GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, P.O. BOX 460, PLEASANTON, CALIFORNIA 94566

NUCLEAR ENERGY

ENGINEERING

DIVISION

July 25, 1980

Mr. Darrell G. Eisenhut, Director
Division of Operating Reactors
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

SUBJECT: Landslide Stability Investigation of the General Electric Test Reactor (GETR) Site - License TR-1 - Docket 50-70

Dear Mr. Eisenhut:

The field exploration phase of the GETR landslide investigation has been completed. The summary report of the work performed is attached so that Mr. John Greeves can verify that the field work performed will provide satisfactory samples to determine the stability of the hills adjacent to the GETR under the present climatic conditions.

Very truly yours,

D L Gilliland

D. L. Gilliland
Manager
Reactor Irradiations



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attachments

AFFIRMATION

The General Electric Company hereby submits the Summary of Field Exploration Phase, GETR Landslide Investigation dated July 22, 1980.

To the best of my knowledge and belief, the information contained therein is accurate.

D. L. Gilliland
Manager
Reactor Irradiations

Submitted and sworn before me this 25th day of July, 1980.

Virginia C Caspieus, Notary Public in and for the County of Alameda, State of California.

July 22, 1980

MEMORANDUM

TO: R. Darmitzel - GE

FROM: D. M. Yadon - ESA

SUBJECT: Summary of Field Exploration Phase, GETR Landslide Investigation



Subsurface exploration for this investigation was conducted during the period June 25, 1980 to July 10, 1980. The field investigation involved drilling, logging, sampling, and standard penetration testing of four rotary wash borings (numbered RD-1, RD-2, RD-3 and RD-4) in the GETR vicinity. Three of the four borings are located approximately as shown on the map accompanying the proposed GETR landslide investigation submittal. The fourth boring was drilled adjacent to RD-2 to obtain additional samples from specifically targeted depths. Piezometers were installed in all borings, drilling fluid was flushed with compressed air, and ground water levels are being monitored. The borings were sampled using a Pitcher Barrel coring sampler and a Modified California Drive sampler to obtain materials for laboratory shear strength testing. A total of thirty seven Pitcher Barrels were taken with an average recovery of 78% and eight California Drive samples were taken with an average recovery of 65%. The borings ranged in depth from 30 feet (RD-1) to 433 feet (RD-3) with a total footage of 673 feet.

Drilling operations were conducted by J. N. Pitcher Drilling Co. of East Palo Alto, California, under the direction and field supervision of Earth Sciences Associates (ESA). All borings were logged by ESA personnel and preliminary copies of the field logs have been sent to John Greeves of NRC. ESA personnel handled, packed and transported all samples to the ESA geotechnical laboratory in Palo Alto.

The geologic section penetrated by the exploratory borings consists of silty to clayey sands and gravels and silty clay-clayey silts of the Livermore Gravels formation. Cobbles up to several inches in diameter were common in the coarse grained units. These cobbles greatly impeded both drilling and sampling operations. Drilling in these coarse materials was slow, and sampling was difficult at shallow depths and not possible at depths greater than about 200 feet. Target sampling depths were chosen on the basis of geologic projection of shear planes observed in Trench B-3 and computer generated failure surfaces from stability analyses. Sampling was not, however, restricted to these depths since the field engineer tried to avoid sampling the very gravelly materials which tended to result in poor to no recovery. Finer grained silts and sands were the preferred sampling horizons.

Penetration resistance tests were performed in RD-3 and RD-4 to obtain an in situ index of strength of the subsurface materials, particularly the coarse grained materials not amenable to undisturbed sampling. The penetration resistance (blow count) was recorded by ESA personnel.

A suite of geophysical logs was run by ESA using a Widco 1200 portable logging unit. These logs measured natural gamma radiation, spontaneous potential, and resistivity of the borehole sidewall materials. These geophysical logs provide information for lithologic interpretation and geologic correlation of the subsurface materials.