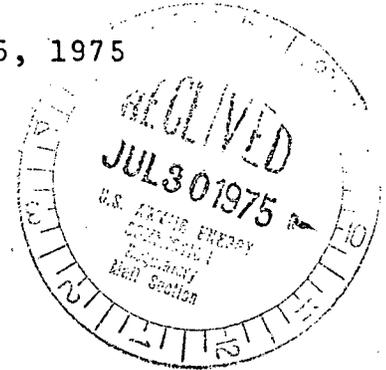


Consolidated Edison Company of New York, Inc.
4 Irving Place, New York, N Y 10003
Telephone (212) 460-3819

Regulatory

File Cy.

July 25, 1975



Mr. Dominick B. Vassallo, Chief
Pressurized Water Reactors
Branch No. 1
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Vassallo

At a meeting with the Staff on July 22, 1975 Con Edison presented its program to determine the minimum age and the movement history of a fault recently discovered on the Indian Point site by Professor Ratcliffe and reported to you in my letter of July 7, 1975. This program will be conducted for Con Edison by Dames and Moore. It will include detailed geologic mapping and sampling, a literature review, and an evaluation by a panel of experts familiar with the geology and the seismology of the area. Where it is deemed necessary, drilling, trenching, structural and petrographic analysis, X-ray diffraction studies, radiometric dating techniques, air photo and ERTS imagery evaluations, and gravity and magnetic data synthesis will be done.

This study has already started and is presently estimated to be completed by mid November 1975. A report will be submitted to you at that time. A description of and the schedule for completing each phase of this program is presented in Enclosure 1.

Con Edison will keep the Staff advised of any significant developments as they occur during the course of this study.

Very truly yours

William J. Cahill, Jr.
William J. Cahill, Jr.
Vice President

Enc.
mrb



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PURPOSE AND SCOPE

The purpose of the investigation would be to develop sufficient data to evaluate significance of a fault recently identified at the site of the Indian Point Generating Station, near Buchanan, New York. The significance of the fault will be assessed on the basis of criteria defined by the Nuclear Regulatory Commission (NRC) for nuclear power plant sites.

Principal objectives of the study are therefore:

- 1) to immediately determine whether or not there is any evidence of recent displacement along the fault on site;
- 2) to explore the possible relationship of the fault on site to any other significant faults in the region; and
- 3) to date, absolutely or relatively, the fault on site and any others found to be associated with it or, alternatively, generate a sufficient weight of circumstantial evidence to resolve questions which may be raised by governmental agencies concerned with the safety aspects of these faults.

To achieve these objectives, the proposed program will include a review of: published and unpublished data, site plans, cross sections and containment excavation photographic records, as well as conducting (and interpreting) aerial and ground-level remote sensing, geophysical investigations, geologic mapping (with trenching and/or borings where essential), petrographic studies and dating of suitable samples.

1. Literature Review

A comprehensive review of published and unpublished information including professional papers, theses, satellite imagery, aerial photography, SLAR and geophysical data will be undertaken.

II. On-Site Mapping, Trenching and Borings

Features identified on the site will be traced and mapped in the site area and studied in outcrop where exposed. Pertinent site data will be re-studied and mapped in greater detail, and ⁱⁿ large scale where appropriate. (1" = 5' scale, 1" = 10')

Trenches may be needed to establish the continuity or lack thereof of the faults inferred from the mapping. Borings may be drilled to provide further data on the characteristics and mineralogy of the faults encountered.

III. Petrofabric Studies

Detailed studies of the structure of fault or shear zones encountered will be performed. Techniques will include very detailed field mapping to determine cross cutting relationships, sense and magnitude of movement (where possible), thin section studies, and mineralogical and chemical analyses of gouge and country rock materials.

IV. Dating Studies

State-of-the-art techniques will be employed in attempts to positively determine the date of last movement of the fault/shear zones which may be encountered. These techniques may include clay mineral orientation studies, radiometric dating (K-Ar, Sr-Rb), oxygen isotope determinations, fluid inclusion studies, and paleomagnetic studies.

Fluvial terraces will be identified and studied to determine if they are associated with glacial, or older processes and whether or not they are disturbed by underlying geologic structural features. Geomorphic studies will be performed in an attempt to determine and/or define the age of peneplain surfaces, if they exist.

V. Off-Site Mapping, Trenching and Borings

Off-site features identified from remote sensing and the continuation of structures exposed in the site area will be mapped and studied to the extent necessary to determine their significance to the site.

VI. Marine Geophysical Studies

From 15 to 20 miles of high resolution, seismic reflection/refraction profiling will be conducted in the Hudson River in the site vicinity. The profiling will be conducted both normal and parallel to the trend of the projected geologic structures. The profiles would provide information on: the bedrock-sediment interface, and the shallower reflectors (gravel-silt interface and any other interface within the sediment column). Offset in the bedrock and/or overlying sediments should be discernable, if present. The profiles would be "tied" to existing river boring data for velocity/rock (soil) type identification.

If deemed necessary a marine drilling program would be conducted to physically confirm any stratigraphic offsets indicated by seismic profiling and to obtain samples for age determination.

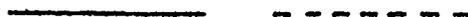
VII. In Situ Stress Measurements

If the rocks encountered in the site borings exhibit adequate integrity, an in situ stress measurement program may be instituted. This would be accomplished using the overcoring technique and would hopefully permit a determination of existing stresses (if any) associated with nearby faults and/or fractures.

SCHEDULE

July August September October November
14 21 28 4 11 18 25 31 1 8 15 22 29 6 13 20 27 3

Literature Review



Regional Geology



Site & Subregional Geology



Geophysics



Core Borings (in river)



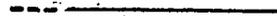
Geochronology



Integration of Site,
Regional and Geophysical
Data



Conclusions



--- Contingency
— Planned