U. S. Atomic Energy Commission
Washington, D.C. 20545

To

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UNITED STATES
ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

TELEPHONE
(312) 858-2660

A. RO Inspection Report No. 050-305/74-13

Transmittal Date : November 14, 1974

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NOV 14 1974

Wisconsin Public Service Corporation
ATTN: Mr. E. W. James, Senior Vice President
Power Generation and Engineering
P.O. Box 1200
Green Bay, Wisconsin 54305

Docket No. 50-305

Gentlemen:

This refers to the inspection conducted on October 9-11, 17 and 18, 1974, by Messrs. Ogg and Schumacher of this office of activities authorized by AEC Operating License No. DPR-43 and to the discussion of our findings with Messrs. Luoma, Richmond and Jarvella of your staff at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, interviews with plant personnel, and observations by the inspectors.

During this inspection certain of your activities were found to be in apparent violation of AEC requirements, as described under Enforcement Action in the Summary of Findings Section of the enclosed inspection report.

This notice is sent to you pursuant to the provisions of Section 2.201 of the AEC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office within 20 days of your receipt of this notice a written statement or explanation in reply, including for each violation: (1) corrective action taken and the results achieved; (2) corrective action to be taken to avoid further violations; and (3) the date when full compliance will be achieved.

In accordance with Section 2.790 of the AEC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this notice, the enclosed inspection report, and your response to this notice will be placed in the AEC's Public Document Room, except as follows. If this report contains information that you or your contractors believe to be proprietary, you

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must apply in writing to this office, within twenty days of your receipt of this notice, to withhold such information from public disclosure. The application must include a full statement of the reasons for which the information is considered proprietary, and should be prepared so that proprietary information identified in the application is contained in an enclosure to the application.

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

Sincerely yours,

Gaston Fiorelli, Chief
Reactor Operations Branch

Enclosure:
RO Inspection Rpt No.
050-305/74-13

bcc: RO Chief, FS&EB
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Licensing (4)
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OGC, Beth, P-506A
GC (2)

U. S. ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS

REGION III

Report of Operational Radiological Protection

RO Inspection Report No. 050-305/74-13

Licensee: Wisconsin Public Service Corporation
P. O. Box 1200
Green Bay, Wisconsin 54305

Kewaunee Nuclear Power Plant
Kewaunee, Wisconsin

License No. DPR-43
Category: B

Type of Licensee: PWR 560 Mwe (W)

Type of Inspection: Annual Radiation Protection

Dates of Inspection: October 9-11, 17-18, 1974

Dates of Previous Inspection: August 1, 6, 14, 19-22, 27, 29, and September 4, 1974 (Operations)

Principal Inspector: W. Ogg W. W. Ogg Nov. 11, 1974 (Date)

Accompanying Inspector: M. C. Schumacher M. C. Schumacher Nov. 11, 1974 (Date)

Other Accompanying Personnel: None

Reviewed By: L. J. Hutton for W. L. Fisher
Senior Health Physicist
Facilities Radiological
Protection Section

Nov. 12, 1974 (Date)

SUMMARY OF FINDINGS

Enforcement Action

The following violations are considered to be of Category III severity:

A. Title 10 CFR 19.11 requires the posting of certain documents by the licensee in such a manner as to permit their viewing by individuals on their way to or from any location to which the document applies.

Contrary to the above, the licensee's posting was deficient in that not all required documents were posted and in that those posted were not observable by all individuals on their way to or from work. (Paragraph 13)

B. Title 10 CFR 19.12 requires that certain instruction be given to individuals working in restricted areas.

Contrary to these requirements, workers had not been instructed regarding the availability of radiation exposure reports pursuant to Section 19.13. (Paragraph 4.a)

Licensee Action on Previously Identified Enforcement Matters

Not applicable.

Unusual Occurrences (Paragraph 6.b)

February 8, 1974	Crack in Instrument Impulse Line
April 9, 1974	Crack in Instrument Impulse Line
March 13, 1974	Charging System Vent Line Break
July 5, 1974	High Radiation Levels Associated with Steam Generator Opening
July 9, 1974	Primary Coolant Release to Containment
July 9, 1974	Pressurizer Pressure Transmitter Bellows Leak
September 4, 5, 17, 18, 1974	Auxiliary Building Ventilation Trips
September 6, 1974	Recirculation of Effluents to Auxiliary Building Intake

Other Significant Findings

A. Current Findings

1. The plant began an outage on September 19, 1974, to do eddy current testing of the steam generator tubes.
2. The licensee is changing steam generator chemistry from phosphate to hydrazine.
3. Contract health physics technicians were used to provide supplementary coverage for work done during this outage.

