

SUMMARY OF FINDINGS

Enforcement Action

A. Violations

1. Failure to properly post a radiation area. (Details, Paragraph 4)
2. Failure to instruct personnel. (Details, Paragraph 11)
3. Failure to follow requirements of the Technical Specifications. (Details, Paragraphs 5, 6, & 7)
4. Failure to provide minutes of General Operating Review Board to the Plant Superintendent. (Details, Paragraph 8)
5. Failure to conduct audits of plant operations at required frequency. (Details, Paragraph 8)
6. Failure to review and approve temporary changes to Radiation Protection Procedures. (Details, Paragraph 9)

B. Safety Item-

1. Deficiencies in management control of the radiation safety program. (Details, Paragraphs 2, 6, 7, 10, 11, 13, & 15)

Licensee Action on Previously Identified Enforcement Items

A. Violations

A review of corrective actions that the licensee had taken to correct previous violations* showed that those actions did provide for the proper posting and control of High Radiation Areas, and the revised catch basin drains as described in the licensee's letter**.

B. Safety Items

Inspection findings showed that actions had been taken to correct previously identified safety items*. A review of those actions showed that they are consistent with that described in licensee's letter** and were effective in some areas. Licensee actions, however,

* RO Inspection Reports, 50-219/73-02 and 50-219/73-07

** Letter, Donald A. Ross to Directorate of Regulatory Operations, Region I, dated March 28, 1973

do not appear to be effective in correcting or preventing recurring problems. Specifically, additional measures are required to improve and correct the items listed below and will continue to be reviewed during subsequent inspections.

- a. Procurement of staff personnel in the radiation protection organization. (Details, Paragraph 2)
- b. Deficiencies in management controls relative to the radiation protection program. (Details, Paragraphs 2, 6, 7, 10, 11, 13, 15)
- c. Deficiencies in exposure control program. (Details, Paragraphs 11, 12, 14)

Unusual Occurrences

- A. External exposure in excess of 3 rem described in licensee letter to Directorate of Regulatory Operations, dated June 5, 1973. (Details, Paragraph 13)
- B. A spill of contaminated liquid from a 55 gallon drum containing filter elements occurred on August 21, 1973, and resulted in extensive contamination of the ground and railroad tracks in front of the Radwaste building. No excessive personnel exposures occurred. (Details, Paragraph 6)

Other Significant Findings

A. Current Findings

Inspection findings showed that to some degree radiological conditions were being improved. Solid waste inventory remained low with continuing waste shipments being effected. Efforts at improving management controls were continuing. However, violations of 10 CFR 20, Technical Specifications and Station Operating Procedures were identified. Management effort appears ineffective relative to overall radiation protection problems. Additions to the staff have not yet been made. Personnel exposures remain high though within 10 CFR 20 limits. These areas will continue to be reviewed during subsequent inspections.

B. Status of Previously Reported Unresolved Items

None

Management Interview

The following individuals attended the management interview held at the conclusion of the inspection on September 7, 1973:

J. Carroll, Station Superintendent
D. Reeves, Operations Supervisor
J. Sullivan, Technical Engineer
E. Growney, Technical Supervisor

The following subjects were discussed:

1. The inspector stated that corrective actions on the two previously identified incomplete enforcement items had been completed.
2. The inspector discussed his observations of poor housekeeping, such as areas with removable floor contamination and the presence of contaminated objects wrapped or bagged and lying in corners.
3. Each item identified under Enforcement Action, above, was discussed. (Details, Paragraphs 2 - 15)
4. The contaminated spill on August 24, 1973 was discussed. The inspector pointed out that no operating procedure existed for this job, that the Radioactive Work Permit did not adequately describe the radiation hazards involved, and that the investigation had still not been completed. The licensee felt that no procedure was necessary and that the RWP data were sufficient. The licensee further stated that the investigation was continuing consistent with availability of the supervisor's time. (Details, Paragraph 6)
5. The inspector discussed the potential exposure to internal contamination during the reactor head removal operation on April 16-19, 1973. He stated that RO:I would further evaluate the body counter data for possible overexposure to Iodine-131. Subsequent telephone conversations with the licensee were made to obtain additional data. The licensee was subsequently notified that the inspectors' calculations indicated that there were not overexposures to personnel. (Details, Paragraph 16)
6. The overexposure to a contractor employee on May 6-8, 1973 was discussed. The inspector stated that no documentation existed that showed that the contractor personnel involved had received an indoctrination prior to starting the job, as required by the Procedure Manual. The licensee stated that this documentation would be maintained in the future. (Details, Paragraph 13)

