

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/88009(DRSS)

Docket No. 50-341

License No. NPF-33

Licensee: Detroit Edison Company
2000 Second Avenue
Detroit, MI 48226

Facility Name: Enrico Fermi Nuclear Power Station, Unit 1

Inspection At: Fermi Site, Monroe, Michigan

Inspection Conducted: March 7-11, 1988

Inspectors: *R. A. Paul*
R. A. Paul

4/5/88
Date

W. J. Slawinski
W. J. Slawinski

4/5/88
Date

Approved By: *L. Robert Greger*
L. Robert Greger, Chief
Facilities Radiation
Protection Section

4-5-88
Date

Inspection Summary

Inspection on March 7-11, 1988 (Report No. 50-341/88009(DRSS))

Areas Inspected: Routine, unannounced inspection of the radiation protection program during a maintenance outage, including: organization and management controls (IP 83722); changes in organization, personnel, facilities, equipment, and procedures (IP 83727, 83729); planning and preparation (IP 83729); training and qualifications of contractor personnel (IP 83729); internal and external exposure control (IP 83729); control of radioactive materials and contamination (IP 83729); and the ALARA program (IP 83729). Additional areas reviewed include liquid and gaseous rawaste (IP 84723, 84724), effluent and area monitor calibrations (IP 84723, 84724), and open items.

Results: No violations or deviations were identified. During the maintenance outage, the licensee's ALARA measures appeared effective for reducing personnel exposures and the radiological control program implementation was good. The licensee's program for controlling liquid and gaseous radwaste is adequate; however, two unresolved items were identified concerning quantification of gaseous releases to the environment and post discharge flushing of liquid radwaste discharge lines.

DETAILS

1. Persons Contacted

R. Anderson, Supervisor, Radiological Engineering
*S. Bartman, Senior Radiological Engineer
*R. Eberhardt, Radiological Controls Engineer
*D. Gipson, Plant Manager
*H. Higgins, Supervisor, Health Physics Operations
*W. Orser, Vice President Nuclear Operations
D. Sylvia, Group Vice President, Nuclear Operations

W. Rogers, Senior NRC Resident Inspector

*Denotes those present at the exit meeting. The inspectors also contacted several other members of the licensee's staff.

2. General

This inspection, which began on March 7, 1988, was conducted to review the radiation protection program during a maintenance outage, including organization and management controls, planning and preparation, qualifications and training, internal and external exposure controls, ALARA program, and control of radioactive material and contamination. Also reviewed were liquid radwaste, gaseous radwaste, and open items. During plant tours, no significant access control, posting, or procedure adherence problems were identified; housekeeping was adequate.

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

(Closed) Open Item (341/86015-01): Extensive use of Tygon tubing to control valve leak-off for contamination control. The licensee's program for management of leaks in the plant is described in Report No. 341/87050; the inspectors verified that the program is progressing satisfactorily. During the maintenance outage, 46 plant leaks are scheduled for repair; the status of plant leaks will continue to be tracked. The licensee's leak reduction program appears adequate to control plant leaks.

(Closed) Open Item (341/86002-01): Followup/disposition of CST spill which occurred on November 17, 1985. The status of this open item is discussed in Inspection Reports No. 50-341/86002 and No. 50-341/86027. The released activity was below regulatory MPC limits and personnel doses were insignificant. In response to the licensee's petition submitted for onsite disposal of soil contaminated from the spill, the NRC concluded that the proposed action will not have a significant effect on the quality of the environment. This conclusion is documented in a letter to the licensee dated December 31, 1987, from the Division of Reactor Projects, NRR.

(Closed) Open Item (341/87018-01): Strengthen the incident report system to ensure that cognizant management personnel are aware of significant incidents and are involved in their review. The licensee has restructured the Deviation Event Report (DER) system, used to document significant events including radiological incidents, to require the Plant Manager to designate action assignments for review of the event and further require Plant Manager and Onsite Review Organization approval(s) for event closeout. A DER is not closed until the Plant Manager approves the completed corrective actions.

