

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-305/82-23(DEPOS)

Docket No. 50-305

License No. DPR-43

Licensee: Wisconsin Public Service Company  
Post Office Box 1200  
Green Bay, WI 54305

Facility Name: Kewaunee Nuclear Power Plant

Inspection At: Kewaunee Site, Kewaunee, WI

Inspection Conducted: November 29 through December 3, 8-10 and 13, 1982

Inspectors: *J. A. Pagliaro*  
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1/14/83

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1/17/83

Inspection Summary

Inspection on November 29 through December 3, 8-10 and 13, 1982 (Report No. 50-305/82-23(DEPOS))

Areas Inspected: Routine, announced inspection to review action taken in response to the Emergency Preparedness Implementation appraisal, "Significant Appraisal Deficiencies," "Notice of Violation," "Appraisal Improvement Items," and "Open Items" sent by letter dated October 29, 1981, from Mr. J. G. Keppler to Mr. E. R. Mathews. The inspection involved 166 inspector-hours onsite by two NRC inspectors and two consultants.

Results: No items of noncompliance or deviations were identified.

## DETAILS

### 1. Persons Contacted

- \*J. S. Richmond, Plant Services Superintendent - Wisconsin Public Service (WPS)
- \*D. C. Hintz, Manager - Kewaunee Plant - WPS
- \*M. L. Marchi, Technical Supervisor - WPS
- \*C. A. Schrock, Nuclear Licensing and Systems Supervisor - WPS
- \*W. S. Winnowski, Radiochemistry Supervisor
- \*D. R. Seebart, Nuclear Emergency Preparedness Coordinator - WPS
- \*R. P. Pulec, Plant Nuclear Engineer - WPS
- \*W. Bartelme, Emergency Planning Specialist - WPS
- \*M. T. Reinhart, Radiation Protection Supervisor - WPS
- J. Klaus, Radiochemistry Technologist - WPS
- W. Flint, Lead Radiochemistry Technologist - WPS
- R. Hartfield, Radiation Protection Technician - WPS
- P. O'Brien, Training Specialist
- J. J. Wallace, Nuclear Systems Supervisor - WPS

\*Denotes those present at exit interview.

### 2. Scope of the Inspection

This inspection was conducted to follow up on deficiencies and a noncompliance identified during the Emergency Preparedness Implementation Appraisal conducted June 8-19, 1981. The deficiencies and the noncompliance identified during the appraisal were documented in letters from Mr. J. G. Keppler to Mr. E. R. Mathews dated June 22, 1981, (Immediate Action Letter) and October 29, 1981, which transmits the appraisal report, IE Report No. 50-305/81-13.

The Immediate Action Letter identified eight significant deficiencies which were included in the NRC report transmitted by the October 29, 1981, letter. The licensee completed action on these eight deficiencies as found during the inspection conducted October 14-16, 1981 (IE Report No. 50-305/81-13). This report (50-305/82-13) serves to formally close out these open items.

The licensee responded to the Immediate Action Letter by letter from Mr. E. R. Mathews, WPS, to Mr. J. G. Keppler, NRC, dated September 25, 1981, and to the October 29, 1981 letter by letter from Mr. E. R. Mathews to Mr. J. G. Keppler dated November 30, 1981. The inspectors used these licensee responses in conducting this inspection.

### 3. Action on Appendix A Items of October 29, 1981, Letter

#### a. Planning Standard (b)(2) Onsite Emergency Organization

##### (1) Deficiency

Measures have not been taken to provide minimum shift staffing and augmentation as specified in NUREG-0654,

Revision 1 Evaluation Criteria II.B.5. and the licensee has not provided an acceptable alternative. (305/81-13-01) (Closed)

#### Licensee Response

"NUREG-0654, Rev. 1, Table B-1, specifies minimum shift staffing and augmentation to provide for emergency situations. Our April 10, 1981, letter to Mr. D. Eisenhut provided to NRC staff with an alternative on-shift staffing and our proposed method of augmented (30 and 60 minute) staffing. At the time of our Emergency Appraisal (June 1981), we had not received any word of the acceptability of our proposal. We understood from conversations with the Emergency Preparedness Appraisal Staff that our proposal would be unacceptable since we did not meet all of the specific functional requirements of Table B-1. Since that time we have reconsidered our position and have committed to meet all of the functional requirements in our letter to Mr. D. Eisenhut of September 10, 1982. In both letters, and previous to that in our January 5, 1981, response to NUREG-0737, we informed the staff that it would be impractical to meet the training requirements by the established date of July 1, 1982 and proposed alternate reasonable compliance dates.

In our concern to meet minimum shift staffing specified by Table B-1, we met with both NRR and I&E headquarters staff in Bethesda, MD, on November 23, 1981, to convey our position in regard to this matter. Under their suggestion we are providing, under separate cover letter, the justification of our alternate compliance dates."

#### Inspection Findings

In the letter from Mr. E. R. Mathews to Mr. Darrel G. Eisenhut, dated September 10, 1981, and during the November 23, 1981, meeting the licensee made the following commitments for minimum shift staffing and compensatory measures for the onsite staff.

- |   |                                    |  |
|---|------------------------------------|--|
| 1 | Shift Supervisor (SRO) -           | currently on-shift   |
| 1 | Assistant Shift Supervisor (SRO) - | will be provided on-shift by January 2, 1984. In the interim will be augmented via pager system and available within 30 minutes. |
| 2 | Control Room Operators (RO) -      | currently on-shift   |
| 2 | Auxiliary/Equipment Operators -    | currently on-shift   |

- |   |                           |   |
|---|---------------------------|---|
| 1 | Communicator -            | will be provided by January 2, 1983. In the interim will be augmented via pager system and available within 30 minutes. |
| 1 | Radiation Technologist -  | currently on-shift  |
| 1 | Rad Chem Technologist -   | will be provided by January 2, 1983. In the interim will be augmented via pager system and available within 30 minutes. |
| 1 | Shift Technical Advisor - | currently on duty 24 hours through a sleep-in arrangement and available to the Control Room within 10 minutes.          |

The licensee presently uses a pager system for about 113 personnel, both corporate and plant staff, to augment their emergency organization. Test Support Procedure (TSP) 44-3 has been developed and used to provide quarterly tests of the pager system. The quarterly pager tests have shown in the four test results reviewed by the inspector that a sufficient number of personnel could have responded in 30 and 60 minutes, but that in two of the four tests the health physics area could not be covered in sufficient depth. A drill conducted on the evening of December 2, 1982, indicated that the health physics depth problem has been solved. Additional Health Physics Technicians have been qualified to respond to emergency functions and the licensee is actively recruiting two additional Health Physics Technicians. A problem was encountered with the functioning of the paging transmitter's operability in inclement weather during the December 2, 1982, drill. The licensee committed, during the Exit Interview to examine the pager units and transmitter equipment problems and correct any malfunctions. This item will be carried under 305/82-23-01. 305/81-13-01 is closed.