7. The inspector stated that his review of the minutes of the Plant Operating Review Committee did not reveal any discussions of radiation safety and that this appeared to indicate a lack of interest in the subject by the committee. The licensee stated that most radiation protection problems are handled by supervisors, rather than being brought before the committee. (Details, Paragraph 7)

8. A general discussion of the problems of hiring and promoting personnel to fulfill the reorganization requirements was held. The inspector stated that this area did not appear to be receiving the priority that it needed. The licensee stated that he was having difficulty in hiring a qualified person from the outside, due, in part, to the salary available, and that procedures required in the job posting and bidding process were very slow. The licensee stated that he expected to have much faster action in hiring a Supervisor of Radiation Protection shortly. (Details, Paragraph 2)

DETAILS

1. Persons Contacted

J. Carroll, Station Superintendent
J. Sullivan, Technical Engineer
R. Stoudnour, Chemical Engineer
D. Weigle, Engineering Assistant
W. Spoulos, General Service Foreman
D. Kaulback, Radiation Protection Foreman
R. Plewa, Assistant Radiation Technician

2. Organization - Radiation Protection

The licensee described the status of their reorganization and staffing effort. Four Health Physicists had been interviewed for the job of Supervisor of Radiation Protection as of September 5. Two additional interviews were scheduled for the following week. The licensee ultimately plans to have a Radiation Protection staff consisting of 1 Supervisor of Radiation Protection, 2 Foremen, 4 Radiation Technicians and 6 Assistant Radiation Technicians for a total of 13 personnel. There are presently 9 personnel in this function: a temporary Supervisor, 1 Foreman, 3 Radiation Technicians, and 4 Assistant Radiation Technicians. The environmental function has been transferred from the Radiation Protection function to that of the Technical Engineer.

The licensee stated that, as of September 5, 1973, only one of the five additional positions had been filled. This was an assistant radiation technician, and was accomplished through an internal transfer. The two key positions of Supervisor of Radiation Protection and Radiation Protection Foreman had not yet been filled. The inspector stated that since the commitment for the reorganization and hiring was made by the licensee in March, 1973, and only one of five positions had been filled and it was at the lowest level, this was no indication of "most immediate" attention on the part of the licensee. The licensee stated that it had been extremely difficult to hire personnel from outside the plant and that the company's internal job posting system made hiring from within a very lengthy process. The licensee also stated that there was a salary limitation placed on the job of Supervisor of Radiation Protection making it difficult to attract a qualified person.

3. Training

Examination of Safety Meeting minutes revealed that radiation safety training lectures are being conducted as a part of safety meetings. The inspector noted that safety meetings held on June 7 and 22, July 12 and 26, and August 22 and 29, included radiation safety lectures. There was no record of radiation safety training in the safety meeting minutes prior to June 7.

4. Radwaste Facility Radiation Doses

The inspectors made dose rate measurements* in and around the Radwaste Building, a restricted area. A roped-off area within the building at the north end of the control room was marked with a radiation area caution sign. The dose rate at this point was 9-10 mR/hr. At the operator's control panel and the adjacent foreman's desk near the posted radiation area, the dose rate was 5 mR/hr, however, this area was not posted as a radiation area. Operating personnel routinely occupy the area, yet they were not aware of the existing dose rates, as discussed in Paragraph 11.

5. Violation of Radioactive Work Permit Procedures

In the Main Reactor Building at the 95' level the inspectors observed four men working at a bench within a controlled radiation zone. The radiation work permit posted at the zone required full protective equipment including gloves, caps, coveralls, plastic disposable booties, and rubbers. The inspectors observed that none of the men working within the area were properly dressed. Two of the men had no caps, 3 were not wearing booties, and none of the men were wearing gloves.

