UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket No. 50-220

02 MAR 1981

Niagara Mohawk Power Corporation
ATTN: Mr. T. E. Lempges
Vice President
Electric Production
300 Erie Boulevard West
Syracuse, New York 13202

Gentlemen:

Subject: Health Physics Appraisal

The NRC has identified a need for licensees to strengthen the health physics programs at nuclear power plants and has undertaken a significant effort to assure that action is taken in this regard. As a first step in this effort, the Office of Inspection and Enforcement is conducting special team appraisals of the health physics programs, including the health physics aspects of radioactive waste management and onsite emergency preparedness at all operating power reactor sites. The objectives of these appraisals are to evaluate the overall adequacy and effectiveness of the total health physics program at each site and to identify areas of weakness that need to be strengthened. We will use the findings from these appraisals as a basis not only for requesting individual licensee action to correct deficiencies and effect improvements but also for effecting improvements in NRC requirements and guidance. This effort was identified to you in a letter dated January 22, 1980, from Mr. Victor Stello, Jr., Director, NRC Office of Inspection and Enforcement.

During the period of October 3-10, 1980, the NRC conducted the special appraisal of the health physics program at the Nine Mile Point Nuclear Power Plant, Unit 1. Areas examined during this appraisal are described in the enclosed report (50-220/80-11). Within these areas, the appraisal team reviewed selected procedures and representative records, observed work practices, and interviewed personnel. It is requested that you carefully review the findngs of this report for consideration in effecting improvements to your health physics program.

The findings of the appraisal at Nine Mile Point indicate that your radiation protection program is particularly unsound in respect to the areas examined and requires substantial upgrading. In this regard, we issued Immediate Action Letter (IAL) 80-38 on October 17, 1980 to effect assurance that your program would be adequate to present operations until an upgraded program could be sufficiently maintained.

Particular findings are discussed in detail in Appendix A, "Significant Appraisal Findings." We recognize that an explicit regulatory requirement pertaining to each significant weakness identified in Appendix A may not currently exist. However, to determine whether adequate protection will be provided for the heath and safety of workers and the public, you are requested to submit a written statement within twenty (20) days of your receipt of this letter, describing your corrective action for each significant weakness identified in Appendix A including: (1) steps which have been taken; (2) steps which will be taken; and (3) a schedule for completion of action. This request is made pursuant to Section 50.54(f) of Part 50, Title 10, Code of Federal Regulations.

During this appraisal, it was also found that certain of your activities did not appear to have been conducted in full compliance with NRC requirements as set forth in the Notice of Violation enclosed herewith as Appendix B. The items of noncompliance in Appendix B have been categorized into the levels of severity as described in our Criteria for Enforcement Action dated December 31, 1974. Section 2.201 of Part 2, Title 10, Code of Federal Regulations, requires you to submit to this office, within twenty (20) days of your receipt of this notice, a written statement or explanation in reply including: (1) corrective steps which have been taken by you and the results achieved; (2) corrective steps which will be taken to avoid further items of noncompliance; and (3) the date when full compliance will be achieved.

You should be aware that the next step in the NRC effort to strengthen health physics programs at nuclear power plants will be the imposition of a requirement by the Office of Nuclear Reactor Regulation (NRR) that each licensee develop, submit to the NRC for approval, and implement a Radiation Protection Plan. Each licensee will be expected to include in the Radiation Protection Plan sufficient measures to provide lasting corrective action for significant weaknesses identified during the special appraisal of the current health physics program. Guidance for the development of this plan will incorporate pertinent findings from all special appraisals and will be issued by NRR later this year.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room. If this material contains any information that you believe to be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. Any such application must be accompanied by an affidavit executed by the owner of the information, which identifies the document or part sought to be withheld, and which contains a statement of reasons which addresses with specificity the items which will be considered by the Commission as listed in subparagraph (B)(4) of Section 2.790. The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified period, this letter and the enclosures will be placed in the Public Document Room.

02 MAR 1981

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

Boyce H. Grier
Director

Enclosures:
1. Appendix A, Significant Appraisal Findings
2. Appendix B, Notice of Violation
3. Office of Inspection and Enforcement Inspection Report Number 50-220/80-11

cc w/encls:
M. Silliman, Acting General Superintendent, Nuclear Generation
T. Roman, Station Superintendent
R. Abbott, Operations Supervisor
E. B. Thomas, Jr., Esquire

APPENDIX A

Significant Appraisal Findings

In the course of this appraisal, the following items were identified as needing improvement in order to achieve an acceptable program.