B. Unresolved Items

None

C. Status of Previously Reported Unresolved Items

Not applicable.

Management Interview

A management interview was conducted at the close of the inspection with Messrs. Luoma, Plant Superintendent; Richmond, Technical Supervisor; and Jarvella, Health Physics Supervisor.

A. The inspector stated that the licensee was in apparent violation of 10 CFR 19 with regard to certain required instructions to workers. He further noted that, during the course of the inspection, the licensee had begun to give the appropriate instructions. The licensee stated that this would continue until current personnel had all been instructed and that this training would be made part of the radiation protection instructions given to all new employees at the site. (Paragraph 4.a)

B. The inspector stated that the licensee appeared to be in violation of 10 CFR 19 with regard to the posting of certain documents, noting that the requisite documents had, during the course of the inspection, been posted at 1 of 2 entries to the plant. The licensee stated that a bulletin board had been ordered for posting at the other entry. (Paragraph 13)

C. The inspector stated that personal monitoring practices appeared to be satisfactory. (Paragraph 6.c)

D. The inspector noted that the highest radiation doses are being incurred by health physics personnel. The licensee stated that it was largely due to the close surveillance deemed necessary for contractor people, that it was of some concern to them, and that the hiring of contract health physics technicians was a partial solution to the problem. (Paragraph 6.c)

E. The inspector observed that the decisions on implementation of the routine bioassay program cited in the Technical Specifications have not been made. The licensee stated that the program would probably consist of sampling from various work groups and indicated reluctance to setting up hard and fast guidelines. (Paragraph 6.d)

F. The inspector stated that initial radiation protection training appeared to be satisfactory but noted that retraining for nonlicensed personnel had not been started. He also noted that the official training files appeared to be incomplete. (Paragraph 4)

G. The inspector noted that the shift supervisors' log indicated that recirculation of effluent into the auxiliary building intake sometimes occurred. The licensee stated that design modifications have been initiated to alleviate this problem. (Paragraph 6.b)

H. The inspector observed that the respirator protection program appears to be in conformity with the Technical Specifications. (Paragraph 7)

I. The inspector questioned the significance of numerous monitor alarms leading to auxiliary building ventilation trips. The licensee stated that these problems appeared to have been alleviated by improved understanding of the operation of the boric acid and waste evaporators. (Paragraph 6.b)

J. Regarding one of the functions of the Nuclear Safety Review and Audit Committee (NSRAC), the inspector questioned what system was in use for performing the semiannual audits of plant operations. The licensee stated that one major area will be audited on a semiannual basis; that is, a general audit, plus one audit item in depth, are performed.

K. The inspector asked if one of the members of the NSRAC is knowledgeable in radiation protection and radiochemistry. The licensee stated that a non-voting member has taught radiation monitoring in university courses. Another member has spent three years in a military assignment with involved radiation protection. In addition, the licensee will call in an expert in radiation protection and radiochemistry who will audit these specialities during November 1974.

REPORT DETAILS

1. Persons Contacted

C. Luoma, Plant Superintendent
J. Richmond, Technical Supervisor
G. Jarvella, Health Physics Supervisor
J. Larson, Radiochemistry Supervisor
T. Moore, Administrative Assistant
G. Kingston, Shift Supervisor
M. Reinhart, Health Physics Technician

2. Organization

(a) Changes in Management

There has been no change in management of the radiation protection organization.

(b) Changes at Staff Level

Mr. Gardner, a Health Physics Technician, left the company. One new man will be added to each category by January 1975 to increase the staff to three radiochemistry technicians and three health physics technicians.

(c) Qualifications of New Personnel

There are no new radiation protection or radiochemistry personnel.

3. Licensee Audits

(a) Audits of Internal Programs

The Technical Specifications require two groups to audit the work. The frequency of meeting and the responsibility and qualifications of the auditors are specified. In addition, ANSI-18.7 is referenced by the Technical Specifications.

The Plant Operations Review Committee (PORC) which comprises an on-site review committee, is composed of all department supervisors and the technical supervisor. The inspector reviewed the minutes of the PORC meeting for the period September 19, 1973 through September 27, 1974. It appeared that the requirements are met and that radiation protection and radiochemistry matters are discussed and acted upon.

