GPU Nuclear

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August 31, 1982

Mr. George H. Smith, Director
Division of Emergency Preparedness and
Operational Support
U.S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

Dear Sir:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Health Physics Appraisal Response

This letter provides our response to those appraisal findings noted in the Health Physics Appraisal conducted by the Office of Inspection and Enforcement from May 12 through 23, 1980.

Should you have any questions concerning our response, please contact myself or Mr. Michael Laggart of my staff at (609) 971-4643.

Very truly yours,

Peter B. Fiedler
Vice President and Director
Oyster Creek

Sworn to and subscribed to before me this 31 day of August, 1982.

Michael Laggart
Notary Public

MICHAEL LAGGART
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires December 31, 1985

cc: Mr. Ronald C. Haynes, Administrator
Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

NRC Resident Inspector
Oyster Creek Nuclear Generating Station
Forked River, NJ 08731

FINDING

A. Organization, Responsibilities, Staffing and Training

A.1 A comprehensive onsite QA audit/surveillance inspection program of health physics activities should be implemented. (Section 1.2)

Response:

Since the subject appraisal was performed, an in-depth audit of Health Physics was performed (S-OC-80-08). Audit team members of this audit included persons with substantive experience in the conduct and management of naval nuclear/commercial (BWR) radiological control programs. This audit established a reference point from which subsequent progress could be measured.

In order to ensure adequate depth of coverage of all audits, a system of scope documents has been developed. The Health Physics Scope Document (attached) was developed utilizing the content of draft NUREG 0761, Radiation Protection Plans. The Scope Document includes a review of health physics staff training and qualifications.

Two audits were conducted in 1981 which, together, provided the review of the areas contained in the Scope Document (S-OC-81-06 and S-OC-81-14). Additionally, two other audits were conducted in radioactive waste management which reviewed radioactive waste operator training and qualification (S-OC-81-01 and S-OC-81-14).

The appraisal also addressed the adequacy of the QA Monitoring Program for health physics. The procedure (SQAI-020) referenced in the appraisal report has been upgraded and included in Oyster Creek QA Monitoring Program Procedure 7-10-OC-004. The Monitoring Program is performed by persons certified by examination to have sufficient experience in health physics.

FINDING

B. Personnel Selection, Qualification and Training

B.1 The job descriptions, training and definitions of job responsibilities for the radiation protection staff need improvement. (Section 2.2)

Response

Job Descriptions were approved and implemented for Radiological Control Field Operations Technicians on April 13, 1981, Radiological Support Technicians on June 24, 1980, and Radiological Control Instrument Technicians on January 2, 1981. These job descriptions separate and better define duties and responsibilities while allowing flexibility in hiring practices.

The formal training program for Radiological Control Field Operations Technicians was submitted to the USNRC in the spring of 1982 for approval. This program includes: initial training; cyclic training; drills; forced progression controlled by time in grade as well as demonstration of proficiency through written exams, oral exams, and practical demonstration through documented on-the-job performance (practical factors); and requalification every two years. First level supervision is subject to the same training and requalification as the technicians in addition to formal training in supervision and management techniques.

Radiological Engineers have been sent off site for formal documented training in containment design and use; shielding calculations; restrictions; installation and control; radiation work techniques; ventilation design and application, etc.

Managers have attended specific seminars and lectures in their respective specialties at off site locations and have received formal corporate level management training.

The entire Radiological Controls Department has received extensive emergency preparedness training and participates in frequent emergency preparedness drills.

B.2 The radiation protection staff selection criteria need improvement (Section 2.2)

Response

Selection criteria for permanent and contractor technicians and first level supervisors is specified in Procedure 915.15 issued April 6, 1981. There are corporate guidelines for selection of non-supervisory, non-bargaining employees as well as supervisory level employees which meet the criteria of ANSI 18.1 1972. There are corporate approved job descriptions and specifications for each staff position within the department.

B.3 In the event that the Radiation Protection Supervisor would be unable to fulfill his responsibilities, no qualified individual on the staff was available to perform his duties. (Section 2.3)

Response

As of June 1982, there are five Radiation Protection manager qualified individuals who meet or exceed the requirements of Regulatory Guide 1.8; one of these individuals is certified by the American Board of Health Physics. In December 1982, we expect an additional two individuals will qualify to the level of Regulatory Guide 1.8 through company sponsored educational assistance programs for a total of seven individuals.

