

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-293/85-22

Docket No. 50-293

License No. DPR-35 Priority -- Category C

Licensee: Boston Edison Company M/C Nuclear
800 Boylston Street
Boston, Massachusetts 02199

Facility Name: Pilgrim Nuclear Power Station

Inspection At: Plymouth, Massachusetts

Inspection Conducted: August 19-23, 1985

Inspectors: RL Nimitz 10/1/85
R. L. Nimitz, Senior Radiation Specialist date

Approved by: W. Pasciak 10/2/85
W. Pasciak, Chief date
BWR Radiation Safety Section

Inspection Summary: Inspection on August 19-23, 1985 (Report No. 50-293/85-13)

Areas Inspected: Routine, announced inspection of the following: licensee implementation of Radiological Improvement Program (RIP) commitments; previously identified items; review of several unmonitored releases; and preparation for diving in the fuel storage pool. The inspection involved 35 inspection hours onsite by one region based inspector.

Results: No violation were identified. The licensee was satisfactorily implementing his RIP Commitments. The licensee took satisfactory corrective action for the unmonitored releases. Additional attention to the area of radiological controls preparation and planning for fuel pool work is needed.

DETAILS

1.0 Individuals Contacted

1.1 Boston Edison Company (BECo)

- *A. L. Oxsen, Vice President-Nuclear Operations
- *W. H. Deacon, Assistant to the Senior Vice President-Nuclear
- *D. E. Mastrangelo, Chief Operating Engineer
- *A. R. Trudeau, Chief Radiological Engineer
- *E. T. Graham, Compliance Management Group Leader
- *J. Smallwood, Senior Chemical Engineer (Acting Chief Chemical Engineer)
- *L. Dooley, Training Supervisor
- *J. McCann, Watch Engineer
- *D. Tepper, Human Relations
- *T. Sowdon, Radiological Controls
- *J. Crowder, Compliance

1.2 Contractors

- *G. H. Smith, Hydro-Nuclear Inc.

*Denotes attendance at the NRC/Licensee exit meeting on May 24, 1985.

The inspector also contacted other licensee personnel.

2.0 Purpose of Inspection

The purpose of this routine, announced radiological controls inspection was to review the following programs elements:

- Previous findings,
- Radiological Improvement Program,
- Transfer of sewage to town of Plymouth,
- Overflow of sewage onsite,
- Apparent unmonitored airborne radioactivity release path from "hot" machine shop, and
- Radiological controls for diving.

3.0 Licensee Action On Previous Findings

- 3.1 (Closed) Follow-up Item (50-293/85-13-01) Licensee to establish guidance/action levels to be used as criteria to identify potentially contaminated normally uncontaminated systems. The licensee established acceptable guidance/action levels to be used as criteria to identify potentially contaminated/normally uncontaminated system. Appropriate personnel were trained in the new criteria. However, the inspector noted that the station air

systems were not identified as systems to be sampled as potentially contaminated systems and to which the new criteria applied. Licensee representatives indicated the matter would be reviewed and appropriate action taken. The area will be reviewed during a subsequent inspection (50-293/85-22-01)

- 3.2 (Closed) Follow-up Item (50-203/85-13-02) Licensee to establish guidance for operations personnel as to what actions to take if a normally clean system was identified as contaminated. The licensee issued a memorandum to Nuclear Watch Engineers on May 28, 1985, (AD 85-132). The memorandum provides adequate guidance as to the responsibilities of the operations personnel. This matter is closed.
- 3.3 (Closed) Violation (50-293/85-13-04) Licensee personnel did not adhere to station procedures. The inspector reviewed this matter with respect to the corrective and preventive action documented in the licensee's August 15, 1985, letter (85-152) to NRC Region I. The licensee satisfactorily implemented the short term corrective actions documented in his letter. The implementation of the licensee's long term corrective action will be reviewed during a subsequent inspection. (50-293/85-22-02) Note: The licensee provided additional long term corrective actions to preclude recurrence. These corrective actions are documented in NRC Region I's September 17, 1985, letter to the licensee (Reference Inspection Report 50-293/85-13).
- 3.4 (Closed) Deviation (50-293/85-07-03) Licensee did not adhere to guidance contained in IE Bulletin 80-10. The inspector reviewed this matter with respect to the corrective and preventive action documented in the licensee's August 15, 1985, letter (85-152) to NRC Region I. The licensee satisfactorily implemented the short term corrective and preventive actions documented in his letter. The licensee has established a plan to evaluate facility design with respect to the criteria contained in IE Bulletin 80-10. The licensee anticipates completion of the evaluation and implementation of final long term corrective actions by January 1986. The implementation of the licensee's long term corrective actions will be reviewed during a subsequent inspection (50-293/85-22-03).

4.0 Implementation of Licensee Commitments Presented to NRC in the Radiological Improvement Program

4.1 General

The inspector reviewed the implementation of Radiological Improvement Program commitments presented to the NRC. The review was with respect to criteria and/or information contained in the following documents:

- Order Modifying Licensee, Notice of Violation, and Notice of Deviation (NRC Inspection No. 50-293/84-25 and 50-293/84-29), dated November 29, 1984,
- Letter (W. D. Harrington, Senior Vice President-Nuclear, Boston Edison, to T. E. Murley, REgional Administrator, NRC Region I), dated February 28, 1985, (BECo Ltr No. 85-042),
- Licensee Completed Regulatory Requirement Analysis Forms (various) relative to Radiological Improvement Plan (RIP) Milestones,
- Licensee Radiological Activity Assessment Reports (RAAR) (various), and
- Radiological Oversight Committee (ROC) Meeting Minutes (various).