(2) Deficiency

An augmentation and staffing procedure for the first 30 and 60 minutes of an emergency has not been provided. (305/81-13-02)  
(Closed)

### Licensee Response

"Since the upgraded emergency planning requirements were proposed by the staff, we have planned on augmenting our on-shift staff with the use of a pager system. At the time of the appraisal we had procured and assigned 60 pagers and had ordered another 60. We had not run an unannounced test at the time. Our intent is to assign enough pagers to personnel so that a minimum response would exceed Table B-1 requirements. Even though our cross training has not been completed (see our September 25, 1981 response to your Immediate Action Letter) our preliminary tests show that the total number of responding personnel exceeded the total number required by Table B-1. These tests included unannounced drills on weekday evenings, weekends, a Friday evening and a summer holiday. We do not anticipate the need for a formal on-call duty roster. We have shown, through unannounced drills, that we can meet the minimum augmented staffing of Table B-1.

Furthermore, specific procedures have been written to initiate the augmentation of the on-shift staff during an emergency situation. These procedures include:

- EP-AD-7 Unusual Event Notification
- EP-AD-8 Alert Notification
- EP-AD-9 Site Emergency Notification
- EP-AD-10 General Emergency Notification
- EP-AD-17 Communications
- EP-EOF-3 Corporate Response to an Unusual Event
- EP-EOF-4 Corporate Response to an Alert
- EP-EOF-5 Corporate Response to a Site Emergency
- EP-EOF-6 Corporate Response to a General Emergency"

### Inspection Findings

The licensee has provided augmentation and staffing procedures for the first 30-60 minutes of an emergency. The inspector reviewed these procedures and found them to be adequate.

#### (3) Deficiency

The procedure defining the Emergency Director's responsibilities, ACD 12.1., does not define those responsibilities which can not be delegated. (305/81-13-03) (Closed)

### Licensee Response

"Each Emergency classification procedure (i.e., EP-AD-3 Unusual Event, EP-AD-4, Alert, etc.) states those responsibilities of the Emergency Director which cannot be delegated."

Inspection Findings

EP-AD-3, 4, 5, and 6 have been reviewed by the inspector. Each procedure contains a "Section 2.0 Precautions" which lists the responsibilities which the Emergency Director may not delegate. This item is closed.

b. Planning Standard (b)(4) (Emergency Classification System)

(1) Deficiency

Several Emergency Operating Procedures do not provide a requirement that the user notify the SRO (Acting Plant Manager) of a possible Emergency Action Level requiring implementation of the Emergency Plan. (305/81-13-04)  
(Closed)

Licensee Response

"All Emergency Operating Procedures (EOP's) will be revised to include a precaution to operations personnel to review Emergency Plan Implementing Procedures to evaluate if the emergency response organization should be activated. This will be completed by March 1, 1982."

Inspection Findings

A review of the Emergency Operating Procedures E-0-01 through E-0-10 showed that each of these procedures contained a statement for operations personnel to review the Emergency Plan Implementing Procedures to evaluate if the emergency response organization should be activated. This item is closed.

(2) Deficiency

The initiating conditions for emergency levels listed in the emergency plan and procedures are not based on observable and reliable indicators for plant operating parameters, nor are they described in sufficient detail to categorize an incident at the appropriate emergency action level. (305/81-13-05)  
(Closed)

Licensee Response

"Initiating conditions for emergency levels were reviewed, and observable and reliable indicators of plant parameters were incorporated into procedure EP-AD-2, Emergency Classification Determination, and the Emergency Plan (Table 4-1). This item was noted in the Immediate Action Letter and found acceptable during the subsequent routine safety inspection."

### Inspection Findings

Emergency Plan Implementing Procedure EP-AD-2, Revision B, dated October 13, 1982, was reviewed for its adequacy in identifying initiating conditions for emergency levels based on observable and reliable indicators of plant parameters. The procedure was determined to be sufficiently detailed and adequate. EP-AD-2 was also reviewed during a routine safety inspection (Report No. 50-305/81-23) on October 14-16, 1981, and found acceptable. This item is closed.

#### c. Planning Standard (b)(6) (Emergency Communications)

##### (1) Deficiency

An acceptable system to notify the general public as specified in Appendix 3 of NUREG-0654 has not been developed and implemented. (305/81-13-06) (Closed)

##### Licensee Response

"A siren system is currently being installed to provide prompt alerting of residents within the emergency planning zone (EPZ) as specified in Appendix 3 of NUREG-0654. A detailed description of the alerting and notification system is included in the WPS submittal to Mr. J. G. Keppler, dated November 20, 1981."

### Inspection Findings

The initial Emergency Preparedness Implementation Appraisal (IE Report No. 50-409/81-13) identified deficiencies in the ability of the Manitowoc County and Kewaunee County Sheriff's Offices and the U.S. Coast Guard to notify the general public of an emergency condition within a 15 minute period. Subsequent to the appraisal an integrated siren system has been installed. (Letter to J. G. Keppler from E. R. Mathews dated February 17, 1982). This system was found to be acceptable. This item is closed.

#### d. Planning Standard (b)(7) (Public Education and Information)

##### (1) Deficiency

A method, such as brochures, bill board signs, has not been developed to inform the resident and transient adult population what to do in the event of an emergency. This information shall be updated and disseminated annually. (305/81-13-07) (Closed)

##### Licensee Response

"A brochure to inform resident and transient populations was developed and sent to all residents within ten miles of

the plant. The brochure was also posted (hand delivered) in various public locations. The brochure will be updated and disseminated annually.

This item was noted in the Immediate Action letter and found acceptable during the subsequent routine safety inspection."

#### Inspection Findings

The licensee has updated and distributed the Emergency Planning Information brochure to the permanent and transient adult population within the ten mile EPZ during the month of August 1982. Wisconsin Public Service Company has mailed the brochures to the permanent population and provided brochures to City of Kewaunee Public Buildings, gas stations, hospitals, motels, tourist information center, restaurants and stores, schools, campgrounds, and to the towns of Footbridge, Stangelville, and Tisch Mills in Kewaunee County for the transient adult population. Distribution of the brochures to the Manitowoc County population is performed by the Point Beach Nuclear Power Plant licensee. This item is closed.

#### e. Planning Standard (b)(8) (Emergency Facilities and Equipment)

##### (1) Deficiency

Procedures to assure that emergency support supplies/equipment are operationally checked and inventoried have not been developed. (305/81-13-08) (Closed)

##### Licensee Response

"Support procedures are in place for monthly inventories of Radiation Emergency Kits, First Aid Kits, Emergency Vehicle equipment and Site Access Facility equipment. Portable radiation monitoring equipment is source checked monthly and calibrated twice yearly. Additional support procedures for emergency survey/sampling kits, communications equipment and emergency response facilities equipment are under development and will be completed by March 1, 1982, or as equipment arrives."

##### Inspection Findings

Procedures RC-HP-33, 57, 109, 115, 119, 134, and 135, which pertain to emergency support supplies and equipment, were reviewed. These procedures list the storage locations for emergency support supplies and equipment, describe the contents of the various emergency kits, and provide forms for monthly inventory checks. A number of storage locations were checked to verify the presence of the designated kits. One radiation emergency kit was examined to verify the presence of the prescribed contents. All inventory records for 1982 were reviewed to verify the performance of regular

monthly inventories. Only one minor deficiency was noted in this portion of the licensee's program. Procedure (Form) RC-HP-119 does not provide a space for the signature of the person who performs the inventory.