(Closed) Violation (341/87050-03) and Open Item (341/87050-04): Untagged and unmarked equipment with detectable contamination stored in the tool crib, an unposted area. The corrective actions described in the licensee's February 5, 1988 response letter have been implemented and appear acceptable. These actions include training for tool crib attendants; procedure revisions to require additional tool crib surveys; development of a new procedure to control tool and equipment issuance, accountability, and return; and improved physical segregation of tools.

(Open) Open Item (341/86002-02): Preoperational test exceptions remaining open for the liquid radioactive waste system. The exceptions were on the oil coalescer, etched disc filters, filter aid system, and radwaste evaporators; only the exception on the oil coalescer remains open. The licensee does not intend to place the etched disc filters or oil coalescer into service and will devote their efforts at optimizing the precoat filters presently in service. The licensee will initiate a FSAR change and conduct a 10 CFR 50.59 Safety Evaluation and Technical Specification analysis to reflect the present operating conditions of the liquid radwaste system with respect to these filters.

(Closed) Open Item (341/87050-02): Review the practice of permitting persons to leave the site after alarming the gatehouse portal monitor if contamination is not detected on a subsequent personal frisk survey. The licensee has revised their procedures to require personnel to receive a whole body count to determine potential intake if they alarm the gatehouse portal monitors.

4. Organization and Management Controls (IP 83722)

The inspectors reviewed the licensee's organization and management controls for the radiation protection program including changes in the organizational structure and staffing, effectiveness of procedures and other management techniques used to implement these programs, and experience concerning self-identification and correction of program implementation weaknesses.

Since the previous inspection (Inspection Report No. 50-341/87050), the most significant change in the organization and management program occurred when the licensee eliminated the General Supervisor, Health Physics position when the individual assigned to that position (who was also the Radiation Protection Manager (RPM)) terminated employment. As a result of this change, the current health physics organization has been modified and now consists of the Radiological Controls Engineer who was named the interim RPM, a Supervisor Radiological Engineering, a Supervisor Health Physics Operation, and a Supervisor Radiological Health. All three supervisors report directly to the Radiological Controls Engineer.

Based on a review by Region III and NRR, it appears the newly appointed interim RPM's qualifications and experience do not meet ANSI N18.1 - 1971 and Regulatory Guide 1.8 - 1975 criteria as required by technical specification 6.3.1. This matter was discussed with the plant manager and at the exit interview. (Open Item 341/86009-01)

No violation or deviations were identified.

5. Training and Qualification of New Personnel (IP 83729)

The inspectors reviewed the licensee's selection criteria and the education and experience qualifications of contract radiation protection personnel and training provided to them.

Licensee selection of contracted radiation protection technicians includes review of technicians' resumes to determine conformance to ANSI 18.1-1971 criteria for responsible technicians and, for selected technicians, a telephone interview with the radiation protection organization of the facility where the technician previously worked. In addition, the station has developed procedural requirements for 100% verification of contract personnel experience and qualifications through contract vendor certification. For instances when vendor certifications are not on-file, resume authenticity is licensee verified by telephone contact with previous employers. Resumes of selected contract radiation protection technicians working at the station during the current outage were reviewed by the inspectors; no problems were noted.

After selected technicians arrive on-site they are required to pass a written health physics proficiency exam on nuclear physics theory and practical health physics problem solving. Scores of 80% and 70% are required for unconditional acceptance of senior and junior technicians respectively; however, senior technician scores between 50% to 79% can be accepted, and the individuals provisionally accepted for limited work assignments, based on determination of Health Physics Supervision. Senior technicians scoring less than 50% are not accepted into the program. The 80 question proficiency exam was reviewed by the inspector and appeared to be moderately difficult. Following successful completion of the proficiency exam, each contracted technician is required to complete three days of licensee procedure training, health physics equipment and applications training, and site specific and radiation worker training. A exam is administered at the conclusion of the

procedure training; a minimum score of 75% is required of all technicians. Inspectors selectively reviewed lesson plans and training and exam records; no problems were noted. Selected technicians not meeting ANSI 18.1 - 1971 experience criteria and those provisionally accepted are assigned duties commensurate with their training and experience and the licensee's program requirements.

