ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
TPIPE - USER FAILED TO CHECK FREQUENCY ANALYSIS
NCR CEB 80-16
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

One function of the TPIPE computer program is to determine the
frequency response of piping systems during a seismic event.
The TPIPE program outputs information regarding the correctness
of the calculation of the frequency analysis. Convergence informa-
tion is calculated and printed out for each frequency that is analyzed.
If, for a given frequency, the results do not converge to within
specified limits, a message to this effect is printed and analysis
continues. The generalized mass matrix is also printed out for review.
The TVA personnel who utilized this program failed to check for the
nonconvergence message and the correctness of the generalized mass
matrix.

Safety Implications

Because the user failed to properly analyze the output, design informa-
tion could have been issued for problems where the results of the
frequency analysis were not correct.

Corrective Action

All analyses performed using TPIPE have been reviewed. There are no
occurrences of erroneous design information resulting from this
condition. Additionally, the program has been modified in order to
assist the user in detecting a frequency analysis that does not
converge. Any run that does not converge to within specific limits
will stop after the frequency analysis. Also, the generalized mass
matrix will be internally checked for accuracy.