During the Exit Interview, the licensee committed to modify Procedure RC-HP-119 by March 1, 1983, to include a signature line for the person performing operational check and inventory. (305/82-23-02)

(2) Deficiency

Radiological emergency survey/sampling kits that contain instrumentation, procedures, and support equipment (e.g., flashlights, keys, batteries, filters) have not been provided. (305/81-13-09) (Closed)

Licensee Response

"Specific environmental monitoring team survey/sampling kits will be assembled by January 1, 1982. Currently the equipment is readily available for the Environmental Monitoring Teams at the Site Access Facility (SAF). Additional Equipment has been ordered and will be incorporated after its arrival."

Inspection Findings

Radiation emergency kits and offsite environmental monitoring kits were examined. Procedures RC-HP-33 and EP-ENV-3B, which pertain to the above kits, were reviewed. The procedures list the storage locations for the kits and describe the contents. Radiation emergency kits were found at each of the specified locations except the Site Access Facility (SAF). This kit would be needed for the Site Environmental Monitoring Team. The SAF radiation emergency kit was moved from the SAF to the onsite EOF. It will be returned to the SAF when the Two Rivers EOF is operational. Portable radiation monitoring and sampling instruments were available for the site and two offsite environmental monitoring teams, except that two PRM-7 uR meters were removed for calibration and three HP-190 detectors were not available. Alternate backup instrumentation to implement these procedures is available. Although this instrumentation is considered adequate, the licensee should consider stocking an additional set of instruments as a backup in case of an instrument failure. In addition, three RAS-1 low volume air samplers were observed that did not have current calibration stickers.

During the Exit Interview the licensee stated that: (1) when the two PRM-7 uR meters are not available, pressurized ion chamber (Reuter-Stokes) units would be used; (2) the Site Emergency Kit will be located at the SAF when the EOF at Two Rivers, Wisconsin, is completed and fully operational; and (3) the RAS-1 air samplers will be put into the

procedure for calibration and inventory by March 1, 1983, and (4) inventory for the HP-190 probes will be incorporated into the monthly inventory procedure. Items 1, 2, 3, and 4 are incorporated into 305/82-23-03.

(3) Deficiency

Lake breeze effect is not incorporated into dose calculations and peak dose rates are not identified from the dose calculation manual. (305/81-13-10) (Closed)

Licensee Response

See licensee response for 305/81-13-18.

Inspection Findings

Emergency Procedure EP-ENV-3D (Revision B) dated October 13, 1982, was reviewed and found to adequately address the lake breeze effect on an interim basis until a more appropriate approach can be incorporated into the Model A which is still under development. Emergency Procedure EP-ENV-3E (Revision B) dated February 18, 1982, was reviewed and found to have the capability to incorporate peak dose rates into the dose calculations. This item is closed.

(4) Deficiency

Adequate telephone communications for use by NRC and State and local governments consistent with NUREG-0696 have not been established in the EOF. (305/81-13-11) (Closed)

Licensee Response

"In addition to the current PBX telephone system available in the Emergency Operations Facility (EOF), additional direct ringdown circuits are being installed as a backup system to assure telephone access to the various Emergency Response Facilities. Commercial exchange lines have been installed for use by the NRC and State and local governments to provide communications to onsite and offsite locations without the use of the plant PBX system.

WPS has requested from the NRC the installation of several new links to the Emergency Notification System (ENS) and the Health Physics Network (HPN). This request is indicated in a letter from E.R. Mathews to Stuart Cohen (NRC) dated October 22, 1981."

Inspection Findings

The EOF has been relocated from the KNPP site to the town of Two Rivers, Wisconsin. See Item 305/82-06-02 in this report for details. Although the communications equipment

was not operational at the time of this inspection, the number and types of communication equipment at the new EOF is considered adequate. This item is closed.

f. Planning Standard (b)(8) (Accident Assessment)

(1) Deficiency

The capability to collect post-accident samples of radioiodine using silver zeolite from containment does not exist.  
(305/81-13-12) (Closed)

Licensee Response

"Procedure EP-RET-2C, Containment Air Sampling and Analysis, provides the method for obtaining and analyzing a post-accident containment air sample. This sample is injected through a silver zeolite filter cartridge and analyzed for radioiodines using a multichannel analyzer."

Inspection findings

Procedure EP-RET-2C was reviewed and the prescribed equipment and techniques were inspected. The licensee demonstrated a basic capability to obtain and analyze radioiodine samples from containment using the interim post-accident sampling system. Additional sampling capabilities are available with the permanent post-accident sampling system, although this system is not yet fully operational. Weaknesses identified in these systems are discussed in Section 9.0 entitled "Post-accident Sampling and Analysis." This item is closed.

During the Exit Interview, the licensee stated that the permanent post-accident sampling system with exception of the chemistry section is operational. All personnel who are to operate the permanent post-accident sampling system are not fully trained. Personnel will be trained by March 1, 1983. This is an open item. (305/82-23-04) (Open)

(2) Deficiency

Post-accident sampling and analysis procedures for the Containment Sump, have not been developed or implemented.  
(305/81-13-13) (Closed)

Licensee Response

"The plant sampling system provides for downstream sampling of the Residual Heat Removal pumps when suction is being taken from the containment sump and core cooling is in a recirculation mode. This sample would be collected in the same manner as the reactor coolant hot leg or pressurizer liquid post-accident sample."

### Inspection Findings

Procedure EP-RET-3C was reviewed and a walkthrough was conducted to evaluate the licensee's capability to obtain and analyze samples from the containment sump. Reactor coolant hot leg and Residual Heat Removal pump samples can be obtained by the permanent post-accident sampling system, although the system is not yet fully operational. These samples could also be obtained by the interim post-accident sampling system, but the permanent system is the preferred method. A number of weaknesses in these systems are discussed in the section entitled "Post-accident Sampling and Analysis." This item is closed.

See Item 305/81-13-12 for details for training commitments by the licensee.

#### (3) Deficiency

A procedure does not exist which will provide guidance in implementing the radiological accident assessment scheme for gathering information. (305/81-13-14) (Closed)

#### Licensee Response

"Procedure EP-RET-2, Inplant Radiation Emergency Team, details immediate and subsequent actions of the Radiological Protection Director to assess the radiological consequences of the emergency. Specific actions include (1) obtaining and recording area and process radiation monitor readings from the control room; (2) obtaining and recording current meteorological data; (3) performing effluent sampling and analyses; and (4) performing surveys of the plant interior and site.

Procedure EP-ENV-3A, Environmental Protection Director Actions and Directives specifies actions of the Environmental Protection Director to assess environmental consequences. Specific actions include (1) acquiring and recording environmental monitoring data at predetermined locations; (2) confirming projected plume pathway with actual plume pathway; (3) performing dose estimates; and (4) making protective action evaluations."

#### Inspection Findings

The licensee's response to this deficiency was to develop two procedures. EP-RET-2 (Inplant Radiation Emergency Team) and EP-ENV-3A (Environmental Protection Director Actions and Directives). These procedures outline actions that would be necessary for gathering both inplant and environmental data to be used in accident assessment. Some of these actions are listed in the licensee response (see above).