A. Organization, Responsibilities, Staffing

1. The organizational structure as currently implemented is not in agreement with the description provided in the licensee's Technical Specification 6.2.2. As of October 9, 1980 the licensee had not initiated any action to amend the existing technical specification. In addition, supporting administrative procedures such as APN-2 and APN-2A were not subject to any revision necessary to reflect the reorganization; and personnel job descriptions were not revised to recognize new or added responsibilities or authorities as a result of the reorganization. Although an organization exists, it has not been formally established within the licensee's own administrative system nor in accordance with the normal regulatory process. (Section 1.1.1)

2. There is no professional level health physics support available to the designated site Radiation Protection Manager (RPM) from either the corporate organization or within the site organization. In addition there is no individual within Niagara Mohawk having the necessary capabilities (managerial and technical expertise) sufficient to meet the requirements of Regulatory Guide 1.8, "Personnel Selection and Training" to provide back-up support to the RPM. (Section 1.1.2)

3. There is an overall lack of technical depth in regards to the ability of the current staff to perform sufficiently to assure an adequate radiation protection program is established, implemented and maintained. Insufficient technical depth appears to be the result of (Section 1.2, 1.3):

   - inordinate deference to select and qualify individuals based on ability to perform in the area of chemistry;
   - lack of any substantial education or training programs provided to upgrade individuals in the area of health physics;
   - the discouragement of tendencies to develop personnel as specialist in the area of health physics, particularly in the case of technicans who are regarded as a generic all-purpose work force capable of performing in any needed capacity.

4. There are insufficient numbers of qualified personnel, particularly supervisors and technicians to assure that adequate radiological controls are established and implemented for normal operations.

5. Licensee management has not developed Job Descriptions for individuals associated with the area of radiation protection that specify authority commensurate with responsibilities, particularly in the position of Superintendent, Radiochemistry and Radiation Protection, supervisors, technical coordinators and technicians.

B. Personnel Selection, Qualification and Training Program

1. Radiation protection training and experience is not addressed in the criteria for advancement of Health Physics Personnel. (Section 2.2)

2. Health Physics duties are not specified in formalized Job Descriptions for technicians. (Section 2.2)

3. The training program for Health Physics personnel, particularly technicians and supervisors, does not include on-the-job training; lacks technical depth, does not provide for retraining; and, does not provide for cross training on health physics tasks. (Sections 2.3)

C. Exposure Control

1. External Exposure Control

a. The method of posting radiologically controlled areas does not provide sufficient information for adequate exposure control. (Section 3.3)

b. The program for spiking vendor supplied film badges was deficient in that the technique utilized did not provide for a sufficient number of badges to be checked, formal procedures were not developed, and the data was not adequately evaluated. (Section 3.4)

2. Internal Exposure Control

a. No independent verification by the licensee of the calibration of the whole body counter was performed. Existing procedures relating to the frequency established for counting personnel are not followed. (Section 3.5.1)

b. The evaluation of internal exposure data is insufficient to determine whether the protection provided by protective clothing and equipment is adequate. (Section 3.5.1)

c. Procedural guidance and action levels which specify when excreta bioassay samples are to be taken have not been developed. (Section 3.5.1)

d. There are no procedures for collecting, handling, analyzing and evaluating bioassay samples. (Section 3.5.1)

3. Respiratory Protection Program

a. In support of the respiratory protection program: medical examinations were not performed annually; breathing air was not tested to Grade D specifications or better; regulators and valves were not tested as required by procedures; quantitative test equipment was found inoperable; and the training/retraining program did not include field training or examinations. (Section 3.5.2)

b. The quantitative fit test equipment and respirator assembly areas were not adequately located. (Section 3.5.2)

c. The individual assigned responsibility for supervising the respiratory protection program was not adequately qualified. (Section 3.5.2)

d. There was a lack of written procedures specific to the quality assurance program for respiratory devices. (Section 3.5.2)

e. Management review of and policy for the respiratory protection program was not established, implemented and maintained. (Section 3.5.2)

D. Surveillance Program

1. The licensee procedures do not adequately define the basis for surveillance activities or incorporate all of the forms used in the surveillance program. (Section 3.6, 3.6.5)

2. Surveillance records do not contain sufficient data and were not organized or maintained in a manner to allow adequate evaluation of the radiological status of the facility. (Section 3.6, 3.6.5)

