VERMONT YANKEE NUCLEAR POWER CORPORATION

SEVENTY SEVEN GROVE STREET

RUTLAND, VERMONT 05701

2.C.2.1

FVY 81-65

REPLY TO
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April 14, 1981

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

Attention: Mr. Darrell G. Eisenhut, Director
Office of Nuclear Reactor Regulation

References:
(a) License No. DPR-28 (Docket No. 50-271)
(b) USNRC Generic Letter 80-10, dated February 18, 1981
(c) USNRC Generic Letter #17, dated March 5, 1981
(d) "Realistic Estimates of the Consequences of Nuclear Accidents," Levenson, M. and Rahn, F., EPRI

Subject: TMI Action Plan Item III.A.1.2

Dear Sir:

Reference (b) provided clarification of TMI Action Plan Item III.A.1.2 - Upgraded Emergency Support Facilities, and requested confirmation that the implementation dates indicated would be met. This letter responds to this request and provides descriptions of the functional compliance to (1) the shift staffing and augmentation capability and (2) the emergency operations facility requirements. This information is provided below.

A. Shift Staffing and Augmentation

Enclosure A provides a description of our plans to comply with the functional intent of the shift staffing requirements. Our experience in nuclear operations supports our conviction that the staffing levels described in Enclosure A assures adequate coverage for prompt emergency plan implementation.

B Emergency Response Facilities

The conceptual design information as requested will be provided by June 1, 1981. Enclosure B provides a description of the Emergency Operations Facility (EOF) arrangement we intend to implement by October 1, 1982. This arrangement has been reviewed against the NRC guidelines and we conclude that no additional modifications to the near site EOF are necessary since we meet the functional intent of the guidelines.

We trust this information will be satisfactory for your review. Although Enclosures A and B describe alternative proposals, we believe the functional intent of Reference (b) has been met. If you desire additional information or have any questions, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

L. H. Heider
Vice President

Enclosure A

Description of Functional Compliance to Shift Staffing and Augmentation Capability
Vermont Yankee Nuclear Power Corporation
Vernon, Vermont

Vermont Yankee Nuclear Power Corporation is, in principle, in agreement with the shift staffing outlined in Table III.A.1.2-1. We feel that our approach to shift staffing is functionally consistent with the NRC position and, additionally, is a more appropriate and effective use of personnel.

In addition to our own operating experience, Vermont Yankee is able to draw on the resources of the Yankee Atomic Electric Company in this area. The Yankee organization has had over 20 years of experience in operating and staffing the Yankee plant at Rowe. Until last year, the back shifts at both Vermont Yankee and Yankee Rowe have typically been manned by 5 professionals - 3 licensed individuals and two auxiliary operators. Last year the nominal shift was increased by two - a shift technical advisor and a health physics and chemistry technician. By July of 1982, an additional licensed individual will be put on shift thus increasing the total complement of shift personnel to 8.

Our experience in nuclear operations supports our conviction that the staffing levels described above assures adequate coverage for prompt emergency plan implementation and, although it may appear different than outlined in the table, the difference is more in form than in substance. The following specific comments are provided to demonstrate how we comply with the functional intent of shift staffing requirements.

Emergency Health Physics and Chemistry

Table III.A.1.2-1 requires an health physics technician and a rad/chem technician to be part of the on-shift staff.

The aggregate of capabilities of our on-shift health physics and chemistry technician and the basic health physics knowledge of other shift personnel make the addition of an on-shift rad/chem technician unnecessary. Our on-shift health physics and chemistry technician will be trained and qualified to implement the immediate radiological response actions necessary in an emergency. The specific actions would be immediately prioritized to respond to the particular radiological needs dictated by the emergency condition. Typical immediate duties performed by our health physics and chemistry technician would include radiological habitability assessment of the Control Room, assistance in radiological release assessment, health physics guidance and support to shift personnel assigned emergency duties outside the Control Room, and certain chemistry analysis that may be needed early in the accident.

In addition to the health physics capability of our on-shift health physics and chemistry technician, our operators have knowledge and capabilities in basic radiation protection. This includes familiarity with the use of survey instruments to support their activities in an emergency.

The necessity of performing more radiological duties than can be supported by our current on-shift staff does not exist in the early time frame following an accident. More radiological functions would be initiated as the on-shift staff is augmented by additional personnel as they arrive at the TSC and EOF.

