, 1991

Inspectors: James Foster
Team Leader

3/29/91
Date

William Snell for
Thomas Ploski

3/29/91
Date

Accompanying Personnel: Bruce Vesper
Jack Gadzala

Approved By: William Snell
William Snell, Chief
Radiological Controls and
Emergency Preparedness Section

3/29/91
Date

Inspection Summary

Inspection on March 18-22, 1991 (Report No. 50-266/91004(DRSS); 50-301/91004(DRSS))
Areas Inspected: Routine, announced inspection of the annual Point Beach Nuclear Power Plant emergency preparedness exercise involving review of the exercise scenario (IP 82302), observations by four NRC representatives of key functions and locations during the exercise (IP 82301), review of the meteorological information program (IP 84750), and follow-up on licensee actions on previously identified items (IP 92701).
Results: No violations, deficiencies or deviations were identified. This was a utility-only, after-hours exercise. The licensee demonstrated an adequate response to a hypothetical scenario involving multiple equipment failures and a minor radiological release. Exercise performance was improved as compared to previous years, and significant improvements were observed in the Operations Support Center. Some confusion was noted as to event classification utilizing fission product barrier analysis. The meteorological program was found to be adequate.

DETAILS

1. NRC Observers and Areas Observed

J. Foster, Control Room (CR), Technical Support Center (TSC), Operations Support Center (OSC), Emergency Operations Facility (EOF)
T. Ploski, TSC
B. Vesper, EOF
J. Gadzala, CR, OSC

2. Persons Contacted

Wisconsin Electric Power Company

* J. Zach, Director - Nuclear Power
* H. Gleason, Coordinator - Emergency Preparedness
* R. Seizert, Superintendent, Regulatory & Support Services
* T. Malanowski, Project Engineer - Licensing
* R. LaViolette, Quality Specialist - Emergency Planning
* D. Finch, Emergency Planner (Richardson-Estes)

*Denotes those attending the NRC exit interview held on March 22, 1991.

The inspectors also contacted other licensee personnel during the course of the inspection.

3. Licensee Action on Previously Identified Items (IP 92701)

a. (Open) Open Item No.266/90006-01: During the 1990 annual exercise, the licensee was slow in obtaining results from offsite air samples to determine or confirm existence of an offsite release. Partially due to the inclusion in the 1991 scenario of a bomb threat requiring increased security measures, sample receipt was again delayed. The licensee is reviewing the options for improving sample receipt and counting timeliness. This item will remain open.

b. (Closed) Open Item No.266/90006-02: During the 1990 annual exercise, it was apparent that the scope of the duties and responsibilities assigned to the Operations Support Center (OSC) Operations Director should be reexamined and limited to allow greater attention to high priority tasks and to increase efficiency. In response to the item, the licensee formed an OSC review committee, which reviewed the overall functions of the OSC, revised the organizational structure and layout of the facility, and developed revised status boards and procedures. During this exercise, the revised OSC functioned well. This item is closed.

c. (Closed) Open Item No.266/90006-03: During the 1990 annual exercise, dose assessment data was not updated on the Emergency Operations Facility (EOF) status board during the afternoon. The Radcon Waste Manager (RCWM) was waiting for additional sample data, but the boards could have been updated using other field data. During this exercise, the status boards were well maintained, updated with adequate frequency, and communications with the offsite

authorities regarding plant status and dose projections were made every thirty minutes. This item is closed.

4. General

An announced, off-hours exercise of the Point Beach Nuclear Power Plant Emergency Plan was conducted at the Point Beach Nuclear Power Plant site on March 19, 1991. The exercise tested the licensee's capabilities to respond to a simulated accident scenario resulting in a minor release of radioactive effluent. This was a "utility-only" exercise. State and local counties participated to a very limited extent, responding to telephone communications. Attachment 1 describes the Scope and Objectives of the exercise and Attachment 2 describes the 1991 exercise scenario.

5. General Observations

a. Procedures

This exercise was conducted in accordance with 10 CFR Part 50, Appendix E requirements, using the Point Beach Nuclear Power Plant Emergency Plan and Emergency Plan Implementing Procedures.

b. Coordination

The licensee's response was coordinated, orderly and timely. If the scenario events had been real, the actions taken by the licensee would have been sufficient to mitigate the accident and permit State and local authorities to take appropriate actions to protect the public's health and safety.

c. Observers

The licensee's controllers/observers monitored and critiqued this exercise along with four NRC observers.

d. Exercise Critique

The licensee's controllers/evaluators held critiques in each facility (with participants) immediately following the exercise. Controllers and some players held a joint critique the day following the exercise to discuss observed strengths and weaknesses for each facility and the overall exercise. The NRC discussed observed strengths and weaknesses, developed independently by the NRC evaluation team, during the Exit Interview with the licensee which was held on March 22, 1991, two days after the exercise.

6. Specific Observations (IP 82301)

a. Control Room (CR)

As in previous years, the licensee utilized the computer room above the actual Control Room as the Drill Control Room. Control Room board drawings, personal computers, strip charts and Plant Process

Computer Systems (PPCS) terminals in drill mode created a good Control Room simulation. Even with this degree of Control Room simulation, some problems were evident, as is typical when personnel are not in their normal environment. The licensee is in the process of installing a plant-specific, two-unit simulator, which should be available by the time of the next evaluated exercise in 1992.

Operators reviewed and entered procedure Abnormal Operating Procedure (AOP) 8A, "High Reactor Coolant Activity", early in the drill. One of the initial conditions provided was that coolant activity was slightly above normal and trending upward. This procedure review was viewed as precautionary, pending an abnormal outcome from the coolant sample being taken. The inspector considered the early entry into this procedure a proactive response by the operators.

At 1805 hours, the "alarms" personal computer indicated a series of alarms, including a fire alarm, in response to the fire in bus 1B04. Operators attempted to ascertain the status of the plant's electrical system; however, limitations in the simulated displays hampered operators in assessing the extent of the problem. The fact that a fire alarm had been received eluded operators for approximately eight minutes until a report was made to the Control Room regarding a halon discharge in the cable spreading room. The fire was not announced until ten minutes after the initial alarm was received.

Radio communications between the Control Room (CR) and the Fire Brigade Leader (FBL) were monitored. Communications were frequent enough to keep the Duty Shift Supervisor (DSS) adequately advised of response activities. Prior to entering the room containing the hypothetical fire, the FBL properly determined that its door was not hot.

The DSS and FBL had a good exchange of information about what equipment was near the alarming smoke detectors. Control Room personnel also referred to the fire protection manual and specific guidelines on fire attack for the cable spreading room. The FBL gave the CR a number of updates on his damage assessments, and his plan for inspecting nearby areas possibly affected by the fire. However, between about 1833 hours and 1840 hours, there was some apparent confusion on whether buss 1B04 or 1P2C was the source of the fire (The latter buss was not energized per the scenario's initial conditions). The uncertainty was resolved when the FBL properly advised that the 1B04 buss should not be reenergized until it had been inspected by qualified personnel. The fire brigade's response ended once they had determined that no other equipment had been damaged by the fire and they had developed a plan to vent smoke from the affected area.

The Operating Shift Supervisor left the Control Room to lead the fire brigade in accordance with fire fighting procedures, leaving the Duty Shift Supervisor (DSS) as the only Senior Reactor Operator remaining in the Control Room. The OSS was gone for about 45

minutes during which time the DSS was forced to single-handedly deal with the impending stream of calamities.

The Duty Technical Advisor (DTA) was prestaged at the Site Boundary Control Center (SBCC) at the start of the drill. This is where he would normally be located during off-normal working hours. He was informed of the fire about five minutes after it was announced in the plant and he responded to the Control Room in about ten minutes. The fact that neither the plant alarms nor the public address system (Gaitronics) are heard at the SBCC prevented the DTA from responding to the Control Room earlier. It appears the availability of plant alarms or public address system (Gaitronics) in the SBCC would be beneficial.

The DSS was the lone supervisor in the Control Room, soon became inundated by procedures, and this detracted from his keeping abreast of changing plant conditions. At one point, permission to analyze a reactor coolant sample was delayed while the control operator relaying the request waited for the DSS to end a phone call with security personnel.

