GEOTECHNICAL ENGINEERS INC.
1017 MAIN STREET · WINCHESTER · MASSACHUSETTS 01890 · 617 729-1625

January 28, 1982
Project 81907
File 2.0
Ref: 81907-2

Mr. Joseph Kane
Project Officer
U. S. Regulatory Commission
Division of Engineering, M/S P-214
Washington, D.C. 20555

Subject: Information Desired Regarding Spring Stiffness Computations
Follow-Up To Audit of January 18, 19, 1982
Bechtel Offices, Ann Arbor, MI
Midland Plant Underpinning
Contract No. NRC-03-82-092

Dear Mr. Kane:

Based on our telephone discussion with Mr. Hari Singh on January 27, 1982 and on my review of the calculations by Bechtel of the Auxiliary Building Spring Stiffnesses (DQ-30.1(Q) and DQ-30.2 (Q) dated 12/08/81 and 12/15/81, respectively), the following questions arise:

(1) How were these spring stiffnesses used with respect to the underpinning that is being audited? Describe the major steps in the procedure used to analyze the stresses and deformations within the structure during and after completion of underpinning.

(2) On page 7/17 of DQ-30.1(Q) there are moduli of elasticity shown.

Incl 2

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(a) Show the source of these moduli.

(b) Provide the Poisson's ratios assumed in the elastic analysis and the basis for selection.

(c) Indicate the technique used to analyze the elastic stresses.

(d) Show whether the calculated spring constants would vary over the area of the concrete mats.

(e) Justify the use of the center point for calculating the spring constant.

Sincerely yours,

GEOTECHNICAL ENGINEERS INC.

Steve J. Poulos
Principal

SJP:ms