The purpose of this review was to determine if,

- the licensee met the commitments (i.e. milestones) specified in the Radiological Improvement Program (RIP);
- the material or actions taken/generated by the licensee satisfactorily met the commitments made to NRC in the RIP;
- the material or actions taken/generated were properly implemented.

The following aspects of RIP implementation were noted and verified implemented:

- a tracking program was in place to identify milestones due;
- adequate management controls were in place to monitor implementation of milestones and initiate proper action when milestones were identified as potentially not being met;
- adequate review was performed of the material or actions taken/generated to determine its adequacy prior to its acceptance and implementation.

Also, on August 20, 1985, the inspector attended and observed a Radiological Oversight Committee (ROC) meeting. Inspector observations at this meeting indicated the committee was functioning consistent with the Committee Charter presented in the licensee's February 28, 1985, letter (85-042) to NRC Region I.

4.2 Findings

The inspector reviewed a total of 67 commitments that were to have been completed by the licensee by July 31, 1985. The commitments reviewed and the status of them are identified in the attachment to this report.

The review indicated the licensee satisfactorily completed his committed action on 57 of the commitments. Several commitments were left open due to the need for additional licensee action or NRC review. These are identified in the attachment to the report.

Within the scope of the review, the following position attributes were noted:

- The licensee's Senior Vice President-Nuclear is closely monitoring implementation of the Radiological Improvement Program.
- Radiological Oversight Committee members are touring the facility once per week. Findings identified during the tours are brought up and discussed at the ROC meetings. Action is initiated to resolve problems identified.

Within the scope of the review, the following matter requiring licensee attention was identified:

- A member of the ROC has been selected as a member of the site Radiological Controls Organization. This individual is now no longer independent of that group. Consequently this individual's membership on the ROC is not in conformance with the specifications of the ROC Charter. The licensee is aware of this matter and is reviewing it. The licensee's action on the matter will be reviewed during a subsequent inspection.
(50-293/85-22-04)

Conclusion

Based on the above review, the licensee is adequately monitoring implementation of the RIP improvement items and is meeting commitments provided to NRC Region I

5.0 Unplanned Release

General

The inspector reviewed the circumstances, licensee evaluation, and licensee corrective actions associated with the following events:

- Discharge of unmonitored potentially radioactive gaseous effluents from the "Hot Machine Shop",
- Transfer of unsampled station sewage to the Town of Plymouth, and
- Overflow of sewage from the site holding/collection tank to various areas within the protected area.

The following matters associated with these events was reviewed:

- proper notification, where required, was made,
- appropriate immediate corrective actions were taken (as necessary) to limit effluent release,
- appropriate short term corrective action was taken to preclude recurrence,
- appropriate long term corrective actions were taken to preclude recurrence, and
- the licensee properly quantified the amount of radioactive material released offsite.

The review was with respect to criteria contained in the following:

- 10 CFR 50.72, "Immediate Notification Requirements for Operating Nuclear Power Reactors",
- 10 CFR 20.403, "Notification of Incidents",
- 10 CFR 20.106, "Radioactivity in Effluents to Unrestricted Areas",
- 10 CFR 20.103, "Exposure of Individuals to Concentration of Radioactive Material in Air in Restricted Areas",

The evaluation of the licensee's performance in this area was based on discussion with cognizant licensee personnel and review of applicable licensee records.

5.2 Release from HOT Machine Shop

Documents Reviewed

- Radiological Occurrence Report 85-7-30-683, dated July 30, 1985
- PNPS Failure and Malfunction Report, dated August 12, 1985

- Engineering Service Request (ESR) 85-363, dated July 30, 1985
- Miscellaneous Radioactive Contamination Surveys of various fan rooms, duct work, air exhaust and intake locations dated July-August 1985
- PNPS Maintenance Request, dated August 7, 1985

General

On July 30, 1985, a contamination survey of the "Old Maintenance Office" floor area identified low level floor contamination (1000-2000 disintegration per minute per 100 centimeters squared [dpm/100 cm²]). An investigation as to the source of the contamination indicated it apparently was emanating from exhaust duct work in the area. Further investigation indicated the local exhaust duct work tied into exhaust duct work from the "Hot" Machine Shop. This former duct work eventually exhausted its contents to the atmosphere outside the Turbine building. (See Figure 1)

As a result of this identification, the licensee determined that an apparent unmonitored release path from the "Hot" Machine Shop may have existed for some period of time. The licensee performed the following action when the floor contamination was identified:

- On July 30, 1985, a Radiological Occurrence Report was written to document the event.
- On July 30, 1985, an Engineering Service Request was written to request engineering evaluation and corrective actions for the event.
- On or about July 30, 1985, a determination was made that Fan VEX-107 was inoperable and had in fact been tagged out of service since December 2, 1983.
- On or about July 30, 1985, a determination was made that a "backdraft damper" down stream of VEX-107 was found to be failed open. Note: This allowed contaminated air to be "blown back" into other duct work (i.e. Maintenance Area).
- On August 7, 1985, the back draft damper was repaired and fan VEX-107 was inspected, found to be operable, and placed in service. Note: Radiation Protection Personnel were unaware of the restarting of this fan.
- On August 8, 1985, Radiation Protection personnel identified that the fan was placed back in operation and requested it be tagged out.