The Nuclear Safety Review and Audit Committee is the second audit group. Voting members include two licensee corporate officials, one consultant, one official from the architect-engineering firm, an off-site nuclear plant superintendent, and an individual with expertise in quality assurance. Minutes of the meeting of this committee were reviewed for the period January through May, 1974.

(b) Audits of Services and Contractor

Audits are made of the TLD Contractor by submitting dosimeters given a known exposure. An additional check was made during the recent outage by issuing workers a second set of TLD's which were analyzed by the licensee.

4. Training

(a) Changes in Training Program

Instructions pursuant to 10 CFR 19 relating to radiation exposure reports that may be requested by workers began during the inspection. The instructions were given during the plant safety meeting on October 16, 1974, and will be repeated during monthly safety meetings until training of staff personnel has been completed. The instructions will also be made part of the basic radiation protection course given to new plant staff.

(b) Training of New Personnel

All new plant staff are given a 12-hour basic radiation protection course and must pass a test to certify successful completion. Auxiliary operators provide basic radiation protection coverage on the back shifts; they are given a radiation protection course of approximately 60 hours duration. This course includes 6 tests, a final examination and an oral examination. The inspector reviewed test results for 8 auxiliary operators. The tests covered the material presented and were graded and returned with helpful comments in the margin.

Contractor personnel are given a 1-hour orientation covering radiation practices, emergency procedures, and security.

Respirator training is given to personnel who have need to enter controlled areas.

(c) Retraining

No health physics retraining has been given, expect for some maintenance and instrument and control people who have had respirator retraining. The health physicist is considering offering a repeat of the material given in the 12-hour basic course as part of the retraining for all staff.

Responsibility for coordinating the retraining for general plant staff has not been defined. A former shift supervisor holding a senior operator license has been made responsible for coordinating retraining of licensed personnel.

(d) Records of Completion

The official training records consist of a file for each member of the plant staff. No master list showing the overall status of training is kept. The records were found to be incomplete with evidence of completion of the basic radiation protection course and the respirator training course missing from many files. Accurate records of this training are kept by the health physicist.

5. Radiological Protection Procedures

Detailed radiological protection procedures are incorporated in the Rad-Chem Procedures Manual. About 200 procedures are included. The procedures are reviewed by the Plant Operations Review Committee (PORC) and signed by the plant superintendent. The following procedures were reviewed by the inspectors.

RC-HP-26	Special Radiological Control Duties of Guards
RC-HP-27	Personnel Dosimeter
RC-HP-28	Controlled Area Entry and Exit
RC-HP-29	Equipment Tagging, Labeling and Marking
RC-HP-30	Guides for Donning and Removing Protective Clothing
RC-HP-35	Radiation Work Permit
RC-HP-36	Survey Techniques
RC-HP-46	Radiation/Contamination Survey Schedule

These procedures are available in the control room, the shift supervisors office, the library and the radiation protection office.

Radiation Control Procedures having wide application are also included in Section 6 of the Administrative Control Directives.

The following directives were reviewed by the inspector.

ACD 6.3	Radiation Work Permit
ACD 6.4	Non Radioactive Liquid Waste Discharge Permit
ACD 6.5	Personal Monitoring
ACD 6.6	Radioactive Gaseous Waste Discharge Permit.
ACD 6.7	Radioactive Liquid Waste Discharge Permit.

A copy of the Rad-Chem Procedures Manual is kept in the control room, the plant library, and the radiation protection office. The ACD manual is also distributed to all supervisors. These appear to fulfill the requirement of Technical Specification 6.4 regarding the availability of the radiation control procedures to all plant personnel.

6. Radiation Safety - Records Evaluation

a. In-Plant Air Sample Program

Procedure RC-HP-46, "Radiation/Contamination Survey Schedule," defines the routine surveillance (including air sampling) program for the entire plant. The inspector received the log "Survey" for the period September 17 - October 9, 1974. It contained the record of routine surveillance together with the non routine surveillance associated with the steam generator outage during that period. Air sampling was done in accordance with procedures with no significant air activity occurring during normal operations. The log shows that iodine levels in containment during steam generator and coolant pump work were generally low but on occasion reached about 10^{-8} microcuries per milliliter near the steam generator manhole access. Noble gases were generally the most abundant isotopes observed, but the corrosion products cobalt 58, cobalt 60, and chromium 51 reached about 10^{-9} microcuries per milliliter near the opening.