No violations or deviations were identified.

6. Planning and Preparation (IP 83729)

The inspectors reviewed the outage planning and preparation performed by the licensee, including: additional staffing, special training, increased equipment supplies, and job related health physics considerations.

The station's radiation protection group has been augmented with 69 contract health physics technicians consisting of 48 senior and 21 junior technicians. The inspectors verified that those technicians not meeting ANSI 18.1 - 1971 selection criteria were not providing radiation protection duties without proper supervision. For the outage, the station assigned lead or senior house technicians as coordinators responsible for health physics in specific areas of the plant. The individuals function as foreman and direct the health physics activities of house and contract technicians assigned to the area. In addition, the station assigned a health physics/maintenance coordinator on each shift to provide an interface between radiation protection and maintenance. Health physics technicians and supervisors provide continuous coverage, typically working ten to twelve hour days, six days per week. This scheme adequately provides the needed oversight of outage activities.

Radiation protection influence/participation in job planning and preparation includes pre-outage mock-up training provided to station and contract workers for certain high exposure work, ALARA briefings for work groups, and ALARA participation in planning and outage meetings. The inspectors reviewed the ALARA coordinated mock-up training for the MSIV job provided to maintenance personnel. The training was a fairly extensive two-day course jointly given by ALARA and site training groups over several sessions. The ALARA program is discussed in Section 7.

No violations or deviations were identified.

7. ALARA (IP 83728 and 83729)

Operational health physics and radiological engineering personnel participated in preplanning meetings and were involved in major radiation jobs in advance of the maintenance outage. The person responsible for the ALARA program was involved in the planning of certain outage jobs. Some of the major outage jobs included replacement of containment thermal couples, inspection/modification to main steam reheaters, main steam line isolation valve listing and repair, and safety relieve valve removal.

testing and replacement. According to the ALARA coordinator, cooperation between work groups was sufficient and management support for ALARA measures was good.

The ALARA review program is defined in Procedure 61.000.02 "ALARA Review Program." The inspectors reviewed documentation related to the implementation of the ALARA program during this outage to ensure the required procedural measures were performed, and sufficient ALARA measures were taken. Based on this review, it appears the licensee's ALARA program is functioning as intended, was effectively implemented during this outage, and meets the procedural requirements.

To implement ALARA for certain job tasks, the licensee provided additional temporary shielding and temporary portable ventilation systems, flushed and drained RWCU and RHR lines to remove hot particle buildup, directed RHR return to the opposite side of the drywell during SRV work and used a MSIV mock-up for training workers before actual MSIV work was performed.

No violations or deviations were identified.

8. External Exposure Control and Personal Dosimetry (IP 83729)

The inspectors reviewed the licensee's external exposure control and personal dosimetry program, including: changes in facilities, equipment, personnel, and procedures and adequacy of the dosimetry program to meet outage needs.

There have been no significant changes in the licensee's external exposure measurement and control program since previously reported (Inspection Reports No. 016/86002; No. 341/86029). The licensee has established station exposure estimates and goals for the current six-week outage of 36 and 30 person-rems, respectively. Approximately seven person-rems were expended during the first week of the outage.

Dose cards maintained at the RCA control points are used to track daily SRD exposures. Drywell and torus worker exposures are also recorded on dose cards maintained and controlled by health physics personnel manning these respective control points.

No violations or deviations were identified.

9. Internal Exposure Control and Assessment (IP 83729)

The inspectors reviewed selected aspects of the licensee's internal exposure control and assessment programs, including: determination whether engineering controls, respiratory equipment, and assessment of intakes meet regulatory requirements, and planning and preparation for maintenance tasks including ALARA considerations.

