VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

May 6, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. D. G. Eisenhut, Director
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Serial No. 259
BSD:ses:0459C
Docket Nos. 50-280
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50-338
50-339
License Nos. DPR-32
DPR-37
NPF- 4
NPF- 7

Gentlemen:

GENERIC LETTER 82-33
EMERGENCY OPERATIONS FACILITIES
NORTH ANNA AND SURRY POWER STATIONS

Based on discussions with the NRC staff, Vepco, in our letter Serial No. 237 dated April 14, 1983, committed to provide a hardened Local EOF at each station, to provide a Central EOF in Richmond, and to revise by May 6, 1983 the Vepco EOF submittal previously provided by our letter Serial No. 102 dated April 8, 1982. Attached is our revised submittal describing our preliminary plan for this concept.

Should you have questions or need additional information, please contact us.

Very truly yours,

W. L. Stewart

Attachment

A003

cc: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1

Mr. Robert A. Clark, Chief
Operating Reactors Branch No. 3

Mr. J. P. O'Reilly
Regional Administrator - Region II

Mr. D. J. Burke
Resident Inspector - Surry

Mr. M. B. Shymlock
Resident Inspector - North Anna

NRC positions were delineated in Generic Letter 82-33 Section 8.4.1.

NRC POSITION:

(a) The EOF is a licensee controlled and operated facility. The EOF provides for management of overall licensee emergency response, coordination of radiological and environmental assessment, development of recommendations for public protective actions, and coordination of emergency response activities with Federal, State and local agencies.

When the EOF is activated, it will be staffed by pre-designated emergency personnel identified in the emergency plan. A designated senior licensee official will manage licensee activities in the EOF.

Facilities shall be provided in the EOF for the acquisition, display and evaluation of radiological and meteorological data and containment conditions necessary to determine protective measures. These facilities will be used to evaluate the magnitude and effects of actual or potential radioactive releases from the plant and to determine dose projections.

VEPCO RESPONSE:

(a) The Emergency Operations Facility (EOF) function is for management of Vepco's overall licensee emergency response (including coordination with Federal, State and local officials), coordination of radiological and environmental assessments, and determination of recommended public protective actions. The facilities, the data systems and their attendant links are designed to provide the EOFs with a sophisticated mechanism for adequately responding to and recovering from any plant emergency.

There will be a Local EOF (LEOF) at Surry Power Station, a LEOF at North Anna Power Station, and a Central EOF (CEOF) in Richmond.

The EOF is a common point for information exchange and response coordination of local, State, Federal and Vepco activities. Representatives from State and Federal agencies are provided space and telephone communication equipment in both the LEOFs and the CEOF. The local counties operate and coordinate through the State EOF representative and have direct contact access with the Recovery Manager. The Recovery Manager, the designated senior licensee official, will have a separate functional area within the CEOF and the LEOF from which to coordinate the emergency response. Travel time between the State Emergency Operations Center and the CEOF is about 15 minutes.

NRC POSITION:

The EOF will be:

(b) Located and provided with radiation protection features as described in Table 1 (previous guidance approved by the Commission) and with appropriate radiological monitoring systems.

TABLE 1

EMERGENCY OPERATIONS FACILITY

Option 1 Two Facilities	Option 2 One Facility
Close-in Primary: Reduce Habitability o within 10 miles o protection factor = 5 o ventilation isolation with HEPA (no charcoal)	o At or Beyond 10 miles. o No special protection factor. o If beyond 20 miles, specific approval required by the Commission, and some provision for NRC site team closer to site.
Backup EOF o between 10-20 miles o no separate, dedicated facility o arrangements for portable backup equipment o strongly recommended location be coordinated with off-site authorities o continuity of dose projection and decision making capability	

For both Options:

- located outside security boundary
- space for about 10 NRC employees
- none designated for severe phenomena, e.g., earthquakes

Habitability requirements are only for the part of the EOF in which dose assessments communications and decision making take place.

If a utility has begun construction of a new building for an EOF that is located within 5 miles, that new facility is acceptable (with less than protection factor of 5 and ventilation isolation and HEPA) provided that a backup EOF similar to "B" in Option 1 is provided.

VEPCO RESPONSE:

(b) The integrated EOF will consist of a LEOF at Surry Power Station, a LEOF at North Anna Power Station, and a CEOF, at Vepco Headquarters in Richmond. The CEOF will be the backup EOF. The CEOF will be manned and capable of assuming primary EOF function at all times after the LEOF is manned and may be manned prior to startup of the LEOF. This meets the intent expressed by the NRC in Option 1 of Table 1.

While the permanent LEOFs are under construction, interim LEOFs will be established at both the North Anna and Surry sites. The Surry interim LEOF will be located at the Surry Training Facility. The North Anna interim LEOF will be located at the North Anna Training Facility. These buildings are constructed in accordance with good building practices and will therefore, offer some protection from radiation. In the event the LEOF's should be evacuated, personnel manning the interim LEOF will transfer to the CEOF. The CEOF meets all criteria for structure and habitability. We anticipate the CEOF will be available for interim use on August 1, 1983. The CEOF will not have full data processing capabilities as described in section g or full communication capabilities as described in section f on August 1, 1983, but will be functional. The probability of an LEOF evacuation will be reduced when the permanent hardened facilities are completed.

The permanent hardened LEOFs will be constructed adjacent or connected to the existing training facilities. The present conceptual design calls for the exposed exterior walls of the LEOF at North Anna to be constructed of 7 1/2" solid core masonry unit (CMU) with 3 1/2" brick facing. Walls, which are adjacent to the existing training center, will be built of 8" solid CMU and will abut the 12" thick existing masonry wall. All exterior walls of the LEOF at Surry will be built of 12" CMU. The roof of each LEOF will be a 9" thick reinforced concrete slab. Based on the preliminary design, we project that the protection factor for the LEOFs to be greater than 8 for the attenuation of 0.7 MEV gamma radiation.

