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G. CARL ANDOGNINI
SUPERINTENDENT
NUCLEAR OPERATIONS DEPARTMENT

August 29, 1980

BECo Ltr. #80-202

Mr. Boyce H. Grier, Director
Office of Inspection and Enforcement
Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

License No. DPR-35
Docket No. 50-293

Response to I.E. Inspection No. 80-05

- Reference: (A) Letter, G.C. Andognini, dated August 8, 1980
Subject: Request for an Extension of the Submittal
Period for I.E. Inspection 80-05
- (B) Letter V. Stello, Jr. to G.C. Andognini, dated
January 22, 1980
Subject: Special NRC Health Physics Team Appraisals

Dear Mr. Grier:

Pursuant to Section 2.201, Title 10, Code of Federal Regulations and Reference (A) above, Boston Edison Company hereby responds to the significant appraisal findings (Attachment A) and items of non-compliance (Attachment B) contained in Inspection Report No. 80-05.

Also, please consider this notification that the Respiratory Protection Program will not be ready for complete implementation by September 1, 1980, as committed in the exit interview. Primarily, due to the procurement of adequate facilities, full implementation is not expected until March 1, 1981.

In addition to responding to the items above, Boston Edison Company also submits the following comments concerning the report.

Boston Edison Company is acutely aware of the importance of maintaining a strong, effective health physics program and has implemented many significant improvements to our program in recent years to achieve this goal. Considering this corporate commitment to program improvement and the results accomplished in the last few years, we are disappointed by the emphasis on negative findings which pervades

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the special team appraisal, particularly the appraisal summary. This minimal attention to the positive aspects of our program and to the improvements which have already been made has resulted in an inaccurate perspective of our health physics program and its staff. We understood from discussions at the exit interviews that many positive improvements were identified by the inspection team.

In summary, Boston Edison Company supports the conceptual purpose of the special health physics appraisal team as evidenced by our concerted effort to assist your team while we were heavily involved in a major refueling outage. It should be the NRC's responsibility to produce an appraisal report that fairly and accurately presents all facets of the appraisal team's findings, both the negative as well as the positive findings. Boston Edison Company does not feel that this was fairly accomplished with Inspection Report 80-05.

Should you have and further comments or questions concerning this response, please do not hesitate to contact us.

Very truly yours

G. C. Ambrogini Jr.
G. C. Ambrogini

ATTACHMENT A

APPENDIX A

SIGNIFICANT APPRAISAL FINDINGS

A. Internal Exposure Control Program

The overall program for internal exposure control was found to be inadequate and not effective due to:

1. lack of confidence in the direct measurement activities (whole body counter). There was a lack of technical oversight for this operation and weakness in personnel training and qualifications of those individuals assigned to operate and calibrate the whole body counter.

Response - 1.

The whole body counting procedure for calibration, Procedure #6.5-130, "Calibration of Canberra Model 2230 Body Burden Analysis System," was revised, and it was approved by the ORC on February 1, 1980. The factory representative for the whole body counter reviewed and agreed with the above calibration procedure.

Formal training on the whole body counter will be given to all PNPS H.P. personnel and to selective contractor H.P. personnel as part of the formal training/retraining program to be implemented by January 1, 1981, as stated in Section B, Item 1 below.

2. lack of procedures to provide for proper collection, handling and analysis of indirect bioassay samples; together with a lack of procedures establishing biological models and calculational techniques necessary to evaluate monitoring data in terms of dose assessment and compliance with intake limitations set forth in 10CFR20.103.

Response - 2.

In the month of June, four Health Physics Engineers attended a one week course on Internal Dosimetry at the University of Lowell, Lowell, Ma.

At the present time, indirect bioassay sampling and interpretation of results is under evaluation. Consultants are in the process of being contacted to assist Boston Edison in developing a comprehensive Internal Dosimetry Program.

The initial program is targeted for implementation by January 1, 1981.

3. failure to ensure consideration of engineering controls for airborne radioactivity areas or to evaluate and document the practicability of applying process or engineering controls in airborne radioactivity areas. Excessively high loose radioactive contamination levels existed in many areas of the plant and a program to reduce and maintain significantly lower levels was not implemented.

