NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

April 19, 1985
(NMP2L 0390)

Mr. R. W. Starostecki, Director
U.S. Nuclear Regulatory Commission
Region I
Division of Project and Resident Programs
631 Park Avenue
King of Prussia, PA 19406

RE: Nine Mile Point Unit 2
Docket No. 50-410

Dear Mr. Starostecki:

On March 18 and April 4, 1985, Mr. Thomas Thompson of the Region I staff requested additional information relevant to the Nine Mile Point Unit 2 Byproduct Material License (NRC Control No. 03-489).

Mr. Thompson requested the following information:

1. A general summary of our Health Physics Program, pertinent to storage and control of the usage of the licensed material; leak testing and radiation levels in nearby unrestricted areas.

2. Total activity for the neutron startup sources (for storage only).

Attached is our response. Additionally, Mr. Thompson requested the GE drawing number for the startup source and the cask model number. The applicable drawing is numbered 112C3666. The cask we will use is a GE model 1500 cask.

Very truly yours,

C. V. Mangan
Vice President
Nuclear Engineering and Licensing

JM/mf
xc: R. Gram, NRC Resident Inspector

Project File (2)

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1) Health Physics Program

A. Program Objectives

The three basic objectives of the Health Physics Program at Nine Mile Point are to:

* Protect station personnel
* Protect the public
* Protect the station

Protection of personnel means surveillance and control over the internal and external radiation exposure of personnel and maintaining the exposure of all personnel within permissible limits, and as low as reasonably achievable in compliance with applicable regulations and license conditions.

Protection of the public means surveillance and control over all station conditions and operations that may affect the health and safety of the public. It includes such activities as radioactive gaseous, liquid and solid waste disposal and the shipment of radioactive materials. It also involves conducting an environmental radioactivity monitoring program and maintaining an effective emergency plan.

Protection of the station means the continuous determination and evaluation of the radiological status of the station for operational safety and radiation exposure control purposes. This work is done in order to warn of possible detrimental changes and exposure hazards, to determine changes or improvements needed and to note trends for planning future maintenance work.

The program organization is as follows:

The General Superintendent - Nuclear Generation is responsible for the protection of all persons against radiation and for compliance with NRC regulations and license conditions. This responsibility is in turn shared by all supervisors. Furthermore, all personnel are required to work safely and to follow the regulations, rules and procedures that have been established for their protection.

The Superintendent of Chemistry and Radiation Management (Radiation Protection Manager - RPM) establishes the Health Physics Program for NMP-2 that is designed to assure compliance with applicable regulations, licenses and regulatory guides. He also provides technical guidance for conducting this program, audits the effectiveness and the result of the program and modifies it as required. He also provides technical assistance to the General Superintendent - Nuclear Generation, who has management authority to implement the "as low as reasonably achievable" (ALARA), occupational exposure policy, to which Niagara Mohawk Power Corporation is committed.

The Superintendent of Chemistry and Radiation Management (RPM) has the qualifications equivalent to those required by Regulatory Guide 1.8.

The Supervisor of Chemistry and Radiation Protection is responsible for conducting the Health Physics Program that has been established for the station. This supervisor has the duty and the authority to measure and control the radiation exposure of personnel to a level that is as low as reasonably achievable and within regulatory exposure limits; to continuously evaluate and review the radiological status of the station; to make recommendations for control or elimination of radiation hazards; to train personnel in radiation safety; to assist all personnel in carrying out their radiation protection responsibilities; and to protect the health and safety of the public both on-site and in the surrounding area.

In order to achieve the goals of the Health Physics Program and fulfill these responsibilities for radiation protection, radiation monitoring, survey and personnel exposure control work are performed for all station operations and maintenance. The extent of this surveillance is outlined below.

The Health Physics section performs the major portion of the Health Physics work for the station. Personnel in the Health Physics section normally work on the day shift, five days a week, during periods of routine operation; and deploy onto the other shifts for major maintenance, shutdown and the refueling work. The Health Physics Section is organized into two units, each headed by a supervisor. These units are: (1) Operations and (2) Support Functions.

For the purpose of defining and assigning work to be performed by the operating shifts and the Health Physics Sections, the routine station radiation surveillance work can be described as consisting of radiation monitoring, radiation survey, radiation exposure control and radioactive waste disposal activities.

The Radiation Protection Technicians perform radiation monitoring and exposure control work for the routine and special operations, This work is performed under the direction of the appropriate Radiation Protection Supervisor. Radiation Protection Instructions (RPIs) and/or assignments prepared by appropriate Radiation Protection Supervisor, will designate routine work to be performed.