- The NRC resident was notified on August 8, 1985, of the unmonitored release pathway.
- A Failure and Malfunction Report was initiated on August 12, 1985.
- On or about August 12, 1985, the licensee initiated comprehensive surveys of all openings of all process buildings that could represent an unmonitored release pathway to the atmosphere. Surveys of plant exhaust and intake ducts of various rooms was also initiated. All surveys were completed about August 12, 1985. Note: No other contaminated exhausts or intakes to or from the atmosphere was identified. An intake near the control room corridor (23' elevation) indicated some low level contamination.
- On or about August 12, 1985, the licensee performed calculations to determine the quantity of material that could have been released and an estimated off site dose resulting from this release. Because the effluent release point was unmonitored, the licensee estimated the release based on contamination levels identified in the exhaust plenum and on the exhaust louvers.

Inspector Evaluation (Hot Machine Shop Release)

The inspector review of this matter indicated the following:

- The licensee initiated timely action to:
 1. identify the source of the unexplained floor contamination;
 2. control any further release of material to non-contaminated areas;
 3. secure the source of release to the environment;
 4. identify any other potential unmonitored release points;
 5. estimate the quantities of material released.
- The plenum and louvers from which air from the Hot Machine Shop was ultimately exhausted to the environment exhibited low levels of contamination. No significant source term was identified based on the extent of contamination present.
- The licensee estimated that about 50 millicuries of a mixture of cobalt-60 and cesium-137 may have been released. The licensee's estimates (using various particle sizes) ranged from 2×10^{-5} millicuries to about 3.2 curies. However, the licensee's evaluation did not provide sufficient information to demonstrate whether he had or had not complied with the average offsite concentration values of 10 CFR 20.106 or, 2) complied with the average onsite concentration values of 10 CFR 20.103.

- The cause of the unmonitored release path was due to insufficient review when this area of the station was converted to a "Hot" machine shop.
- Licensee Procedure 3.02, "Preparation, Review Verification, Approval and Revision of Design Documents for Plant Design Changes", dated December 10, 1984, provides guidance for review of design changes by radiological control personnel. However, inspector review of this procedure indicated the procedure does not appear to clearly show how a similar event could not occur. i.e., (Conversion of a normally clean room to a contaminated area and subsequent offsite release.)

Based on the above review, the following matters are unresolved and will be reviewed during a future inspection: (50-203/85-22-05)

- licensee evaluation of offsite releases with respect to 10 CFR 20.106,
- licensee evaluation of onsite releases with respect to 10 CFR 20.103,
- licensee close-out of applicable Radiological Occurrence Reports and Failure and Malfunction Reports,
- licensee completion of a safety evaluation for further operation of "Hot Shop" exhaust ventilation (including need to monitor this release point),
- source of contamination of duct work in Control Room Corridor and HP Count Room,
- design change methodology to preclude recurrence, and
- update of Final Safety Analysis Report to reflect actual conditions of "Hot Shop" area.

As a result of the above and the problems associated with the sewage system, the licensee has initiated a review of the facility with respect to IB Bulletin 80-10, "Contamination of Nonradioactive System and Resulting Potential for Unmonitored/Uncontrolled Release to the Environment". This evaluation is scheduled for completion in January 1986.

5.3 Sewage Disposal To Town

Documents Reviewed

- Radiological Occurrences Report 85-4-3-205, dated May 4, 1985
- Licensee memorandum NMSD 85-312, dated July 5, 1985, "Investigation of PNPS Septic Pumping Chamber"
- Various station effluent sample analysis results including:
 - main gate pumping station
 - south septic tanks
 - radioactive waste sanitary sump
 - leaching field at Pilgrim Station parking lot
 - sanitation trucks
 - radioactive waste septic tank
 - radioactive waste oil separator
- Various sample analysis results of samples from:
 - Plymouth sanitary landfill
 - Baxter's grit machine
 - Baxter's aeration trough
 - nite soil settling trough
 - landfill drying pit

General

On May 3, 1985, a drain in the licensee's "Hot Machine Shop" (23' elevation) was identified as apparently backing up. A Radiological Occurrence Report was written at that time. Since this drain was plugged and located in a contaminated area, an investigation was initiated to determine the ultimate disposal point of the drain. The licensee's investigation indicated that liquid in the drain may be directed to the Main Sewage Pumping Station. Since the effluent from this pumping station is directed to an onsite leaching field and the pumping station effluent is periodically pumped out and sent to the Plymouth Sewage Disposal facility, the Main Pumping Station potentially represented an unmonitored effluent release path. The sewage flow path is shown in Figure 2. The licensee notified the resident inspector of this finding on May 10, 1985. This matter was reviewed in part during inspection 50-293/85-13. (Conducted May 20-24, 1985). At that time it was determined that the licensee had failed to implement a noncontaminated system sampling program consistent with the requirements of IE Bulletin 80-10, "Contamination of Nonradioactive System and Resulting Potential for Unmonitored/Uncontrolled Release to the Environment." The NRC took enforcement action on this matter at that time. The licensee initiated a comprehensive review of the facility design with respect to IE Bulletin 80-10 in order to identify other problems in this area. The licensee took the following actions when the backed up drain was identified:

- A Radiological Occurrence Report (ROR) (No. 85-4-3-205) was written on April 3, 1985 (date identified).
- A review of the apparent back up was conducted shortly thereafter. Because the drain is plugged, no further action was taken to examine the drain. It was believed the water was remaining on top the plug.
- On or about April 8-10, 1985, a Radiological Assessor, performing a tour, identified bubbles coming up from the drain. This was indication of water entering the drain. New drain plugs were installed.
- On or about April 8-10, 1985, a review was initiated to determine the flow path of the drain. This included dye checks of drains to determine their flow paths.
- On or about April 8-10, 1985, or shortly thereafter, a decision was made to halt shipment of sewage to the Town of Plymouth. Security personnel were notified not to allow sewage trucks on site.
- On April 15-20, 1985, action was initiated to pump out the main sewage holdup tanks.
- On May 6, 1985, a sample of effluent from the main sewage holdup tank was collected, analyzed and found to be contaminated.
- On May 10, 1985, Town of Plymouth sewage collection truck entered the site, and pumped out sewage. The truck was stopped before leaving the site, a sample of its contents was collected, analyzed and found not to be radioactive.
- During the period April 8 - May 10, 1985, action was taken to isolate all potential radioactive inputs to the sewage collection system. All identified inputs were rerouted to radwaste. (e.g. Hot Machine Shop floor drains, Radwaste Oil Separator)
- During late April 1985, and May 1985, the licensee initiated sampling of all collection tanks and sump of the sewage collection system, sampled the site leaching field and sampled collection/holding areas of the Plymouth Sewage Treatment Facility/Landfill. The environmental sampling and analysis program was performed by the Yankee Atomic Electric Company Environmental Laboratory. No measurable radioactivity was identified offsite.

Inspector Evaluation (Sewage To Town)

The inspector review of this matter indicated the following:

- The licensee initiated timely action to:
 1. identify the final release point of the Hot Machine Shop drains;
 2. prevent release of the material offsite;
 3. isolate the contaminated inputs into the sewage system;
 4. sample and analyze the hold-up and disposal points of the sewage;
 5. take long term corrective action to review facility design to identify any further unmonitored release points.
- Concentrations of radioactive material identified in final onsite storage transfer tanks (i.e. Main Sewage Pumping Station) were at concentrations of less than 10% of offsite average allowable concentration values.
- No releases in excess of 10 CFR 20.106 or 10 CFR 20.303 was identified.
- The licensee initiated a routine sampling and analyses program for sewage to be transferred offsite.
- The licensee included the Plymouth landfill in his environmental monitoring program.

This matter is closed.

5.4 Sewage to Bay

Documents Reviewed

- Letter - W. D. Harrington (BECO) to T. E. Landry (EPA), dated August 5, 1985,
- Miscellaneous overflow sample analysis results dated July 30, 1985.

General

On July 30, 1985, the licensee's Sanitary Sewage System malfunctioned causing an estimated 100 gallons of untreated sewage to flow into storm drains. The drains discharge to Cape Cod Bay via the discharge canal. The licensee investigated the cause and determined it to be inoperable level instrumentation on the sewage tank at the main

sewage pumping station. The level instrumentation malfunctioned causing their breaker to trip. Since this breaker also powered the pumps, the pumps became inoperable. The licensee issued an Engineering Design Service Request to modify the power supplies to the level instrumentation and pumps.

Inspector Evaluation

The inspector review of the matter indicated the following:

- The licensee initiated timely action to prevent additional waste from entering the bay. This included blocking off the storm drains and repairing the malfunction.
- The licensee sampled all sources of waste discharging to the storm drains. No radioactivity in excess of background was identified.
- The licensee initiated a design change request to correct the cause of the event.
- No releases in excess of 10 CFR 20.106 or 10 CFR 20.203 occurred.

This matter is closed.

6.0 Fuel Pool Modification (Radiological Controls)

The inspector met with licensee site Radiological Controls personnel to discuss licensee planning and preparation for the planned increase in storage capacity of the Spent Fuel Pool. The licensee will use divers during underwater work.

The following matters were discussed:

- planning and preparation,
- establishment and approval of procedures (as necessary) for:
 - diving operations
 - emergency response (e.g. loss of breathing air, loss of pool water, damage of diving equipment and suits)
 - exposure control including source checking radiation survey instrumentation
- pool decontamination,
- radioactive source control (e.g. encore instrumentation),

- water clarity,
- control of diver approach to spent fuel,
- dose mapping of pool including gamma and neutron radiation,
- personnel dosimetry and its calibration (whole body, skin, and extremity),
- use of multiple survey instrumentation, its calibration and periodic verification of operability,
- use of survey meters and alarming dosimeters during underwater work,
- contamination control including control of possible point sources (e.g. small chips),
- control and verification of movement of spent fuel,
- bioassays of diving personnel,
- training and qualification of personnel on applicable procedures,
- applicable NRC guidance in this area (e.g. IE Information Notice No. 84-61, "Overexposure of Diver in Pressurized Water Reactor (PWR) Refueling Cavity"),
- breathing air quality for divers,
- previous diving operations at reactor facilities in NRC Region I,

The discussion with licensee Radiological Controls personnel indicated no significant planning and preparation for the upcoming diving work had occurred. The inspector indicated the licensee's efforts in the area will be reviewed during a subsequent inspection. (50-293/85-22-06).