Declaration of an Alert was suggested (via cellular phone) by the Duty and Call Superintendent (DCS) after he was notified of the 1B04 fire. The DSS was somewhat slow in making that determination himself. The DCS arrived in the Control Room about 20 minutes after being called and rapidly took command of the situation. He was only briefly hindered by the inability of the DTA to provide a detailed assessment of plant conditions when requested. The DCS evaluated the situation and quickly organized available personnel on appropriate courses of action. The OSS returned to the Control Room soon after the DCS arrived.

Personnel recall notifications were carried out well. Notifications to the NRC and other appropriate government agencies were made within the required timeframes.

Initial response to the loss of coolant accident at 1910 hours was prompt and appropriate. The OSS obtained the reactor trip procedure and guided the control operator in the immediate action sequence. Control Room operators recognized the eventual need for containment sump recirculation and used the onshift auxiliary operators to set up the temporary shielding (needed once recirculation was underway) in the primary auxiliary building.

At 2345 hours, the DSS log was reviewed and it was noted that the last entry was at 1946 hours. Several significant events including declaration of site and general emergencies, TSC and OSC activations, bomb threat, and initiation of containment sump recirculation were not entered in the log. This comment was also noted during the previous year's exercise.

No violations or deviations were identified.

b. Technical Support Center (TSC)

At 1851 hours, a security guard arrived in the TSC to make the initial notifications to State and county officials regarding the Alert declaration, which had been made in the Control Room at 1843 hours. In accordance with the scenario's initial conditions, the National Alert and Warning System (NAWAS) telephone was determined to be inoperable. By 1855 hours, the guard had located the commercial telephone number for the Wisconsin Division of Emergency Government (WDEG) and had established contact with its duty officer. The guard then told the duty officer that he would break off communications using the commercial line and would call back using the dedicated three way line to the State, Manitowoc and Kewaunee Counties. After no one had answered his call on this dedicated line, the guard began using a commercial line to initially notify the WDEG and both counties between 1858 hours and 1903 hours, which was 15 to 20 minutes after the Alert declaration. In view of the unavailability of the NAWAS line and the guard's efforts to make the notifications in a timely manner, 15 to 20 minutes was an acceptable timeframe.

Since the dedicated three way line's telephones are located in the State's and counties Emergency Operations Centers (EOCs), which are not staffed during off-hours, communication instructions should indicate that commercial telephone numbers should be utilized if the NAWAS is inoperable.

The initial notification messages to the WDEG and counties contained one slightly erroneous piece of information. The message form indicated that the Alert had been declared at 1833 hours, which is actually when the classification procedure was initiated. Licensee personnel stated that event classification is not complete until the classification procedure is completed, which would result in a classification time of approximately 1843 hours.

The TSC's staff began arriving about 25 minutes after the Alert declaration. Personnel became ready to perform their duties in an adequate, although somewhat noisy manner. The Site Manager (SM) made several decisions to reassign personnel, particularly to communicator positions, until additional staff arrived. The SM contacted the Control Room on several occasions to inform the DSS of the TSC's activation progress and to obtain information on past and current onsite events. The SM provided a good initial briefing to TSC and OSC staffs, using the public address (PA) system linking these facilities. After another discussion with Control Room personnel, the SM announced to TSC and OSC staffs that he had assumed command of emergency response activities at 1949 hours, which was timely and slightly more than one hour after the Alert declaration.

Beginning at 1940 hours, the SM conducted several discussions with the Duty Technical Advisor (DTA), Plant Operations Manager (POM) and other key staff regarding the need to reclassify the situation based on recent reports of deteriorating plant conditions. The plant's Emergency Action Levels (EALs) were reviewed and the Control Room was consulted. The SM's central focus was Fission Product Barrier (FPB) integrity.

Although several Category 3 EALs include a statement that core fuel damage is indicated by containment radiation levels of at least 6000 R/hour, the SM correctly concluded that recent values between 2000 and 3000 R/hour could only be due to some core damage (studies at other plants have indicated that containment radiation values in excess of 1000 R/hr represent fuel damage). Core fuel damage EALs should be reevaluated to determine whether 6000 R/hour, or some lesser value, is an appropriate indicator of fuel damage.

The SM was also well aware of indications of a Loss of Coolant Accident (LOCA) within containment. Several abnormal radiation level readings in portions of the Auxiliary Building raised concerns about a breach of containment integrity. While that building's vent stack monitor indicated no release, the SM expressed his concern that an unmonitored release might be occurring. Abnormal radiation levels in portions of the Auxiliary Building were not believed to be due to radiation "shine" from the containment. The desirability of sending a team into the Auxiliary Building was discussed.

At 1955 hours, the SM correctly declared a Site Area Emergency (SAE) based upon the loss of two Fission Product Barriers (FPB). However, associated PA announcements and the SM's statements to several staff indicate that he believed that all three barriers (fuel cladding, reactor coolant system, containment) had been breached. The loss of three barriers would have warranted a General Emergency (GE) declaration. Confusion regarding the proper event classification was considered an Open Item (No. 50-266/91004-01).

Initial notifications to State, county, and NRC officials were completed within the regulatory time limits following the SAE declaration. Due to timing of the notifications, there was inconsistent information provided to State and county officials regarding release status. At the time of the SAE declaration, TSC communicators were in the midst of providing a periodic update message to offsite officials. Their message indicated that a release was not in progress, although a SAE had just been declared. Meanwhile, the DTA had completed drafting an initial notification message form for the SM's approval. Since the SM was still unsure about the existence of an unmonitored release, he wanted this message form to indicate that a release had begun. Upon recognizing the inconsistency in the two messages to State and county officials, the DTA and lead communicator correctly decided to ensure that offsite officials were told that a release had begun, in accordance with the SM's direction.

By 2020 hours, the SM and POM became convinced that all three FPBs had been breached, although there were still no indications of an abnormal monitored release and no confirmation of an unmonitored release to the environment or within the Auxiliary Building. The SM declared a General Emergency at 2023 hours for the loss of all three FPBs and no indications that onsite conditions would improve.

The initial Protective Action Recommendation (PAR), to take shelter within a two mile radius of the plant and from two to five miles in downwind sectors, was appropriate. Initial notifications to State and county officials were completed within the regulatory time limits. The notification to the NRC operations Center was simulated, per the previous request of the NRC Headquarters Operations Officer to be further notified only on exercise termination. At about 2030 hours, indications of a monitored release from the Auxiliary Building were received in the TSC.

The assembly and accounting for all onsite personnel began several minutes after the SAE declaration, per procedures. All persons were accounted for within 30 minutes of the sounding of the appropriate plant alarm. The simulated evacuation of the few nonessential onsite personnel was initiated shortly after the completion of onsite accountability.

A PA announcement was made minutes after the GE declaration to inform onsite personnel of the reason for this reclassification. While this announcement was a verbatim reading of an "initiating condition" of the most relevant EAL, it was confusing. The announced reason for the GE declaration was "containment high radiation with actual or potential loss of containment integrity." The SM and POM were already convinced that all three Fission Product Barriers had been breached.

The TSC's offsite dose assessment staff correctly determined that the magnitude of the monitored release did not warrant a change to the initial PAR. By 2100 hours, a periodic update message had been transmitted to State and county officials that correctly indicated that a release had begun at 2030 hours. However, the message included a statement that the estimated duration of the uncontrolled release was 27 minutes. Based on the status of inplant team activities, there was no apparent basis for this release duration value, and it apparently was the duration of the release at that time rather than projected total release duration.

Shortly after 2100 hours, the POM, who was now in charge of TSC staff while the SM had temporarily transferred to the nearsite EOF per procedures, was informed of a simulated security threat. This threat was discussed by appropriate key TSC and OSC staff, who initiated response actions. The threat also resulted in a conservative decision to upgrade the offsite PAR in the event that the threat was credible. The PAR upgrade, which was the responsibility of EOF staff, was discussed with the POM prior to issuance. Although EOF staff had assumed responsibility for

offsite notifications sometime earlier, TSC staff were assigned responsibility to notify State and county officials of the PAR upgrade. The reason for this assignment was uncertain. While the EOF is not equipped with a NAWAS line, the NAWAS was declared inoperable for this exercise in order to demonstrate backup communications capabilities.