Emergency Notification/Communications

According to our Emergency Plan, the Plant Emergency Director (typically the Shift Supervisor) must assure that the NRC and the states are notified of the emergency condition. In our shift structure, an initial notification to the NRC will be conducted by an individual with the experience and level of understanding and knowledge of the plant such that he could fully apprise the NRC of the status of the plant (i.e., the Shift Supervisor). Following the initial notification, we will maintain an open line using a different individual whose role will be to act as a "phone holder" and as such would relay messages between the Shift Supervisor and the NRC. One of the people summoned to the control room would be assigned this task until relieved, in a short time, by plant staff activating the Technical Support Center. Realistically, NRC could not do anything to assist the plant on such short notice in any case. Once the TSC and EOF are established, as well as the NRC Emergency Response Center, the flow of communications between these locations will take place.

State notification procedures called for in the Emergency Plan also require prompt notification of the emergency classification, dose rate projections, and recommended protective action. The Emergency Director assures this contact is made to the designated state agency so that the state may activate its emergency response plan at a level corresponding to the emergency classification. Following the initial contact, state health department officials would then call into the plant for additional emergency information which would be supplied by a qualified individual.

In the short-term, little additional information will be required by the state since according to the new Emergency Plan, the emergency classification system is designed to indicate level of necessary response. By the time the state is mobilized to deal with the emergency, an EOF will be established near the site and direct communications dealing with offsite radiological consequences will have been established.

Thus, due to the nature and objective of the new emergency planning philosophy which calls for emergency classifications to clearly indicate level of emergency response, there is no need nor basis for separate on-shift communications person to handle immediate notification/communication requirements called for in our Emergency Plan. In addition, we strongly believe that based on the TMI experience, that the quality information is extremely important and it is our intention that only qualified and knowledgeable persons respond to NRC and state inquiries in the short term from the Control Room and in the longer term from the TSC and EOF.

Emergency Maintenance

Since maintenance (i.e. mechanical, electrical, instrumentation and control) at our plant is a very precise, controlled, and well supervised activity which is conducted in accordance with standard or specially prepared procedures and focused at assuring quality work, we do not accept the desire to have on-shift capability for maintenance "repair and corrective action". This addition carries with it the inherent implication that there would be maintenance activities conducted on shift that may be somewhat spontaneous or reactive in nature. It has been our experience in the years of plant operation that preparation for maintenance work requires time to permit system line-up, tag out, radiation protection considerations and sometimes material issue. Again, our experience is that the standard call-in response which has been used to satisfy our maintenance needs in the past provides a full complement of individuals necessary to execute a maintenance function in less time than is required to prepare the plant as suggested above.

Since the plant is designed with an inherent redundancy in safety systems, there is no need for spontaneous maintenance activities on shift. There is substantial down-side risk in having single maintenance individuals performing any but the most rudimentary tasks. Reaction type maintenance, done hurriedly, without supervision, with inadequate numbers of people is definitely not beneficial. While the potential for quick maintenance and repair sounds appealing to the NRC, Vermon Yankee's experience shows that any maintenance and repair without proper review, qualified supervision, and quality assurance can create more problems than it solves.

Practically, maintenance functions in the I&C, electrical and mechanical areas are special diciplines. During an emergency situation, little meaningful work can be done by a single individual. Should minor repair, alignment and or operation of plant components be required, auxiliary operators under direction of a licensed operator would perform the necessary actions. Should significant emergency maintenance be required, additional personnel would be called on site. During their travel time, the plant could be making preparations for their prompt access to effect repair of affected systems. Thus, based on our experience, an on-shift maintenance capability is not necessary for emergency response since meaningful maintenance assistance is available on a call-in and timely basis as the next section fully describes.

Augmentation Capability in Emergencies

We fully agree that emergency conditions require rapid plant staff augmentation to the on-shift personnel. Our Emergency Plan and implementing procedures recognize this directly as we call for plant staff notification as an immediate action following the declaration of an emergency. This notification is done by radio pager activation for the top level plant staff and by telephone contact for the remaining staff needed. All notified staff would respond to activate the TSC, OSC, and EOF emergency organizations and functions.

As can be seen on Table 1, the travel times to Vermont Yankee, based on existing housing patterns support the NRC objective of 30 and 60 minute augmentation capability as identified in Table III.A.1.2-1. While we wholeheartedly endorse the response times as goals, we feel that making them a requirement subject to I&E enforcement actions goes beyond reasonable regulation. Consequently we are opposed in principle to NRC regulations that force specific housing and behavior patterns on individuals.