The respiratory protection and respirator usage program remains as previously described (Inspection Report No. 341/87050). The inspectors toured the respirator storage and distribution facility in the turbine

building and discussed the program with health physics workers manning the area. No problems were noted; it appears sufficient attention is given to respirator inspection, storage, and maintenance. RWP's for drywell and torus work were posted at the work area control points and appeared to adequately reflect the respiratory protection requirements for the job; health physics personnel manning these control points verify workers are properly equipped. Provisions are made during the respirator issuance and return cycle for MPC-hour accountability. The inspectors observed workers sorting protective clothing and monitoring them with the automated monitor. Sorting is performed on a table located under a canopy type hood; vertically hung plastic sheets provide a physical barrier to separate workers from the sort table/hood and retain potential airborne contaminants. Air samples are continually taken in the area.

No violations or deviations were identified.

10. Facilities/Equipment and Equipment Calibrations (IP 83727)

The inspectors toured radiation protection facilities, observed equipment in use, and discussed recent improvements and future plans for facilities and equipment.

Equipment procured in 1987 and to date in 1988 which should enhance the radiation protection program include: (1) a state-of-the-art laundry monitor; (2) two tool monitors for frisking hand carried items leaving the RCA; (3) several portable enclosures/booths for contamination control; (4) a bag monitor; and (5) a static elimination booth to reduce recurrent contamination problems from radon gas daughters. A portable gamma spectrometer has been ordered to aid in the identification of radon daughter products. The laundry monitor and several of the portable enclosures have been installed and made operational. Installation of other recently procured equipment is underway. It appears that radiation protection facilities and equipment are good and that the necessary management support and licensee funding is available for program improvements.

The inspectors reviewed records and relevant procedures for calibration of the Eberline Model PCM-1A whole body friskers. The station has eleven such friskers available and performs calibrations at six-month frequencies using nominal 94 nCi technetium-99 (100 cm² area) standards. Detector efficiencies to the Tc-99 standards range from 5-9%. Frisker alarms are nominally set at 450 cpm (900 dpm or 4 nCi). The inspector reviewed calibration records for selected monitors; no problems were noted.

The licensee purchased and recently made operational an automated laundry monitor. The monitor employs gas flow proportional detectors located above and below, and traversing the width of a moving conveyor belt. In February 1988, the monitor was installed, voltage plateaus determined and detectors calibrated using the same technetium-99 sources used for whole body frisker calibrations. Detector efficiencies are 5-6% with the Tc-99 plate source about two inches from the detector(s). The licensee has adjusted the monitor to alarm at 10,000 cpm/100 cm² which translates to

an unattenuated activity of about 90 nanocuries. Procedures have been developed for operation and calibration of the monitor and include daily operational (Tc-99) source checks. The inspectors reviewed and discussed the basis for the monitor's alarm setpoint with the licensee. It appears that a laundered coverall containing a hot particle on it's inside surfaces, with an activity equivalent to the monitor's alarm setpoint, could go undetected since the particle would be attenuated by the clothing. This could produce a significant skin dose should the particle remain affixed to the inside of the PC and worn for several hours. This matter was discussed during the inspection and the licensee agreed to reevaluate the monitor's alarm setpoint and their PC monitoring method. This matter will be reviewed during a future inspection (Open Item 341/88009-02).

11. Control of Radioactive Materials and Contamination (IP 83729)

The inspectors reviewed the licensee's program for control of radioactive materials and contamination, including: changes in instrumentation, equipment, and procedures; effectiveness of survey methods, practices, equipment, and procedures; effectiveness of methods of control of radioactive and contaminated materials; management techniques used to implement the program; and experience concerning self-identification and correction of program implementation weaknesses.

