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NIAGARA MOHAWK POWER CORPORATION

NIAGARA  MOHAWK

300 ERIE BOULEVARD WEST
SYRACUSE, N.Y. 13202

September 14, 1971

United States Atomic Energy Commission
Attention: Mr. Lawrence D. Low, Director
Division of Compliance
Washington, D. C. 20545

Dear Mr. Low:

Re: Provisional Operating License DPR-17
Docket No. 50-220

Your letter of August 26, 1971 set forth several items in apparent non-compliance with license requirements for the Nine Mile Point Nuclear Station, Unit #1. Our response follows:

1. A written report was not submitted in accordance with 3.C (2) on the matter of variance of the liquid waste system; i.e., variation of actual discharge concentrations versus values in FSAR, Appendix D, Table D-18 for the following reasons:
 - (a) Table D-18 was compiled by extrapolating Dresden I data. At the time the PHSA and the FSAR were written, this was thought to be the best source of information. It was recognized, however, that since there were no plants of the same size and design as Nine Mile Point, there may be variations. This is clearly pointed out in the footnote to Table D-18 which stated that although these are "expected" concentrations, the values are "subject to revision as more accurate data becomes available". When variations were found in the actual to "expected" data, they were not considered to constitute a substantial variance so long as liquid release was not in violation of 10CFR20 and the liquid effluent technical specifications.
 - (b) It was felt that Table D-18 was meaningful only when gamma pulse height analysis was not performed; i.e., when Grade A of the Lake Program was in effect and, therefore, no sampling was conducted. Grade A of the Lake Program comes into effect only when the average discharge concentration is less than Q/10. Table D-18 could then be used in place of actual measured data for the "assignment of the concentrations" if liquid effluents were discharged on a radionuclide basis (refer to D-31, Appendix D, FSAR). Throughout the year 1970, liquid waste was not released on a radionuclide basis and Grade A of the Lake Program was not in effect.

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September 14, 1971

- (c) We have updated both our analysis procedure and our liquid effluent reporting procedure to reflect variations from Table D-18. The analysis of MN^{54} serves as an example. Table D-18 does not even list MN^{54} where as it is one of the more prominent radionuclides which we have found in liquid waste batches. The procedure outlined in tech. spec. change #4 [sec. 4.6.1(b)] insures that no beta emitters such as MN^{54} are accounted for.
- (d) It must be realized that the data quoted as examples of variations from D-18; i.e., I^{131} factor of 20, Fe^{59} factor of 700 is based on only one sample from one floor drain sample tank during that month. It may or may not be representative of the monthly discharge. We have since found as many as six different mixtures in the liquid waste discharge depending on such things as source and age of the liquid and suspended solids. I^{131} is, because of its relatively short half life, subject to great variation.
- (e) While the monthly sample showed radionuclides such as Fe^{59} with an MPC of 2×10^{-3} $\mu Ci/ml$ were present in greater amounts than were postulated. It also showed that radionuclides such as Sr^{90} which is of much more concern with an MPC of 4×10^{-6} $\mu Ci/ml$ was not detectable, again pointing out that where differences were noted in D-18 is probably too conservative.

2. Paragraph 6.7.b. (1) (a) of the original Technical Specifications is worded "Total activity discharged". Paragraph 3.6.1. b. on page 88 reads as follows: -

- (1) The concentration of gross beta activity (above background) in the condenser cooling water discharge tunnel shall not exceed the limits stated below unless the discharge is controlled on a radionuclide basis in accordance with Appendix B, Table II, Column 2 of 10 CFR 20 and Note 1 thereto:

(a) Gross Isotope Releases

Average Annual Concentration 1×10^{-7} $\mu Ci/ml$

Maximum Instantaneous Concentration 1×10^{-6} $\mu Ci/ml$

Prior to May 1971, releases were controlled on a gross beta basis only. Therefore, our interpretation of G.7.b. (1) (a) reporting requirements were in accordance with this specification.

"Total activity discharged", as listed in the current Semi-Annual Report, January-June 1971, is the total curies of both beta and gamma emitters. Future reports will show total curies discharged in this manner as we now control releases on a radionuclide basis as described in the new Technical Specifications of May 1971, Paragraph 4.6.1.b. (4) and its attendant basis. Corrections have been made to all past reported quantities in a separate letter to the Director of Reactor Licensing. (copy enclosed)



September 14, 1971

Past average monthly isotopic analysis reveal that the discharges were actually about 1% of the acceptable aggregate concentration given in 10 CFR 20 Appendix B, Table II, Column 2 instead of the 21% indicated by gross beta analysis.

