



VERMONT YANKEE NUCLEAR POWER CORPORATION

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FVY 81-108

REPLY TO:
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July 28, 1981

United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Office of Nuclear Reactor Regulation
Mr. D. G. Eisenhut, Director
Division of Licensing

References: a) License No. DPR-28 (Docket No. 50-271)
b) Letter, USNRC to VYNPC, dated April 29, 1981

Subject: Mark I Torus Program - Exceptions to NUREG 0661 Criteria

Dear Sir:

Reference (b) requested that Vermont Yankee advise the NRC of any exceptions we would be taking to the criteria of NUREG 0661. As a result of our analyses to date, we have determined that the exceptions described below will be necessary.

The three general areas into which all exceptions fall are these:

1. Random phasing of frequency components.
2. Wider use of Safety/Relief Valve (SRV) test data than discussed in NUREG 0661.
3. Wider use of Quarter Scale Test Facility (QSTF) data than discussed in NUREG 0661.

The specific applications of these exceptions are as follows:

1. Random Phasing - Condensation Oscillation (C.O) and Chugging

Detailed evaluation of Full Scale Test Facility (FSTF) test data has identified the presence of phasing relationships between the individual load frequencies for C.O. and post chugging loads. These phasing relationships provide a consistent correlation to resultant shell stresses. It is our



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intention to use these relationships in the evaluation of the affected structure.

2. SRV Test Data

NUREG 0661 makes provisions to use in-plant SRV test results to calibrate analyses for torus shell pressure. In addition to this, we intend to use data from these same tests to calibrate analyses for SRV drag on submerged structures, as well as to calibrate gross torus lateral load response and for attached piping response. Each affected structure was instrumented to provide the data needed for calibration.

3. QSTF Test Data

NUREG 0661 provides for the use of plant-unique QSTF test movies to correct froth velocities. In addition to this, we intend to use these same movies to assign vector orientations to the Froth I loads and to more accurately define regions where these vectors act.

Vermont Yankee will provide a detailed discussion of each of these approaches in our plant - unique analysis report.

Although the exceptions listed above will be necessary to allow Vermont Yankee to complete the required analysis, they will not allow us to achieve the completion schedule of the NRC's Order of January 13, 1981. This problem was discussed in a meeting between the Mark I Owner's Group and the NRC staff on May 22, 1981. We are currently waiting for communication from the NRC concerning this situation.

We trust the information given above is satisfactory; however, should you have any further questions, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION



R. L. Smith
Licensing Engineer