Respiratory protection provided appeared to be in accordance with the Technical Specifications.

The licensee's analysis includes radon, which he also measures in outside air.

b. Unusual Occurrences

The radiological aspects of the following occurrences were examined.

Crack in Instrument Impulse Line, February 8, 1974 (AO 74-1)[1/]

Primary coolant having activity below 10^{-7} microcuries per milliliter sprayed onto charging room floor. No contamination was observed.

Crack in Instrument Impulse Line, April 9, 1974 (AO 74-4)[2/]

Event similar to that of February 8, 1974. Radioactivity release insignificant with airborne levels to 3.5×10^{-11} microcuries per milliliter.

Charging System Vent Line Leak, March 13, 1974 (AO 74-3)[3/]

Water spilled onto floor inside containment while the reactor was critical at zero power level. Contamination and air activity were negligible.

1/ Ltr WPS to L dtd 2/15/74.
2/ Ltr WPS to L dtd 4/18/74.
3/ Ltr WPS to L dtd 3/13/74.

High Radioactivity Levels Associated With Steam Generator Opening July 5, 1974

Direct radiation levels up to 700 mR/hr were observed upon removal of the A steam generator access coverplate. Floor contamination up to 500,000 disintegrations per minute per 100 square centimeters ($d/m/100cm^2$) was observed apparently from migration off the plastic sheeting. The area was evacuated. Lead shielding blankets were put in place and the job was resumed. Airborne radioactivity levels measured at the work area were about 4 times MPC. All work was done in respirators and no significant exposures occurred.

Primary Coolant Release to Containment, July 9, 1974 (AO 74-8)[4/]

Containment was isolated and evacuated following the observation of steam and water in the containment basement. The release was caused by a vent valve (RC 32) being left open inadvertently. Air activity observed was 2.7×10^{-9} microcuries per milliliter gross beta gamma, and 1.6×10^{-10} microcuries per milliliter cobalt 60. Floor areas were decontaminated. Health physics performance appeared to have been adequate. A citation was issued[5/] for failure to follow procedures with regard to valve lineups.

Pressurizer Pressure Transmitter Bellows Leak, July 9, 1974 (AO 74-9)[6/]

Steam leak from a pressurizer and sensor caused minor contamination inside the containment with gross beta-gamma air contamination to 5×10^{-9} microcuries per milliliter. Corrective action appeared adequate.

Auxiliary Building Ventilation Trips, September 4, 5, 17, 18, 1974

Ventilation trips with special ventilation zone startup associated with operation of the waste and boric acid evaporators were noted in the shift supervisors' log on 4 occasions during September. On one occasion (September 4), the auxiliary building was evacuated while airborne conditions were assessed by health physics. The activity principally was due to fission gases. No apparent violations occurred. The licensee believes

4/ Ltr WPS to L dtd 7/19/74.
5/ RO Inspection Rpt 74-11.
6/ Ltr WPS to L, dtd 7/19/74.

that the problem has been largely solved by amending operating procedures for the evaporators. There is a proposal pending to install a heat exchanger to cool the boric acid evaporator condensate.

Recirculation of Effluents to Auxiliary Building Intake September 6, 1974

The shift supervisors' log for September 6 notes that containment purge was terminated because the prevailing southwest wind blew effluents from the containment vent into the auxiliary building intake. The licensee stated that the problem is sporadic and unpredictable and can occur with discharge from the auxiliary building vent as well. Design changes have been requested to modify both exhausts in an attempt to eliminate the horizontal streaming to the intake that sometimes occurs.

Primary Coolant Boiling, September 26, 1974 (AO 74-17)[7/]

Contamination resulted from steam from open steam generator manways after the RHR system was inadvertently disabled for a short period of time. Personnel in containment evacuated and containment integrity was reestablished. Workers in and around the steam generator at the time were in full protective clothing, including self-contained air respirators. No personal contamination resulted. After entry, floor contamination was reduced from about 30,000 dpm/100cm^2 to less than 1000 dpm/100cm^2. Health physics action appears to have been adequate.

c. Personal Dosimetry

Personal monitoring procedures and implementation were found to be satisfactory. Monthly thermoluminescent dosimeters (TLD's) and self-reading dosimeters are kept in a rack at the gate house. Dosimeter readings are logged daily by the wearer and are verified by the guard. Monthly TLD results from the contractor are posted there and initialed by each employee.