B.4 The radiation protection technician requalification and the on-the-job training programs were inadequate in their current state. A formal documented program should be developed to ensure that adequate on-the-job training is provided. (Section 2.4)

Response

The Radiation Protection Technician training program was submitted to the USNRC for review and approval in the Spring of 1982. Refer to B.1 above for details of training program.

B.5 Training responsibilities should be resolved so that technician training and requalification programs can be developed. (Section 2.4)

Response

Training Department/Radiological Controls Department Interface. With the upgrading of the two departments, the establishment of a corporate organization plan, and the establishment of formal interface mechanisms and procedures, the uncertainty about the responsibilities and interfaces has been resolved. In general, the Radiological Controls Department is responsible for establishing training requirements, reviewing and approving training programs, working with training to assure training programs are relevant and effective, qualifying Radiological Control Department personnel, and maintaining Qualification Records.

The Training Department is responsible for developing and presenting training programs that are consistent with the training criteria established by the Radiological Controls Department, testing students to measure their level of achievement during training, assuring the training programs are consistent with training criteria, efficient and effective, and maintaining training records. The interfaces are both formal and informal. For example, representatives meet formally about once every six weeks to discuss training matters, a training coordinator position has been established in the Radiological Controls Department who communicates regularly with appropriate members of Training Department on relevant training matters, and the managers discuss matters as appropriate.

B.6 The general employee radiation protection retraining program permits two or more years prior to retraining. Retraining should be required on an annual basis. (Section 24.)

Response

As of January 1982, all general employee radiation protection retraining is required on an annual basis ±25%.

FINDING

C. Exposure Control

C.1 Usable beta calibration data should be obtained and employed to evaluate beta exposures. (Section 3.1)

Response

In January 1981, O.C. received the beta calibration data from the dosimeter processor who participated in the USNRC dosimetry evaluation study (University of Michigan). In January 1982, O.C. awarded a dosimetry spiking contract which includes various energies of beta radiation and mixed beta gamma fields.

Surveys have been performed to evaluate the effectiveness of protective clothing in absorbing beta radiation. A containment program has been established to minimize exposure to beta radiation.

C.2 Extremity dosimetry should be improved to evaluate doses more realistically and accurately. (Section 3.1)

Response

Finger ring TLD's are available for issue when direct contact with small sources cannot be avoided or direct contact with larger high intensity sources is unavoidable. Wrist and ankle TLD badges in combination with finger TLD badges provides a more complete extremity dosimetry capability.

C.3 An MPC-hour exposure program to demonstrate compliance with 10 CFR 20.103 should be established. (Section 3.2)

Response

Procedure 915.5, which is in compliance with 10 CFR 20.103, includes instructions and forms for logging and controlling MPC-hrs. MPC-hour exposure is routinely so low at Oyster Creek that the requirement for such logging is precluded.

C.4 A training program should be established for technicians responsible for operating the respirator fitting booth and the whole body counter. (Section 3.2)

Response

A training program has been established for Rad Support Techs responsible for the respirator fit test booth and the whole body counter which includes classroom instruction, written tests and documented practical demonstration of ability to perform their assigned duties and responsibilities.

C.5 The individual conducting respiratory training for users should satisfy the experience requirements specified in NUREG-0041.

Response

Respiratory protection training is currently given in two phases at OCNGS. The classroom training phase is given in RWP training by the Training Department and does meet NRC requirements for technical content and the instructor meets the experience requirements of NUREG 0041. In the quantitative fit test booth, supplementary training is given by a trained Radiological Support Technician from a lesson plan approved by the Respiratory Protection Supervisor. However, the Radiological Support Technicians do not meet the NUREG 0041 experience requirements.

The Training Department is scheduled to incorporate both phases of respiratory protection training in 1982 with instructors that meet NUREG 0041 experience requirements.

C.6 A formal training lesson plan which covers both routine and emergency use of respiratory protection equipment should be written and the program implemented. (Secion 3.2)

Response

Formal lesson plans covering both routine and emergency use of respiratory protection equipment have been written and implemented.