The licensee's procedures are adequate. This item is closed.

(4) Deficiency

Specific provisions/procedures have not been developed to do specific radiological assessment trend analyses. (305/81-13-15)  
(Closed)

Licensee Response

"Radiological accident assessment trend analysis is performed by three emergency response groups. The Radiological Protection Director receives periodic updates of plant area and process radiation monitor readings, and plant and site survey data. Plant gaseous effluent monitors and the Emergency Operations Facility monitor data are recorded and permit data retrieval for trend analysis. The Environmental Protection Director receives environmental monitoring team data on a continual basis for trend reviews. A Technical Support Center Staff member is assigned responsibility for maintaining a status sheet listing plant radiation monitoring readings, meteorological conditions, and safety concerns, and performing continual review to follow trends.

Inspection Findings

The licensee's response is adequate. In addition, several procedures (EP-ENV-3A and EP-TSC-3) indicate that plant status information, environmental sampling data, and offsite dose calculations will be continually updated and reviewed.

Based on this response, the item is considered closed.

(5) Deficiency

Compensating actions outlined in NUREG-0737, III.A.2. for an adequate interim meteorological monitoring/dose assessment program have not been established. (305/81-13-16) (Closed)

Licensee Response

"The revised Emergency Plan commits to providing a new meteorological system in accordance with Appendix 2. The letter from Mathews (WPS) to Eisenhut (NRC) dated July 1, 1981, committed to provide a description of the system by January 1, 1982, in accordance with revised requirements of NUREG-0737. WPS has had ongoing discussions with members of the NRC staff concerning acceptable siting of a new system and Class A dispersion models. Additional information was supplied to the staff in the letter from Mathews to Eisenhut dated November 1981. We believe our current schedule for compliance meets NRC guidance."

### Inspection Findings

The licensee's response to these concerns was to develop Surveillance Procedures SP-63-205 through 213 calling for semi-annual calibration of the entire meteorological system. In addition, monthly checks of the meteorological system will be made along with daily checks of the strip charts in the control room. Emergency Procedures EP-ENV-3C and EP-ENV-3D require meteorological data from Point Beach to be used as a backup if the onsite system is lost. Therefore, the licensee has adequately upgraded it's system to meet the compensating actions outlined in NUREG-0737, III.A.2. This item is closed.

#### (6) Deficiency

Provisions and procedures have not been developed for using and/or incorporating offsite environmental survey sampling data into the accident assessment scheme and protective action recommendation scheme. (305/81-13-17) (Closed)

#### Licensee Response

"Procedure EP-ENV-3F, Protective Action Recommendation Determination, will be issued to provide guidance to the Environmental Protection Director in performing protective action evaluations. Protective Action Guideline levels for soil, milk, and water samples are specified."

### Inspection Findings

Emergency Procedure, EP-ENV-3F, (Protective Action Recommendation) addresses this deficiency. This procedure provides guidance on protective action recommendation for environmental sampling (soil, milk, and water). These are consistent with USFDA (21 CFR 1090, Federal Register Volume 43, No. 242 dated December 15, 1978). In addition, the Plant Services Superintendent indicated that offsite survey data would take precedent over dose projections during an emergency due to the uncertainties (e.g. lake breeze) associated with dose projections.

The licensee's response appears to be adequate. This item is closed.

#### (7) Deficiency

The capability to make dose predications and estimates at any location within the ten mile EPZ for guidance in the areas of assessment and protective action recommendations has not been developed. (305/81-13-18) (Closed)

### Licensee Response

"WPS has contracted a consultant to develop isopleth overlays for determining atmospheric diffusion factors (X/Q) within the ten mile EPZ. In conjunction with the existing DOSERATE computer program (EP-RET-6, Dose Projections) or use of the manual method (EP-ENV-3E, Manual Environmental Dose Projection Calculations), integrated dose and peak dose rates can be projected at any location within the ten mile EPZ. Overlays and implementing procedures are to be completed by January 1, 1982. A climatological study is in progress to support dispersion projections in the presence of a lake breeze. The results of that study, expected to be completed by March 1, 1982, will provide interim guidance until implementation of the Class A model."

### Inspection Findings

The licensee has developed a dose calculation method involving the use of isopleth overlays. As described in EP-ENV-3C, 3D, 3E, this method will calculate external gamma and thyroid doses at any point within a ten mile radius. Currently, this is a manual calculation method, however, the licensee is in the process of computerizing the method. Following this, the current computer code (KARL: EP-RET-5) will be phased out for emergency use. This item is closed.

An item identified during this inspection was discussed during the Exit Interview. The licensee is using adult dose factors for calculating thyroid dose from radioiodines. Infant dose factors should be used or adult doses should be multiplied by a factor of two to account for the most sensitive individuals in the population. The licensee stated that the procedure would be modified to address this item by March 1, 1983. This is an open item. (305/82-23)

### (8) Deficiency

Emergency survey, sampling and sample analysis equipment and procedures are inadequate in the following areas; (1) plume monitoring, (2) emergency air sampling, equipment to make field radioiodine measurements to  $1 \times 10^{-7}$   $\mu\text{Ci/cc}$ , (4) meteorological measurements and QC program for these measurement, and (5) use of protective equipment under emergency conditions. (305/81-13-19) (Closed)

### Licensee Response

"Twenty procedures have been issued detailing responsibilities and actions of the Environmental Monitoring Teams. These include procedures for plume track sampling (EP-ENV-3A), air sampling (EP-ENV-4B), measuring radioiodine (EP-ENV-5C), and issuing protective equipment (EP-ENV-3B and EP-AD-18). The

meteorological system was repaired and calibrated in response to the Immediate Action Letter and found acceptable during the subsequent routine safety inspection."

#### Inspection Findings

The licensee's response to this deficiency was to develop several procedures including EP-ENV-3A for plume monitoring, EP-ENV-4B for emergency air sampling, EP-ENV-5C and EP-ENV-4B for field radioiodine measurements, and EP-ENV-3B and EP-AD-18 for protective equipment use. These procedures appear to be adequate.

Some of the equipment listed as available in the above procedures is not yet in place at the SAF. This equipment includes three PRM-7 uR meters and three HP-190 detectors for the E530. The uR meters are onsite and being calibrated while the HP-190 detectors are not yet available. The licensee needs to assure that all instrumentation listed in its EP-ENV procedures is in place. The licensee has alternate backup capability for instrumentation to implement these procedures. See 305/81-13-09 for additional details and licensee commitments.

Surveillance Procedures SP-63-205 through 213 have been developed and implemented and provide an adequate quality control program for the meteorological system. Emergency Procedure EP-ENV-3A (Revision F) adequately addresses meteorology in plume monitoring. This item is closed.

g. Planning Standard (b)(10) (Protective Response)

(1) Deficiency

A procedure has not been developed for relocation of personnel to assembly areas and the existing Procedure ACD 12.9., "Personnel Accountability" needs revision. (305/81-13-20)  
(Closed)

#### Licensee Response

"Directive ACD 12.9, Personnel Accountability, has been replaced by EP-AD-12, Personnel Assembly and Accountability. Emergency Response facility activation procedures provide criteria for relocation of assembled personnel or assurance of habitability by the Site Radiation Emergency Team.

