

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-358/78-24

Docket No. 50-358

License No. CPPR-88

Licensee: Cincinnati Gas and Electric
Company
139 East 4th Street
Cincinnati, OH 45201

Facility Name: Wm. H. Zimmer Nuclear Power Station

Inspection At: Wm. H. Zimmer Site, Moscow, OH

Inspection Conducted: October 10-13, 1978

Inspector: *W. L. Fisher*
for M. C. Schumacher

11/14/78

Approved By: *W. L. Fisher*
W. L. Fisher, Chief
Fuel Facility Projects and
Radiation Support Section

11/14/78

Inspection Summary

Inspection on October 10-13, 1978 (Report No. 50-358/78-24)

Areas Inspected: Routine, announced initial preoperational inspection for radiation protection, including a review of organization, initial training, refresher training, procedures, facility, instruments and equipment, and respiratory protection program. The inspection involved 30 inspector-hours onsite by one NRC inspector.

Results: No items of noncompliance were identified in any of the seven areas inspected.

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DETAILS

1. Persons Contacted

- *J. R. Schott, Plant Superintendent
- *P. King, Assistant Plant Superintendent
- *D. L. Erickson, Radiation/Chemistry Supervisor
- G. Appel, Chemist
- R. Price, Acting Training Supervisor, (General Physics Corp.)
- *J. J. Wald, Quality Engineer

2. General

This inspection began at approximately 11:00 a.m. on October 10, 1978. Initial discussions relating to the planned scope of the inspection were held with the plant superintendent and the radiation/chemistry supervisor. In the afternoon, a tour was made in company with a licensee representative of selected plant areas, including radiation/chemistry laboratories, access control facilities, the radwaste building, laundry, and instrument calibration facility. The presence of concentrated waste line valves in the concentrated waste tank room, an expected high radiation area, was noted. The licensee representative stated that this problem had been recognized and that the lines will be extended to remove the valves from the room.

3. Organization

The radiation/chemistry organization remains basically unchanged from that described previously.^{1/} Personnel changes include the addition of four new technicians, the resignation of one and the promotion of several to technician and senior technician. Currently, the total complement is 13, comprised of 4 senior technicians, 5 technicians and 4 junior technicians. The licensee is still recruiting to fill the FSAR projected complement of 14. Of the 9 technicians and senior technicians, 5 have had 6 to 8 years of previous nuclear experience. By fuel loading, all are expected to meet the requirements of ANSI N18.1-1971.

Responsibilities and authority vested in the radiation/chemistry organization with respect to radiation protection, chemistry and radiochemistry, and radwaste management appear to be adequately defined in the following station administrative procedures:

1/ RIII Inspection Report No. 50-358/77-16.

CR.SAD.01, "Chemical/Radiochemical Program," Revision 0,
May 16, 1978.

RO.SAD.01, "Radwaste Management Program," Revision 00,
May 19, 1978.

RP.SAD.01, "Radiation Protection Program," Revision 00,
May 11, 1978.

The responsibility of the station superintendent with regard to enforcement of the Radiation Protection Program is defined in station administrative procedure QA.SAD.01, "Quality Assurance," Revision 00, July 12, 1978.

Intradepartmental audits are provided for in the above referenced administrative directives. The foremen's duties include review of completed technician work including data sheets. The chemist will review laboratory data sheets and licensee representatives stated that a procedure is being drafted to define quality assurance audit responsibilities of the radiation/chemistry supervisor. The quality engineer has responsibility to conduct quality assurance audits under the jurisdiction of the station superintendent.

Licensee procedure RC.RPP.2.11, "TLD QC," when approved, will provide for periodic audit of the TLD contractor by means of "spiked" dosimeters. Procedure RC.RPP.2061, "Calibration and Leak Test of Direct Reading Dosimeters," describes a testing program that appears to meet Regulatory Guide 8.4.

4. Training

The station's commitment to training is given in FSAR Chapter 13 and in station administrative procedure TR.SAD.01, "Station Training Program." With regard to radiation protection, all employees (including temporary workers) are required to receive an initial orientation to satisfy 10 CFR 19, and annual refresher training; respiratory training with annual refresher will be given before respirators are worn. Plant personnel who will enter controlled areas will also be given a Radiation Protection Manual Course expected by licensee representatives to involve about 40 hours. Plant technicians will also receive Nuclear Power Plant Fundamentals (NPPF), unless waived, and on the job training (OJT) appropriate to their specialty.

At the time of the inspection, the Radiation Protection Manual Course had been approved and the first offering was planned for November 1978. The initial radiation protection orientation, part of a course now designated as "ZPS-1 orientation" is still being developed. The planned first offering of this course is about 3 to 4 months before fuel loading. The annual refresher training will be essentially the same with some additional emphasis on current topics such as changes in regulatory requirements and procedures, and review of event reports. The respirator training course had not been developed although a 2-hour videotaped course had been purchased and will probably be used for radiation/chemistry technician training.