Prior to the conclusion of the exercise, the SM correctly stated that plant conditions did not yet warrant a relaxation of offsite PARs or an emergency reclassification. He correctly realized that offsite officials would have to be contacted to discuss any PAR changes or emergency reclassification prior to implementing changes to these items.

The Radiological and Environmental status board and the Plant Status boards were kept up to date with accurate information. The Plant Process Computer System (PPCS) terminal was effectively used to periodically monitor changing plant conditions.

In contrast, a small status board that is only used to display the current status of FPB integrity was not updated in a timely manner after the SM and POM had made their decisions on the loss of multiple FPBs. This status board was finally corrected after the simulated release had begun.

The SM conducted concise, periodic update briefings involving key TSC and OSC supervisors about once a hour after these facilities became operational. Ongoing response activities and views on priorities were discussed at these useful meetings.

Administrative staff did a good job in compiling various forms generated by TSC personnel and transmitting them, as appropriate, to other response facilities.

No violations or deviations were identified.

c. Operations Support Center (OSC)

The performance of the Operations Support Center (OSC) was a significant improvement from that observed during the previous year's exercise. The organization of the OSC was changed to provide the OSC director with several assistants, thereby allowing him to devote greater attention to higher priority tasks and increase the efficiency of the OSC. The layout of the OSC was also restructured, providing stations for the OSC director and his assistants. These stations are now identified by permanent signs hanging from the ceiling.

The physical separation between the OSC and supporting stations was eliminated by moving the final dressout area adjacent to the OSC. Prominent signs are posted throughout the area identifying each stage of the team processing area. Final briefs are conveniently held either in the final dressout area or in the adjacent OSC. This

change has improved information flow among the OSC support stations and allowed for more efficient management of the operations support teams.

Announcements made in the TSC are also broadcast thru speakers in the OSC, keeping OSC personnel informed of events. Announcements made over the plant's public address system (Gaitronics) could not be heard in the OSC. This caused OSC supervisors to miss important information.

Although an effort was made to improve prioritization of work items, the inspector noted that at one point four of five jobs were labeled as priority 1. The OSC director was assigning priority to jobs based on understandings gained through periodic TSC/OSC staff meetings.

Some of the paperwork used for team dispatch and tracking is cumbersome and could be consolidated. It was unclear as to why three copies of the team status form were needed.

The OSC supply cabinet was well stocked with all materials necessary for facility activation. Arriving personnel carried out the activation properly in accordance with procedure ZPIP 4.2, "Operations Support Center Activation and Operation". Initial arrivals to the OSC were well utilized by supervisors who directed them to dress out in a first set of protective clothing in anticipation of being sent into radiologically controlled areas. Equipment was then obtained and staged to facilitate ease of use as the need arose.

One event which hindered full activation of the OSC was the delay in arrival of health physics personnel until about 2000 hours. The OSC team coordinator temporarily compensated for this by having operators follow health physics procedures to provide assistance in preparing the support teams.

The inspector noted at least one weakness in the accuracy of information maintained regarding plant status and conduct of major evolutions. At [illegible], the team coordinator misinformed the first operations [illegible] that there had, as yet, been no plant evacuation.

Later, it appeared that the OSC director and the team coordinator were not aware that repair of bus 1B04 was imminent, obviating the need for sending personnel into a high radiation area to manually operate valves. Subsequent discussion with licensee personnel indicated that the two teams were purposely formulated in concert, so that the failure of either team would not prevent the valve manipulation, viewed as a high priority action.

The inspector followed one operations team sent into the auxiliary building to attempt identification of the leak. The team was directed to enter the auxiliary building via the Unit 1 facade 26 foot elevation passageway vice the southeast entry door. This

approach took them thru a significantly higher radiation field, especially since containment sump recirculation was in progress. The two team members did not appear confident in their assigned duties, resulting in some delays. After reporting on conditions in the lower level of the auxiliary building, the team was directed to stand by. The two members made little effort to find a low dose area in which to wait, choosing instead to stand in the 30 mR/hr field they had been in when making their report. Moving a relatively short distance would have placed them in a considerably lower dose rate area.

No violations or deviations were identified.

d. Emergency Operations Facility (EOF)

The EOF was set up and staffed within an hour of the declaration of the General Emergency. Except for the Emergency Support Manager (ESM) and Radcon/Waste Manager (RCWM) the EOF was ready for operations by 2115 hours. The offsite health physics office was set up quickly and efficiently.

EOF status reports were conducted at irregular intervals prior to EOF activation, although they were conducted very regularly after 2123 hours. These status reports appeared to remind EOF staff of the overall emergency status and directed the EOF toward priorities. Consideration should be given to conducting these briefings more regularly to establish and drive EOF priorities.

Plant status and radiological/meteorology status boards were updated quite regularly. The time of update was clearly noted on the boards. Updated meteorological conditions were obtained approximately every 30 minutes during the exercise.

Communications with the NRC, State and counties were completed expeditiously, with one communicator drafting the message updates using EPIP form 1.4, obtaining the ESM's approval, and distributing copies of these to the other communicators for dissemination to the other offsite agencies. These notifications and updates were delivered approximately every 30 minutes, unless new information became available sooner.

The ESM and RCWM did not arrive from corporate offices until 2147 hours and 2123 hours; however, each assumed his position, after a short briefing, and began to aggressively drive EOF operations.

The dose assessment program presented operators with some difficulties in performing timely projections. The program requests some ambiguous information and is not "user-friendly". The program also uses an eight-hour release duration default, which is very conservative and could lead to overly conservative protective action recommendations. The program does not have a separate user's manual, although procedures for program use are contained in EPIP 9.2.

During the latter stages of the exercise, it was noted that dose assessment personnel were continuing to utilize the 8-hour release duration default value. It was not apparent that efforts were being made to develop an improved release duration estimate value through discussion with other technical groups. As improved information becomes available, this value should be adjusted, and offsite authorities advised of such adjustments so that they can be incorporated into offsite dose calculations.

At 2200 hours, a portable air sampler was noted running in the EOF which was exhausting air in close proximity to the filter intake, resulting in recirculation of exhaust air. Discussion with plant personnel indicated that this was not the only portable air sampler in the plant configured in this manner. The observed air recirculation could result in lower measured airborne radioactivity levels, as a "representative sample" is not obtained.

This was raised to plant management as a current health physics concern, and a review of all plant air samplers was performed by licensee personnel. The licensee identified 57 low volume air samplers onsite, with eight currently in use with the sample head directly attached. Five of these were found with the inlet and exhaust posts oriented in the same direction. 31 low volume air samplers were not in use, and approximately 60% of these were similarly configured. Sample heads were reoriented to be approximately 180 degrees from exhaust posts, and additional corrective actions (dissemination of information via memo, training, routing of all low volume air samplers through health physics for inspection) are planned.

It was noted that the Plant Process Computer System (PPCS) terminal located in the technical support section of the EOF was somewhat difficult to read, due to a dim display.

No violations or deviations were identified.

e. Field Monitoring Teams

Field monitoring teams were only observed at the EOF during the exercise. The monitoring equipment, dosimetry and other gear needed for the field teams were satisfactorily checked for operational capability at the Site Boundary Control Center (SBCC) prior to dispatching the field teams. The briefings for the teams were conducted in depth, and included details on protective measures, sampling routes, and a sample pickup point outside the plant. Team No. 1 was dispatched at 2115 hours. Initial dispatch of this team was delayed due to concern about possible plume passage over the SBCC.

At 2145 hours, difficulty was encountered attempting to drop off the field samples at the plant, as security did not want to compromise the northern boundary of the plant by allowing personnel passage. This delayed receipt and processing of these samples. The results of the field team samples were not reported back to the EOF until 2315 hours.

The licensee has been reviewing methods of improving the speed of field sample collection and counting, in response to Open Item No.266/90006-01. Options exist for changing methods of sample delivery and sample counting (separate operations). Discussion with licensee personnel indicated that the time devoted to sample counting can be reduced by utilization of another sample counter (one sample will not have to await counter availability). Another option under consideration is the movement of analysis equipment from the TSC/OSC area to the EOF. This would reduce the time necessary for sample delivery, including processing through security requirements.