Procedure EP-ENV-6A, Relocation of Site Access Facility (for habitability reasons), details actions to be taken to cope with adverse wind conditions.

Procedure EP-SEC-3, Personnel Accountability (Initial and Maintaining) directs the Security Force to tour the areas outside the plant fence line (substation, sewage plant, substation) to alert personnel of the accountability check under way or the means by which to leave the area."

#### Inspection Findings

Emergency Procedure EP-ENV-6A dated December 21, 1981, designates an alternate location (either the north or south roadblock on State Highway 42) for the Site Access Facility in the event that it becomes uninhabitable. Selection of the appropriate alternate location will be made by the Environmental Protection Director.

Emergency Procedure EP-AD-12 (Revision C) dated October 13, 1982, designates alternate assembly areas and considers the safe routing of personnel between assembly areas. Emergency Procedure EP-SEC-2 (Revision B) dated May 21, 1982, and EP-SEC-3 (Revision C) dated October 13, 1982, provide procedures for alerting and directing personnel within the owner controlled fenced area and the public accessibility area outside the fence. Each of these items are considered sufficient to satisfy their aspect of the emergency preparedness program.

However, plume location (i.e., wind direction) has not been considered in the routing of personnel from the owner controlled fenced area and the public accessibility area outside the fence. Therefore, with the exception of item addressed below, this item is closed.

During the Exit Interview the licensee committed to modify the procedure to reflect the alternate evacuation routes to be taken from the site under adverse wind direction by March 1, 1983. (305/82-23-06)

#### h. Planning Standard (b)(11) (Radiological Exposure Control)

##### (1) Deficiency

Specific provisions and procedures for establishing and implementing an emergency radiological and environmental monitoring program and analysis of the collected samples have not been provided. (305/81-13-21) (Closed)

##### Licensee Response

"Procedures detailing actions to implement an emergency radiological and environmental monitoring program are in place (EP-RET-4's and EP-ENV's). These areas were noted in the Immediate Action Letter and found acceptable during the subsequent routine safety inspection."

### Inspection Findings

The licensee's response to the deficiency was to develop several sets of procedures; the EP-RET4 series and the EP-ENV series. The EP-RET4 series provides guidance on emergency radiological monitoring within the site boundary and ERFs. The EP-ENVs provide guidance on environmental monitoring including monitoring team organization, team actions, sample acquisition, portable instrument use, and environmental sampling techniques. These procedures appear adequate. This item is closed.

#### (2) Deficiency

Radiation Protection procedures do not reflect the accident conditions. (305/81-13-22) (Closed)

#### Licensee Response

"Procedure EP-AD-11, Emergency Radiation Controls, details the radiological control program to be implemented during a plant emergency. Procedure EP-RET-2D, Emergency Radiation Entry, Controls and Implementation, provides specific guidance to the Inplant Radiation Emergency Team for allowing controlled area entries. Containment air sampling, reactor coolant sampling and effluent sampling procedures (EP-RET-2C, EP-RET-3B, and EP-RET-2B, respectively) have been revised to reflect potential accident conditions."

### Inspection Findings

The licensee's response to this deficiency was to develop and/or revise five procedures to address specific radiation protection concerns during accident conditions. The new procedures provide guidance on personnel monitoring requirements, respiratory requirements, anti-C clothing requirements, stay times in high radiation areas, and briefings prior to emergency radiation work.

The licensee's response appears to be adequate. This item is closed.

#### (3) Deficiency

Provisions have not been made for expanding the respiratory protection requirements that would be imposed under accident conditions (i.e., decontamination, testing, and acquisition of additional respiratory units and supplies). (305/81-13-23) (Closed)

### Licensee Response

"An additional thirty (30) MSA self-contained pressure-demand breathing units and fifty (50) additional air cylinders have been purchased for plant emergency use. Consideration is being given to the installation of onsite cylinder refilling capability. In addition, WPS has a mutual assistance agreement with the Point Beach Nuclear Plant to provide support as needed."

### Inspection Findings

Procedures RC-HP-32A, 32B, 32C, 32D, 32E, 32F, 32G, 32H, and 131, which pertain to the licensee's respiratory protection program, were reviewed. Procedure RC-HP-32D is being revised to include the new MSA-401 respiratory protection equipment. The availability of the new equipment was verified. In addition three breathing air respirator filter carts have been provided that can supply quality breathing air from any plant service air outlet. All of the above procedures and other pertinent information on the respiratory protection program have been compiled into a respiratory protection manual, which is scheduled for publication in early January 1983. The manual will be used for training. This item is closed.

Respiratory protection equipment would very likely become contaminated in the event of an emergency involving a radiological release. This only existing facility for decontaminating respiratory protection equipment is the Decontamination Room, which is routinely used for decontaminating all types of contaminated equipment. During an emergency, higher levels of contamination would be expected and cross-contamination of respiratory protection equipment could present a serious problem.

A separate facility or area for relatively lower level decontaminations should be provided for respiratory protection equipment.

During a telephone call on December 9, 1982, the licensee representative stated that during a radiological emergency, respiratory protection devices will be decontaminated in the Radio Analytical Facility (RAF). The procedures will be revised by March 1, 1983, to reflect this change in planning. (305/82-23-07)

i. Planning Standard (b)(12) (Medical and Public Health Support)

(1) Deficiency

Procedure HP-RET-14 does not provide sufficient detail for rescue, transporting, handling and giving first-aid to contaminated injured personnel and for the interface with Two Rivers Community Hospital. Criteria for moving the

person to the hospital have not been developed in sufficient detail and the contacts and telephone numbers at the hospital have not been listed in the procedure. (305/81-13-24) (Closed)

Licensee Response

"Procedure EP-RET-2E, Handling of Injured Personnel, and EP-RET-2F, Personnel Decontamination, provide instructions for assisting contaminated, injured personnel. Lifesaving efforts take precedence over contamination control activities. Procedure EP-RET-8, Contamination Control Measures at the Two Rivers Community Hospital, provides guidance to plant personnel interfacing with hospital employees."

Inspection Findings

EP-AD-16, Occupational Injuries or Vehicle Accidents - December 21, 1981; EP-RET-2E, Handling of Injured Personnel - December 21, 1981; EP-RET-2F, Personnel Decontamination - March 19, 1982; and EP-RET-8, Contamination Control at the Two Rivers Community Hospital - December 1981; were reviewed by the inspector. The items in question have been satisfied by these procedures. This item is closed.

j. Planning Standard (b)(13) (Recovery and Re-entry)

(1) Deficiency

Procedures have not been developed specifying all of the positions and duties of the recovery organization, and how recovery will be implemented. (305/81-13-25) (Closed)

Licensee Response

"Procedure EP-AD-15, Recovery Planning, provides criteria and structure for the establishment of a recovery organization. The Assistant Manager - Nuclear Power is given the authority to relax protective measures and allow site re-entry."