6. Radioactive Material Spill

The inspectors noted that soil from the area outside the Reactor Building (23 ft. elevation) was being shoveled into drums. Upon inquiry the licensee representative informed the inspectors that a radioactive material spill had occurred there on August 24, 1973. The licensee stated that highly contaminated filter elements were removed and placed in a 55 gallon drum on the roof of the Radwaste Facility. It was reported that the filter elements were longer than the drum and, therefore, protruded above it preventing the installation of a drum cover. During the act of transferring the drum to the ground and to the inside of the building, the drum was accidentally tipped and some of the contaminated water spilled

*Eberline Inst. Co. Model E-120 end-window G-M survey meter were used

out onto the ground. Radiation levels at the drum surface were reading up to 3R/hr. Contamination levels on the ground after the spill were as high as 200 mR/hr at 6" from the ground surface. The licensee stated that the investigation of this incident had not been completed as of September 7, 1973, due to a lack of manpower. The licensee stated that no Plant Procedure exists for this operation. The Radioactive Work Permit (RWP) issued for the job was examined by the inspector. It was observed that no information regarding dose rates to personnel, contamination levels inside the drum, or any special precautions were written onto the RWP in spite of the high radiation levels. As noted above, the filter elements were too long to allow the drum to be properly capped. Hence, it was handled as an open container. According to the licensee, the job was performed without the supervision of health physics personnel. A licensee representative stated that he cannot always provide health physics coverage for this type of job.

7. Plant Operating Review Committee Minutes

The inspector reviewed the minutes of the Plant Operating Review Committee (PORC) for the period April 1, 1973 through August 13, 1973. Nothing relative to problems of exposure control, house-keeping, radiation protection or the contractor employee over-exposure was found in these minutes. PORC meetings were held on a routine basis but the minutes suggested that the committee did not appear to concern themselves with these problems. The licensee stated that the committee did concern themselves with these problems, even though the minutes did not specifically say so. The licensee also stated that many problems are handled by supervision immediately, rather than being brought before the committee.

8. General Operating Review Board

The inspectors asked to see minutes of the General Operating Review Board (GORB) meetings for 1973 that Technical Specification 6.1.C.2.f requires to be in the possession of the Plant Superintendent. The superintendent stated that minutes of these meetings had not been furnished to him. The inspectors determined that audits were not conducted by the GORB at the required frequency. This was confirmed by the licensee. A GORB audit on radiological control was made on March 13, 1973. The next audit on limiting conditions of plant operation was not made until July 17, 1973.

9. Changes to Radiation Protection Procedures

The inspectors reviewed the Radiation Protection Procedure Manual and noted that procedure 903.2 had been changed twice; the changes were marked in the procedure manual, one change was dated March 30, 1973 and another change dated April 10, 1973. Upon examination of Plant Operating Review Committee minutes, however, no indication was made that these changes had been approved by this committee. The licensee agreed that the changes had not been reviewed.

10. In-House Safety Audits

The inspectors reviewed an in-house audit program that was begun in March 1973. The program is documented through Supervisor Tour sheets. This program is being conducted for purposes of measuring the effectiveness of the radiation protection program relative to compliance with AEC regulations and conformance with plant procedures. The tour sheet is filled out by the person conducting the tour. The sheet includes the item noted, the date of action and any notes made by the supervisor. The inspectors noticed that approximately half of the items entered on each weekly tour tended to be repeated during subsequent tours. Some of the items noted on the tour sheets were "Radiation Work Permit ripped-up", "High Radiation Area sign removed", "Radiation barriers torn down", "High Radiation Room not locked". It appeared that although items were identified there were no effective means of assuring that they were not repeated at some later date.

11. Radiation Levels in Radwaste Facility

Inspection findings indicated that employees working in the Radwaste Building in the area discussed in Paragraph 3 were not aware of existing radiation levels. The inspectors asked an employee working in the control room what the dose rates were and he stated that, "he did not know but they were very low." The inspectors were accompanied on a tour of the Radwaste Building by a foreman; when asked what the dose rates in the small pump room of the facility were, the foreman stated that they were high but he did not know what the rates were. The only knowledge that the foreman had of dose rates was the reading on his pocket dosimeter. Dose rates in these areas were properly noted and recorded on radiation survey sheets that were posted at the access control point, however, the employees were apparently not familiar with this data.

12. Contaminated Floor in Reactor Building

In the reactor building at the 51' level the inspectors took two smear samples on the floor in the roped-off area. A smear taken near a sample sink read 10 mR/hr. on the survey meter, another smear sample taken in an area near the recirculating pumps read 30 mR/hr. The floor was covered with a dry, rusty looking material that was the source of the contamination. A rubber shoe cover located adjacent to the step-off pad for this area was found to have contamination on the sole which read 12 mR/hr. directly on the survey meter. The area is routinely frequented by plant personnel. According to the licensee no routine surveys or air samples are presently scheduled. The inspectors stated that their smear survey indicated that the contamination was easily removable and could therefore become airborne. The licensee stated that he didn't feel that the existing contamination was significant enough to require routine surveillance. The inspectors stated that although the area was roped-off, equipped with a step-off pad and frisker and posted with an RWP, the ease with which the contamination came off the floor and the high levels of radiation created an unnecessarily high degree of hazard.