No violations or deviations were identified.

f. Joint Public Information Center (JPIC)

The JPIC was not directly observed during this exercise. A selection of press releases issued during the exercise was reviewed, without identification of any significant problems.

No violations or deviations were identified.

7. Exercise Objectives and Scenario Review (IP 82302)

The licensee submitted the exercise and scope and objectives and a draft scenario package for review by the NRC within the established timeframes. Scenario review did not indicate any significant problems, and the licensee adequately responded to questions raised during scenario review. The scenario package was adequate in scope and content to ensure ease of use and contained enough information so that licensee controllers could control the exercise.

The licensee's scenario was sufficiently challenging for a utility-only exercise, including: multiple equipment failures, and assembly/accountability.

The degree of challenge in an exercise scenario is considered when assessing observed exercise weaknesses.

No violations or deviations were identified.

8. Exercise Control

Overall, exercise control was considered adequate.

There were adequate controllers to control the exercise, and they were knowledgeable regarding their tasks. No instances of controller prompting were observed.

No violations or deviations were identified.

9. Licensee Critiques

The licensee held a Controller exercise critique, and a critique where the conclusions of the Controller/Evaluators presented their findings to

the players. NRC personnel attended these critiques, and determined that significant NRC identified exercise deficiencies had also been identified by licensee personnel.

During the licensee's critique of the exercise, the lead controller for the Control Room did not identify a number of the concerns of lesser significance which were noted by the NRC evaluation team.

10. Review of the Meteorological Information Program (IP 84750)

The primary, backup and inland monitoring sites, CR, TSC and EOF were toured. The inspector also reviewed and discussed the monitoring program manual prepared by its vendor, relevant procedures, correspondence, computer software documentation, the Updated Safety Analysis Report (USAR), the Emergency Plan and a sample of 1989 and 1990 maintenance and calibration records. Based on the information provided in the following paragraphs, there is reasonable assurance that in the event of an emergency, the onsite meteorological monitoring program will be operable and capable of providing good quality data to licensee, State, and Federal emergency responders.

Installation of the upgraded monitoring program was completed during the fall of 1984. The USAR only mentioned the existence of three monitoring towers, and did not provide the following types of information: the towers' locations; parameters measured at each location; measurement accuracies; system surveillance, maintenance and calibration provisions; information on data availability in the CR, TSC and EOF; and analyses of data from the upgraded program. The Emergency Plan and related implementing procedures had been adequately revised to provide the approximate locations of the towers, lists of parameters measured at each tower site, means by which their data were available in the CR, TSC and EOF, and backup sources of local meteorological information. However, the plan did not address monitoring program maintenance and calibration provisions or whether the instrumentation met the range and accuracy criteria of Regulatory Guide 1.23. The Emergency Plan should be revised to summarize monitoring program maintenance and calibration provisions, and to indicate that wind and temperature difference measurements meet the range and accuracy criteria of Regulatory Guide 1.23.

An adequate description of the monitoring program was found in Revision 0 of Emergency Plan Maintenance Procedure (EPMP) 5.0, PBNP Post-TMI Meteorological Monitoring Program Design, Operation and Maintenance. As indicated in EPMP 5.0, the primary purpose of the 10 meter inland tower's wind instrumentation was to help identify the existence of a lake breeze effect. The 45 meter primary tower and the 10 meter backup tower were located near the Lake Michigan shoreline to the South and North of the plant, respectively. The licensee indicated that the 45 meter tower was the same used in 1967-1968 for the collection of wind data only, whose analyses were found in the USAR.

Instrumentation installed at each tower site was as described in EPMP 5.0. Review of the vendor's program manual and other program records indicated that the wind speed, wind direction, temperature, temperature difference and wind direction fluctuation (sigma theta) measurements met the range and accuracy criteria of Regulatory Guide 1.23.

The towers were sufficiently distant from structures, trees and terrain obstacles which could adversely influence meteorological measurements. With the exception of a temperature sensor mounted within an aspirated shield on top of the inland tower's instrument shelter, all wind and temperature sensors were properly mounted. This temperature sensor's mounting was unimportant since its data had no use in offsite dose calculations. All three towers were equipped with lightning rods and were grounded. Signal conditioning equipment, housed within environmentally controlled shelters at each tower site, were provided with electrical surge protection. Wind sensors on all towers were equipped with heater elements to reduce the potential for inaccurate measurements due to the combined effects of low-temperature and moisture. The temperature sensor's shields were equipped with airflow sensing devices, so that insufficient airflow would result in an indication in the instrument shelter and on certain displays on the Plant Process Computer System (PPCS) terminals located in the CR, TSC, and EOF. With two exceptions, all monitoring subsystems were found to be currently calibrated during this inspection. A rain gauge was installed at the backup tower site, but had apparently not been calibrated for several years. A solar radiation sensor was installed on top of the instrument shelter at the inland tower site. Its calibration was similarly out of date. The licensee indicated that periodic calibration of both sensors electronics had been discontinued since there were no requirements to collect these data; however, analog readouts from both sensors were still available in the Control Room. The inspector agreed that precipitation and solar radiation data from these sensors were not required for emergency response purposes. Survey teams could easily provide onscene information regarding the presence or absence of precipitation, which could then be factored into emergency decisionmaking processes. It was unclear, however, whether emergency responders were aware that the precipitation sensor was no longer calibrated and that its data were suspect at best. Pending discontinuation of precipitation and solar radiation measurements, the licensee should ensure that appropriate Control Room personnel and other emergency responders are aware that these sensors are no longer being calibrated.

The analog output from each parameter's signal conditioning equipment is input to a telemetry transmitter for transmission to telemetry receivers at the plant. A dedicated, voice grade telephone line is used as the data link for the inland tower, while higher quality telemetry cables are utilized for the data transmission from the primary and backup towers. The telemetry receivers' converted outputs are input in parallel to analog chart recorders in the Control Room and to the plant process computer. No analog charts were installed at the monitoring sites, TSC, or EOF. Data stored in the plant process computer is accessible in the Control Room, TSC and EOF by using PPCS terminals. Digital readouts of wind speed, wind direction and ambient temperature from the primary tower were also located above a Control Room door. Since these readouts varied within one minute and did not include an atmospheric stability indication, these data would not be suitable for use in offsite dose calculations.

The monitoring program surveillance, maintenance and calibration provisions were adequate and as described in EPMP 5.0 and referenced Instrument and Controls Procedures (ICPs). Daily zero/span checks are automatically done for all analog recorders of meteorological data in the Control Room. Monthly surveillances of the towers, which were essentially visual observations of monitoring system components, are performed per ICP 7.30. Maintenance and periodic calibration of the Control Room's analog recorders are performed per ICP 6.3, while semiannual calibration of wind and temperature sensors and associated electronics are performed per ICP 6.55. The semiannual calibrations included several "preventive maintenance" aspects, such as the change out of wind speed and direction sensors, the alignment of replacement wind direction sensor's transmitters to fixed reference points, and the change out of temperature difference sensors and their electronics. ICP 6.55 included provisions for documenting the multi-point "as found" condition of components before change out, as well as documenting multi-point "as left" conditions of replacement components. Acceptable tolerances were clearly indicated on ICP 6.55 where appropriate. The licensee's meteorological laboratory was responsible for refurbishing sensors removed from the towers and for ensuring that the sensors and associated electrical components were within the manufacturer's specifications prior to shipment to the plant. Records review indicated that monitoring system calibrations had been performed semiannually, per ICP 6.55 and regulatory guidance.

Nonscheduled maintenance activities have been performed on an as needed basis, and were infrequent since 1989, based on a review of Maintenance Work Request (MWR) summaries. The most frequent problem in recent years has been the temporary loss of data telemetry capability from the inland tower, usually associated with the occurrence of local thunderstorm activity. MWR records indicated that investigative and corrective actions had been initiated within a reasonable number of hours following potential problem identifications since mid-1988, when the plant's Instrument and Controls Department assumed responsibility for monitoring system operations from the licensee's Environmental Group located in the Milwaukee, Wisconsin area.

