

POWER AUTHORITY OF THE STATE OF NEW YORK

INDIAN POINT NO. 3 NUCLEAR POWER PLANT

P. O. BOX 215 BUCHANAN, N. Y. 10511

TELEPHONE: 914-739-8200



June 29, 1981  
IP-JRP-14039

50-286

Mr. Cesare J. Manfredi  
Senior Sanitary Engineer  
New York State Department of  
Environmental Conservation  
202 Mamaroneck Avenue  
White Plains, New York 10601

Subject: Indian Point 3 Nuclear Power Plant Water Processing  
and Sanitary Waste Facilities

Dear Mr. Manfredi:

This letter has been drafted to comply with reporting requirements of the revised State Pollutant Discharge Elimination System Permit No. NY0027065, Section 14 (April 17, 1981). The letter also summarizes problems indicated in recent BMW 88 reports.

There were three occurrences where suspended solids were discharged from our process water facility in excess of the 17.8 Lbs/day limitation. On all occasions resin passed into the neutralization discharge tank thus causing an excess of indicated suspended solids. Closer operator surveillance and procedural co-ordination have been effectively implemented to avoid a recurrence of a similar discharge. Resin traps will soon be installed to prevent the passage of resin into the neutralization tank. We consider this problem resolved.

The Sanitary Waste Facility at Indian Point Unit 3 has had some operating difficulties. The Power Authority is making every effort to improve the operation of this facility as indicated in John Blake's letters of May 14, and May 22, 1981 to John D'Aquino of the Westchester County Department of Health (copies attached). However, the problem appears to be somewhat complex. To provide advice and assistance in efforts to resolve this problem, the Power Authority recently retained the services of Lawler, Matusky & Skelly Engineers (LMS). An initial look at the situation suggested several potential problem areas:

1. The daily flow logs show that much of the time, the waste facility flows are substantially below design flow. The result is an average aeration tank detention time of four to five days, compared to the design detention time of one day. This detention time results in starved bacteria with little ability to respond to shock loads or to settle completely, as evidenced by the relatively high levels of pin floc observed in the plant effluent.

2. Visual examination of aeration tank influent shows a relatively clear influent stream, which suggests low organic loading. Coupled with the long detention time described above, the clear influent stream exacerbates the "old" age and starved condition of the sludge. This apparent low organic loading is probably a combination of the high ratio of laboratory, shower, urinal, and cleaning wastes to toilet solids, and the settling of solids in the equalization basin.
3. Visual examination of the walls and bottom of the chlorine contact chamber show accumulations of solids. This may be due to low velocity and long detention time in the chamber which result from the low system hydraulic loading.
4. Observation of return line contents indicates that solids may be held in the clarifier hoppers too long before being returned to the aeration tank. Additionally, sludge from the west hopper of the clarifier cannot be transferred to the waste tank.

A number of avenues are being considered to improve effluent quality. Installation of an equalization tank bypass would permit cleaning this unit and removing the accumulated settled solids, which may be harboring one or more problem chemicals. Steady bypassing of this unit may permit a higher concentration of feed stock to the aeration tank.

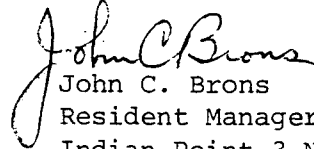
Additional piping, valving, and baffling are being considered to add substantial flexibility in operating the facility. This could include using the equalization tank as a reduced volume aeration tank, compartmentalizing and gating the present aeration tank to do the same; as well as to provide a variety of activated sludge flow sheets, extending both return sludge lines to the holding and equalization tanks, and providing rotational currents in the clarifier hopper to prevent sludge channeling.

We will make hardware changes to the plant after we are sure we have reviewed problem areas and we have carefully considered the effects of the proposed changes.

Because of the normal cooling water dilution flow through a common discharge canal, the indicated operating difficulties will not have a measurable effect on the Hudson River.

We plan to keep you informed of our progress.

Very truly yours,

  
John C. Brons  
Resident Manager

Indian Point 3 Nuclear Power Plant

JP:pw

cc: Mr. John V. D'Aquino, P.E.  
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Bureau of Environmental Quality Control  
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May 14, 1981

Mr. John V. D'Aquino  
Sr. Engineer  
Bureau of Environmental Quality  
Control  
Westchester County Department  
of Health  
County Office Building 2  
150 Grand Street  
White Plains, New York 10601

Subject: Power Authority Wastewater Treatment Facility  
Indian Point #3  
Buchanan, New York

Reference: April 28, 1981 letter from Peter McKillop  
to John W. Blake

Dear Mr. D'Aquino:

This letter addresses two general issues: the detailed inspection of the subject facility on March 5, 1981 and compliance with the ten items discussed in your April 10, 1980 letter to me.