13. Contractor Indoctrination Program

The inspectors' review of this program determined that there were no written procedures covering the training, indoctrination, or radiation protection responsibilities for contractors working on temporary jobs at the station. There was documentation that some contractors had received an indoctrination and some training. However, there was no documentation showing that one particular contractor who had an employee that was overexposed during a control rod drive modification job had received any indoctrination. The employee received a whole body exposure of 3.020 rem during the second calendar quarter of 1973.* A review of the licensee's investigation of this overexposure showed that the employee did state that he had been indoctrinated. The inspectors had previously noted comments in a contractor log book relative to the contractor supervisor responsible for this particular job. These comments described the supervisor's attitude toward radiation safety rules and training as poor. The licensee representatives stated that they were cognizant of the situation and that contractor personnel do indeed receive an indoctrination. They said that documentation of these indoctrinations would be made in the future.

* Letter from Donald A. Ross, to Directorate of Regulatory Operations, dated June 5, 1973

14. Personnel Dosimetry, External

As evidenced by a review of exposure records and observations, personnel monitoring is accomplished with film badges supplied by a commercial processor. Badges are changed monthly. Day-to-day exposure is determined and controlled with pocket dosimeters. Exposure records for the period January 1 through June 30, 1973 were reviewed. No exposures in excess of 10 CFR 20 limits were noted. It was noted that personnel with exposures greater than 2500 mrem in a calendar quarter are issued a film badge daily, in addition to their routine badge and that these results are hand posted along with their pocket dosimeter results. These daily badge results are not included in the processor's monthly tabulation. At 2800 mrem, the employee is moved to a "cold" area to minimize chances of overexposure. One of the "cold" areas is the Radwaste Facility control room where dose rates of 5 mR/hr were measured by the inspectors. A record for one employee showed an exposure of 2910 mrem for one calendar quarter. The system described above was followed in this case. Although in general, exposures are distributed among all radiation workers, there is a potential for exceeding 3000 mrem in a calendar quarter using the system described.

15. Radiation Survey Instruments

The inspector examined the contents of the instrument cabinet in the Health Physics office adjacent to the access control point. He asked to see a check source for verifying instrument operation and was told by a licensee representative that "There used to be one, but I don't know where it is, now." It was observed that four out of five cutie-pies in the cabinet were inoperable (one of these was tagged as such), a neutron survey meter had a calibration date of September, 1972, and a Geiger-Mueller survey meter had been left "on".

Before the inspection was concluded, the licensee removed the defective instruments from the cabinet and tagged them for repair or calibration.

16. Whole Body Counts on Potentially Exposed Employees

The inspector reviewed whole body counter data for 39 employees potentially exposed during the reactor head removal operation on April 16-19, 1973. It was observed that two employees, A&B, counted on either April 18 or 19 had Iodine-131 body burdens of 18.28% and 20.28%, respectively. The inspector stated that, depending upon the exact dates and times of the body counts and the exposures, it is possible that both employees might have

been exposed to air concentrations in excess of the limits in 10 CFR 20, Appendix B, Table I. These data were not readily available at the time of the inspection. The licensee stated that they had conducted an investigation, along with a consultant retained by them, and that their conclusion was that there had not been any overexposures. The data were obtained by the inspector during telephone conversations on September 11 and 13 with the licensee. Both employees were counted on April 18 and dates and times of potential exposure were furnished. Calculations by the inspectors of initial Iodine-131 burdens using retention functions described in ICRP Publication 10 showed that neither employee was overexposed in this event.

17. Air Sample Results

Air sample records for all areas for May through August 18, 1973 were examined by the inspector specifically for Iodine-131 activity and particulate activity. No activity levels in excess of 9×10^{-9} $\mu\text{Ci/cc}$ of Iodine-131 activity and 3×10^{-10} $\mu\text{Ci/cc}$ particulate activity were found on the records examined.

18. Fence Line Dosimeters

The inspector reviewed data obtained from radiation dosimeters located at 8 locations around the perimeter of the plant. Data for the months of May, June and July showed dose rates all less than 0.3 mR/hr.