Response - 3.

The consideration of engineering or process controls and the practicality of their use in airborne radioactivity areas is currently being implemented through the ALARA Program Procedures. In addition, these procedures address the initial decontamination of areas containing high levels of radioactive contamination as well as making reasonable efforts to maintain low contamination levels.

The Respiratory Protection Program and accompanying procedures, which are in the process of being written, will incorporate the consideration and use of engineering and process controls in airborne radioactivity areas on an expanded scale to meet the guidelines of NUREG-0041.

Full implementation of the ALARA procedures was achieved on August 4, 1980, and full implementation of the Respiratory Protection Program and accompanying procedures will not be achieved until March 1, 1981, depending upon the procurement of necessary equipment and facilities. Several facilities are being evaluated at this time, which could result in implementation of the Respiratory Protection Program and accompanying procedures as early as January 1, 1981.

4. lack of adequate facilities for cleaning, inspecting and maintaining respiratory protection equipment.

Response - 4.

A purchase order has been issued for the purchase of the Health Physics Systems drycleaning system, which will be used for cleaning respirators. Expected delivery is prior to January 1, 1981. The drycleaning system will be located in a dedicated area, as yet to be determined, for cleaning, maintaining and inspecting respiratory equipment.

As stated above, several facilities are in the process of being evaluated, which could result in full implementation of the Respiratory Protection Program and accompanying procedures as early as January 1, 1981.

5. lack of adequate training for contractor health physics technicians in the operation of the respirator fitting booth.

Response - 5.

The factory representative for the respirator fitting booth provided on-site instruction at PNPS. In addition, the factory representative recommended modifications to the existing procedure for the respiratory fitting booth, Procedure #6.7-105, "Operation of Mask Fitting Booth".

This procedure is being revised and should be completed by September 15, 1980.

Formal training on the respirator fitting booth will be given to all PNPS H.P. personnel and to selective contractor H.P. personnel as part of the formal training/retraining program to be implemented by January 1, 1981, as stated in Section B, Item 1 below.

6. lack of in-plant surveillance to insure proper usage of respirator equipment.

Response - 6.

The Health Physics Staff has developed a one day training course on radiation protection. This training course, as with the General Employee Training (GET) class, includes the proper use of respiratory equipment. Implementation of this course began in June and, to date, approximately one-half of the PNPS personnel have received this training.

Full implementation should be achieved by October 1, 1980. In addition, when the new procedures for the Respiratory Protection Program are implemented, H.P. control point individuals will be held responsible for ensuring the proper use of respiratory equipment by personnel.

7. failure to have a technically knowledgeable individual assigned responsibility for maintaining cognizance of developments in respiratory protection use and equipment and evaluation of the effectiveness of the respiratory protection program.

Additional concerns relating to the internal exposure control program are documented in Appendix B, "Notice of Violation" and are identified as items of non-compliance.

Response - 7.

Manpower requirements are being evaluated at the present time. Requests for additional personnel will be made as a result of the evaluation.

The schedule for full implementation is not available at this time.

B. Personnel Selection and Training Program

A program for training/retraining members of the health physics staff at Pilgrim is essentially non-existent. The level of formal training and education of most of the staff and the contractor personnel is limited. Appraisal findings established that:

1. there is no formal training/retraining program that exists for members of the plant health physics staff. A check sheet (qualification) is used to document that personnel have received new hire orientation and some on-the-job orientation.

Response - 1.

The Health Physics Staff is developing a formal training/retraining program for all Health Physics personnel, including contractor H.P. personnel. The program is in the final draft stage at the present time. The training/retraining program will be implemented by January 1, 1981.

2. there is no established retraining program in radiation safety for general employees.

Response - 2.

Contrary to the Appraisal finding, radiation safety and protection retraining has always been given to all general employees through regular reindoctination of General Employee Training (GET) at PNPS.

3. there was minimal effort to determine the qualifications of the contractor supplied health physics personnel. The program in place consisted of only a screening process. The training provided these individuals is lacking and the qualifications of many of the contractor health physics technicians used during the refueling outage were questionable.