Inspection Findings

A review was made of Emergency Plan, Section 9, Recovery; a.1 Emergency Plan Implementing Procedure EP-AD-15, Recovery Planning, dated October 21, 1981. These were found to adequately specify the positions and duties of the recovery organization and the implementation of recovery procedures. This item is closed.

k. Planning Standard (b)(15) (Training)

(1) Deficiency

A formal training program consistent with NUREG-0654 for offsite governmental organization and agencies in the area

of Emergency Plans and Procedures has not been established.  
(305/81-13-26) (Closed)

Licensee Response

"WPS is developing a formal training program for offsite governmental organizations and agencies in the area of Emergency Plans and Procedures. The training program is scheduled to be presented prior to March 1, 1982."

Inspection Findings

The licensee trained offsite agencies and organizations on February 11, 1982, as evidenced by formal documentation. Training for the Two Rivers Hospital Physicians and nursing staff and the Mishicot, Tisch Mills and Two Rivers Ambulance Services is scheduled by the licensee on December 6, 1982. The licensee, Kewaunee Nuclear Power Plant, Wisconsin Public Service Company and Point Beach Nuclear Power Plant, Wisconsin Electric Power Corporation alternate annually the responsibility for providing this training. However, this agreement is not documented with Point Beach Nuclear Power Plant, Wisconsin Electric Power Corporation. Additionally, the KNPP Emergency Plan states, "Annual training of hospital personnel, police, and fire departments will be provided by WPS," indicating that WPS, alone, will provide the training.

The licensee is in the process of documenting the formal training program for the offsite governmental organizations and agencies in the area of Emergency Plans and Procedures. The licensee representative explained that the documentation of this training program has been delayed due to the modification of their schedule for the emergency preparedness exercise for 1983.

During the Exit Interview, the licensee committed to:  
(1) pursue a memorandum of understanding with Point Beach regarding the training schedule agreement by January 1, 1983;  
(2) revise the Emergency Plan regarding the commitment for annual training of hospital personnel, police and fire departments by February 1, 1983; and (3) complete the WPS formal training program for offsite governmental agencies and organizations by March 1, 1983. (305/82-23-08) 305/81-13-26 is closed.

(2) Deficiency

A formal training program which provides for the maintenance of training records and is consistent with NUREG-0654 for all onsite and corporate emergency response personnel in the area of emergency plans and procedures has not been established.  
(305/81-13-27) (Closed)

Licensee Response

"A formal training program as outlined in the Emergency Plan has been established and incorporated into the General Plant Training Program. The computerized Administrative Document Retrieval System (ADRS) is being used for a record of qualifications and attendance. This area was an item in the Immediate Action Letter and found acceptable during the subsequent routine safety inspection."

Inspection Findings

The licensee has established this training program by providing lesson plans, tests, proficiency criteria, training records system (computerized Administrative Document Retrieval System), and the requirement for annual training and retraining consistent with NUREC-0654. This portion of the licensee's program is considered closed.

(3) Deficiency

The security force has not been formally trained by KNPP personnel regarding the effects of radiation on the body, Emergency Classification categories, and what actions are expected of them during an emergency. (305/81-13-28) (Closed)

Licensee Response

"Security Force personnel are currently receiving instructions in emergency classification categories and their actions during a plant emergency (EP-SEC-2, Security Force Response to Emergencies). As part of their annual Health Physics Training, security force personnel will receive training regarding the effects of radiation on the body."

Inspection Findings

The Security Force receives annual training in the above referenced areas and records are maintained as per the Administrative Document Retrieval System. This item is considered closed

(4) Deficiency

All health physics technicians have not been trained in the performance of activities contained in Procedure RC-HP-180. (305/81-13-29) (Closed)

Licensee Response

"Training of Health Physics personnel in post-accident containment air sampling (EP-RET-2C) has been completed. This area was an item in the Immediate Action letter and found acceptable during the subsequent routine safety inspection."

Inspection Findings

Health Physics personnel have been trained on RC-HP-180 on July 31, 1981. RC-HP-180 has been modified to be renumbered as EP-RET-2C. This item is considered closed.

k. Planning Standard (b)(16) (Responsibility for Planning Effort)

(1) Deficiency

Procedures for emergency plans and procedure review to assure completeness and accuracy of plans and procedures have not been developed. (305/81-13-30) (Closed)

Licensee Response

"Development of procedures and directives considered to be supplemental to the EIPs will be completed by March 1, 1982. These supplemental procedures will include the review of the emergency plan and procedures to assure completeness and accuracy. Responsibilities and frequencies for the review are delineated in Section 8 of the Emergency Plan."

Inspection Findings

Section 8.3.1. of the KNPP Emergency Plan provides a commitment for annual review and update of the KNPP Emergency Plan and Emergency Plan Implementing Procedures. ECD 5.13, Revision and Control of the Emergency Plan, April 7, 1982, and ECD 5.14, Emergency Plan Implementing Procedures, May 6, 1982, contain provisions for review and update to assure completeness and accuracy of plans and procedures. This item is closed.

(2) Deficiency

The audit procedure does not provide for an annual audit of the emergency plan and does not provide for auditing equipment, interviewing personnel, and drills. (305/81-13-31) (Closed)

Licensee Response

"The Quality Assurance Directive (QAD 3.2) is currently being expanded to include an annual audit of the Emergency Plan, Implementing Procedures, emergency response training, drill and exercise results, records management, and emergency equipment maintenance and inventory schedules. The results of the audit are reported to the Manager Nuclear Power, Plant Manager and the Nuclear Emergency Preparedness Coordinator. The audit is retained for a period of at least five years."

### Inspection Findings

Procedure QAD 3.2 Emergency Plan Audit was reviewed by the inspector. The audit procedure provides for annual audit of the emergency preparedness items stated above. The audit team also reviews Regulations and Technical Specifications to assure appropriate requirements are audited. This item is closed.

#### 4. Action on Appendix B, Item of October 29, 1981, Letter

##### Notice of Violation

Technical Specification 6.8.1 states: Written procedures and administrative policies shall be established, implemented and maintained that meet the requirements and recommendations of Sections 5.1 and 5.3 of ANSI N18.7-1972.

Section 5.3.6 and Section 5.3.9.3 of ANSI N18.7-1972 require procedures for implementing the emergency plan and procedures for radiation control.

Contrary to the above, on the date of this inspection, Procedure RC-HP-180, "Post-accident Sampling of Containment Atmosphere," was not maintained since requisite equipment (shielding for syringes, gas bomb, and a transport container) was not provided. (305/81-13-54) (Closed)

##### Licensee Response

"Our initial corrective action taken was to review procedure RC-HP-180 both from a training aspect and required equipment aspect. In response to the former, we have completed training required for the HP staff (see our September 25, 1981, response to your Immediate Action Letter). Equipment necessary to support RC-HP-180 was ordered, has been received, and is available for use.

For long term corrective actions, we have taken those procedures necessary for emergency situations and grouped them together in a set of Emergency Plan Implementing Procedures (EPIPs). RC-HP-180 has been changed to EP-RET-2C. We are also currently developing a set of support procedures which will periodically check to ensure all necessary equipment and supplies are available for all the EPIPs. We expect to have this latter set of procedures developed and implemented by March 1, 1982."