3. Surveys were taken which indicated that there was a relatively high level of contamination on the valve surfaces but precautions were not taken to properly ensure that an inhalation dose was not received. It is thought that the man received the nasal contamination while wire brushing the valve flange prior to placing a new gasket.

Decontamination of the man's nasal passages reduced the initial smear count from 4×10^5 dpm to 100 dpm. Because of the success of the decontamination, it was felt to be unnecessary for an immediate whole body count. An estimate was made of the effective whole body exposure and it was estimated to be less than 100 MRem/week. Calculations made subsequent to a whole body count of the individual on 11/18/70 showed that for the entire fourth quarter 1970, an effective whole body dose due to Co^{60} and Co^{88} would be approximately 50 MRem.

The Radiation Protection Technicians were cautioned that in the future, adequate precautions must be taken to protect personnel against contaminated surfaces being a source of airborne activity.

Regarding your concern for radioactivity buildup in aquatic animals, biological specimens were taken from Lake Ontario in the vicinity of the station cooling water outfall prior to station operation. After station startup, this sampling was continued on a routine basis. Results of radioanalysis for the pre-operational samples and for specimens taken in the summer and fall of 1970 were published in the Semi-Annual Reports of Operation.

Extensive samples of aquatic life were taken in June 1971. The results were not available in time for publication in the January through June Semi-Annual Report. Concentration comparisons are available in all sampling periods for Cobalt 60, Strontium 90, and Cesium 137. Gamma spectral analysis for the samples of fish taken in June 1971 show no detectable activity above instrument background. The discharge concentrations of Strontium 90 and Cesium 137 were less than one percent of the MPCC values given in the FSAR and the fish sample concentrations for these nuclides were within the same order of activity as reported in the pre-operational survey.

The June 1971 discharge concentration of Cobalt 60 was 51% of the MPCC value listed in the FSAR but the fish sample concentration for this nuclide was only 0.05% of the equivalent allowable specimen concentration derived from the MPCC value and the concentration factor of 10,000 referenced in the FSAR.

Information from these recent comparisons indicates that the buildup, if any, of radionuclides in the aquatic environment is at low levels. Sampling will continue in the future to provide continuing surveillance.



Mr. Lawrence D. Low, Director
Division of Compliance

-4-

September 14, 1971

The waste concentrator in the disposal facility is operated at maximum capacity to keep discharges as low as practical. Detailed records of effluent concentrations and biological sample concentrations are kept at the station. These are subject to continuing analysis and are available for inspection.

Very truly yours,

F. J. Schneider

F. J. Schneider
Vice-President - Operations

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Dear Sirs,

I have the honor to acknowledge the receipt of your letter of the 11th inst. regarding the matter mentioned therein. The same has been referred to the appropriate authorities for their consideration.

Very respectfully,

Yours faithfully,

[Signature]

NIAGARA MOHAWK POWER CORPORATION

NIAGARA MOHAWK

300 ERIE BOULEVARD WEST
SYRACUSE, N Y 13202

September 14, 1971

Dr. Peter A. Morris, Director
Division of Reactor Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Dr. Morris:

Re: Provisional Operating License DPR-17
Docket No. 50-220

Lawrence D. Low, Director, Division of Compliance in his letter of August 26, 1971 requested that the Semi-Annual Reports of Nine Mile Point Nuclear Station Operation be corrected to reflect total activity discharged in the liquid effluents. Prior to January 1971, the activity had been reported as gross beta only.

Following is listed an estimate of the total curies of liquid discharged during 1970. The data is based on a monthly isotopic analysis of a typical liquid waste batch.

<u>MONTH</u>	<u>TOTAL CURIES</u>
January	5.36
February	4.60
March	0.72
April	1.29
May	4.82
June	<u>1.51</u>
January-June '70	<u>18.30</u>

Therefore, the value on Page 3 of the Report for this period should be changed from 4.75 Ci to 18.30 Ci.

July	0.26
August	0.62
September	4.38
October	2.52
November	1.02
December	<u>0.84</u>
July-December '70	<u>9.64</u>

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Dr. Peter A. Morris, Director
Division of Reactor Licensing

-2-

September 14, 1971

Therefore, the value on Page 3 for the Report of this period should be changed from 4.69 Ci to 9.64 Ci.

Total activity discharged for the year 1970 was 27.94 Ci against 9.44 Ci reported as gross beta.

Total activity has been reported for the January 1 to June 30, 1971 period and will be continued in future reports.

Very truly yours,

F. J. Schneider

F. J. Schneider
Vice President, Operations

cc: Mr. Lawrence D. Low

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