7.0 The inspector met with licensee representatives (denoted in Section 1 of this report) on August 23, 1985. The inspector summarized the purpose scope and findings of this inspection.

At no time during this inspection did the inspector provide written material to the licensee.

ATTACHMENT

Status of Boston Edison Company's
Radiological Improvement Program (RIP)
Commitment to be Completed after
April 30, 1985, and before July 31, 1985.

<u>COMMITMENT</u>	<u>STATUS</u>	<u>NRC COMMENT</u>
1. 1.2.4(a)-1 Perform a task analyses for all position within the Radiological Group's organization. (July 31, 1985)	Complete (See NRC comment)	The licensees performed a comprehensive task analysis for the organization in place before August 26, 1985. However, on this date the licensee reorganized his Radiological Controls Organization. This organization was to be completed by June 30, 1985, but was deferred (See RIP Item 1.2.2). Consequently it is not certain whether a task analyses has been performed for all positions in the newly established organization. This matter remains Open. (50-293/85-22-07)
2. 1.2.4.c-1 Complete Technician rotation policy evaluation. (July 31, 1985)	Complete	None
3. 2.1.4-1 Improve the qualification process of radiological controls personnel. (July 31, 1985)	Open	The following matters remain open: <ul style="list-style-type: none">• definition of minimum radiological controls experience for each position in the organization• identification of issuance of training policy

ATTACHMENT

<u>COMMITMENT</u>	<u>STATUS</u>	<u>NRC COMMENT</u>
		<ul style="list-style-type: none">• procedure T-20 check list for personnel qualifications does not match procedures. <p>Licensee action on these will be reviewed during a subsequent inspection. (50-293/85-22-08)</p>
4. 2.2.b-1 Develop supervisory training materials. (June 30, 1985)	Complete	None
5. 2.2.7-1 Develop and implement a program to ensure personnel are trained in procedure revisions. (May 31, 1985)	Open	Procedure developed does not ensure radiological controls personnel were be trained in procedures prior to implementing the procedure (e.g. watch health physics technicians) Licensee action on this matter will be reviewed during a subsequent inspection. (50-293/85-22-09)
6. 3.1.1-3 Implement the revised Radiological Protection portion of the General Employee training program. (July 31, 1985)	Open	The revised program has a limited discussion of the Radiological Occurrence Report and a limited discussion of the major feature of the Radiological Control Group structure and key individuals. The licensee's action on this matter will be reviewed during a subsequent inspection. (50-293/85-22-10)
7. 3.1.2-1 Revise General Employee Training Program. (June 30, 1985)	Complete	(See NRC Comment on RIP Item 3.1.1-3)

ATTACHMENT

	<u>COMMITMENT</u>	<u>STATUS</u>	<u>NRC COMMENT</u>
8.	3.1.3-1 Request INPO Evaluation of General Employee Training (GET) Program. (July 31, 1985)	Complete	None
9.	3.1.4-1 Licensee to request Certification of GET Program. (July 31, 1985)	Complete	None
10.	3.1.5-1 Develop pretest and refresher update training for the new GET Program. (July 31, 1985)	Complete	None
11.	3.3-1 Develop a booklet for personnel in GET (reference). (July 31, 1985)	Complete	None
12.	4.1.2.c-1 Compare and evaluate the use of wrist badges and finger rings to monitor extremity exposure. (July 31, 1985)	Complete	License revised and issued procedures to incorporate findings.
13.	4.1.3-1 Evaluate significant skin contamination relative to skin exposure. (July 30, 1985)	Complete	None
14.	4.1.3-2 Develop guidance for assigning skin exposure. (July 31, 1985)	Open	Procedure issued provides limited guidance relative to assigning skin exposure at skin contamination levels less than 350,000 dpm/100 cm ² . (50-293/85-22-11)
15.	4.2-2 Review applicable procedures to determine the need for a policy for exposure of females. (July 31, 1985)	Complete	None

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	<u>COMMITMENT</u>	<u>STATUS</u>	<u>NRC COMMENT</u>
16.	4.3-1 Review physical controls for high radiation areas. (June 30, 1985)	Open	The licensee's review did not address high radiation area key controls. This matter remains open. (50-293/85-22-12)
17.	5.1.1-2 Evaluate and modify testing program for breathing air system. (May 31, 1985)	Complete	None
18.	5.1.3-1 Prepare and Implement a procedure for training technician to inspect and repair respirators. (June 30, 1985)	Complete	None
19.	5.1.3-2 Develop a training program to train technicians to inspect and repair respirators. (July 31, 1985)	Complete	None
20.	5.1.4 Prepare a checklist and visual aids for inspecting and repairing respirators. (July 31, 1985)	Complete	None
21.	5.2.1a-1 Evaluate use of alarming CAMs during work where there is a potential for changes in airborne particulate and iodine concentration. (June 30, 1985)	Complete	Comprehensive evaluation performed. Findings indicate deficiencies in real-time airborne radioactivity monitoring program.
22.	5.2.4-1 Develop non-radiological respiratory protection equipment controls and equipment. (June 30, 1985)	Open	Licensee review indicated a need for a non-radiological respiratory protection program. No date provided for program establishment. (50-293/85-22-13)