In addition, we fail to see the need for going beyond the goal formulation of the objective. Due to the presence of the STA and improved operator training we can see no measurable impact on accident control or restoration if a person arrives in 35 or 45 minutes. Thus, while we can support the goal and objective of 30 and 60 minute augmentation capability, we fail to see any need to make it a requirement and in so doing negatively impacting morale and unnecessarily intruding in the private lives of plant employees particularly if our demographics and past experience indicate that we can achieve the goal.

TABLE 1

TRAVEL TIME TO VERMONT YANKEE

Position	PERSONNEL AVAILABLE WITHIN SPECIFIED TIME		
	15 Min.	30 Min.	45 Min.
I&C Supervision	1	1	
Technician	4	2	
Maintenance Supervision	4	2	2
Mechanical	4	5	
Electrical	1	2	
Chemistry & Health Physics			
Supervision	3	1	
Technicians	6	2	1
Operations Personnel	16	17	5
Reactor Engineering/STAs	4	5	1
Technical Support	8	9	2
Plant Management	2	1	
Plant Support (stores, admin.)	8	12	

Enclosure B

Description of Functional Compliance to Emergency Operations Facility Requirements

Vermont Yankee Nuclear Power Corporation
Vernon, Vermont

The current emergency preparedness arrangements for Vermont Yankee include the designation and use of a primary EOF located in an existing structure 1350 feet from the plant. It is our intent to modify our procedures to designate as the alternate EOF the Vermont Yankee Operations Office in West Brattleboro, Vermont.

The Vermont Yankee Operations Office is located approximately 7 miles from the plant. As can be seen on the enclosed topographical map, this location would provide greater protection from airborne releases than would an EOF located 10 miles from a station with flat intervening terrain.

Vermont Yankee is located in the Connecticut River Valley which runs essentially north-south past the station. The valley walls rise 600-700 feet above the river and the predominant wind flows, as observed by the meteorological monitoring system at the site, are up and down valley flows. The West Brattleboro office is approximately 3 miles due west of the Connecticut River, at its closest point, and is outside of the valley boundaries. It is believed, therefore, that this alternate location would meet the intent of the NRC's 10 mile separation criterion.

Our emergency facility use plan will call for early activation of the alternate EOF for any Site Area, or General emergency. Under this concept our emergency implementing procedures would provide for activation of the alternate EOF communications and dose projection capabilities. Should a transfer from the near site EOF be required in the extreme condition of an accident beyond the Design Basis Accident, no lapse in dose projection information or communications would occur.

The near site EOF contains radiation monitoring equipment. Procedures exist to continuously assess EOF habitability. This radiological surveillance provides early warning of any need to transfer the critical EOF functions of dose projection and communications to the alternate EOF.

Should the extremely unlikely Class 9 type accident occur - a General Emergency with potential loss of containment - it is our intent that the alternate EOF would be fully activated directly. Should a Site Area emergency degrade to a General Emergency with potential loss of containment functions, there is sufficient time and continuity based on simultaneous activation described earlier to transfer locations without interruption of the flow of vital information. The conclusions of the Reactor Safety Study support the warning time necessary to effect a transfer to the alternate EOF. Control Room instrumentation provides sufficient information to determine whether direct activation of the alternate EOF is required.

The concept of our EOF facility use plan, which does not call for using the near site EOF for Class 9 accident, makes the issue of near site EOF protection factors and ventilation isolation with HEPA filters moot. Under Design Bases Accident Conditions, the 30-day plume exposure whole body dose at the near site EOF is less than 10 rems (neglecting protection factors). This is well below the 25 rem emergency worker PAG identified in NUREG-0654 (Planning Standard K). An additional justification for eliminating the HEPA requirement is found in an EPRI report by Levenson et al [Reference (d) of the cover letter]. this report concludes that, based on actual reactor accidents and controlled experiements, the predicted release of iodine and particulates are greatly reduced relative to the noble gases. This report goes on to point out that the fission product behavior models in WASH-1400 neglected significant aerosol removal mechanisms, such as particulate aglomeration and wall deposition, in predicting particulate releases. The reasoning that resulted in eliminating the requirement for a charcoal filter should likewise be applied to the HEPA filter. We do not feel that any filtration system is warranted in the near site EOF.

For a vast majority of accidents therefore, the primary EOF as-built is expected to be habitable for the duration of any significant radiological release. The conclusion of our evaluation of the near site EOF, based on our approach, against the NRC's guidelines is that no additional modifications such as upgrading to achieve facility protection factor increase and augmented filtration ventilation systems are necessary because we satisfy the functional intent of the guidelines.