The Commonwealth of Massachusetts
Metropolitan District Commission
Water Division
20 Somerset Street, Boston 02108

50-213

Haddam Neck Plant
SEP Topic II-3.B

December 10, 1982

Dennis M. Crutchfield, Chief
Operating Reactors' Branch No. 5
Division of Licensing
Office of Nuclear Reactor Regulation
Nuclear Regulation Commission
Washington, D. C. 20555

Dear Mr. Crutchfield:

We hereby transmit two copies of two reports, as requested in your letter of 10 November 82. The Embankment Stability Study by Goldberg, Zoino addressed only the seismic and static stability of the winsor Dam and the Goodnough Dike, not the potential downstream flooding areas. It only answered one of the topics questioned by the Corps of Engineer's National Dam Inspection Program Report. The confidential report, especially assesses only the order of magnitude of the potential downstream flooding. No detailed follow-up to this initial report has been made to date.

The Confidential Report was copied in limited numbers originally, but only one original flood boundary map was prepared for each of three scenarios. Your request will impose a considerable reproduction cost and require a lengthly period to complete. We believe neither aspect to be consistent with your Commission's interest. As an alternative, we have offered to Northeast Utilities, and herewith extend a similar offer to your NRC group, to present this mapped material in a briefing format. Perhaps a joint session with NRC and NUSCO is appropriate. A suggested site would be the Administration Buildings at Quabbin Reservoir, thus additionally affording all parties to view, at first hand, the actual structures and reservoir in question.

A recent supplemental letter-report by Goldberg-Zoino to their original report is also enclosed. We fully recognize the magnitude of our Quabbin facilitiy in relation to the entire Connecticut Valley, and have enclosed the listing excerpted from USGS sources for your use.

A035 Change:
PDR
L.PDR
NSIC
NTIS
} Non Prof Encls Only!

The MDC stands ready to cooperate with the NRC (and NUSCO) in this matter, and accepts your offer to maintain confidentiality of the report.

Very truly yours,

William A. Brutsch

William A. Brutsch, P. E.
Director and Chief Engineer

WAB/TSB/mem

CC: Northeast Utilities w/Embankment Stability Study (w/copy No.5 & Ltr.from Goldberg-Zoino & Assoc.)

Enclosures: 1. Confidentail Preliminary Report on Quabbin Reservoir Emergency Plan
2. Embankment Stability Study Quabbin Reservoir Dams
3. Ltr. from Goldberg Zoino 9/23/82 Re Piezometer Levels Quabbin Reservoir
4. Two copies of table

GZA
GOLDBERG-ZOINO & ASSOCIATES, INC.
GEOTECHNICAL-GEOHYDROLOGICAL CONSULTANTS

RECEIVED
M.D.C. WAT. DIV.
DIRECTOR'S OFFICE
'82 SEP 27 A11:28

CIRCULATE TO	INITIALS
WAB	WAB
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CONSULTANTS
WALTER E. JAWORSKI
STANLEY M. BEMBEN

September 23, 1982
File No. 2-2585.6-C

cc ✓ TBARON 9/23/82
✓ FILE

Metropolitan District Commission
20 Somerset Street
Boston, Massachusetts

Attention: Mr. William A. Brutsch

Re: Piezometer Levels
Quabbin Reservoir

Gentlemen:

In accordance with our proposal dated June 24, 1982 and signed on September 3, 1982, we have completed a set of piezometer readings at Winsor Dam and Goodnough Dike. The piezometers were installed in June 1981 by GZA as part of our contract with the MDC to evaluate the two embankments. The latest readings were made on September 17, 1982.

Reservoir levels in June 1981, were approximately elevation 522. At the time of this latest reading, the reservoir has risen to elevation 527.44. A summary of piezometric levels is presented in the attachment. For the most part, the piezometers registered slight increases in pressure or no increase at all. Two of the piezometers, however, registered a decrease in pressure. In our opinion, the data suggests that both embankments are functioning normally and that acceptable factors of safety exist. These findings are consistent with those previously made in our report of November 1891.

You should be aware, however, that conditions within an earth embankment may change over time because of changes in both internal and external factors. For this reason, it is recommended that the MDC repeat these measurements on a yearly basis and accumulate this data and other observations as historical performance records. If you have any questions regarding this letter, please do not hesitate to call.

Very truly yours,

Richard P. Weber
Geotechnical Engineer

William S. Zoino

RPW/WSZ:dmm

SUMMARY OF PIEZOMETRIC LEVELS

Piezometer Number	Date Installed	Tip Elevation	Piezometric Elevations (BCB) 6/26/81	9/17/82
1	6/04/82	475.2	497.4	497.9
2	6/04/82	440.2	477.6	477.6
3	6/04/82	413.0	479.0	480.9
4	5/11/82	458.5	459.0	460.0
5	5/11/82	446.5	451.1	448.8
6	6/18/82	391.0	391.0	391.0
7	6/01/82	484.2	498.1	498.1
8	5/29/82	440.8	469.0	469.0
9	5/29/82	403.2	451.7	451.7
10	6/03/82	457.0	457.5	457.5
11	6/03/82	436.3	436.8	436.8
12	6/23/82	378.2	392.9	387.0
13	6/19/82	402.4	502.3	505.9
14	6/19/82	456.0	481.9	491.1
15	6/19/82	413.5	-----	-----
16	6/16/82	431.0	437.0	437.0
17	6/09/82	442.0	445.7	445.7
18	6/12/82	405.0	425.3	425.3
RES	-------	-----	522±	527.44

Elevations are approximate and based on assumed surface elevations.
Reservoir elevation obtained from MDC.

GZA

Second Conn. Lake	506×10^6 ft.^{3}
First Conn. Lake	3,330
Lake Francis	4,326
Moore	4,970
Comerford	1,279
Union Village	1,660
Gouse Pond	509
Grafton Pond	144
Crystal Lake	75
Masdoma	337
Northhartland	3,110
Sunapee	862
North Springfield	2,230
Ball Mtn.	2,380
Townsend	1,460
Surry Mtn.	1,420
Otterbrook	798
Birch Hill	2,180
Tully	958
Somerset	2,500
Harriman	5,060
Barre Falls	1,050
Conant Brook	163
Ludlow	201
Knightville	2,130
Littleville	1,410
Borden Brook	344
Cobble Mtn.	3,050
Otis	780
TOTAL	$49,222 \times 10^6$ ft.^{3}

Reservoirs of the
Connecticut River Watershed within
Vermont, New Hampshire
and Massachusetts

Source: USGS Stream Flow Records

QUABBIN $53,800 \times 10^6$ ft.^{3}

Tom Baron
MDC Water Division
Nov. 82