James A. FitzPatrick
Nuclear Power Plant
P.O. Box 41
Lycoming, New York 13093
315 342 3840

Radford J. Converse
Resident Manager

New York Power Authority

August 29, 1985
JAFP-85-0707

United States
Nuclear Regulatory Commission
Region I
631 Park Avenue
King Of Prussia, PA 19406

Attention: Thomas E. Murley
Regional Administrator

SUBJECT: DOCKET NO. 50-333
ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM
ANOMALOUS MEASUREMENT REPORT

Gentlemen:

We have attached an Environmental Radiological Monitoring Program Anomalous Measurement Report in accordance with Section 5.6.2(b) of the James A. FitzPatrick Environmental Technical Specifications, which were in effect at the time of the sample collection.

If there are any questions concerning this report, please contact Mr. John A. Solini at (315) 593-5740.

RADFORD J. CONVERSE

RJC:JAS:lo
Attachment (2 pp)

CC: Director, Nuclear Reactor Regulation
J. P. Bayne (NYPA/WPO)
J. Blake (NYPA/WPO)
R. A. Burns (NYPA/WPO)
J. A. Gray (NYPA/WPO)
G. M. Wilverding (NYPA/WPO)
NRC Resident Inspector
E. Mulcahey
J. A. Solini
LER/OR File (PORC Secretary)
Correspondence File
Document Control Center

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

IE 22

The following environmental radiological monitoring sample is an anomalous measurement based on the criteria outlined in Section 5.6.2.B of the James A. FitzPatrick Environmental Technical Specifications (ETS), which were in effect at the time of the sample collection:

PERIPHYTON SAMPLES

Sample Location*	Date	Co-60 pCi/g (wet)	Recount
1. Offsite (Control)	06/25/85	<0.019 (LLD)	<0.014 (LLD)
2. Onsite FitzPatrick	06/25/85	0.26 ± 0.04	0.22 ± 0.05

*See Technical Specification, Appendix B, for location details.

The detected levels of Co-60 in the FitzPatrick (onsite) periphyton samples was greater than 10 times the control location (offsite) results for the same sample period. The control station 10 times value is based on 10 times an LLD value (4.66 sigma).

The detected level of Co-60 is related to liquid effluents discharged from the Nine Mile Point Site. The total release of Co-60, via liquid effluent from the plant for the period of January 1, 1985 through June 25, 1985 was 0.099 curies. This represents 0.99 percent of the Technical Specifications quarterly limit of 10 curies.

The release of liquid effluent during this period was well within the objectives outlined in the James A. FitzPatrick Nuclear Power Plant ETS Appendix B Section 2.3.A.

A possible explanation for the detection of the 10 times concentration for Co-60 in the periphyton samples collected is the high bioaccumulation factor (concentration factor) for this element in comparison to other elements. Due to the fact that stable cobalt is an essential trace element important to fresh water algae, a bioaccumulation factor of up to 30,000 can exist (mean value = 6,760). The bioaccumulation factor will vary with the concentration of cobalt in the lake. Because of this high concentration factor, trace quantities or Co-60 will be accumulated in the periphyton (fresh water algae) which are indigenous to the site.

IE25
1/1

There is no expected dose to man as a result of the radioactivity detected in the periphyton samples, as periphyton are not directly in the human food chain. A more direct calculation of dose to man can be made based on possible levels of Co-60 found in fish samples collected if such activity is present. The results of fish samples also collected in the first half of 1985 showed no detectable levels of Co-60 activity (all <LLD values) for both the NMPP (onsite) and FitzPatrick (onsite) locations. These results indicate that there has been an undetectable movement, if any, of Co-60 through the tropic levels of the food chain. Based on a dose to man concept the detection of Co-60 in the periphyton indigenous to the Nine Mile Point Site in trace amounts have no determinative environmental impact.