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	<u>COMMITMENT</u>	<u>STATUS</u>	<u>NRC COMMENT</u>
23.	5.3-2 Revise Purchase specification for SCBA compressor parts. (June 30, 1985)	Complete	None
24.	6.2.1a-2 Order calibration sources for whole body counter. (May 31, 1985)	Complete	None
25.	6.2.1b-1 Develop procedure for whole body counter (BWC) configurations and uses of phantoms. (June 30, 1985)	Complete	Licensee effort was comprehensive.
26.	6.2.1b-2 Validate configuration benchmarks for WBC configurations (on going)	Open	Licensee obtaining sources and performing validation.
27.	6.2.1c-2 Correct errors and inconsistencies in WBC library. (May 31, 1985)	Complete	Comprehensive review performed.
28.	6.2.1f-1 Develop and approve a program for evaluating and trending internal deposition.	Complete	None
29.	6.2.1h-1 Develop method for investigation, documentation, and records maintenance of abnormal internal exposures. (July 31, 1985)	Complete	None
30.	6.2.1i Develop a procedure that contains the approved methods and calculation for determining intake. (July 31, 1985)	Complete	None
31.	6.2.1R-1 Evaluate WBC spare parts and equipment. (July 31, 1985)	Complete	None

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	<u>COMMITMENT</u>	<u>STATUS</u>	<u>NRC COMMENT</u>
32.	6.2.1.1 Review software program and jobstreams of WBC for accuracy and completeness. (July 31, 1985)	Complete	None
33.	6.2.1.m Evaluate CAMs for the need to add iodine monitoring capability. (June 30, 1985)	Complete	None
34.	7.1.2-2 Complete a walkdown of the station to identify and remove unnecessary posting and labeling. (June 30, 1985)	Complete	Walkdown comprehensive
35.	7.1.7 Require that responsible Health Physics supervisors assure that RWPs have adequate and current surveys. (On-going)	Open	On-going
36.	7.1.11-1 Complete review of ARMs in the Radwaste Truck-lock. (June 30, 1985)	Complete	None
37.	7.2.1-10,1 Obtain and review information on RWP programs at other power reactors. (June 30, 1985)	Complete	None
38.	7.2.1-10,2 Approve plan for improving the RWP program at Pilgrim Station. (July 31, 1985)	Open	Approval not identified. (50-293/85-22-14)
39.	7.3.3-2 Prepare plan and schedule for modification of the Main Control Point. (May 31, 1985)	Open	No plan and schedule provided. (50-293/85-22-15)
40.	7.3.4-3 Develop plans and schedules for further minimization of access control points. (June 30, 1985)	Complete	None

ATTACHMENT

	<u>COMMITMENT</u>	<u>STATUS</u>	<u>NRC COMMENT</u>
41.	8.1.1-1 Develop policy concerning radioactive waste. (July 31, 1985)	Complete	None
42.	8.1.3-2 Recommend enclosures for radwaste. (May 31, 1985)	Complete	None
43.	8.1.4-2 Shield current radwaste storage areas. (May 31, 1985)	Complete	None
44.	8.1.4-3 Evaluate consolidation of radwaste storage areas. (June 30, 1985)	Complete	None
45.	9.1.1-1 Revise NOP 83RC-1 address in the area of ALARM. (July 31, 1985)	Complete	None
46.	9.1.1-2 Evaluate and revise, as appropriate, the formal statement of ALARA Policy. (July 31, 1985)	Complete	None
47.	10.1.2-1 Provide shielded storage areas for the storage of high level radioactive materials. (May 31, 1985)	Complete	None
48.	10.1.3-2 Initiate Pilot Program for housekeeping. (May 31, 1985)	Complete	None
49.	10.1.4-1 Review current practices, procedures, and facilities for issuance and control of Health Physics instrumentation. (June 30, 1985)	Complete	None
50.	10.1.6-1 Evaluate storage needs of Radiological Control Group's instruments and calibration equipment. (May 31, 1985)	Complete	None