The licensee's plans, as judged by the inspector from review of completed licensee procedures and discussions with licensee representatives, appear to meet or exceed his commitments for radiation protection training.

A training folder has been established for each station employee to document all training received. A summary matrix showing training status at the station was also established. The inspector reviewed the folders for all radiation/chemistry department employees. These records indicated a rather intensive training program for the technicians has been in effect since 1976. Included have been formal courses in radiation protection, chemistry and nuclear power plant fundamentals as well as training sessions considered as part of the on-the-job training. Most of these offerings have been described previously^{2/} but new training sessions, largely relating to various aspects of the radwaste system, have been offered since. In addition, some courses and training sessions offered earlier have been or will be repeated for more recently hired technicians.

During the previous inspection of this area,^{3/} the licensee indicated plans for observation of radiation/chemistry technicians at an operating BWR. Since then, 2 foremen and 4 technicians have participated in 6 weeks of on-the-job training at the Monticello plant. During the current inspection, 2 more technicians were sent to Monticello to work 4 weeks during a refueling outage.

Review of the training folder for the radiation/chemistry supervisor indicated a discrepancy from some of the training specified in FSAR Table 13.3-2. Specifically, the courses labeled Dresden Technology and On-site Training (balance of plant) were not received. Licensee

2/ RIII Inspection Report No. 50-358/78-04.

3/ Ibid.

representatives indicated that the material had been covered in other training such as Zimmer Technology and in work during construction, inspection, procedure preparation, etc. They stated that this matter would be resolved with licensing.

5. Procedures

The inspector reviewed the status of radiation/chemistry department procedures. A licensee representative stated that 50% of the 120 radiation protection procedures, 60% of the 158 chemistry procedures and 40% of the 24 radwaste procedures had at least reached the status of typed draft. Approximately 40 of the radiation protection procedures had been completed and received final approval.

The following procedures, reviewed and discussed with licensee representatives, appeared to be consistent with regulatory requirements and without significant problems.

RC.RPP.1.011 (not approved), "ALARA Program."
RC.RPP.1.012 (10/11/78), "Access Control - Radiation Control Areas."
RC.RPP.1.014 (8/23/78), "Eating, Drinking and Smoking Control."
RC.RPP.1.015 (8/23/78), "Use of Step Off Pads."
RC.RPP.1.022 (not approved), "Regular Radiation Work Permits."
RC.RPP.1.030 (8/30/78), "Receipt of Radioactive Material."
RC.RPP.1.031 (9/5/78), "Operation of the Eberline PRM-4A and PRM-6
Count Rate Meters."
RC.RPP.1.032 (8/10/78), "Operation of the Eberline PMP-4E Portal
Monitor."
RC.RPP.1.033 (9/25/78), "Use of RAD-TAD Radiation Chirper."
RC.RPP.1.211 (9/18/78), "Radiation Exposure Records and Reports."
RC.RPP.1.300 (8/5/78), "Use of Direct Reading Dosimeters."
RC.RPP.2.061 (7/3/78), "Calibration and Leak Test of Direct-Reading
Dosimeters."
RC.RPP.2.073 (9/13/78), "Calibration of the Technical Associates
Model PDR-1B Alarming Dosimeter."
RC.RPP.3.060 (8/10/78), "Radiation Survey Techniques."
RC.RPP.3.111 (6/22/78), "Contamination Survey Techniques Personnel."
RC.RPP.7.067 (6/23/78), "Operation of the Eberline RM-14."
RC.RPP.7.076 (9/26/78), "Use of the RO-2 and RO-2A Ion Chamber
Survey Instruments."
RC.RPP.4.077 (10/11/78), "Use of Eberline 6112 Teletector."
RC.RPP.5.076 (8/18/78), "Calibration of Eberline RO-2 and RO-2A Ion
Chambers."

- RC.RPP.5.255 (9/11/78), "Radiation Protection Instrument Calibration and Maintenance Records."
RC.RPP.6.022 (7/13/78), "Storage and Use of Sealed and Unsealed Radioactive Check Sources."
RC.RPP.6.111 (9/19/78), "Use of the Victoreen Condenser R-Meter."
RC.RPP.6.160 (9/19/78), "Calibration of the Eberline Model 1000B Gamma Calibrator."

The licensee agreed to review and modify as appropriate the following procedures.

- RC.RPP.6.010 (8/30/78), "Inventory, Control and Leak Testing of Licensed By-Product Material."

The annual reporting requirement for wipe tests showing greater than 0.005 μCi given in section 5.3.4 of this procedure conflicts with the 5-day reporting requirement in License Condition 13A of EPM License No. 34-07251-04.

- RC.RPP.6.060 (10/9/78), "Use of the Eberline Model 1000 B Gamma Calibrator."

Monitoring precautions for persons using the calibrator will be added to insure detection of unexpected dose rate conditions.