Where applicable, neutron doses are determined using a portable neutron monitor and time of stay information. These are submitted monthly to the TLD contractor for entry into the permanent exposure record. Additional monitoring may be provided for special jobs at the discretion of the health physicist. This may include the use of an additional TLD badge which is processed in-house to maintain day-to-day dose cognizance. The inspector noted the use of such badges for contractor personnel working on the steam generator. The highest observed dose from 13 individuals for a 1 1/2 week period was about 600 millirem.

7/ Ltr WPS to L dtd 10/4/74.

Visitors are issued self-reading dosimeters at the gate house. If entry to the controlled area is required, a TLD is issued at the health physics office adjacent to the controlled area entry point.

The contractor's TLD report is kept as the official exposure record pursuant to 10 CFR 20. The highest individual dose to date was 1170 millirem, virtually all recorded in May 1974. The licensee formally reviewed this exposure with the aid of controlled area access sheets and daily dosimeter logs. It was concluded that the reading was in error. Nevertheless, the man was restricted from work in containment for the balance of the quarter. With this exception, the highest annual doses in the plant, ranging up to 1040 millirem through August 1974, are being incurred by health physics personnel. The licensee attributes the fact to the close surveillance given to contractor personnel working in containment. He believes that such measures as the hiring of contract health physics technicians during the current outage will alleviate the problem somewhat but recognizes that a potential future problem does exist.

A file is kept for each plant employee (including terminated employees) which includes medical history, AEC-4, correspondence with previous employers, notification pursuant to 10 CFR 19, and bioassay records. Approximately twenty percent of these records were examined. In one instance the previous exposure history recorded on the AEC-4 had not been entered into the contractor record, due to an oversight.

The inspector observed the notification letters, required by 10 CFR 19 and 20, prepared for contractor personnel who had been involved in the current outage. They were accompanied by addressed envelopes to the individual, the AEC, and the employer and were awaiting dosimeter results from the TLD contractor.

d. Bioassay

Bioassay procedures are defined in Section 11.2 of the FSAR and in station procedure RC-HP-27. Whole body counts will be made after each refueling for routinely exposed persons. Urinalysis will be done for persons exposed to tritium during refueling, for persons who may have exceeded 10% of the Maximum Permissible Body Burden (MPBB), and for routinely exposed company employees who terminate or are transferred to non-nuclear positions within the company. What is meant by "routinely exposed" has not been defined. The licensee stated his reluctance to make these decisions in advance preferring to make a case-by-case analysis with the aid of pertinent plant records.

Tentative plans are that the routine program will consist of sampling of individuals from the various work groups, but the details have not been worked out. To date, no master list showing bioassay sampling history has been kept. The licensee indicated that such a list would be set up. The inspector was given a list, prepared from the contractor reports, showing that baseline whole body counts have been obtained from 76 plant employees with 7 left to be done. The licensee's policy is to obtain a baseline as near to the beginning of employment as possible, consistent with the scheduling of the mobile whole body counter by either the Kewaunee or Point Beach Plants. The inspector observed that terminated plant employees have not been given bioassays to date - none of them have been routinely exposed. He also observed that urine samples had been secured from contractor personnel who worked in the controlled area during the recent outages.

e. Radiation Surveys and Exposure Control

(1) Routine Direct Exposure and Contamination Surveys

Routine radiation surveys are performed according to procedure RP-HP-46 as outlined in section 6.a above. Records were reviewed for the period July 1 through October 8, 1974. Basic to the survey record is the form "Radiation Protection Survey". Contamination and radiation background surveys are made daily in parts of the plant and weekly, or less frequently, in other areas. The inspector noted that radiation background and contamination levels appeared to be generally low and that necessary decontamination was done promptly. Appropriate floor plans are used with each daily survey. Radiation readings and smear results are recorded. The inspector noted no problems in this area.

(2) Non - Routine Surveys

To review non-routine survey, the inspector reviewed radiation protection surveillance performed in containment during the present outage and that performed as a result of abnormal occurrences. The health physics aspects of this work appeared to have been adequately handled by the licensee.

(3) Startup Surveys by Licensee

The licensee published the results of gamma, beta, and neutron surveys of areas within the plant and the exclusion area in "Kewaunee Nuclear Power Plant Initial Startup Report".

In general, surveys show that the secondary shield is adequate to reduce dose rates below those limits specified in the FSAR, and that there is no radiation leakage to the environment.

