TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

May 5, 1982

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Denton:

In the Matter of	)	Docket Nos. 50-327
Tennessee Valley Authority	)	50-328

In accordance with 10 CFR Parts 50.59 and 50.90, we are enclosing 40 copies of a temporary change which involves installation of five sewage treatment facility lines across, and eight feet above, the essential raw cooling water (ERCW) supply headers. Tests performed by TVA indicate that 10 feet of Type B backfill is sufficient as a tornado missile barrier.

Therefore, the installation of the new sewage treatment facility lines will necessitate excavation of a portion of the backfill which serves as a tornado missile barrier above the headers. TVA has determined that installation of this segment of piping constitutes an unreviewed safety question requiring NRC concurrence. Since the probability of missile damage to the ERCW piping during this period is $<<6.0 \times 10^{-7}$, we are requesting a maximum of five days total time for excavation, installation of piping, and backfilling.

Please notify us of your decision concerning this matter by June 1, 1982.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

Sworn to and subscribed before me
this 5th day of May 1982

Paulette N. White
Notary Public
My Commission Expires 9-5-84

Enclosure (40)
cc: U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

ENCLOSURE

UNREVIEWED SAFETY QUESTION ON NEW SEWAGE TREATMENT FACILITY
AT SEQUOYAH NUCLEAR PLANT

TVA has designed a new sewage treatment facility for Sequoyah to meet increased sewage needs. The facility includes one 3-inch and four 6-inch lines which are to be laid 11.5 feet above the four 36-inch essential raw cooling water (ERCW) supply headers (centerline-to-centerline distance, see attached figure). This will necessitate excavation of a portion of the backfill which serves as a tornado missile barrier above the headers. Tests performed in the past by TVA indicated that 10 feet of this backfill are sufficient to protect the pipes from tornado missiles. However, while the five sewer lines are being laid, only eight feet of Type B backfill will be in place (see attached figure). Therefore, it has been determined that installation of this segment of piping constitutes an unreviewed safety question thus requiring NRC concurrence.

Therefore, we are requesting NRC approval of the installation plan based on the fact that the probability of missile damage to the ERCW piping during the excavation period is extremely small. This probability is given by the following:

$$P = P_{t'}TP_{d/t}$$

where: $P_{t'}$ = probability/unit time that a tornado strikes the plant site. Its value as stated in the Sequoyah FSAR is $4.5 \times 10^{-5} y^{-1}$.

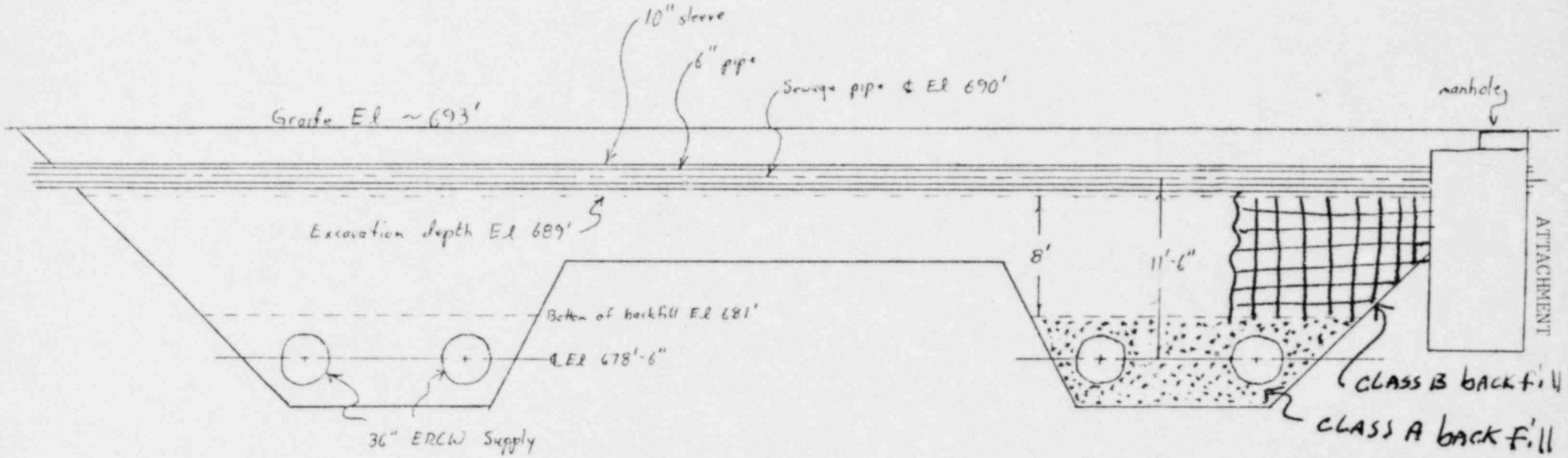
T = time period during which less than 10 feet of backfill covers the headers; this will be about five days.

$P_{d/t}$ = probability that, given a tornado at the site, a missile is hurled downward toward the small excavation area with sufficient velocity to penetrate the eight feet of backfill and damage a header. This value is not precisely known but is obviously much less than 1.

Hence, $$P = (4.5 \times 10^{-5} y^{-1})(\frac{5}{365} y)(P_{d/t})$$

$$P = 6.0 \times 10^{-7} P_{d/t}$$

$$P << 6.0 \times 10^{-7}$$



NEW SEWAGE TREATMENT FACILITY PIPING