



DEPARTMENT OF THE ARMY

DETROIT DISTRICT, CORPS OF ENGINEERS
BOX 1027
DETROIT, MICHIGAN 48231

REPLY TO
ATTENTION OF

29 SEP 1980

NCEED-T

SUBJECT: Interagency Agreement No. NRC-03-79-167, Task No. 1 - Midland Plant
Unit 1 and 2, Subtask No. 2

THRU: Division Engineer, North Central
ATTN: NCDED-G (James Simpson)

TO: U.S. Nuclear Regulatory Commission
ATTN: Mr. George Lear, Chief
Hydrologic & Geotechnical Engr. Br.
Division of Engineering
Washington, DC 20595

1. The Detroit District hereby submits these review comments on the soil boring information received from the Bechtel Corporation, the applicant's consultant. The purpose of these review comments is to determine whether or not the additional soil information furnished by the applicant as per request of Mr. R. Vollmer, Director, Division of Engineering (NRC), in a meeting of 29 August 1980, is adequate to evaluate the stability of the various structures built on the fill material and; whether or not the staff request of 30 June 1980 for additional exploration and testing of soils is still in effect.

2. As decided by Mr. Vollmer, the applicant has furnished soil information obtained from standard penetration tests from one-hundred and fourteen (114) borings including twenty-six (26) borings used for determining the shear wave velocity in plant fill area.

3. The results of the review suggest the following minor modification in our position.

a. Diesel Generator Building:

Since the new boring No. CH-13, CH-14 and CH-15 are located close to the requested boring COE-8, and boring No. CH-16, CH-17 and CH-18 are close to the COE-13, the information from these borings may be used to determine the soil types and the thicknesses of the layers of various types of soil from which undisturbed samples are to be taken. Thus, requirements of continuous split spoon sampling may be eliminated from these two boring locations.

b. Service Water Structure.

Four of the new borings, CH-1, CH-1A, CH-2 and CH-3 are located in the vicinity of the requested boring COE-16. The information from these four new

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borings could be utilized to determine soils types and thickness of the layers from which undisturbed samples are to be taken. Thus, requirements of continuous split spoon sampling may be eliminated from the requested boring location COE-16.

c. Retaining Walls.

Information obtained from the boring No. PD-9 which is close to the requested boring COE-14, could be utilized to identify the locations of various soil strata and to determine from where soil samples are to be taken for testing. Thus, requested continuous split spoon sampling can be eliminated from the location of COE-14.

d. Auxiliary Building.

Borings of the Series TW and TEW are located near the requested boring COE-17 and COE-18 respectively, therefore, the information obtained from these series of borings could be used to identify the locations of various soil strata and to determine from where the undisturbed samples are to be taken for testing. Thus, requested continuous split spoon sampling can be eliminated for the Auxiliary Building.

e. Cooling Pond.

The boring information, furnished by the applicant in response to Mr. Vollmer's request of 29 August 1980, does not show any borings taken along the cooling pond dike. Therefore, all the requested exploration (7 borings) and testing is required along the cooling pond dike.

4. The additional information received from the applicant's consultant is not adequate. It does not provide the shear strength parameters and the consolidation coefficients needed to determine bearing capacities of the foundation soils, the sizes and length of the underpinning elements (piles, caissons), settlements of the Diesel Generator Building, and stability of the cooling pond dikes. Selection of undisturbed samples locations should follow the guidance of NRC Regulatory Guidance 1.132 entitled "Site Investigation for Foundation of Nuclear Power Plants." Laboratory testing of the recovered samples should follow the guidance of NRC Regulatory Guide 1.138 entitled "Laboratory Investigation of Soils for Engineering Analysis and Design of Nuclear Power Plant."

P. McCALLISTER
Chief, Engineering Division