March 5, 1981 Inspection

I do not agree with Mr. McKillop's determination that the Power Authority is in violation of the chlorine residual limit in the Indian Point Unit 3 NPDES permit, for two reasons. First, the sample taken March 5, 1981 was not a 24 hour composit sample. Therefore, the sample cannot indicate a daily average and does not in fact show a violation of the daily maximum. The daily maximum residual chlorine limit in the NPDES permit is 2.0 mg/l, well above the 0.8 mg/l value present on March 5, 1981. In addition to the fact that the March 5, 1981 sample was insufficient to represent a daily average, the definition of "daily average" remains unclear to the utilities, the Environmental Protection Agency and the New York State Department of Environmental Conservation. This is reflected in the fact that the revised NPDES permit for Indian Point Unit 3 does not contain a daily average limit.

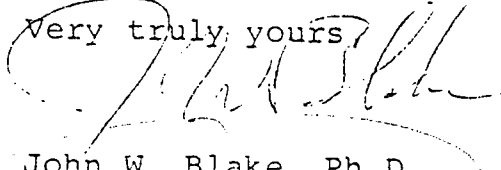
May 14, 1981

To assure compliance with the NPDES permit limitations for coliform and fecal coliform, the Power Authority will pump the sewage treatment plant chlorination tank more frequently than the current monthly operation.

April 10, 1980 Letter

Many of the items in your April 10, 1980 letter have been completed. Inasmuch as that letter did not request a response, we simply set about complying with the items enumerated. As soon as we have compiled answers for each question, we shall forward our response.

Very truly yours,

  
John W. Blake, Ph.D.  
Director  
Environmental Programs

bcc: J. P. Bayne  
J. Brons, IP3  
J. Gillen, IP3  
J. Lyons

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May 22, 1981

Mr. John V. D'Aquino, P.E.  
Senior Engineer,  
Bureau of Environmental Quality Control  
Westchester County Department of Health  
County Office Building 2  
150 Grand St.  
White Plains, NY 10601

Subject: Indian Point Project Wastewater Treatment  
Facility

- Reference:
1. April 28, 1981 letter from Westchester County Dept. of Health (Mr. Peter McKillop) to the Power Authority (Dr. John W. Blake)
  2. April 10, 1980 letter from Westchester County Dept. of Health (Mr. John D' Aquino) to the Power Authority (Dr. John W. Blake)
  3. May 14, 1981 letter from the Power Authority (Dr. John W. Blake) to Westchester County Dept. of Health (Mr. John D'Aquino)

Dear Mr. D'Aquino:

Per the Westchester County Dept. of Health letter to April 28, 1981 (Ref. 1), we are providing the following information regarding the actions taken previously by the Power Authority in response to the items in your April 10, 1980 letter (Ref. 2):

Item 1: Splitter box

Action: Completed as requested, May 27, 1980

Item 2: Effluent weir

Action: Completed as requested, July 15, 1980

Item 3: Comminutor seals

Action: Corrected as requested, May 18, 1980

Item 4: Wastewater lift station, high water alarm

Action: Gas detectors, installed at time of construction, do signal high water levels. An alarm specifically for high water levels has been ordered.

Item 5: Water intrusion study.

Action: Study is under way, but has not been completed at this time.

Item 6: Operating report contents

Action: Compliance as requested, January, 1980.

Item 7: Employee education program re. facility.

Action: Plant operators are sent to training courses, subject to their availability. Additionally, contact is continually made with employees and contractors at Indian Point to alert them to the problems that could be caused to toxic substances reaching the sewage treatment facility. This program is continuing.

Item 8: Signs in treatment building.

Action: Completed as requested, May 18, 1980

Item 9: Dissolved oxygen testing in secondary clarifier.

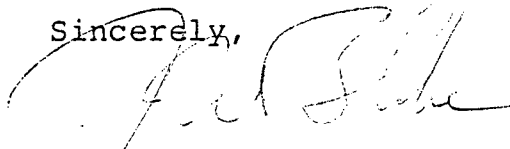
Action: Compliance as requested, March 22, 1980.

Item 10: Chlorine residual and coliform/fecal coliform data.

Action: Efforts have been, and continue to be made, to examine the design and operation of the sewage treatment facility to avoid non-compliance with NPDES permit requirements. [ Note Authority letter of May 14, 1981 (Ref. 3) regarding permit condition revisions, ]

If you have any further concerns, please let me know, or contact Mr. Gillen at the Indian Point Plant.

Sincerely,



John W. Blake, Ph.D.  
Director,  
Environmental Programs

JWB:ai

cc: Mr. Peter McKillop,  
Westchester County Department of Health