The licensee has upgraded their machine shop for work on contaminated materials by installing a HEPA filtered and ventilated enclosure around equipment used for work on radioactive materials. The licensee also has completed construction of a hot machine shop in the radwaste building which is fully enclosed from surrounding areas and equipped with two dedicated (400 cfm) HEPA filtered ventilation systems to prevent migration of loose contamination and control airborne contaminants. Both machine shops are designed to maintain a negative pressure within the facility even though air patterns outside the enclosure may be unstable. Other similar enclosures were noted in several other plant areas.

The station's multiple ingress and egress control point to the radiologically controlled area (RCA) is located near the entrance to the turbine building from the service building. Health physics technicians continually observe the control point. To reduce and better control plant traffic flow during the outage, the licensee established a second RCA control point in a trailer constructed onto the south end of the reactor building. This control point is used primarily for contract worker ingress/egress, contains two PCM-1A whole body friskers for personal contamination detection, and is also continually manned by contract health physics technicians and plant security personnel. This secondary RCA control point facilitates access to the drywell and torus control points and appears to reduce overall plant congestion while maintaining the necessary radiological controls. Control points were also implemented at entrances into the drywell and torus.

The licensee has established a program for identifying and reporting personal contamination events and assessment of dose due to skin contamination. Procedure POM 63.000.21 requires a "Personnel Decontamination Form" be completed when any detectable activity above background is detected on the skin by a hand-held frisker and requires a skin dose assessment for all skin contaminations. The inspectors selectively reviewed personal contamination incident reports generated. There were 32 personal contamination incidents reported in 1987 and seven in 1988 through January. Most involved low level hand contamination caused primarily by improper radiological work practices. The inspectors reviewed the licensee's skin dose assessment methodology and found it generally acceptable and applicable to most contamination events. However, the methodology assumes the contaminant has a maximum beta energy of 800 kev and the contamination is spread evenly over 16 cm² and therefore, is not applicable for dose assessment from hot particles or for beta energies significantly different from that assumed. The licensee has not identified any hot particles at this early stage in plant operations.

In October 1987, the licensee formed a hot particle task group, composed primarily of dosimetry and health physics personnel, for the purpose of establishing a hot particle identification, prevention, control and dosimetry program. The group has developed an action plan for application during the current outage which includes identification of jobs with potential for hot particles, appropriate RWP precautions, identification and response actions should hot particles be identified, and training and instruction for health physics and general plant staff. General hot particle information was conveyed to the plant staff in the outage issue of the station's newspaper and specific training was provided to health physics staff members. The licensee plans to revise the personnel decontamination procedure to address hot particle issues including dose assessment, implement a plan for laundry operations and monitoring, develop a hot particle training module for training of health physics and selected radwaste personnel, and include general coverage of this issue in radworker training. The implementation of these plans will be reviewed during a future inspection (Open Item 341/88009-U3).

No violations or deviations were identified.

12. Liquid Radioactive Waste (IP 84723)

The inspectors reviewed portions of the licensee's liquid radwaste management program, including changes in equipment and procedures; radioactive waste effluents for compliance with regulatory requirements; adequacy of required records, reports, and notifications; and experience concerning identification and correction of programmatic weaknesses.

There have been no significant changes to the licensee's methodology for quantifying liquid radwaste releases since previously described (Inspection Report No. 50-341/87037). The inspectors reviewed the semi-annual effluent report for the last half of 1987; no problems were

noted. There were 31 lake discharge batch releases totaling a gross beta-gamma activity (excluding tritium) of about 16 millicuries reported for the last half of 1987; no instances of a release exceeding technical specification limits were identified. For that period, the calculated maximum whole body dose to an individual beyond the site boundary was $1.03E-3$ mrem.