##### Inspection Findings

Procedure EP-RET-2C was reviewed and a walkthrough of containment atmosphere sampling was conducted. The requisite equipment for sampling was available and the licensee demonstrated a basic capability to obtain and analyze samples from the containment atmosphere using the interim post-accident sampling system. This item is closed.

The licensee is maintaining the interim post-accident containment atmosphere sampling system as a backup system. Sampling capabilities are available with the permanent post-accident sampling system. A number of weaknesses were noted in these systems which are described in the section entitled "Post-accident Sampling and Analysis." The licensee expected to have "a set of support procedures which will periodically check to ensure all necessary equipment and supplies are available for all the EIPs" developed and implemented by March 1, 1982. As of December 2, 1982, these procedures have not all been developed or implemented. During the Exit Interview, the licensee committed to have these procedures complete by March 1, 1983. This is an open item (305/82-23-09).

5. Action on Appendix E of the Appraisal Inspection - Open items of October 29, 1981, Letter

- a. Full implementation of Table B-1, NUREG-0654 to be accomplished by July 1, 1982. (305/81-13-47) (Closed)

Inspection Findings

See inspection findings for Item 3, Action on Appendix A items of October 29, 1981, letter, Item A.1. This item is closed.

- b. Operational Capability of the permanent Technical Support Facility to be accomplished by October 1, 1982. (305/81-13-48) This item is closed.

Inspection Findings

The Technical Support Center was operational for the February 23, 1982, Emergency Preparedness Exercise (NRC Report No. 50-305/82-06 (DEPOS)). Communications capability between the new location for the EOF in Two Rivers, Wisconsin, to the TSC at the KNPP site were being installed during this inspection. The licensee committed to have the communications capability operational and tested during the next communications drill to be conducted on December 16, 1982. This item is closed.

- c. Operational capability of the permanent Operational Support Facility to be accomplished by October 1, 1982. (305/81-13-49) (Closed)

Inspection Findings

The Operational Support Facility (OSF) was operational for the February 23, 1982, Emergency Preparedness Exercise (NRC Report No. 50-305/82-06 (DEPOS)). Communications capability between the new location for the EOF in Two Rivers, Wisconsin, to the OSF were being installed during the inspection. Refer to 305/81-13-48 for additional details. This item is closed.

- d. Installation of the permanent post-accident coolant sampling system to be accomplished by January 1, 1982. (305/81-13-50) (Closed)

#### Inspection Findings

Installation of the permanent post-accident coolant sampling system has been accomplished as described in a letter from C. W. Giesler to Darrel G. Eisenhut, dated September 15, 1982. The status of the post-accident sampling system is provided in this letter. Additional information on the status of the system as of December 2, 1982 is provided in the section entitled "Post-accident Sampling and Analysis." This item is closed.

- e. Installation of the permanent post-accident containment sampling system to be accomplished by January 1, 1982. (305/81-13-51)  
(Closed)

#### Inspection Findings

Installation of the permanent post-accident containment sampling system has been accomplished as described in a letter from C. W. Giesler to Darrel G. Eisenhut, dated September 15, 1982. The status of the post-accident sampling system is provided in this letter. Additional information on the status of the system as of December 2, 1982, is provided in the section entitled "Post-accident Sampling and Analysis." This item is closed.

- f. Installation of the permanent post-accident gaseous and particulate effluent sampling system to be accomplished by January 1, 1982. (305/81-13-52) (Closed)

#### Inspection Findings

Installation of the permanent post-accident gaseous and particulate effluent sampling system was accomplished. Procedure EP-RET-2B, which addresses sampling and analysis of gaseous, particulate, and radioiodine effluents from the auxiliary building stack, was reviewed and a walkthrough was conducted. The licensee demonstrated a capability to obtain and analyze these samples. (305/81-13-52 is Closed). However, two minor deficiencies were noted in the procedure. If the instructions were followed explicitly, a technician would obtain a gas sample at the sampling station then take it to the counting room for analysis. The technician would then return to the sampling station to obtain particulate and radioiodine samples. Under accident conditions these instructions are not consistent with the ALARA philosophy. All three samples should be obtained during a single trip to the sampling station. Procedure Step 5.2.3 applies only to the low noble gas release range channel. Procedural steps are not included for the medium and high noble gas release range channels. During the Exit Interview, the licensee committed to revise Procedure EP-RET-2B to consider ALARA guidance by March 1, 1983. (305/82-23-10)

- g. Full operational capability of the Class A Model system for dose assessment by July 1, 1982. (305/81-13-53) (Open)

### Inspection Findings

A letter from E. R. Mathews (WPS) to G. E. Eisenhut (NRC) dated July 1, 1982, stated that a fully operational Class A Model would be implemented by October 1983. At the time of this review (December 3, 1982), the model was not operational. Therefore, this item will remain open.

#### 6. Miscellaneous Open Items

Open Items: 305/82-XX-01 (Closed)

##### Item

A copy of the Region III Incident Response Supplement will be sent to all Region III licensees along with a cover letter when it becomes ready for distribution.

##### Action

Region III mailed a copy of the NRC Region III Incident Response Supplement to the licensee during the month of June 1982. The licensee has received the supplement and the current revisions. This item is closed.

#### 7. Deficiency

Letter from E. R. Mathews to D. G. Eisenhut dated July 1, 1982, states Kewaunee NPP commitment to provide functional description of the upgraded meteorological system and schedule for its installation and full operational capability by January 1, 1982. (305/82-XX-02) (Open).

##### Inspection Findings

A letter from E. R. Mathews (WPS) to D. G. Eisenhut (NRC) dated December 3, 1981, was reviewed stating that WPS was in the process of working with vendors to provide the appropriate system. Therefore the information was not yet available. Another letter was reviewed from E. R. Mathews to D. G. Eisenhut, dated May 7, 1982. This letter provided information describing the instrumentation for the upgraded meteorological system. A commitment was made to send a final system description to the NRC when it is completed. Therefore this part of the emergency preparedness program is not yet complete.

During the Exit Interview, the licensee committed to provide the final system description by March 15, 1983.

8. Open Items from Emergency Preparedness Exercises Report No. 50-305/82-06

a. 305/82-06-01 (Closed)

Weakness

Health Physics technicians who are responsible for performing calculations to estimate concentrations of radioactivity in releases must be trained in the use of appropriate procedures.

Licensee Action

The licensee has established an adequate HP technician training procedure with lesson plan, text, and tests to determine proficiency. The training is scheduled to be carried out annually with the last training given on December 10, 1981. This item is closed.

b. 305/82-06-02 (Closed)

Weakness

The exercise demonstrated that the permanent Emergency Operations Facility must be relocated to a more suitable location to minimize potential exposure to occupants and have adequate space for the number of personnel required to perform EOF functions.

Inspection Findings

The licensee has relocated the EOF to the town of Two Rivers, Wisconsin. During this inspection the EOF communications equipment was being installed and the relocation was underway. The licensee has committed to having the facility relocation completed during the month of December 1982. This new location is about 18 miles from the KNPP site and appears to have adequate space and communications capability for the number of personnel to perform the EOF functions. This item is considered closed.