Response - 3.

As stated above, a formal training/retraining program is in the process of being developed. This training/retraining program will be used to determine the qualifications of the contractor H.P. personnel.

The training/retraining program will be implemented by January 1, 1981.

C. Emergency Preparedness

1. the present equipment configuration for emergency environmental monitoring in conjunction with existing procedures are inadequate since there is an inability to detect, measure and project radiation levels and radionuclide concentrations in air equivalent to the lower limits of the Protective Action Guides.

Response - 1.

Four Eberline SAM-II's were purchased and their use and operation were incorporated into the Emergency Plan Implementing Procedures. The Eberline SAM-II's with the use of silver zeolite cartridges are able to detect and measure radionuclide concentrations in air at less than the lower limits of the EPA Protective Action Guides. The Eberline SAM-II's and silver zeolite cartridges were obtained and incorporated into the Implementing Procedure prior to startup, on May 19, 1980.

Full implementation was achieved by May 19, 1980.

2. the present procedure for declaring an emergency is based solely on the results of the rapid protected area survey. The survey method is inadequate and dependence upon it is unacceptable.

Response - 2.

The PNPS Emergency Plan Implementing Procedure for declaring an emergency incorporated the use of Emergency Action Levels prior to startup on May 19, 1980. A rapid area protected survey is presently left to the discretion of the Watch Engineer.

Full implementation was achieved by May 19, 1980.

3. the current emergency plan training program as written in the Pilgrim Station Training Manual is not being implemented. The 1979 radiation emergency plan training was not performed in accordance with the training manual program.

Response - 3.

Prior to startup, the entire Emergency Organization was trained in accordance with the training manual program. Since April 15, 1980, a Radiological Engineer was added to the Health Physics Staff. This Engineer is mainly responsible for emergency planning activities at the site as well as Health Physics training activities, which includes ensuring that the Emergency Plan Training Program for PNPS H.P. Staff as outlined in the PNPS Training Manual is adhered to.

Full implementation was achieved prior to startup on May 19, 1980.

4. the state of readiness of emergency equipment, i.e., items missing and out of calibration, appeared to indicate some maintenance problems.

Response - 4.

All emergency equipment missing, out of calibration and having maintenance problems were replaced, calibrated and repaired. A complete audit of emergency equipment was conducted within three days of startup.

Full implementation was achieved by May 19, 1980.

5. there was a lack of a clear assignment of emergency duties and responsibilities for radiation protection and emergency repair/corrective actions.

Response - 5.

Since the inspection, a clear assignment of Emergency Plan duties and responsibilities for radiation protection and emergency repair/corrective actions has been delineated. As stated above, a Radiological Engineer was added to the H.P. Staff existing at the time of the inspection. This individual has assumed specific emergency planning duties and responsibilities.

Full implementation was achieved by May 1, 1980.

APPENDIX B

NOTICE OF VIOLATION

Boston Edison Company M/C Nuclear
Boston, Massachusetts 02199

Docket No. 50-293

Based upon the results of the NRC appraisal conducted on January 28-February 8, 1980, it appears that certain of your activities were not conducted in full compliance with NRC regulations and the conditions of your license as indicated below. These items are infractions.

A. Technical Specification 6.13 "High Radiation Area" states, "In lieu of the 'control device' or 'alarm signal' required by paragraph 20.203 (c)(2) of 10 CFR 20, an acceptable alternate to controlling access to a high radiation area is as follows:

1. Each High Radiation Area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a High Radiation Area and entrance thereto shall be controlled by issuance of a Radiation Work Permit and any individual or group of individuals permitted to enter such areas shall be provided with a radiation monitoring device which continuously indicates the radiation dose in the area.
2. Each High Radiation Area in which the intensity of radiation is greater than 1000 mrem/hr shall be subject to the provisions of 6.13.A above, and in addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the Watch Engineer on duty."

Procedure No. 6.1-012, "Access to High Radiation Areas," Revision 4, states in part, in Section VI.B, "Areas greater than 1000 mrem/hr but less than 10,000 mrem/hr shall be locked as required by Technical Specification 6.13.B. The keys for these areas will be under the administrative control of the Watch Engineer and issued as follows ..

