



VERMONT YANKEE NUCLEAR POWER CORPORATION

SEVENTY SEVEN GROVE STREET

RUTLAND, VERMONT 05701

2.C.2.1
TTY 81-98

REPLY TO:

ENGINEERING OFFICE

1671 WORCESTER ROAD
FRAMINGHAM, MASSACHUSETTS 01701
TELEPHONE 617-872-8100

July 1, 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 All Licensees of Operating Plants,
dated October 31, 1980

Subject: Response to NUREG 0737 Item III.A.2, Emergency Preparedness-
Long Term

Dear Sir:

The subject NUREG Item required, in part, that a functional description of each licensee's upgraded meteorological program and the implementation schedule for that program be provided by July 1, 1981. The purpose of this letter is to forward the attached information responding to this requirement for the Vermont Yankee Nuclear Power Corporation.

We trust this information is acceptable. However, should you have any questions, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

L. H. Heider
Vice President

8107070344 810701
PDR ADOCK 05000271
F PDR

A046
Sili

ATTACHMENT

Functional Description of the Upgraded Vermont Yankee Meteorological Program

The existing primary meteorological monitoring system at Vermont Yankee utilizes a guyed 305' Rohn 65G tower located onsite as shown in the attached figure. The parameters measured on the tower include the following:

- Wind Speed @ 35' and 297' (Climet 011-1 sensors)
- Wind Direction @ 35' and 297' (Climet 012-10 sensors)
- Temperature @ 35' (Climet 015-3 sensor in a Climet 016-1 aspirator)
- Delta-Temperature between 35'-200' and between 35'-297' (Climet 015-3 sensors in Climet 016-1 aspirators)

In addition, both precipitation and solar radiation are measured on the ground.

The translator cards for the tower sensors are located in an instrument shed near the base of the tower. The analog output is then transmitted through a v/f convertor to a Data General NOVA III minicomputer located in a nearby relay house (see attached figure). The NOVA III periodically scans each parameter and then digitally compiles and records the data as 15-minute averages. The 15-minute averages are automatically displayed on a teletype located in the control room and are also recorded on floppy diskette. Analog strip chart recorders located in the relay house are also utilized as auxiliary data loggers. The entire system is currently supplied by redundant power sources.

An existing 140' guyed tower used previously for meteorological monitoring is currently being reinstrumented to serve as a backup tower. This tower's location is also shown in Figure 1. The parameters which will be measured on the backup tower include:

- Wind Speed @ 100' (Climet 011-1 sensors)
- Wind Direction @ 100' (Climet 012-10 sensors)
- Delta-Temperature between 33'-135' (Climet 015-3 sensors in Teledyne Geotech 327 aspirators)

Both the translator cards and the strip chart recorders for the tower will be located in the control room. The backup system should be in operation by September 1981.

Regional meteorological data will be available through the use of Weather Service International's (WSI) Real-Time Weather Information System. WSI's system will be available on a 24-hour basis and will be accessible

by terminal via commercial telephone lines. Data available through the system will include current weather data from surrounding official weather service stations. Current synoptic conditions for the site region will be approximated by interpolating meteorological data from surrounding official weather service stations to the site area. This data will be used to represent meteorological conditions outside of the river valley.

The Vermont Yankee emergency plan contains procedures for calculating offsite external gamma dose rates using current onsite meteorological data and radiation monitor readings. In addition, a fixed trajectory model with Gaussian dispersion is currently being developed inhouse to serve as an emergency response "Class A" dispersion model to produce initial transport and diffusion estimates for the plume exposure EPZ. The model shall use automatically supplied meteorological data from the primary monitoring system to produce plume dimensions and position, location and magnitude of the peak relative concentration, and relative concentration at several downwind locations. Using manually supplied effluent release information and a finite cloud external gamma dose model, estimates of near-real-time dose rates and accumulative sector average doses will also be available. The model will have the graphics capability of drawing relative concentration and dose isopleths over a background map of the site. The model is scheduled to be completed and in operation by April 1982.

The dispersion model will be executed on an existing Sperry Univac Varian V77-600 minicomputer located in the Framingham, Massachusetts engineering office. During an emergency, 15-minute averaged meteorological data will be automatically telemetered from the site NOVA III minicomputer to the Varian minicomputer via dedicated telephone lines. Access to the data and dispersion models on the Varian will be available via the same dedicated telephone network to terminals located in the Framingham engineering office as well as both the primary and alternate EOF. Information concerning offsite dose consequences will be provided to outside agencies through a company representative located in the EOF.