9. New Inspection Findings

Meteorology

Emergency Procedure EP-ENV-3C (Revision B) dated October 13, 1982, addresses the computation and incorporation of stability class into the determination of X/Q values. Form ENV-3C.1 of EP-ENV-3C contains a table for determining stability class based on temperature differential for the temperature at 55 meters minus the temperature at 11 meters. However, the meteorological instrumentation and recorders are set up to give a temperature differential based on the temperature at the 11 meter level minus the temperature at the 55 meter level. This could lead to a significant misrepresentation of the stability class. Either the meteorological instrumentation or EP-ENV-3C should be modified to correct this problem. During the Exit Interview, the licensee committed to correct this item by March 1, 1983. This is an open item.  
(305/82-23-11)

During subsequent telephone conversations on December 10 and 13, 1982, the licensee representative stated that a note was attached to the strip chart recorder in the control room indicating that the sign (+ or -) of the values of temperature differential should be reversed. The licensee representative stated that the problem would be solved by a change in the instrumentation or by a revision to the procedures by March 1, 1983. (82-23-12)

10. Post-accident Sampling and Analysis

In a letter from C. W. Giesler (WPS) to Darrel G. Eisenhut (NRC), dated September 15, 1982, the status of the Kewaunee Nuclear Power Plant relative to NUREG-0737, Item II.B.3, Post-accident Sampling System is provided. The attachment to the letter describes the status of both the interim and the permanent post-accident sampling systems.

In general, all required post-accident samples could be obtained with either the interim or the permanent post-accident sampling systems. However, a number of minor deficiencies in procedures and equipment were noted when these systems were examined during this inspection. Weaknesses in the interim system were as follows:

Reference Procedure EP-RET-2C (Containment Atmosphere) (305/82-23-13)

- a. 2.3.7. "Portable Shields" actually refers to an extension handle on the syringe kit which would aid in reducing personnel exposure while transporting syringes. No portable lead shielding was available at the sampling station or for transportation of samples.
- b. The carrying case for sample syringes is designed to contain three empty syringes (with rods inserted). After taking a sample, each syringe rod would be withdrawn, making the syringe assembly about three inches longer. In this configuration the sample syringes would not fit in the syringe transportation case and the case could not be closed. It could be hazardous to attempt transportation of the syringes under these conditions.
- c. A number of extra fittings and tubes were present at the sampling station (some are used for training). The procedure should provide a diagram(s) to show connection options or superfluous equipment should be removed from the sampling station.
- d. Radiation dose rates near the gas bomb could be several R/hr during sampling operations. No shielding was provided. Alternately, the sampling equipment could be redesigned to minimize sample volume and thereby reduce dose rates.
- e. Section 4.5 (Iodine Analysis) of this procedure specifies injection of a gas sample into a silver zeolite cartridge under vacuum without consideration of the exhaust from the vacuum source and without specifying where the operation should be performed (fume hood).

Weaknesses in the permanent post-accident primary coolant sampling system were as follows:

Reference Procedure EP-RET-3C (Primary Coolant) (305/82-23-12)

- f. Chemistry procedures for the analysis of boron, pH, conductivity, oxygen, ion chromatograph, and gas chromatograph have been developed but have not been implemented.
- g. 5.1.4. lists a number of equipment items that must be available and operational. Four items (a, k, l, and m) were not available in the High Radiation Sample Room.
- h. Several controls on the Sample Acquisition Panel had no operational numbers to correspond to instructions in Procedure EP-RET-3C.
- i. Several lines and valves on the Liquid Sample Panel and the Chemical Analytical Panel were not labeled or did not clearly indicate their function or position as specified in Procedure EP-RET-3C.
- j. The procedures for Hydrogen and Gaseous Activity of Primary Coolant, 5.3., do not include procedures for analysis of the sample nor do they reference any analysis procedures.
- k. A number of typographical errors were noted in Procedure EP-RET-3C and the procedure used many abbreviations that were never defined.

In addition, deficiencies were noted in the permanent post-accident sample analysis system and in training on the system. (305/82-23-15).

- l. The ion chromatograph is not functional and training on the instrument has not been initiated.
- m. A number of plant personnel who would have (or could have) post-accident sampling and analysis responsibilities in the event of an emergency have not received training on the permanent post-accident sampling and analysis system.
- n. No procedures have been developed for periodic inventory of post-accident sampling and analysis equipment and supplies.

In summary, the interim post-accident sampling and analysis system is functional but the weaknesses in the systems need to be corrected. The permanent primary coolant post-accident sampling and analysis system is marginally functional. The balance of the system equipment and procedures must be fully implemented, weaknesses need to be corrected, and training completed.

During a telephone conversation with the licensee representative on December 8, 1982, the licensee representative stated that the interim post-accident sampling of containment atmosphere system is to be re-designed with modifications and procedures to be completed by March 1, 1983. The modifications will include:

- a. Removal of the 300cc gas bomb and replacement with a "T" and septum arrangement; and
- b. shielding is to be installed on the sampling lines. (see 305/82-23-13)

11. Action on Appendix C Items of October 29, 1981 Letter (IE Report No. 50-305/81-13)

Items 1-5, 9, 11, 13-22, 25-27, 29-31, 35-38, and 40 have been closed.

Specific comments for open items follow:

Item 6 - EP-RET-3B does not include requirements or guidance for sample labelling.

Item 7 - EP-RET-3B does not include a step which requires sample analysis results to be reported to the Radiological Protection Director.

Item 8 - EP-RET-3B does not specify the coolant activities and related background levels discussed in the licensee's November 30, 1981 response.

Item 10 - EP-SEC-3 does not specify that identification of missing individuals shall be provided within 30 minutes.

Item 12 - EP-RET-2C does not provide for additional dilution procedures if the dead time on the multichannel analyzer becomes excessive. The GeLi detector has not been calibrated to permit sample counting at various distances from the detector.

Item 23 - Procedures EP-RET-2C and EP-RET-3D specify that sample analysis results are to be reported to the Radiological Protection Director. However, the specifications only pertain to reporting hydrogen and oxygen analyses results. Only Procedures EP-RET-2B and EP-RET-3B address sample disposition following analysis. Only Procedure EP-RET-2B addresses background radiation levels that would require alternative analysis methods.

Item 24 - Procedure EP-RET-2C does not include consideration of the exhaust from the vacuum source downstream of the silver zeolite cartridge nor does it specify where the sample processing should be performed.

Items 28, 33, and 34 - Letters of agreement with the U. S. Coast Guard, the State of Wisconsin, and local support groups are out-of-date.

Item 32 - Has not been completed.

Item 39 - Has not been completed.

12. Exit Interview

The inspectors met with the licensee representatives (denoted in Paragraph 1) on December 3, 1982. The scope and findings of the inspection were summarized. The licensee committed to specific dates for completion of action on open items and weaknesses identified as a result of this inspection. Subsequent followup telephone conversations were held with the licensee on December 8, 10 and 13, 1982, in which the licensee committed to completion of open items with respect to a decontamination facility for respirators during a radiological emergency, correction of the temperature differential readout for the meteorological instrumentation and correction of design problem of the interim post-accident sampling system for containment atmosphere (by March 1, 1983).