There was some difficulty in determining the rough percentage of time that parameters, which could be utilized in offsite dose calculations, were available and of acceptable quality since mid-1988. Prior to mid-1988, the Milwaukee Environmental Group was responsible for performing quarterly data validation reviews which incorporated maintenance and calibration records plus review of analog chart recordings of each parameter being measured. This review may also have incorporated reduction of some or all analog data into hourly averaged digital data. Review of internal correspondence dated November 15, 1988 indicated that the quarterly averaged recovery rates for validated data, which could be utilized in offsite dose calculations, exceeded the 90 percent criterion in Regulatory Guide 1.23. The recovery rate statistics did take into account the acceptable practice of using data from a sensor mounted on the primary or backup tower in the event that a primary sensor's data were missing or were considered to be invalid. For example, if the only temperature difference measurement of atmospheric

stability were invalid or missing, a computed sigma theta for a wind direction sensor on the primary or backup tower constituted an acceptable substitute toward achieving 90 percent valid data recovery for atmospheric stability measurement. Similarly, if the primary wind speed or direction measurement became invalid or missing for the primary tower, the analogous measurement from a different sensor elevation on the primary tower or the backup tower was an acceptable substitute. Validated data recovery rates for individual parameters on the primary, backup and inland towers typically exceeded 90 percent between 1984 and mid-1988; however, this recovery rate was typically not achieved for one to three calendar quarters during this period.

Plant staff had apparently relieved the Environmental Group of the responsibility of performing manual data validations and computing validated data recovery rates in mid-1988. As part of a larger cost saving program, the licensee subsequently decided to discontinue the cumbersome manual data validation process, and to rely on the existence of multiple alternates for each primary sensor, daily zero/span checks of continuous analog readouts, monthly monitoring site visits, semi-annual calibrations with sensor changeouts and timely "as needed" maintenance as the strategy for achieving at least 90 percent recovery for all parameters which could be used in offsite dose assessments. The licensee correctly determined that there was no regulatory requirement to maintain validated data recovery rate statistics. The inspector concluded that the licensee had apparently incorrectly equated the manual validation process with the need to generate periodic validated data recovery rate statistics. However, based on a review of 1989 and 1990 MWR summaries and a sampling of calibration records, the inspector concluded that the licensee's strategy was adequate to provide reasonable assurance that at least 90 percent data representative of local conditions had been collected in 1989 and 1990 for those parameters which could be utilized in offsite dose assessments. The infrequent outages usually affected only the inland tower or were of a nature that repairs would have simply involved component replacement. Some MWRs were not however, considered as "closed" (completed) until a removed, defective component had been repaired. Actual review of analog or hourly digital data records, with all associated maintenance and calibration records, was well beyond the scope of this inspection.

The inspector determined how licensee and offsite agencies' staffs could be reasonably assured that monitoring program data, acquired during an emergency response, would be representative of local conditions. This determination included the review of computer software documentation with a cognizant engineer, discussions with the EP Coordinator and review of EPIP 9.2, Revision 16, "Radiological Dose Assessment".

Onsite meteorological data could be acquired using PPCS terminals in the CR, TSC, and EOF. Data displayed on output screen 352 were from all three towers, and were a mixture of 15 minute averaged and "instantaneous" values updated a number of times per minute. Computer software documentation indicated that data displayed on Screen 352 did not undergo any computerized quality control tests prior to display. However, meteorological data displayed on Screen 351, which also included

release rate and stack flowrate data, were 15 minute block averages and did undergo a number of computerized quality control tests prior to display. Values which would fail a test would be automatically replaced by values from a hierarchy of alternate sensors' data which had passed their acceptance test(s). Review of software documentation indicated that the data acceptance tests associated with Screen 352 were reasonable, and should be capable of identifying many types of obviously invalid or highly questionable data. A review of EPIP 9.2 indicated that it did not clearly refer the PPCS terminal user to output Screen 351 and not to Screen 352. Step 3.5 of the procedure only instructed the user not to use "instantaneous data"; however, Screen 352 contained a mixture of 15 minute averaged and instantaneous data. Thus, there was the potential for using data, which had not undergone acceptance testing, in offsite dose calculations and protective action decisionmaking.

No violations or deviations were identified.

11. Open Items

Open Items are matters which have been discussed with the licensee which will be reviewed further by the inspector and which involves some actions on the part of the NRC or licensee or both. An Open Item disclosed during this inspection is discussed in Paragraph 6.b of this report.

12. Exit Interview

The inspectors held an exit interview two days after the exercise on March 22, 1991, with the representatives denoted in Section 2.

The NRC Team Leader discussed the scope and findings of the inspection.

The licensee demonstrated an adequate response to a hypothetical scenario involving multiple equipment failures and a minor radiological release. Exercise performance was improved as compared to previous years, and significant improvements were observed in the Operations Support Center. Some confusion was noted as to event classification utilizing fission product barrier analysis. The meteorological program was found to be adequate.

During the Exit Interview, the Team Leader noted that one of the Emergency Planning consultants was nearing the end of his contract, and there was no current plan to replace this individual, effectively lowering emergency preparedness staffing by one person.

The licensee was also asked if any of the information discussed during the exit interview was proprietary. The licensee responded that none of the information was proprietary.

Attachments:
1. Point Beach 1991 Exercise Scope and Objectives.
2. Point Beach 1991 Exercise Scenario Outline.

4.0 EXERCISE SCOPE

4.0 EMERGENCY EXERCISE SCOPE

4.1 Overview

4.1.1 The 1991 Point Beach Nuclear Plant Emergency Plan exercise scenario will require activation of the Wisconsin Electric TSC, OSC, EOF, JPIC and various corporate support facilities.

4.1.2 The 1991 exercise will be conducted during hours which qualify as an off-hours exercise in accordance with NRC Guidelines.

4.1.3 The State of Wisconsin, Manitowoc and Kewaunee counties will participate ONLY to the extent of communications.

4.1.4 Scenario events will escalate to the General Emergency level.

4.1.5 Scenario events lead to a radiological release of sufficient magnitude to be tracked by field teams.

4.1.6 Protective action recommendations will be required due to plant conditions and a release of radionuclides to the environment.

4.1.7 The scenario will be designed to allow the participants to terminate the release and perform recovery actions within a reasonable time period.

4.2 Sequence of Events

4.2.1 The scenario begins at ~1715 with both Unit 1 and Unit 2 at 100% power. Unit 1 is at EOL; Unit 2 at MOL. 1RE-109 has begun to show elevated readings in the past day; a primary sample is in progress to verify primary coolant activity levels.

4.2.2 Weather is typical of mid-March. A moderate breeze is blowing from the Northeast, but is expected to lessen later in the evening. No rain is predicted.

4.2.3 At the beginning of the scenario, the RCT who is sampling coolant at the U-1 sample room is contaminated when a hose breaks loose. The HP showers are under repair and the RCT must be transferred to the TSC shower for decontamination.

4.2.4 Shortly after 1800, an electrical fire occurs in the 1B04 safeguards bus, resulting in a loss of power to all equipment powered from that bus. The operators will declare an ALERT based upon EPIP 1.2, Category 7, fire in one train of safety systems. Post-fire investigation will show that the end of a bus bar has been damaged. Restoration of power is possible through several paths but will challenge the operators to accomplish it in a reasonable time.

4.2.5 Loss of a safety train will place the plant on a 3 hour LCO. It is expected that they will begin a shutdown.

4.2.6 Upon attempting initial notification of the ALERT, the NAWAS system will be found to be out of commission on-site. It is expected that alternate methods of notification will be identified and utilized. Initial notification may exceed 15 minutes, but subsequent notifications should be made in a timely manner.

4.2.7 Shortly after 1900 hours, the cover blows off check valve 1SI-867B, resulting in an in-containment, 10-inch LOCA. The initial blowdown results in a short term uncovery of the upper core and some incore temperatures in excess of 900 degrees. A gap release of <10% is postulated to occur. The event will be classified as a SITE EMERGENCY based upon EPIP 1.2, Category 1, Abnormal Primary Leak Rate.