C.7 A calibration program which is compatible with the recommendations in ANSI N343-1978 for the whole body counter should be established. (Section 3.2)

Response

The whole body calibration procedure, 906.32, addresses using multiple calibration points and multiple calibration energies in accordance with ANSI N343-1978.

C.8 The radiation protection instrument repair and calibration programs require significant improvement, especially in the areas of technical training and instrument availability and accountability. (Section 3.3)

Response

In January 1981, the Radiological Controls Department assumed responsibility for Radiological Controls portable instrumentation repair and calibration. The program has been significantly upgraded in all aspects.

A dedicated supervisor was recruited with five years formal training including an associates degree in electronics with six years of applied experience. After a formal job description was approved, five dedicated technicians were recruited with combined formal training exceeding 10 years, and 20 years of combined experience. Individual combined training and experience of the technicians ranges from 5 years to 8 years. These qualified technicians were the basis for upgrading the program. A formal training program has been implemented which documents proficiency.

A new facility for instrument repair and calibration was purchased and operational in March 1982, which increased the space approximately 6 fold to 1200 ft^2. Two additional NBS traceable calibration sources have been purchased.

All the calibration procedures have been reviewed and revised in accordance with applicable ANSI standards within the last year.

An adequate supply of portable instruments has been purchased which includes a surplus for outages and turn around time during repair and calibration. A separate stock of dedicated instruments has been purchased for emergency preparedness. Adequate spare parts and components are stocked for repairs.

An improved accountability system includes computer tracking of all Radiological Control instruments with exception reports to flag instruments two weeks and one week prior to calibration due date. The accountability system is backed up manually in the event of computer downtime and to verify accuracy. Dose rate instruments are source checked daily prior to issue and calibration stickers are verified and calibration due dates logged prior to issue.

The combination of computer tracking and daily issue has significantly upgraded instrument accountability.

C.9 The technicians operating the counting equipment should receive appropriate training in counting and analyses techniques. (Section 3.3)

Response

The Oyster Creek Radiation Control Technicians Training Program provides the necessary training required to properly operate the counting equipme and analyze the results.

FINDING

D. Radioactive Waste Management System

D.1 A program for the routine testing of the NRW HEPA filters should be developed and implemented. (Section 4.3)

Response

Procedure 659.3.001, New Radwaste and Off Gas Building HEPA Filter Efficiency In-Place Leak Test, has been placed on the Master Surveillance Schedule and will be conducted on an 18 month interval in accordance with Regulatory Guide 1.140 (October 1979). The cycle will commence in June of 1983. The initial filter test was performed in 1978 with follow-up tests on June 29, 1980, March 31, 1981, and March 1, 1982. However, the March 1, 1982 test results were not completely satisfactory. Whereas the AOG HEPA filters passed, the NRW HEPA filters failed to meet the test criteria. Further repairs were made, and on July 9, 1982, the system was again retested and failed. The inability of the NRW HEPA filters to meet the acceptance criteria is attributed to poor system construction (i.e., bent filter frames, stripped hold down bolts, etc.). Consequently, a job order has been issued to rework the system. Also, during the investigation of the above, it was discovered that the HEPA filter cartridges reached their recommended replacement Delta P in four to six months vice one to three years, as designed. It is suspected that the cause of the premature filter blockage is a result of the cement dust generated by the portable Hittman Solidification System located in the NRW Building. Accordingly, the Radwaste Manager is working with the site Tech. Functions representative. A Tech. Functions work request is being developed to investigate and resolve this problem. Both the Delta P and the poor construction problem will be coordinated for efficient use of resources and ALARA considerations.

At the present time, the NRW HEPA filters are being bypassed on the recommendation of the AE not to exceed filter maximum differential pressure. The ventilation exhaust of the New Radwaste Facility is continuously monitored for Particulate, Iodine, Noble Gas Activity; and additionally, the ventilation exhaust is routed to the plant stack for release.

E.1 Management should demonstrate support of their commitment to the ALARA program. This should include holding ALARA committee meetings as required by Procedure 915.9.4 "Implementation of the ALARA Program".