The inspectors reviewed discharge records for a February 19, 1988 batch release from a waste sample tank and the licensee's methodology for determining the MPC fraction for each nuclide, discharge monitor setpoints, cumulative MPCs released at the discharge point and monitor ability to distinguish relatively low concentrations when elevated background levels exist in the discharge line. No significant problems were noted. For this release, the in-line monitor detected elevated background levels presumed to have been caused by buildup in the discharge line. The licensee performs a post-discharge flush of the discharge line but reportedly does not flush the entire line from the sample tank to the monitor. The licensee concluded the elevated background levels were caused by buildup from a previous discharge which was not adequately flushed. Monitor background levels were reportedly back to normal on the subsequent discharge. To correct this problem, the licensee is revising procedure POM 23.718.05 to require a thorough post-discharge flush for the entire run of line from the waste sample tank to the monitor. Review and implementation of the revised procedure will be reviewed during a future inspection (Open Item 341/88009-04).

No violations or deviations were identified.

13. Gaseous Radioactive Waste (IP 84724)

The inspectors reviewed the licensee's gaseous radwaste management program, including: determination whether gaseous radioactive waste effluents were in accordance with regulatory requirements; adequacy of required records, reports, and notifications; experience concerning identification and correction of programmatic weaknesses; and the licensee's organization and management controls for the chemistry programs.

The program was reviewed for the period July 1987 through February 1988. The inspectors reviewed the semiannual effluent report for July through December 1987, and selectively reviewed effluent records for the same period.

The gaseous effluent release paths, control mechanisms and procedures, effluent quantification methods, dose projections, and dose calculations are unchanged from the description provided in Inspection Report No. 50-341/87037. In that report it was noted that for 1986 and 1987 through August the technical specification required monthly grab gas samples collected from the reactor building and SGTS exhausts were less than LLD, and as a result the total gaseous effluent releases were computed as zero curies. During this period the reactor operated at 50% or less power and the licensee stated that until the reactor generates

noble gas effluents which can be quantified using the reactor building and/or SGTS sampling/monitoring system, effluent quantifications will continue to be based on the monthly grab samples, rather than the results recorded by the reactor building gaseous effluent monitoring system. Based on samples for the period August 1987 through February 1988, during which time the reactor was operating at 60% to 90% power levels, the grab gas samples collected from the reactor building and SGTS exhausts continue to indicate less than LLD. The grab samples are taken on a prescribed day each month without regard to reactor power level. Given the reactor power history of the reactor, grab samples may have been taken during days in which the reactor was not operating or during low reactor power.

During this inspection, information was reviewed comparing reactor building vent exhaust gaseous effluent monitoring data to reactor power levels for January and February 1988. As a result of this review it was noted that at power levels of 95% and less, the gaseous effluent concentrations recorded by the monitoring system normally ranged between $5E-7$ to $1E-6$ $\mu\text{Ci/cc}$ with the exception of a five-day period in February 1988, in which the recorded concentration ranged between $1E-6$ to about $1E-5$ $\mu\text{Ci/cc}$. According to the licensee, the monitor detection system can detect concentrations between $5E-7$ to $1E-6$ $\mu\text{Ci/cc}$ with reasonable confidence, and above $1E-6$ $\mu\text{Ci/cc}$ with good confidence. Although the concentrations detected and recorded by the gaseous effluent monitor above $5E-7$ $\mu\text{Ci/cc}$ may well be indicative of actual gaseous releases, they are not represented in the semi-annual effluent report. To date, the licensee has not performed an evaluation to determine the significance of the noble gas monitor results. Because the results of the gas grab samples and actual recorded monitoring results have not been compared, and the results of the monitoring system values have not been evaluated, it appears the licensee's program for evaluating, quantifying and analysis of gaseous effluent data requires review and evaluation. This is considered to be an Unresolved Item. This matter was discussed with a member of the licensee's staff on March 22, 1988, who stated that an evaluation will be made of previous and current grab gas sample and monitor data to determine if the gaseous effluent monitoring program is adequate, and to identify if unreported gaseous releases have occurred (Unresolved Item 341/38009-05).