ATTACHMENT

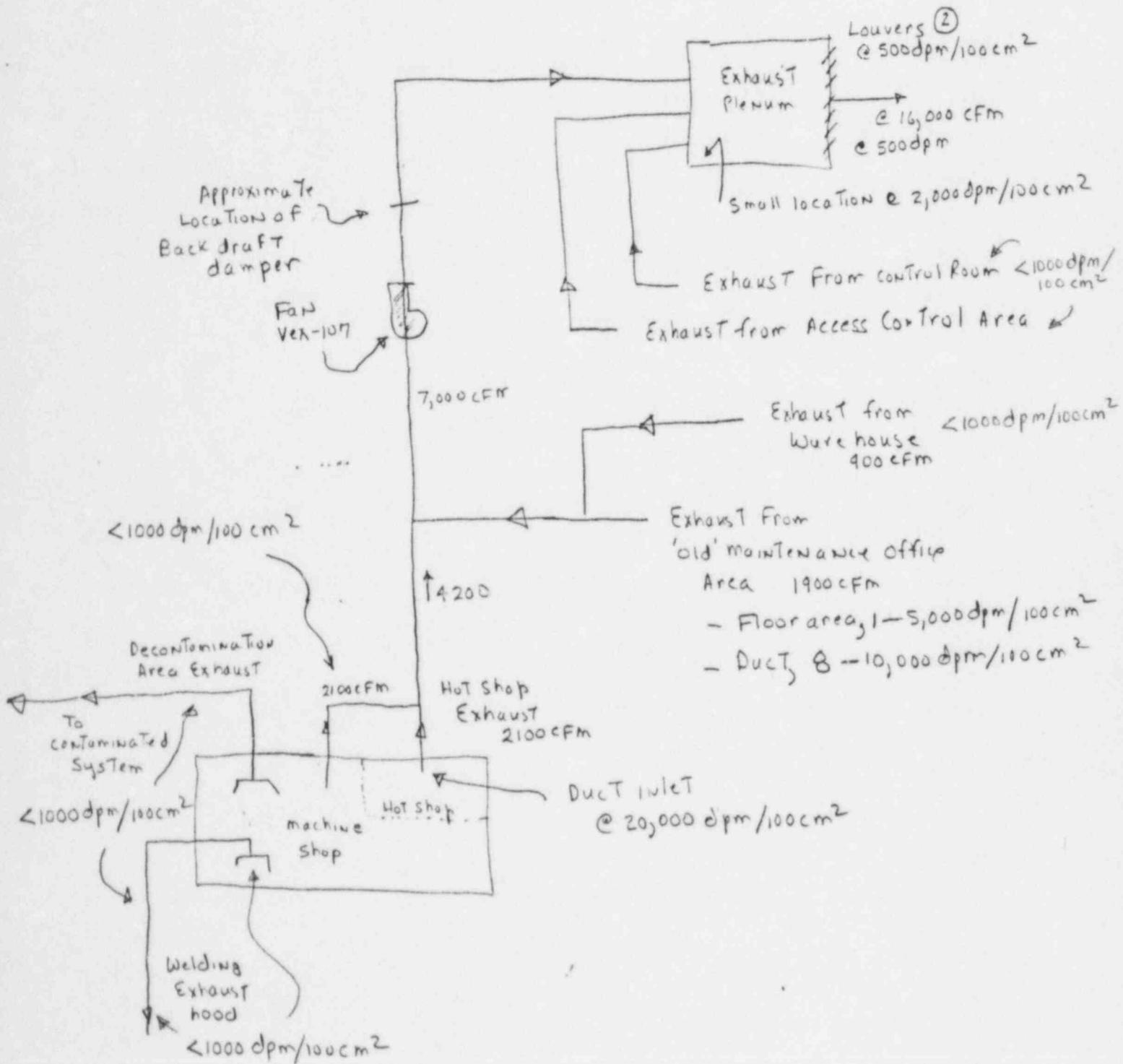
	<u>COMMITMENT</u>	<u>STATUS</u>	<u>NRC COMMENT</u>
51.	10.1.6-2 Order storage equipment for instruments and calibration equipment. (June 30, 1985)	Complete	None
52.	10.2.1a-1 Evaluate WBC and its software. (July 31, 1985)	Complete	None
53.	10.2.1c Determine the need for upgraded software for the WBC. (July 31, 1985)	Complete	None
54.	10.2.1.d Review the program for rotating technicians used to operate the WBC. (July 31, 1985)	Complete	None
55.	10.2.2.a-1 Receive vendor recommendations for WBC spare parts. (May 31, 1985)	Complete	None
56.	10.2.1a-2 Order WBC spare parts. (June 30, 1985)	Complete	None
57.	10.2.2.c-1 Approve revised procedures for analysis of charcoal cartridges. (June 30, 1985)	Complete	None
58.	10.2.2.c-2 Order sources for GE (Li) system. (June 30, 1985)	Complete	None
59.	10.2.5.a-2 Approve procedures to calibrate the calibration sources. (June 30, 1985)	Complete	None
60.	10.2.5.a-3 Initiate calibration of sources. (June 31, 1985)	Complete	None
61.	10.2.6-1 Evaluate the need to obtain additional instrumentation. (June 30, 1985)	Complete	None