Response

The management commitment to the ALARA program has been identified and incorporated into the Radiation Protection Plan and its implementing procedures. The concept of an ALARA committee has been eliminated and replaced by a line function in the Radiological Control Department designated Radiological Engineering.

Radiological Engineering provides technical support to the station to achieve ALARA objectives and the Radiological Controls Department monitors the progress made by the station including making recommendations for further progress. No further action is considered necessary.

E.2 The Radiation Work Permit (RWP) program should be improved. Deficiencies noted in the program were: (1) several RWP's posted at the job sites were illegible; (2) workers were not familiar with the conditions specified in the RWPs; and (3) workers had signed in under wrong RWPs.

Response

The RWP Procedure in effect during the subject audit has been revised to resolve the problems identified. Further revisions to the RWP procedure are in progress, mainly to clarify Radiological Engineering Review requirements. This procedure will be submitted for review/approval by August 30, 1982.

E.3 Training and supervision of contractor HP technicians should be improved to ensure that ALARA practices are being followed. (Section 5.4)

Response

Answered in B.1. Contractors are qualified to the same standards as permanent technicians which includes ALARA practices.

FDSAR augmented Off gas and Rad Radwaste System

9.4.3.1.4 Tests and Inspection - The performance of the heating and ventilating system components can be verified while the system is in operation. Pressure and temperature instrumentation and flow connections are provided as shown in Figure 9.4.1 for determining performance of the system and its components. The ductwork system and components are subjected to leak tests during manufacture and erection. Filters and filter housings are subjected to manufacturers performance and production tests, as well as a field DOP test. 1

In addition, the complete heating and ventilating system is subjected to preoperational testing at design conditions.

9.4.3.2 Radwaste Building

9.4.3.2.1 Design Bases - The Radwaste Building heating and ventilation system, is designed to meet the following requirements:

a. To provide fresh, tempered air to the various areas of the Radwaste Building in sufficient quantity to limit the temperature to a maximum of 104°F in areas where electrical equipment is located and where personnel access is not limited. In other areas the maximum temperature limit is 120°F. The maximum outdoor air summer temperature and design basis for building ventilation is 89°F. 1

b. To provide air distribution within the building for controlled air movement from areas of low radioactive contamination potential to areas of high radioactive contamination potential.

c. To provide means for filtering the exhaust air before discharging to atmosphere.

d. To heat the supply air as required to maintain a minimum of 50°F supply temperature during the winter season with a design basis of 0°F minimum outdoor temperature.

Zone booster heating coils increase the supply air temperature to 60°F before entering the respective zones.

e. To maintain automatically a negative pressure of 0.125" W.G. within the building with respect to atomspheric pressure in order to minimize the uncontrolled release of radioactivity.

f. To maintain airborne radioactivity below 10CFR20 and 10CFR50 Appendix I limits.

g. To provide conventional air conditioning for the control room and electrical equipment room.

h. To provide a means for detecting and alarming automatically the ventilation system, of low air flow and/or loss of air flow.

i. To provide ventilation to the building from a manually operated supply system and separate exhaust system.

j. To automatically shut down the ventilation system following a preheat steam coil failure to protect against coil freeze up.

k. To automatically alarm the ventilation systems filter media replacement.

l. To service by means of a bypass arrangement, unit and equipment without shutting down the exhaust ventilation system.

m. To maintain, by means of redundant exhaust fans, operation of the exhaust system following the failure of the normal operating fan.

Ductwork is designed, fabricated and constructed in accordance with Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) standards, and is classified as non-seismic.

9.4.3.2.2 System Description - The Radwaste Building heating and ventilating system is shown diagrammatically in Figure 9.4.1. The heating and ventilating system provides once-through air flow with no recirculation. It consists of a supply air system and an exhaust air system which discharges to the atmosphere. Components' exhausts carrying radioactivity contents are routed directly to the exhaust duct, upstream of the exhaust filter unit.