3. Six (6) master 'R' keys will be issued to HP personnel through the HP Office...
7. Prior to the end of each work day, all individual 'R' keys that have been issued will be returned to the HP office unless otherwise directed by HP supervisory personnel."

Contrary to the above requirements, the following instances were identified when high radiation areas were not properly posted and barricaded and key control was not maintained:

1. On February 1, 1980, the contents of a two feet by four feet by sixteen feet wooden box (discarded Control Rod Drives) located in the Reactor Building truck lock produced a radiation intensity of 1.2 R/hr when measured on contact with the top surface of the box (potential gonad dose) and the area was not posted or barricaded as a High Radiation Area.

Response

A H.P. Technician was enroute to post and barricade the area as a High Radiation Area at the time the inspector found the violation. This vio-

lation existed for less than ten minutes, and was corrected upon the H.P. technician's arrival at that location a few minutes later.

To prevent a recurrence, the H.P. Staff have been reinstructed to ensure that posting and barricading material is on-hand prior to moving any equipment, such as the wooden box containing discarded Control Rod Drives.

Full compliance was achieved by February 1, 1980.

2. On February 5, 1980, piping located above the Chemical Waste Filter Cell produced a radiation field over an extended area of 100-200 mrem/hr when measured at about eighteen inches from the pipe and the area was not posted as a High Radiation Area.

Response

The High Radiation Area sign had become inadvertently dislocated from its original position. The sign was immediately reposted.

To prevent a recurrence, High Radiation Area signs are being posted in a more permanent fashion, such as being tied up or bolted in the area of concern instead of being taped up, if deemed appropriate.

Full compliance was achieved by February 5, 1980.

3. During the period, January 1 through February 6, 1980, there were eight instances as documented in the Health Physics Office Log Book, in which master "R" keys to High Radiation Areas were unaccounted for. In addition, there were thirteen instances identified in which room specific High Radiation Areas Keys were unaccounted for - as many as ten on two occasions.

Response

All H.P. technicians were reinstructed that the designated "On Watch" H.P. technician was assigned the responsibility for both the issuance and accountability of all "R" keys on his shift.

To prevent a recurrence, the outgoing H.P. technician signs a "R" key accountability form, and the oncoming H.P. technician audits and countersigns the same "R" key accountability form. These forms are reviewed daily by the H.P. Supervisor for any discrepancies.

Full compliance was achieved by February 8, 1980.

- B. Technical Specification 6.11, "Radiation Protection Program," states, "Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure."

Procedure No. 6.4-067, "Operation of Eberline RM-14 Radiation Monitor", Revision 0, Attachment 1, states in part, "Frisker Station Directions," Before leaving the area, check for contamination by using the Frisker as follows:...5. Pass the(Frisker) probe over the body slowly...(frisk at least shoes, nostrils and hair).

Contrary to the above, on February 5, 1980, two individuals were observed leaving the controlled area of the facility via the Health Physics Control Point (located outside HP office) on the 23' elevation of the Reactor Building without checking themselves (frisking) for contamination. Additional instances were observed by the appraisal team in other areas of the plant when workers performed inadequate frisks (excessively fast) or frisking was not performed at all.

Response

Initially, security guards were assigned to major controlled egress points on or about February 8, 1980, in order to ensure that the frisking procedure was performed correctly. Security personnel assisted in this function until the end of the 1980 Refuel Outage (startup was on May 19, 1980).

To prevent a recurrence, additional friskers have been permanently located at the major controlled egress points. The importance for frisking is delineated and the proper procedure for frisking is outlined in the General Employee Training (GET) class. At the present time, personnel observed either not performing the frisking procedure properly or not doing it at all are subject to disciplinary action.

Full compliance was achieved on February 8, 1980.