3. The method for, frequencies of and locations of radiation and contamination surveys were inadequate. (Section 3.6, 3.6.2)

4. Methods did not exist to ensure that contamination related problems are identified, evaluated and corrected sufficient to preclude recurrence. (Section 3.6.3)

5. No formal mechanism has been established for the review of surveillance records. (Section 3.6.5)

6. Procedures do not exist to describe the methods used to count air samples and there is no evidence to indicate that all significant isotopes were identified for air samples. (Section 3.6.1)

7. The licensee's procedures do not provide sufficient guidance for Health Physics personnel issuing Radiation Work Permits and do not specify a time limitation for Extended Radiation Work Permits. (Section 3.6.6)

8. The Radiation Work Permit (RWP) system was deficient in that:

   - procedural guidance and training was not sufficient for providing personnel with adequate criteria for RWP requirement selection;
   - survey data was not recorded in a manner that permits adequate evaluation and review;
   - pre-planning meetings were not adequately performed.

9. The requirements for and use of protective clothing is inconsistently applied. (Section 3.6.6)

10. The licensee does not have positive management controls established that would assure that individuals and equipment are adequately monitored for contamination prior to leaving contamination areas or the licensee's restricted area; and most personnel do not adequately monitor themselves prior to leaving the restricted area. (Section 3.6.7)

11. The procedures for entry into high radiation areas were confusing, and did not completely reflect the Technical Specification requirements. Some doors and gates (accesses) to these areas were found to be open or otherwise not controlled in accordance with Technical Specifications. (Section 3.6.7)

12. Procedures do not exist for the calibration, operation or setting of alarm points for the count rate instruments normally used to monitor personnel and equipment leaving restricted areas. (Section 3.6.7)

13. Adequate accountability, control, labeling and leak tests do not exist for all radioactive test and calibration sources. (Section 3.6.7)

14. The licensee does not exercise control over or provide source checks for all survey instruments. (Section 3.6.8.1)

15. The calibration and operation procedures for the majority of the licensee's portable radiation and contamination survey instruments and laboratory counting equipment are not adequately established, maintained or implemented. (Sections 3.6.8)

16. The methodology and procedure for setting the portal monitor alarm points is deficient in that the technical basis for the technique used did not support an adequate instrument calibration.(Section 3.6.8.2)

17. The sources used to calibrate the laboratory counting equipment are not traceable to NBS. (Section 3.6.8.7)

18. The calibrator used to calibrate portable radiation survey instruments was not adequately maintained; technicians were not adequately trained in its theory or use; and the device could not be used to calibrate the higher ranges due to source decay. (Section 3.6.8)

19. Technicians were not adequately trained on the theory, set up or use of laboratory counting equipment. (Section 3.6.8.7)

20. Sufficient quality control procedures had not been established for laboratory counting equipment. (Section 3.6.8.5)

21. The air sampling program based on grab samples utilizing high and low volume air samplers is deficient in that breathing zone samples are not collected, 100% collection efficiency is assumed for the iodine collection media without adequate basis or consideration of the residence time for the charcoal as a function of flow rate. (Section 3.6.8.5)

22. The instruments used to monitor personnel and equipment for contamination could not detect the licensee's release limits and the detector types used did not meet the ANSI 323 recommendations. (Section 3.6.9)

E. Radioactive Waste Management System

1. The Radwaste Coordinator did not have adequate personnel support or authority commensurate with his assigned responsibilities. (Section 4.1)

2. The training for personnel assigned tasks related to radioactive waste management was not sufficient. (Section 4.0)

3. Waste handling procedures were not adequately established, implemented or maintained. (Section 4.2.3)

4. The site Quality Assurance Department did not provide sufficient active participation in activities relating to radioactive waste packaging and shipping. (Section 4.2.3)

5. There is no assurance that all radioisotopes that may have significantly contributed to the radioactive content of packages of radioactive material were evaluated. Personnel did not evaluate peak indications that were not positively labeled by the counting system's computer. (Section 4.2.3)

F. ALARA

1. A corporate policy statement or formal commitment on ALARA did not exist. (Section 5.0)

2. The licensee administrative ALARA procedure did not specify goals or objectives of the program. (Section 5.0)

3. A management control system did not exist to monitor, control and measure the performance of the licensee's efforts in ALARA. (Section 5.0)