ATTACHMENT

	<u>COMMITMENT</u>	<u>STATUS</u>	<u>NRC COMMENT</u>
62.	10.2.8-1 Establish a method and frequency for checking HEPA filter unit for break-through. (May 31, 1985)	Complete	None
63.	10.3.2-1 Review and recommend standardization of health physics posting and labeling. (July 31, 1985)	Complete	None
64.	10.3.3-1 Review the need for lower radiation levels on protective clothing and document recommendations. (July 31, 1985)	Complete	None
65.	10.3.4-1 Evaluate the personnel decontamination supplies available to the Radiological Controls Group and make materials available. (July 31, 1985)	Complete	None
66.	10.3.5-1 Discuss 10.3.5-2 Use of substitution material with stores personnel and develop additional action as required. (May 31, 1985)	Complete	Licensee to review adequacy of substitution program in November, 1985.
	No commitments in Section 11, Procedures.		
67.	12.1.1-8,1 Draft a radioactive 12.2.1-5,1 and contaminated material control program. (July 31, 1985)	Complete	None
	No commitments in Section 13, Management Oversight.		
68.	14.1 Review the current corrective action system and expanded it to include a followup evaluation of significant items. (July 31, 1985)	Open	<ul style="list-style-type: none">• Licensee identified need for additional procedures to implement program.• The program does not include a timely review of radiological controls significant items. (50-293/85-22-16)

Figure 1
Hot Shop Ventilation
Flow Path ①

Report
 SO-293/85-22



① General Path
 Based on discussion
 with licensee
 personnel

② Contamination
 level of @ 500 dpm/100 cm²
 used for release
 calculations

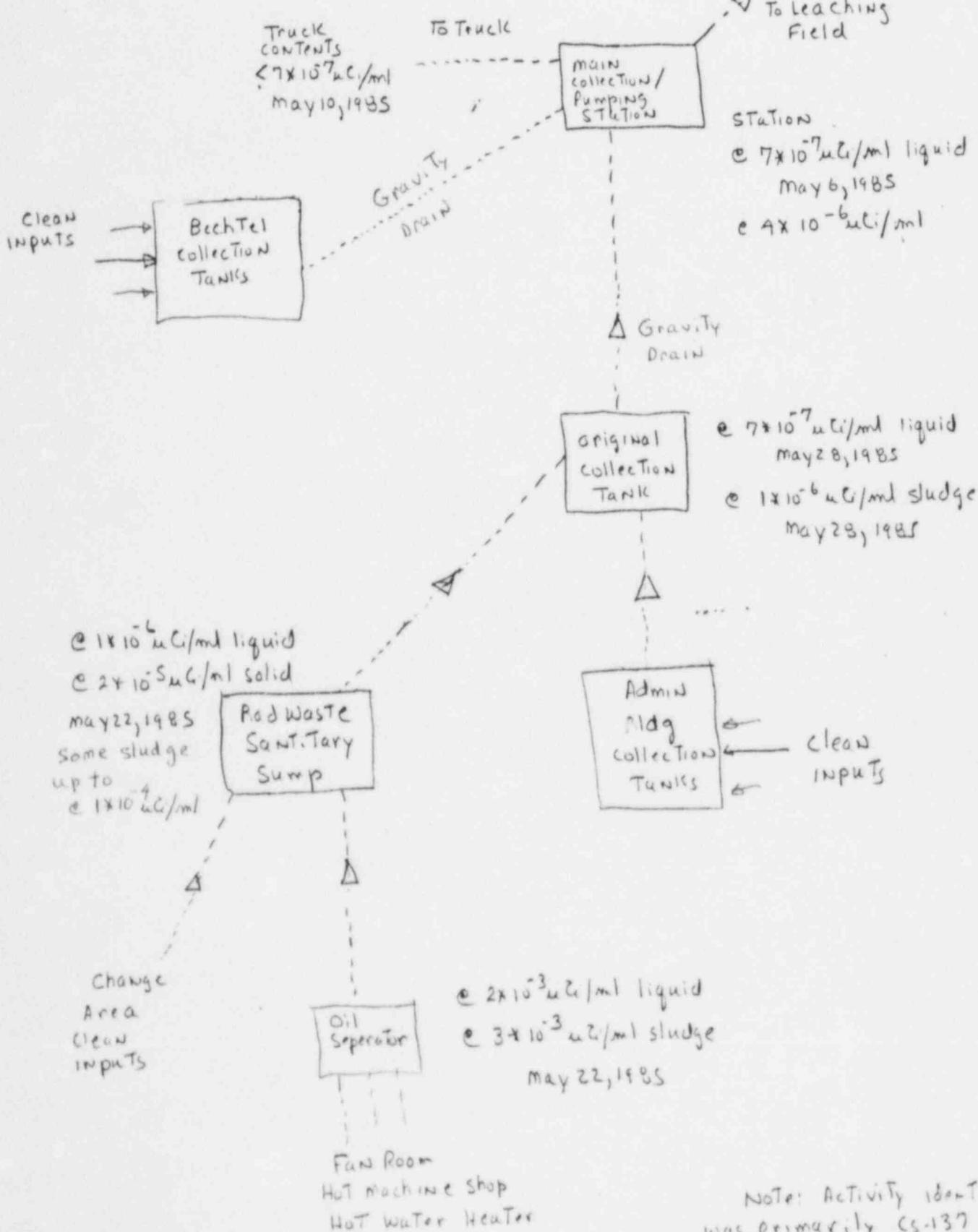
Note:
 values are
 gross beta/gamma
 removable
 contamination
 values!

Figure 2

Report 50-293/85-22

Pilgrim Sewage System*

$< 8 \times 10^{-7} \mu\text{Ci/ml}$
May 30, 1985



* Based on Licensee Review

Note: Activity identified was primarily Cs-137 and Co-60. No alpha emitters were indicated.