4.2.8 Following transfer of train A RHR pump to containment sump recirculation, failure of the 1P10A (RHR) pump seal creates a 100 gpm leak into the PAB and a radiological release out via the PAB vent stack. A 2% bypass of the charcoal filter allows some detectable iodine to be released to the environment.

This is a monitored release. The release will continue until recirculation is shifted to the other RHR pump and 1P10A is isolated. This requires restoration of power to 1P10B.

4.2.9 A GENERAL EMERGENCY is expected to be declared based upon fission product barrier criteria - the actual or imminent loss of two fission product barriers with the potential loss of the third. Protective action recommendations will be issued for sectors K, L, M, N, and P.

4.2.10 At approximately 2100, a bomb threat is received from offsite, indicating that an explosive device has been placed in the number two pipeway. An investigation is warranted, and entry into the high radiation space as a response to the bomb threat will be as per PBNP guidance and security procedures.

The bomb threat event will be terminated by controller message when the opportunity to demonstrate the associated objectives has been given.

4.2.11 Appropriate assessment and electrical repair is accomplished and/or an alternate power source is identified for 1P10B. This must be accomplished in order to secure the leaking RHR pump and terminate the release.

4.2.12 Following termination of the release by participant actions, the verification of conditions allowing recovery and reentry will be demonstrated.

4.2.13 The exercise will be terminated at the discretion of the Lead Exercise Controller, in coordination with the Lead Facility Controllers.

POINT BEACH NUCLEAR PLANT
1991 EP EXERCISE

MARCH 19, 1991

EVENT 1 SUMMARY

EVENT:	Contaminated RCT
DESCRIPTION:	At 1735, while an RCT is sampling coolant at the U-1 sample room, a gas bubble causes the hose to fly loose and spray the RCT with reactor coolant. The RCT is contaminated on the neck, chest, shoulder, arms, and hair.
CHALLENGING ASPECTS:	The HP showers are tagged OOS. The individual must be transferred to the TSC shower for decontamination without contaminating the travel path. The HP tech must also ensure that the contamination procedure is properly carried out to the appropriate standards.
EXPECTED ACTIONS:	The contaminated individual is transferred to the TSC, the shower set up in accordance with procedures and decontamination performed. Follow up frisks and a successful pass through two PCM1B's.
MOCKUPS/ SIMULATIONS:	The RCT will be dressed to preclude "contamination" of other spaces during transfer to the TSC. Actual decontamination and followup frisking should be performed with the appropriate instruments.

POINT BEACH NUCLEAR PLANT
1991 EP EXERCISE

MARCH 19, 1991

EVENT 2 SUMMARY

EVENT: Fire in 480 V Vital Bus 1B04

DESCRIPTION: A fire in the 1B04 safeguards bus cabinet causes loss of power to all equipment powered from that bus. Halon activation and a bus tie trip will act to put out the fire, with or without fire brigade intervention. Upon investigation, the fire will be found to have damaged a bus bar. The damage is repairable.

CHALLENGING ASPECTS: The operators will be challenged to (a) recognize the event and take appropriate action, (b) recognize that an ALERT condition is warranted, (c) recognize that an LCO (plant shutdown required) has been entered and (d) determine that repair is possible.

EXPECTED ACTIONS: Dispatch of the fire brigade upon identification of the problem is expected immediately, as well as verification of equipment lost. Recognition of entry into an emergency classification condition and a Technical Specification LCO situation is expected, along with the appropriate responses for each condition.

MOCKUPS/ SIMULATIONS: Photos/drawings/sketches will be utilized, along with other descriptive material, to indicate damage during the 1B04 investigation phase, as the removal of the panel back WILL BE simulated. Fire alarms, switch indications, and equipment run status will be simulated.

POINT BEACH NUCLEAR PLANT
1991 EP EXERCISE

MARCH 19, 1991

EVENT 3 SUMMARY

EVENT:	NAWAS Failure
DESCRIPTION:	Following declaration of an emergency classification level, the person attempting to make the initial notification to the state and counties will discover that the NAWAS communications link is inoperable.
CHALLENGING ASPECTS:	The communicator will be challenged to determine, through use of the appropriate EPIPs, an alternate method to notify the state and counties of the ALERT condition, and to do so within the 15-minute initial notification allowable time period. The communicator is further challenged to determine an appropriate off-hours number.
EXPECTED ACTIONS:	The communicator will utilize EPIP 2.1 and EPIP-23 to determine an alternate means of communication and perform the initial notifications as per EPIP-12.
MOCKUPS/ SIMULATIONS:	A telephone resembling the NAWAS unit - but disconnected - will be utilized to aid in keying the communicator to the problem.

POINT BEACH NUCLEAR PLANT
1991 EP EXERCISE

MARCH 19, 1991

EVENT 4 SUMMARY

EVENT: In Containment, 10-inch LOCA

DESCRIPTION: During the power rampdown the cover on check valve 1SI-867B blows off, producing an unisolable break in the loop B cold leg. The RCS rapidly depressurizes, and a reactor trip and SI are generated on low pressure. All train A safeguards equipment operates correctly. The short time uncovery of the fuel during RCS blowdown causes minor fuel damage and a gap release (<10%). The RWST will be rapidly depleted and a shift to sump recirculation will be required in approximately one hour.

CHALLENGING ASPECTS: The operators are challenged to identify the condition and correctly reclassify the event. The operators are also challenged to carry out the provisions of EOP-0, EOP-1, EOP-1.3 and EOP-1.4. During the performance of EOP-1.4, they are challenged to manually (simulate) reposition of the "B" train valves to preclude later difficulty in the scenario. Time constraints for recirculation are very challenging.

EXPECTED ACTIONS: The operators are expected to correctly classify the event, make notifications, and carry out the provisions of the EOPs. The establishment of recirculation during the allotted time will be difficult.

MOCKUPS/ SIMULATIONS: All plant manipulations associated with the LOCA will be simulated.

POINT BEACH NUCLEAR PLANT
1991 EP EXERCISE

MARCH 19, 1991

EVENT 5 SUMMARY

EVENT:	RHR Recirculation - Radiological Release
DESCRIPTION:	Upon transfer of train A RHR pump to containment sump recirculation at approximately 2030, a beyond design specifications failure of the 1P10A (RHR) pump seal creates a 100 gpm leak into the PAB and a radiological release via the PAB vent stack. This is a monitored release. A small bypass of the charcoal filter allows a small amount of iodine in the release. The release will continue until recirculation is shifted to the alternate RHR pump and 1P10A is isolated. This requires restoration of power to 1P10B.
CHALLENGING ASPECTS:	The operators will be challenged to determine the source of the release and devise a means to terminate it by reenergizing 1P10B. They will have to evaluate the change in plant status, reclassify, and develop new PARs. Field teams will be challenged to detect and define a low level, narrow plume under nighttime conditions.
EXPECTED ACTIONS:	The operators will evaluate presented indications and conditions to determine that a release is in progress and the source of that release. They will determine a termination plan and implement it. Restoration of power to 1P10B pump is a win path. It is probable that a GENERAL EMERGENCY will be declared.
MOCKUPS/ SIMULATIONS:	Data will be available for a variety of win path responses. Temporary power cables will be used up to the point of connection if that method of re-powering is selected.

POINT BEACH NUCLEAR PLANT
1991 EP EXERCISE

MARCH 19, 1991

EVENT 6 SUMMARY

EVENT:	Bomb Threat - Number Two Pipeway
DESCRIPTION:	At approximately 2100, a bomb threat is received from outside the plant, indicating that a bomb has been placed in the No. 2 pipeway. An investigation, when conducted, will indicate that no bomb is in the pipeway. A subsequent phone call or cue will indicate that the threat was a hoax.
CHALLENGING ASPECTS:	Security is challenged to respond to the threat (in accordance with the security plan) and to determine the possible personnel who COULD have had access to the cubicle. The players are challenged to determine the dose levels in the pipeway and arrange for a high radiation level entry for investigative purposes (in accordance with EPIP 5.1).
EXPECTED ACTIONS:	It is expected that the potential for further damage to the recirculation path should justify an investigation of the pipeway. The bomb threat will be responded to as per PBNP guidance.
MOCKUPS/ SIMULATIONS:	The calls will be placed by a control cell actor using an outside line. NO mockup will be utilized, as no bomb will be found, and followup call or termination cue will be utilized to positively control the event.