9.4.3.2.2.1 Supply Air System - The supply air system consists of one 100% (38,000 CFM) capacity axial fan, a steam preheating coil, a prefilter, and a system of ductwork. The prefilter is the renewable roll type and is automatically progressed to maintain a uniform pressure drop. It's efficiency is rated at 85% in accordance with the latest edition of ASHRAE 52, Method of Testing Air Cleaning Devices. A filter rack has been provided for future installation, as required, consisting of a "Bag Type" Filter with an air cleaning efficiency of 80 to 85% based upon NBS dust-spot method of testing with atmospheric dust. The preheating coil uses low pressure steam for tempering fresh air entering the building. 1

The ductwork is arranged to induct fresh outside air and distribute it to the various spaces within the building in proportion to the ventilation air requirements. An additional modulating steam booster heating coil is provided in each of the zones of the supply air system.

9.4.3.2.2.2 Exhaust Air System - The exhaust air system consists of one 100% capacity axial fan, one 100% capacity redundant axial fan, a filter train with a prefilter and final filter (HEPA) and associated system ductwork. The prefilter is the renewable roll type and is automatically progressed to maintain uniform pressure drop. It is rated 85% efficient in accordance with the latest edition ASHRAE 52, "Method of Testing Air Cleaning Devices". The final filter is a replaceable high efficiency (99.97% rated in accordance with NBS dust-spot method of testing with atmospheric dust) unit arranged in a filter bank. The efficiency of this HEPA filter is assigned according to the requirements of the latest edition of ANSI N510. The fan is rated at 38,000 CFM.

9.4.3.2.2.3 Control Room and Electrical Equipment Room Air Conditioning System - The control room and electrical equipment room are air conditioned by a single package unit located adjacent to the Control Room. The unit maintains 75°F (dry bulb) air temperature all year round without humidity control. The unit will switch over to an economizer cycle when the outdoor temperature drops below 60°F and mix outdoor and room air to maintain control room temperature at 75°F.

9.4.3.3 Safety Evaluation - The following safety features are incorporated in the design of the Radwaste Building heating and ventilating system: 1

In order to prevent the release of airborne radioactivity that may be present in the building environment to the outside, the Radwaste Building environs are maintained at a negative pressure of 0.125" WG with respect to atmospheric pressure by means of a differential pressure controller on the exhaust fan discharge. The controller accomplishes this by modulating the exhaust fan inlet damper. This control method maintains an infiltrated condition into the building. The consequences of the failure of the controller can be mitigated by manually adjusting the air operated damper located in the exhaust system. The redundant exhaust fan provides the backup in the event the normally operating fan fails. The supply fan failure has no safety related significance.

In order to isolate and remove airborne radioactivity which may be released due to equipment failure or malfunction the air distribution within the building is designed for controlled air movement from areas of low radioactive contamination potential to areas of high radioactive contamination potential. An upset condition ("blowback" of air from a potentially high radioactive area to a low radioactive area) can occur when the exhaust fan stops, on an unscheduled basis, or during a component failure which reduces substantially or stops the exhaust air flow. At low exhaust ventilation air flow, a flow switch located in the exhaust system will alarm the low air flow condition.

A bypass ductwork arrangement is designed into the exhaust unit (filter train) to allow constant exhaust air flow during maintenance or replacement of filters. A two position "zero" leakage damper is located in the bypass ductwork. In bypass mode the "zero" leakage damper opens allowing the exhaust air to bypass the filters. 1

An exhaust air sampling station is provided in the exhaust air duct downstream of the exhaust filter train. A sample is drawn through a nozzle for noble gas, particulate and iodine radiation monitoring. Radiation levels are continuously recorded on the Liquid/Solid System control cabinet. Should the radiation level reach a predetermined high value, an alarm will sound in the Radwaste Building Control Room and in the station main control room. Sampling points have been provided to allow verification of monitor readout.

DOES NOT address CONTINUOUS by-pass.

9.4.3.2.4 Tests and Inspection - The performance of the heating and ventilating system components can be verified while the system is in operation. Pressure and temperature instrumentation and flow connections are provided as shown in Figure 9.4.2 for determining performance of the system and its components. The ductwork system and components are subjected to leak tests after erection. Filters and filter housings are subject to manufacturers performance and production tests, as well as a field DOP test.

In addition, the complete heating and ventilating system is subjected to preoperational testing at design conditions.