- C. 10CFR20.103, "Exposure of Individuals to Concentrations of Radioactive Material in Air in Restricted Areas," states in part, in Section (b) (2), "...precautionary procedures, such as increased surveillance, limitation of working times, ... shall be used to maintain intake of radioactive materials by any individual within any period of seven consecutive days as far below that intake of radioactive material that would result from inhalation of such material for 40 hours at the uniform concentration specified in Appendix B, Table 1, Column 1 as is reasonably achievable. Whenever the intake of radioactive material by an individual exceeds this 40-hour control measure, the licensee shall make such evaluations and take such actions as are necessary to assure against recurrence."

Contrary to the above, after six individuals had exceeded the 40-hour control measure on January 29, 1980, the licensee did not take such actions as necessary to assure against recurrence in that six other individuals later exceeded the 40-hour control measure on February 1, 4, 5 and 6, 1980.

Response

On Monday, February 4, 1980, action was taken to eliminate the above problems. Since the computerized MPC-HR system was inoperative, a manual system was implemented. A total of 72 hours was needed to implement the manual MPC-HR tracking system.

In addition, since most of the individuals who exceeded the 40 hour control measure were on the same job, the temporary exhaust with absolute filters was set up at the job site to supplement the existing ventilation system to further minimize the airborne radioactive particulates in the area.

To prevent a recurrence, an individual was trained and assigned to manually accumulate all the data and maintain the MPC-HR log after the computer malfunction. An alert list for all personnel with accumulations of greater than 25 MPC hours and a separate list for all personnel with accumulations of greater than 35 MPC hours was generated daily.

Full compliance was achieved on February 7, 1980.

- D. 10CFR20.201, under the subpart, "Precautions and Procedures", "Surveys," states:

"(a) As used in the regulations in this part, 'survey' means an evaluation of the radiation hazards incident to the production, use, release, disposal or presence of radioactive materials or other sources of radiation under a specific set of conditions. When appropriate, such evaluation includes a physical survey of the location of materials and equipment, and measurements of levels of radiation or concentrations of radioactive material present.

(b) Each licensee shall make or cause to be made such surveys as may be necessary for him to comply with the regulations in...part (20)."

Contrary to the above, from January 1 through (about) January 30, 1980, an evaluation/survey was not made to determine compliance with 10CFR 20.103 (b) (2) as it pertains to maintaining the intake of radioactive material by an individual within any period of seven consecutive days below the 40-hour control measure in that the licensee's computer print-out listing individual MPC-hours was not reviewed and evaluated. Consequently, a computer malfunction resulting in the incorrect listing of MPC-hours was not detected in a timely manner thereby partially contributing to certain individuals having exceeded 40-hour control measure.

Response

A manual MPC-HR tracking program was established under the direct supervision of a Senior H.P. Engineer, and maintained by an individual specifically trained in this program, as stated in Section C above.

To prevent a recurrence, long-term corrective action consisted of revising the computer software to provide a better monitoring capability, and the concurrent use of a total manual MPC-HR tracking program.

Full compliance was achieved for the manual MPC-HR tracking program on February 7, 1980

- E. 10CFR20.103(a)(3) states in part, "For purposes of determining compliance with the requirements of this section, the licensee shall use suitable measurements of concentrations of radioactive materials in air, for detecting and evaluating airborne radioactivity in restricted areas..."

Contrary to the above, on February 5, 1980, a steam cleaning was observed being performed by an individual wearing a full face respirator in the hot machine shop, on contaminated equipment which exhibited surface radioactive contamination as high as 260 mrem/hr gamma and 3,400 mrad/hr beta, without suitable measurements of airborne radioactivity being made or used. An airborne radioactivity sampler was observed to be located on a table at the opposite end of the machine shop, at a distance of 30-40 feet from the worker.

Response

All work was stopped in the area. Radiological surveys of the area were performed, including dose rates and smearable contamination on the item being steam cleaned. A Breathing Zone Air Sampler was installed in the Hot Shop. The person performing the steam cleaning was given a whole body count which resulted in negative findings. (The result indicated no body peaks).

To prevent a recurrence, the Breathing Zone Air Sampler was installed in the hot machine shop to facilitate air sampling in specific work locations. Similar methodology is being utilized throughout the station, where deemed appropriate.