The inspector reviewed "Kewaunee Test Procedure 6.201 Radiation Survey," which contains tables and floor plans showing results of surveys made at 5%, 25%, 50%, 75% and 100% power. However, part of the containment survey at 100% power was postponed until additional primary shielding, specified in a design change, is erected. The inspector reviewed a letter dated September 19, 1974, from the licensee to the contractor in which proposed methods of shielding the problem areas in the containment were outlined. Until this shielding is erected, the reactor will be scheduled on hot shutdown when maintenance work is required in the high areas. This will be done in order to reduce radiation dose to as low as practicable. The inspector found no problems in this area.

(4) Contaminated Laundry

Protective clothing is laundered by the licensee using a washer and dryer located adjacent to the controlled area access point. The dryer is vented to the filtered auxiliary building exhaust. The washer drains to the laundry drain tank.

Laundered garments are laid out flat and surveyed first with a pancake probe. If a reading of greater than 500 counts per minute is obtained, the garment is surveyed with a thin walled G.M. tube. The garment may not be reworn if this reading is above 0.75 millirads per hour.

f. Work Authorization Records

A radiation work permit (RWP) is required for all work inside the controlled area. A standing RWP exists for plant staff who routinely work there; for example, in the rad-chem laboratory. These individuals are identified by name. A specific RWP is required for each special job in the controlled area. Involved persons are named and nonplant personnel are required to log their dosimeter readings on the form. Addition of a name to an existing RWP requires approval by the Health Physics Supervisor and notification of the shift supervisor in the Control Room. Extension of an RWP must be similarly approved.

The inspector's review of the file of completed RWP's for 1974 and his observation of their using during this inspection indicated the procedure (RC-HP-35) is being followed.

7. Respiratory Protection

The respiratory protection program is addressed by Section 6.4 of the Technical Specifications and by Rad-Chem Procedure RC-HP-32. Respirators are available at eight (8) emergency lockers placed throughout the plant. The available devices and the approximate station inventory are given below.

Air Purifying Respirators (Full Face)	50
Air Line Respirators	18
SCBA's (Air Bottles)	12
SCBA's (Chemox)	12

All devices in routine use have full face pieces. Prescription spectacles for use inside a face piece are made available to individuals requiring them. Canisters used with air purifying respirators are discarded after each use. The inspector reviewed the licensee's record of monthly inspections and the training record, and examined representative respirators. The program is apparently being conducted in conformity with applicable procedures.

8. Materials Inventory

The inspector reviewed the licensee's inventory and leak test data file entitled "Radioactive Sources" for the period November 1973 to August 1974 and inspected source storage locations. It appears that no sources other than those listed in the license are on hand, and that adequate control procedures for shielding and leak detection are carried out.

9. Receipt and Transfer of Materials

The inspector reviewed the licensee's records of receipt and transfer of radioactive materials. For receipt of materials, the requirements of 10 CFR 20.205 appear to be carried out. No offsite solid waste shipments have been made to date. Shipments of materials to two other licensees occurred on October 2, 1974. It appeared that the requirements of 10 CFR 71 and the DOT regulations were adhered to.

10. Shipping Accidents

The licensee stated that there have been no shipping accidents involving radioactive material in transit to or from the plant.

11. Facilities and Equipment

a. There have been no changes in facilities.

b. Inspection of Facilities

(1) Radiochemistry Laboratories

(a) Quality Control and Standardizations

A program of accuracy and precision tests for boron analyses was used prior to startup. A program of routine testing of technicians' analyses in general will begin in the near future.

Standardization of the pH meter is accomplished by a vendor's certified salt. Similarly, the atomic absorption spectrometer is standardized on the basis of vendor's dated standards. The inspector noted that those standards on hand had valid dates.

(b) Sampling Room

The sampling room, an integral part of the chemistry laboratory, contains a large hood, where primary sampling is done. The hood contains a deep sink. It was noted that the room entrance and the hood appeared to be properly labeled.

(c) Steam Generator Chemistry Control

A colorimetric spectrophotometer is used to measure the ammonium radical in steam generator chemistry. However, for detection in the ppm range required in volatile treatment, the instrument may not be sensitive enough. A new procedure or a new potentiometric system is to be supplied by the licensee's contractor. The licensee's representative stated that if steam generator chemistry is being controlled only by addition of volatile substances, then the introduction of nonvolatile impurities, such as from very minor condenser leaks, can adversely affect steam generator chemistry and require immediate correction. An immediate shutdown will be requested by the representative should significant condenser in-leakage be confirmed.