The C&RM Department also performs essentially all of the work necessary to calibrate and maintain (other than repair) the Counting Room instruments and the portable radiation monitoring instruments.

Duties concerning radioactive liquid, gaseous and solid waste disposal are performed under C&RM Department direction. The detailed analyses and records required to characterize the nature of these releases, both qualitatively and quantitatively, are under the control of the C&RM Department. In addition, solid waste disposal and shipments of radioactive materials are under the control of the C&RM Department.

Training and qualification of personnel in Radiation Protection are the responsibility of the Supervisor of Chemistry and Radiation Protection and are performed under his direction.

All administrative aspects of training, such as scheduling and documentation are handled by the Nuclear Training Department. The Nuclear Training Department also administers the general standardized Radiation Protection Training, as approved by the Superintendent of Chemistry and Radiation Management.

The C&RM Department also conducts the Offsite Radiological Monitoring Program and Emergency Planning for the station.

B. Radioactive Materials Safety Program

Radiation protection procedures are established for the safe handling, storage and inventory of sealed and unsealed radionuclide sources having activities greater than the exempt quantities of radionuclides defined in 10 CFR 20, Appendix C or 10 CFR 30.71.

1. Source Accountability and Storage

Upon receipt or preparation, monitoring will be performed in accordance with the requirements of 10 CFR 20.205, and source data will be entered into a Source Accountability Record. The sources will be stored in suitable containers or areas such that radiation levels in nearby unrestricted areas are within the limits for permissible levels in unrestricted areas as defined by 10 CFR 20.105.

Sources will be stored only in designated storage areas at either Nine Mile Point Unit 1 or 2. Storage areas for sources which contain greater than those quantities listed in 10 CFR 20, Appendix C or 10 CFR 30.71 must be locked or placed under the physical controls of responsible individuals (ie., Radiation Protection personnel) at all times. Whenever a source is removed from it's designated storage area, the person removing the source shall enter applicable data on a Source Movement Log Sheet, to aid in maintaining source accountability. By procedure, each calibration or check source shall be accounted for quarterly, with the complete inventory maintained current at all times.

Licensed material shall be used by or under the supervision of Edward W. Leach (Supt. of Chemistry and Radiation Management) or James N. Duell (Supv. of Chemistry and Radiation Protection). Personnel authorized to use [illegible]s shall receive training in procedures which govern [illegible]

2. Source Leak Testing

Tests for leakage and/or contamination shall be performed on each sealed source, except startup sources subject to core flux or installed in the core, containing radioactive material, other than hydrogen 3, with a half life greater than thirty days and in any form other than gas at intervals not to exceed six months.

The periodic leak test required does not apply to sealed sources that are stored and not being used. These shall be tested, however, prior to any use or transfer to another user unless they have been leak tested within six months. In addition, sealed sources are exempt from such leak tests when the source contains 100 microcurie or less of beta and/or gamma emitting material or 10 microcurie or less of alpha emitting material.

Startup sources shall be leak tested within 31 days prior to being subjected to core flux or installed in the core and following any repair or maintenance.

The leakage test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the sample provides 0.005 microcurie or more of removable contamination, it shall be immediately withdrawn from use, decontaminated and repaired, or be disposed of in accordance with Commission regulations.

Results of required leak test performed on sources, if the tests reveal the presence of 0.005 microcurie or more of removable contamination, shall be reported in accordance with Commission regulations.

2) Neutron Startup Sources

There are a total of seven (7) neutron start-up sources (Byproduct License application, Attachment 1, source "A"), consisting of a tubular source holder and two (2) irradiated antimony (Sb) capsules. The total activity for the seven (7) sources is less than 4.20×10^4 Curies.

The irradiated antimony capsules are provided separately and are installed in the source holders on site. Due to the irradiated antimony characteristic half-life of 60 days, the irradiated capsules must be prepared and shipped so that their arrival is coincident with their scheduled period of use.

The seven reactor startup sources are shipped to the site in a special shielded cask. Upon receipt, the cask will be surveyed in accordance with the requirements of 10 CFR 20.205. The cask will then be placed in the Spent Fuel Pool for underwater storage until needed. Subsequent removal from the shielded shipping cask, installation in source holders, and installation into the reactor vessel will be performed under water. Those sources may remain in the core for the lifetime of the plant; no unique shielding is required after reactor operation has begun.