POINT BEACH NUCLEAR PLANT
1991 EP EXERCISE

MARCH 19, 1991

EVENT 7 SUMMARY

EVENT: RHR Recirculation Shift - Release Terminacion

DESCRIPTION: Upon restoration of power to 1P10B, recirculation may be shifted to that pump and 1P10A secured and isolated, either manually or by the containment sump "B" valves. This will terminate the release. After approximately 15 minutes, the PAB sump alarms will clear and the RMS alarms will be clearing.

CHALLENGING ASPECTS: Recognition that ONLY power restoration will terminate the release is the major challenge the operators have in this event. The actual restoration of power to 1P10B is also a challenging event.

EXPECTED ACTIONS: It is expected that the maintenance personnel will try to repair the 1B04 bus bar, either by replacement of the entire bar, or by removing the burned section and reenergizing the bus from the Un-damaged sector. It is also possible that temporary jumper cables may be run to the "B" RHR pump or that another alternate source may be utilized.

MOCKUPS/ SIMULATIONS: A fire in the 1B04 safeguards bus cabinet causes loss of power to all equipment powered from that bus. Halon activation and a bus tie trip will act to put out the fire, with or without fire brigade intervention. Upon investigation, the fire will be found to have damaged a bus bar. The damage is repairable.

POINT BEACH NUCLEAR PLANT
1991 EP EXERCISE

MARCH 19, 1991

EVENT 8 SUMMARY

EVENT:	Recovery and Reentry Operation
DESCRIPTION:	Following (a) restoration of power to 1B04 (or reenergization of 1P103), (b) termination of the release, and transfer of EOF functions to the backup facility, the recovery and reentry process will be demonstrated.
CHALLENGING ACPECTS:	Recognition and verification of conditions allowing recovery and reentry is the primary challenge associated with this event.
EXPECTED ACTIONS:	The ESM will coordinate with the site manager and emergency director to verify the event termination criteria and begin recovery proceedings in accordance with EPIP 12.1 and 12.2.
MOCKUPS/ SIMULATIONS:	None

3.0 OBJECTIVES/EVALUATION

OBJECTIVES
March 1991 Exercise

3.0 Wisconsin Electric will demonstrate the ability to implement the Emergency Plan to provide for protection of the public health and safety in the event of a major accident at the Point Beach Nuclear Plant. The 1991 exercise will be conducted during the hours which qualify as an off-hours exercise in accordance with NRC Guidelines.

3.1. Assessment and Classification

a. Initiate an evaluated Emergency Exercise between the hours of 6:00 p.m. and 4:00 a.m. (Ref: PO 50)

b. When provided information by the exercise scenario, demonstrate the ability to assess initiating conditions which warrant an Emergency Classification. (Ref: 90EX; PO 8) [CR, TSC]

c. Demonstrate the ability of the [ERF] staff to correctly classify an emergency event using the EPIPs. (Ref: PO 8) [CR, TSC]

3.2. Notification and Communications

a. Demonstrate the ability to notify on-site personnel of emergency classification(s) using the plant Gai-tronics system. (Ref: PO 20) [CR, TSC]

b. Demonstrate the ability to make notifications to offsite state and county emergency governments, using EPIP 2.1, within fifteen (15) minutes of making an Emergency classification. (Ref: PO 9) [CR, TSC]

c. Demonstrate the ability to make notifications to the NRC within one (1) hour of the emergency classification using EPIP 2.2. (Ref: PO 9) [CR, TSC]

d. Demonstrate the ability to use alternate communications following a failure of NAWAS. (Ref: PO 37) [CR, TSC]

e. Demonstrate the ability of ERF management to provide briefings and updates concerning plant status, event classification, activities, and assumption of responsibilities approximately every hour. (Ref: 90EX; PO 20, 56) [CR, TSC, OSC, EOF]

f. Demonstrate the ability to direct a plant evacuation, utilizing the Gai-tronics system, in accordance with EPIP 6.2. (Ref: PO 20) [CR, TSC]

g. Demonstrate the ability to provide information updates to the state and counties at least hourly and within thirty (30) minutes of changes in monitored conditions using the appropriate EPIP forms. (Ref: PO 11, 12, 13) [CR, TSC, EOF]

h. Demonstrate the ability to provide information updates to the NRC at least hourly and within thirty (30) minutes of changes in monitored conditions using the appropriate EPIP forms. (Ref: PO 14) [CR, TSC, EOF]

i. Demonstrate the ability of personnel using radios to communicate effectively. (Ref: 90EX; PO 10) [OSC, OSHPF]

j. Demonstrate the ability to provide the state with frequent, periodic dose projection updates. (NRC 90006-03) [EOF]

3.3. Radiological Assessment and Protective Actions

a. Demonstrate the ability to accurately determine current meteorological data from control room instrumentation. (Ref: PO 17) [CR]

b. Demonstrate the ability to make appropriate protective action recommendations (PARs) promptly after completing an offsite dose projection or completion of a PAR determination segment of any EPIP. (Ref: PO 42, 59) [TSC, EOF]

c. Demonstrate the ability to monitor and control exposure of all persons assigned. (Ref: PO 22) [CR, TSC, OSC]

d. Demonstrate the ability to establish radiological monitoring and controls of assembly areas in accordance with established policies and plant procedures. (Ref: PO 22) [OSC]

e. Demonstrate the ability to align, or verify alignment of the ventilation systems in accordance with the EPIP ERF activation procedures. (Ref: PO 22) [TSC, EOF]

f. Demonstrate the ability to start up, or verify alignment of the ERF radiological monitoring systems in accordance with the ERF activation procedures. (Ref: PO 22) [TSC, EOF]

g. Demonstrate the ability to compare estimated doses to the appropriate PAGs to determine PARs. (Ref: PO 34) [TSC, EOF]

h. Using information provided by the exercise scenario, demonstrate the ability to calculate offsite dose projections in accordance with appropriate procedures, programs and guidance. (Ref: PO 34) [TSC, EOF]

i. Demonstrate the ability to issue respiratory protection equipment to emergency personnel. (Ref: PO 21) [OSC, OSHPF]

j. Demonstrate the ability to properly use respiratory equipment. (Ref: PO 21) [OSC, OSHPF]

k. Demonstrate the ability to employ protective clothing as part of emergency response. (Ref: PO 21) [OSC, OSHPF]

l. Demonstrate the ability of the onsite monitoring team to accurately provide survey information for conditions presented in the exercise scenario. (Ref: PO 22) [OSC]

m. Demonstrate the ability to periodically monitor personnel dose levels to promote ALARA. (Ref: PO 31) [CR, TSC/OSC, OSHPF]

n. Demonstrate the ability to brief personnel for entry into a high radiation area in accordance with plant policies and EPIP 10.1. (Ref: PO 27) [OSC]

o. Demonstrate the ability of OSC personnel to obtain previous exposure records for team personnel and to integrate them into current records. (Ref: PO 30) [OSC]

p. Demonstrate the ability to monitor, track and document radiation exposure to in-plant teams in accordance with established policies and plant procedures. (Ref: PO 30) [OSC]

q. Demonstrate the ability to set up a dosimeter control point to ensure all personnel have been issued proper dosimetry. (Ref: PO 31) [TSC/OSC, SBCC]

r. Demonstrate the ability to issue dosimetry in accordance with EPIP 7.7.2 and PBNP Health Physics procedures. (Ref: PO 31) [CR, TSC/OSC, SBCC]

s. Demonstrate the ability to perform decontamination of radioactively contaminated individuals in accordance with established policies and procedures. (Ref: PO 32) [OSC]

t. Demonstrate the ability to collect and document all in-plant radiological surveys taken for conditions presented in the scenario in accordance with EPIP 4.2. (Ref: PO 33) [OSC]

u. Demonstrate the ability to make the decision, based on EPIP 5.2 and EP 6.5 criteria, whether to issue KI to emergency workers. (Ref: PO 45) [TSC]

v. Demonstrate the ability to supply and administer KI within its window of effectiveness, if a decision is made to do so. (Ref: PO 45) [TSC]

w. Demonstrate the ability to obtain an air sample, analyze it, and provide the results for a dose projection calculation within a one (1) hour time period, using the appropriate HP procedures and EPIPs. (Ref:NRC 90006-1; PO 34) [OSHPF]

x. Demonstrate the ability to perform radiological monitoring of site evacuees in accordance with EPIP 6.7 and PBNP Health Physics procedures. (Ref: PO 25) [OSHPF]

y. Demonstrate the ability to authorize personnel exposure beyond 10 CFR 20 limits. (Ref: PO 28)

z. Demonstrate the ability to determine and evaluate vital plant parameters and evaluate safety system function, core status, and fission product barriers. (Ref: PO 19) [CR, TSC]