Full compliance was achieved on February 5, 1980.

- F. Technical Specification 6.11, "Radiation Protection Program," states, "Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained, and adhered to for all operations involving personnel radiation exposure."

Contrary to the above, Procedure No. 6.1-021, "MPC Hours Determination" was not prepared consistent with the requirements of Part 20, in that precautionary procedures were not prescribed, such as the use of process or other engineering controls, increased surveillance, limitations of working times or provisions for respiratory protective equipment to limit concentrations of radioactive material in air and limit intake by workers.

Response

A review of applicable PNPS procedures has been accomplished. Procedure No. 6.1-021, "MPC Hours Determination", will be revised to include an alert point at 25.0 MPC-HRS, and a stop point at 35 MPC-HRS in which personnel involved will either be restricted or removed from all high contamination and/or high concentration areas. This will be completed by September 15, 1980.

Contrary to the above finding, PNPS procedures include not only Procedure No. 6.1-021, which has to do with MPC-Hour Decontaminations, but other procedures which prescribe compliance with the requirements of 10CFR Part 20. These procedures include Procedure No. 6.3-160 "Airborne Activity Survey," Procedure No. 6.7-101 "Respiratory Protection Program" and Procedure No. 6.10-002 "ALARA Pre-Job Planning". The total implementation of the appropriate procedures will result in full compliance.

Full compliance will be achieved on March 1, 1981, as stated in the response to Item 3, Section A of Appendix A.

- G. 10CFR50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," states, "Activities affecting quality shall be prescribed by documented instructions, procedures or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures or drawings."

Station Procedure No. 1.4.3, Revision 8 developed pursuant to the above, dated October 10, 1979, states in part, in Section D, "Combustibles resulting from work activity must be controlled so to keep the combustible loading within any one area within acceptable limits regarding exposures to safety-related equipment systems and structures. Precautions are as follows:

1. All waste, debris, scrap, rags, oil spills or other combustibles resulting from work activity shall be removed from the area immediately following completion of the activity.
2. All wood staging, clean and soiled anti-contamination clothing shall be removed from the area immediately after completion of the work activity..."

Additionally, Station Procedure No. 1.4.6, "Housekeeping," Revision 5, states in Section III.A.3, "It is the responsibility of all station personnel to maintain a clean and orderly facility. General housekeeping should be accomplished as a daily routine on an assigned basis."

Contrary to the above requirements, combustibles resulting from previous work activities completed at least one week prior to identification; were found in excessive amounts in the following areas of the plant:

1. On February 5, 1980, a pile of waste and debris (several wood planks, plastic bags filled with waste, mop handles, etc.) approximately four feet by three feet by eight feet in size, was observed beneath a stairway (leading to the Condensor Bay) located in the area of the Radwaste Corridor. Station Procedure No. 1.4.3 specifies that the Radwaste Corridor is a "safety-related area."

Response

For the balance of the 1980 Refuel Outage, H.P. personnel conducted housekeeping inspections on a regular basis. The above identified area was cleaned up by February 15, 1980.

To prevent a recurrence, all PNPS personnel are in the process of being re-instructed on housekeeping duties and responsibilities through the one day radiation protection course being given by the H.P. Staff (as mentioned in the response to Section B, Item 1 of Appendix A). All PNPS personnel will have attended the course by October 1, 1980.

Full compliance was achieved in cleaning up the above identified area on February 15, 1980.

2. During the course of the appraisal, a large pile of plastic bags containing waste, used disposable protective clothing (boodies) and debris were found inside the passageway leading to the Reactor Water Cleanup Pump Rooms.

Response

For the balance of the 1980 Refuel Outage, H.P. personnel conducted housekeeping inspections on a regular basis. The above identified area was cleaned up by February 15, 1980.

To prevent a recurrence, all PNPS personnel are in the process of being re-instructed on housekeeping duties and responsibilities through the one day radiation protection course being given by the H.P. Staff (as mentioned in the response to Section B, Item 1 of Appendix A). All PNPS personnel will have attended the course by October 1, 1980.

Full compliance was achieved in cleaning up the above identified area on February 15, 1980.