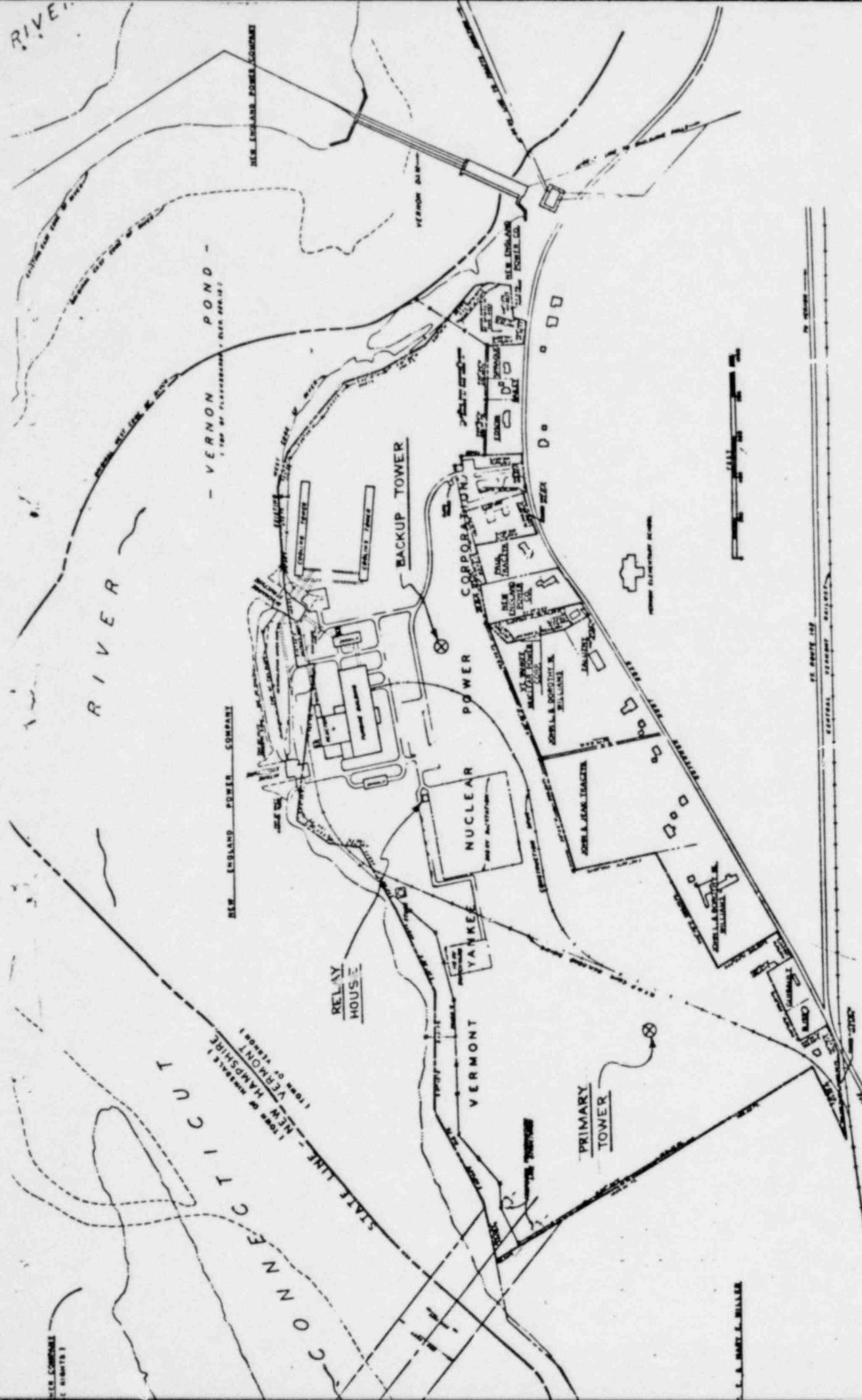


FIGURE 1
LOCATION OF PRIMARY
AND BACKUP METEOROLOGICAL TOWERS