3.4. Emergency Facilities

a. Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions based upon specified emergency classifications. (Ref: PO 1,16) [OSHPF, CEC]

b. Demonstrate the ability to augment the TSC within 30 minutes of the Alert classification and be activated within one hour of the Alert classification or direction to activate by competent authority, in accordance with the EPIPs. (Ref: PO 1,16) [TSC]

c. Demonstrate the ability to staff and activate the OSC within one hour of the Alert classification or direction to activate by competent authority, in accordance with the EPIPs. (Ref: NRC 90006-2; PO 1,16) [OSC]

d. Demonstrate the ability to maintain plant parameters and fission product barrier status boards with current data (e.g., not more than 30 minutes old). (Ref: PO 29, 58) [TSC, EOF]

e. Demonstrate the ability to set up and maintain reentry status boards. (Ref: NRC 90006-2; PO 29) [OSC]

f. Demonstrate the ability to maintain meteorological status boards with recent data (e.g., not more than 30 minutes old). (Ref:90EX; PO 29) [TSC, OSHPF, EOF]

g. Demonstrate the ability to staff and activate the EOF with site personnel within one-hour of the Site Emergency classification or direction to activate by competent authority, and within two hours with corporate personnel in accordance with the EPIPs. (Ref: PO 01) [EOF]

3.5. Emergency Direction and Control

a. Demonstrate the ability to augment the control room staff within 30 minutes of an appropriate emergency classification in accordance with the Emergency Plan, i.e., DCS, TSC manager, I&C supervisor, Chemistry director, HP director, and the radiochemical technician. (Ref: PO 3) [CR]

b. Demonstrate the ability to contact and secure assistance from offsite emergency response resources. (Ref: PO 7) [Security]

c. Demonstrate the ability to operate the OSC in accordance with applicable EPIPs. (Ref: NRC 90006-2; PO 16) [OSC]

d. Demonstrate the ability of TSC personnel to maintain the personnel status board up-to-date. (Ref: 90DR; PO 29) [TSC]

e. Demonstrate the ability of the TSC staff to aggressively pursue actions to terminate the release following its identification. (Ref:90EX; PO 57) [TSC]

f. Demonstrate the ability to prioritize Operations and Maintenance activities during abnormal and emergency situations. (Ref: PO 63) [CR, TSC, OSC]

g. Based on information provided by the Exercise scenario, demonstrate the ability to determine if site evacuation of non-essential personnel is required in accordance with EPIP 6.2 or EPIP 6.7. (Ref: PO 23) [CR, TSC]

h. Demonstrate the ability to evacuate contractor personnel to the SBCC in accordance with EPIP 6.2. (This may be demonstrated from the CR, TSC.) (Ref: PO 23) [CR, TSC]

i. Demonstrate the ability to accomplish personnel accountability within 30 minutes of announcement of plant evacuation. (Ref: PO 44) [Security]

j. Demonstrate the ability to assess in-plant radiological conditions using available information. (Ref: PO 60) [OSC]

k. Demonstrate the ability to develop reentry routes to ensure that reentry doses are consistent with ALARA principles. (Ref: PO 60) [OSC]

l. Demonstrate the ability to organize, dispatch, and manage reentry teams in accordance with applicable EPIPs. (Ref: NRC 90006-2) [OSC]

m. Demonstrate the ability of the ERF staff to develop and maintain 24-hour staffing. (Ref: PO 02) [TSC, OSC, EOF, JPIC, CEC]

n. Demonstrate the ability to conduct a shift relief in the control room (drill control room using oncoming shift personnel). (Ref: PO 02) [CR]

3.6. Public Information

a. Demonstrate the ability to staff the Corporate Emergency Response-Public Information Center (CERPIC) within one (1) hour of notification of the classification. (Ref: PO 06) [CEC]

b. Demonstrate the ability to brief the media in a clear, accurate, and timely manner. (Ref: 90EX) [JPIC]

c. Demonstrate the ability to staff the JPIC with site personnel within one hour of the Site Emergency classification or direction to activate by competent authority, and activate within two hours with corporate personnel in accordance with the EPIPs. (Ref: PO 38) [JPIC]

d. Demonstrate the ability to establish and effectively operate a utility rumor control program at the JPIC. (Ref: PO 39) [JPIC]

3.7. Reentry and Recovery

a. Demonstrate the ability to acquire emergency equipment and supplies necessary to mitigate or control unsafe or abnormal plant conditions. (Ref: PO 54) [TSC,EOF]

b. Demonstrate the ability to augment the staff to provide technical support for planning and recovery/reentry operations. (Ref: PO 4) [TSC, EOF]

c. Demonstrate the ability to analyze conditions for entering the recovery mode. (Ref: PO 49) [EOF]

d. Demonstrate the ability to utilize the appropriate recovery/reentry procedures to allow reentry and recovery of an evacuated area. (Ref: PO 49) [TSC, EOF]

3.8. Offsite Agency Coordination

Demonstrate the ability to augment the staff to provide management level interface with government authorities. (Ref: PO 05) [TSC, EOF, CEC]

6.0 TIME SCHEDULE OF REAL AND SIMULATED SCENARIO EVENTS

Key Event	Real Time	
	1715	Exercise is initiated with drill CR brief. 1RE-109 showing elevated readings.
1	1735	-- to ~1800: Contaminated (uninjured) RCT...to demonstrate decontamination capability in TSC area.
2	1805	Fire in 1B04. Bus bar burns. Loss of 1B04. NO reactor trip. Unit 1 placed in three hour LCO.
	~1810	Decontamination completed -- clean frisk.
	1820	ALERT declared based on EPIP 1.2, Category 7. Fire in one train of safety systems.
3	~1820	NAWAS failure on initial notification.
	1830	-- 2145: Investigation and repair efforts on 1B04 continue.
	1845	Power ramp down begins at 3/4% per minute.
4	1910	IN CONTAINMENT LOCA (valve cover blows off of 1SI-867B), RCS depressurizes, Rx trip from ~80%, SI initiates.
	1925	SITE EMERGENCY declared based on Category 1., Abnormal Primary Leak Rate.
	~1940	RWST at 60%.
	2001	Containment sump recirculation begins.
5	~2030	"A" RHR (1P10A) seal fails at ~100 gpm into PAB. Radiological release begins.
	~2035	Heat, humidity or mechanical cracking allows ~2% bypass of charcoal filter -- iodine in environment.
	(~2045)	A GENERAL EMERGENCY is expected to be declared based on fission product barrier criteria.
6	2100	Bomb threat received -- caller says device has been placed in number 2 pipeway.
	~2130	Investigation of No. 2 Pipeway is expected. Permission for exposure > 10 CFR 20 limits required. No bomb found.
7	2115--	--to 2230: Repairs result in power available to 1P10B. Shift made in RHR pumps and the release secured.

Key Event	Real Time	
	2210	Close out bomb threat. Hoax indicated.
	~2215	Oncoming operators demonstrate shift relief in drill control room.
	~2230	Plant conditions stable. Recirc in progress.
8	>2230	Recovery/reentry planning. Set up 24 hour rotation for ERFs (except drill CR).
	2230 to 2330	Secure from exercise. On location critiques.
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	1000	Exercise critique; exercise controllers, evaluators and major players.