(2) Counting Rooms

Equipment

Counting equipment includes a liquid scintillation counter, an automatic sample counter, two other beta-gamma sample counting systems, one alpha scintillation system, and a multi-channel analyzer (MCA) with a Ge-Li detector.

Procedures, Calibration and Standardization

The procedure RC-HP-49 addresses operation and standardization of general counting room equipment. In addition, the MCA work is done according to the "Kewaunee Nuclear Plant Multichannel Analyzer Procedure Manual." The inspector reviewed both of these documents. It was noted that the counters are standardized daily as the procedure requires. Each counter has its own log. The procedure also requires that a plateau be run at least monthly on these counters. This requirement appears to be met. Although not required, daily energy and efficiency checks of the MCA are made using cesium and cobalt sources.

The inspector reviewed the set of nine calibration curves made in February, 1974, for the MCA. Various geometric sample configurations are included. Each of these curves is recorded on a tape which is fed into the spectrometer and against which the unknowns are quantified.

(3) Access Points to Restricted and Radiation Areas

Access to the restricted area is via the gatehouse, where personal dosimeters are issued as described in Section 6.c above. Exit is via the gatehouse with passage through a portal monitor required.

Within the plant a controlled area has been established for the auxiliary building. The access point is adjacent to the health physics office and the change room and is under continuous surveillance. All persons entering must sign in and out on a controlled area access log. During shutdown an additional control point is set up at the containment access with a guard in attendance during work by non-plant staff.

Access appeared to be well controlled and the inspectors observed that the procedures were strictly followed.

(4) Change Rooms

The licensee has one principal change room located adjacent to the controlled area access. Local change areas are set up as required. These facilities appear adequate.

(5) Personal Decontamination Area

Personal decontamination areas consist of showers and a large deep trough sink for normal decontamination. The licensee also has a glove box device for personal decontamination.

(6) Equipment and Decontamination Areas

The licensee's equipment decontamination facility consists of two ultrasonic cleaners, two hoods with facilities to handle medium sized equipment, and a large hot cell type remote facility for handling large and highly contaminated items. No problems were noted.

(7) Radioactive Material Storage Areas

Storage areas exist for both low and high level storage. There were no problems noted.

(8) Posting

The inspector observed high radiation areas at the solid waste barreling station, the volume control tank, the letdown heat exchanger (not applicable during shutdown) and at the containment access. The postings appeared to be in accordance with the requirements of 10 CFR 20 as modified by Section 6.4 of the Technical Specifications. The latter reference specifies that entry to high radiation areas will be controlled by radiation work permit in lieu of control devices or alarm signals.

(9) Portable and Fixed Survey Equipment

(a) Portable Instruments

The inspector reviewed the licensee's complement of portable survey meters. The licensee has on hand more than the minimal stock of each type required by the FSAR.

The checklist file entitled "Portable Instruments" was reviewed in order to verify routine calibration. A sample of about 10 percent of the instruments was inspected to confirm that the dates on the checklist agreed with the dates on the instrument labels.

A single, small cesium 137 check source is used to confirm instrument operability prior to use, in conformity with the procedure.

(b) Area Monitors

The inspector reviewed the monthly surveillance function tests SP-049 log for the period March through September 1974. Functional tests appear to be performed as required. Exceptions and faulty instruments appear to be corrected promptly. Some internal check sources appear to be weak.

12. Notification and Reports

Notifications and reports pursuant to 10 CFR 19 and 10 CFR 20 appear to be in order. The licensee stated that no thefts, loss of licensed material, incidents as defined in 20.403 or over exposures have occurred. Termination reports to exposed employees and to the AEC are generally satisfactory as noted in Paragraph 6.c of this report.

13. Posting of Notices to Workers

Passage into the restricted area is via the gatehouse. From there, two routes are normally used for personnel entry into the plant - one via the administration building and the second via door 40 into the turbine building. Copies of certain documents or a notice describing the documents and the locations where they may be examined, were not posted, as required by 10 CFR 19.11, along either route. The posting deficiency involved copies of 10 CFR parts, 19 and 20, the license with incorporated documents and applicable operating procedures. Forms AEC-3 were posted in the change room and in the lunchroom. Before the close of this inspection the requisite postings had been made inside of the door 40 and the licensee stated that a bulletin board would be set up for the posting at the entrance to the administration building.