The chemistry department is staffed with a recently appointed general supervisor, a chemist, an engineer, two specialists, 15 technicians, two nuclear equipment technicians and three water technicians, and an unfilled position for a chemistry engineer which is currently filled by a chemistry technician who is expected to receive a bachelors degree in chemistry in the near future. The licensee indicated that the recently appointed general supervisor meets the ANSI N18 - 1971 requirements; however, the inspectors were unable to review his qualifications during this inspection. These qualifications will be reviewed during a future inspection (Open Item 341/88009-06).

No violation or deviations were identified.

14. Calibrations of Process Effluent and Area Radiation Monitors
(IP 84723 and 84724)

The inspectors selectively reviewed calibration procedures and records for technical specification required area monitors and radioactive gaseous system process monitors (reactor building exhaust plenum SPING). Calibration methods appeared appropriate and met technical specification frequency requirements. Beginning in 1988, responsibility for area and process monitor calibrations was transferred from the station's instrumentation group to the radiological health group. New calibration procedures were developed and approved, emphasizing monitor radiological calibrations and in the absence of problems, foregoing full electrical calibrations. Eighteen-month calibrations for technical specification required area monitors (main control room area monitor, new fuel storage and fuel pool area monitors) and the control center normal makeup air radiation monitor were completed in February and March 1988 and are underway for gaseous and liquid process and effluent monitors. Thus far, a new calibration has been successfully completed on the reactor building exhaust SPING. The licensee plans to complete the remaining process and effluent monitor calibrations during the current outage.

Technical specification required area monitors are calibrated pursuant to recently developed procedures (NPP 64.080.302-304) using a J. L. Shepherd calibrator containing a nominal 100 mCi Cs-137 sealed source. Monitors are dismounted and bench calibrated at delivered dose rates of 5 and 25 mR/hr; alarm/trip setpoints are set per technical specification requirements. According to the licensee, the output of the Shepherd calibrator is verified using a Victoreen R-chamber calibrated by the manufacturer on an annual basis.

As previously described (Inspection Report 341/87037), initial calibration of gaseous effluent monitors involved using several concentrations of different noble gases to show counting efficiencies for each isotope and to demonstrate linearity over the range of the monitor. Concurrently, solid sources with differing beta energies were counted, monitor efficiencies determined, and transfer calibration methodology established. During subsequent calibrations, these solid sources are decay corrected and counted to show that the monitor efficiency has not significantly ($\pm 20\%$) changed over the range of energies. Monitor linearity is also verified by counting several sources of a single nuclide with differing activities. In March 1988, the reactor building exhaust plenum low range noble gas channel was calibrated using four different activity Sr-90 solid sources and one Tc-99 source. The mid-range noble gas channel was calibrated using four different Cs-137 sources and one Cd-109 source. The inspectors reviewed records of the calibration; no problems were noted.

No violations or deviations were identified.

15. Tours and Independent Measurements

During tours of the reactor and turbine buildings, radioactive material controls, access control, postings, and housekeeping appeared good. Inspector observations of ingress and egress activities at the drywell, main control points, and other SOP areas indicated that workers were adhering to dress and frisking requirements. Several RWP jobs were followed and observations were made of workers performing outage activities; workers appeared to be adhering to RWP and procedural requirements.

The inspectors performed direct radiation surveys of equipment and selected areas in the reactor and turbine buildings; survey results were consistent with postings. Smear surveys were performed in the same areas; no detectable contamination was found.

No violations or deviations were identified.

16. Exit Meeting (30703)

The inspectors met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on March 11, 1988. The inspectors summarized the scope and findings of the inspection and also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents/processes as proprietary. In response to certain items discussed by the inspectors, the licensee:

- a. Stated a review will be initiated to appoint an RPM who meets the qualifications defined in ANSI-N18.1971 and Regulatory Guide 1.8-1975. It is the inspectors' understanding that before the appointment is made, the appointees' qualifications will be submitted to Region III for review (Section 4).
- b. Acknowledged the unresolved items (Section 13).