- RC.RPP.6.211 (8/23/78), "Calibration of Victoreen Condenser R-Meter." Requirements will be added to require that measurements on a known calibration source be made before and after the meter is sent offsite for calibration.

6. Facilities

The inspector reviewed licensee facilities designated for radiation/chemistry activities including laboratories, counting room, calibration facility, decontamination facilities, offices and access control areas. They appeared to meet or exceed FSAR commitments. Construction of the new access control/technician office area on the 546' level adjacent to the turbine operating floor was in progress. An Eberline Model 1000B, Multiple Source Calibrator with 8 cesium 137 sources had been setup in the calibration room on auxiliary building level 473'. Both the room and the calibrator were under key control by the radiation/chemistry supervisor.

7. Instruments and Equipment

The inspector inventoried instruments and equipment onsite for comparison with the FSAR commitments.

a. Personnel Dosimeters

Approximately 350 self-reading dosimeters described in section 12.3.3.1.2 of the FSAR have been received, leak tested, and accuracy tested consistent with Regulatory Guide 8.4. The primary dosimeter will be a monthly issued, vendor supplied TLD. The calendar quarter has been established (3 month intervals beginning January 1) and storage and issue locations have been selected. Procedures incorporating a quality assurance program, including audit of the TLD vendor, are either completed or in draft. A TLD reader has been acquired and the licensee plans to use it to develop an in-house capability and to make periodic comparisons with vendor results by reading an extra chip in the vendor supplied TLD badge. Methods for personal neutron dosimetry are still under consideration. The guidance of Regulatory Guide 8.14 was discussed with licensee representatives.

b. Portable Instruments

The licensee's inventory of portable survey instruments appears to meet the commitment in section 12.3.2.3.4 of the FSAR. Calibrations of these instruments was in progress at the time of this inspection.

The 10 low volume air samplers specified in section 12.3.2.3.3 of the FSAR have been received. The 6 high volume samplers also specified have not. A licensee representative stated that the efficiency of these samplers is questionable and the FSAR may be revised.

The inspector noted an apparent discrepancy between FSAR section 12.2.4.1 which describes 2 portable constant air monitors (CAM's) for particulate and noble gas monitoring and FSAR section 12.3.2.3.3 which specifies 5 portable CAM's (2 for particulates, 2 for particulate plus iodine, and 1 for noble gas). A licensee representative stated that current plans are to have 4 CAM's: 2 for particulates (currently onsite), 1 for particulate plus iodine plus noble gas (on order), and 1 for particulate plus noble gas (on order). He stated that the discrepancy with the FSAR would be resolved.

c. Fixed Instrumentation

Installation of the fixed monitoring instrumentation, consisting of 43 area monitors (FSAR section 12.1.4), 5 constant air monitors with air particulate and iodine capability (section 12.2.4.1) and a fixed air sampling system with 26 sample points (section 12.2.4.2) has not been completed. It will be reviewed at a later time.

A second shielded end window GM detector with scaler for the counting room (section 12.3.2.2.3) has not been received.

d. Other Safety Equipment

Review of such items as hood air velocities, glove box vacuums, and emergency showers will be reviewed after air balancing and/or installation has been completed.

8. Respiratory Protection Program

The inspector discussed the respiratory protection program with licensee representatives. Assurance was given that the requirements of 10 CFR 20.103 and Regulatory Guide 8.15 will be addressed in the procedures which are being developed. It was indicated that most of the plant staff have already received medical examinations that include a vital capacity test given by a company physician. However, notifications from the physician indicating clearance to wear respirators has not been received by the radiation/chemistry supervisor onsite.

This area will be reviewed during subsequent inspections.

9. Exit Interview

The inspection results were discussed with Mr. J. Schott and others (Paragraph 1) at the close of the inspection.

The inspector noted significant progress in the radiation protection program and estimated a reasonable probability of its being ready for a July 1979 fuel loading. In particular he noted: (a) good progress in radiation/chemistry personnel recruitment and training, including the work/training experience being obtained at an operating BWR; (b) good radiation/chemistry department facilities which meet or exceed FSAR requirements; (c) presence on site of most required

sampling and monitoring instruments; (d) progress in the development of radiation protection training programs for general station personnel including temporary workers; and (e) generally satisfactory radiation protection procedures approved and reviewed by the inspector thus far. He emphasized that this review mainly covered the radiation protection program and did not include radwaste responsibilities of the department. These would be covered in subsequent inspections.

The inspector noted a discrepancy between the scheduled and FSAR specified training for the radiation/chemistry supervisor, the need for a station policy governing decontamination responsibilities, and the apparent failure to receive notification onsite of medical clearances to wear respirators. He also acknowledged good AL awareness on the part of station staff in the planned removal of valves from the concentrated waste tank room.

The licensee acknowledged these comments noting that the training discrepancy would be resolved, that a station policy addressing decontamination responsibility was being formulated, and that the matter of medical clearances would be pursued. He also stated that recruiting is continuing to add 3 or 4 more radiation/chemistry technicians.