G. Health Physics Facilities and Equipment

1. The design of protective clothing change areas did not provide for decontamination showers and sinks in close proximity or the availability of personnel clothing lockers. (Section 6.1)

2. Frisking stations were not designed or located adequately to provide positive access control. (Section 6.1)

H. Emergency Planning

1. A specific and complete organizational delineation (reaching to the working levels) of the emergency command hierarchy for all the distinct emergency functions, describing the assignment of supervisory and non-supervisory personnel by title/position for each functional area of emergency response was not in place. (Section 8.1)

2. The augmentation of the onsite emergency organization (Personnel and equipment) for a continuous (24 hours) emergency situation projected to last an indefinite period was not specified in the following areas: health physics, environs monitoring, logistical support, technical support, notification of governmental authorities and release of information to the news media. (Section 8.2)

3. The authorities, responsibilities, limits and interfaces of contractors, private organizations, and local services with the onsite emergency organization was not clearly delineated. (Section 8.2)

4. Formally approved lesson plans for each functional area of the emergency organization including student performance objectives, tests and practical exercises in which individuals demonstrate specific abilities were not established. (Section 9.0)

5. Means to provide training/retraining of all individuals concerning their specific functional duties in the emergency organization to meet schedule requirements, and to provide additional training in those areas where significant changes in emergency response planning or procedures occur were not established and implemented. (Section 9.0)

6. Survey instrumentation with a range to at least 1000 R/hr was not on hand. (Section 10.1)

7. Provisions for means of detecting and measuring radioiodine airborne concentrations of at least 10^{-7} uCi/cc under field conditions and high background radiation levels were not established. (Section 10.1)

8. Determination of detection efficiency for ratemeter/detector system for Iodine 131, and the retention efficiency of cartridge media for airborne iodines had not been determined. (Section 10.1)

9. Equipment and supplies to both EOCs needed to protect and assist personnel coordinating and evaluating the emergency response effort (e.g. air sample, beta/gamma survey instruments, calibration sources, site maps, isopleths, etc.) were not on-hand. (Section 10.4)

10. Supplies and equipment for decontamination of personnel during serious emergencies were not available at each of the assembly areas. (Section 10.6)

11. Provisions had not been established for primary assembly area and other designated assembly areas so that they can accomodate the number of persons expected during an emergency, and having equipment and supplies as required to ensure the physical safety of personnel assembled (e.g. respiratory protection equipment, etc.). (Section 10.6)

12. Special Operating Procedures developed pursuant to Regulatory Guide 1.33 did not include a step in the "Immediate Action Section" which requires an evaluation of emergency conditions relative to EALs and emergency classification criteria contained in the licensee's Emergency Plan and Implementing Procedures. (Section 11.2)

13. Implementing Instructions which provided separate procedures for each emergency category specified in the Emergency Plan providing a clearly graded classification system and distinct EALs based on available quantitative indicators had not been developed. (Section 11.3)

14. A coherent scheme for emergency notification of all offsite agencies, including specific action levels for selective notification of such agencies in accordance with a graded classification of emergencies had not been developed. (Section 11.4.1)

15. No provisions for upgrading and maintaining a current "Emergency Contact List" were in place. (Section 11.4.1)

16. Provisions for recording the duration of meter readings, air sample volume and flow rates, background radiation levels at the time of filter media counting, and sample counting times were not in place. (Section 11.4.4)

17. The procedure for monitoring and decontamination of personnel during emergency conditions did not include: cross-references to Implementing Instructions which orchestrate all emergency actions, definition of contamination levels, methods, instrumentation, follow-up surveys for internal contamination, and logistics to handle a large number of contaminated persons during an emergency. (Section 11.4.5)

18. All designated assembly areas in the Emergency Plan, Emergency Implementing Instructions and Procedures were not specified. (Section 11.4.6)

19. Procedures to incorporate the interim high-range main stack monitor into the radiological assessment procedures to measure radioactive release rates from the main stack in the event the presently installed process monitors with control room readouts are off-scale or inoperable had not been developed and implemented. (Section 11.4.8)

20. Provisions for radiation protection during emergencies which include: personnel dosimetry, exposure records, positive access controls instructions to emergency workers regarding the radiological conditions due to the emergency dose assessment, limiting exposures/re-exposures and ALARA considerations had not been established. (Section 11.4.12)

21. Provisions for emergency repair/corrective actions, including designation of the responsible emergency organization element, team make-up, and procedures had not been established. (Section 11.4.14)