The HVAC system of the hardened LEOF will provide ventilation isolation, and HEPA filters will be used. The hardened LEOF will operate at positive pressure when airborne radioactive contaminants are detected. Entry to the hardened LEOF addition will be through one of the three (3) two door vestibules.

At each LEOF, radiation detection equipment capable of continuously monitoring dose rates and airborne radioactivity concentrations will be provided.

Due to the position of the CEOF in relation to the plant sites, radiological monitoring will not be required.

NRC POSITION:

The EOF will be:

(c) Sufficient to accommodate and support Federal, State, and local and licensee predesignated personnel, equipment and documentation in the EOF.

VEPCO RESPONSE:

(c) The interim LEOFs are sized to allow sufficient working space for assigned personnel. The hardened LEOF design is currently a 2660 square foot structure which has sufficient working space for assigned personnel, equipment, and documentation.

The space available in each facility and the floor plan for each facility will be reviewed by a human factors engineering consultant.

The CEOF has been sized to allow sufficient working space for those assigned positions currently planned with the potential for adding work stations in the future should it become desirable.

NRC POSITION:

The EOF will be:

(d) Structurally built in accordance with the Uniform Building Code.

VEPCO RESPONSE:

(d) The LEOFs will be well engineered structures designed to the BOCA Code. Use of the BOCA Code is consistent with the design standard used for other structures on site. The BOCA Code is the uniform building code used in Virginia.

The CEOF complex will be located on the fifth floor of the Vepco Corporate Headquarters. This building was constructed in 1978 and meets City and State Building Code requirements. It is above the "once in a hundred" year flood elevation of the James River.

NRC POSITION:

The EOF will be:

(e) Environmentally controlled to provide room air temperature, humidity and cleanliness appropriate for personnel and equipment.

VEPCO RESPONSE:

(e) The HVAC system in the existing training center, interim LEOF, meets these provisions.

The HVAC system in the hardened LEOF will be designed to provide ventilation isolation, room air temperature, humidity, and cleanliness appropriate for personnel and equipment. The LEOF computer will be located in the existing training center simulator computer rooms.

The HVAC system for the CEOF meets these provisions.

NRC POSITION:

(f) The EOF will be:

Provided with reliable voice and data communications facilities to the TSC and control room, and reliable voice communication facilities to OSC and to NRC, State and local emergency operations centers.

VEPCO RESPONSE:

(f) The systems for the LEOFs and the CEOF will be designed to provide reliable voice and data communications facilities to the TSC and control room, and reliable voice communication facilities to the OSC and to the NRC, state, and local emergency operations centers. The communications at both the CEOF and LEOF's will generally be the same as those currently provided for in Vepco's interim EOFs.

The communications links required for personnel manning the EOFs will be human factors engineered.

The conceptual plans for the communications systems are outlined below. These plans are subject to change as the design progresses and as requirements are identified.

The CEOF work stations will be equipped with standard telephone extensions. Necessary intercommunications will be provided between functional areas of the CEOF complex and between functional areas of the CEOF center. Communication equipment to be provided in the CEOF include standard telephone extensions (each with access to the Bell System Lines, WATS lines, and Vepco tie-lines), Instaphone(s), TSC ringdown(s), NRC HP network, two state Emergency Telephone Systems, CRT's, and radio communications.

Work stations in each LEOF will be equipped with standard telephone extensions. Necessary intercommunications will be provided between functional areas of the LEOF. Communications equipment to be provided in the EOF include standard telephone extensions (each with access to the Bell System Lines, WATS lines, and Vepco tie-lines), Instaphone(s), TSC ringdown(s), NRC HP network, two State Emergency Telephone Systems, CRT's, and radio communications.

At the Surry LEOF, communications will also include ringdown phones to James City County and Surry County offices.

At the North Anna LEOF, communications will also include ringdown phones to Louisa and Spotsylvania County offices.

NRC POSITION:

The EOF will be:

(g) Capable of reliable collection, storage, analysis, display and communication of information on containment conditions, radiological releases and meteorology sufficient to determine site and regional status, determine changes in status, forecast status and take appropriate actions. Variables from the following categories that are essential to EOF functions shall be available in the EOF:

(i) variables from the appropriate Table 1 or 2 of Regulatory Guide 1.97 (Rev. 2), and

(ii) the meteorological variables in Regulatory Guide 1.97 (Rev. 2) for site vicinity and regional data available via communication from the National Weather Service.

VEPCO RESPONSE:

(g) The data processing system which Vepco plans to install will provide reliable collection, storage, analysis, display, and communication of information needed to perform the EOF function. The exact data, which will be available in the EOFs, has not been determined but adequate data will be provided since all information available in the Technical Support Center (TSC) can be made available in the EOF.

Vepco has placed purchase orders for the seven (7) MODCOMP Classic II-75 computer systems which will form the Emergency Response Computer System.

Two (2) computer systems will be Data Communications Processors (DCPs). One DCP will be located in each TSC. These computer systems will gather data from the emergency response remote multiplex system and supplemental data from other computers in the plant. The historical data storage function will be provided on the DCPs. At a minimum, a capability of recording 2 hours of pre-event data and 12 hours of post-event data will be available. Longer term data storage with reduced time resolution will be provided. These historical data files will be available in the LEOF and CEOF via data links from the DCP.

The five (5) remaining computer systems will be Emergency Response Facility Input/Output Processors (ERFIO). One (1) redundant ERFIO system will be located in each TSC, one (1) ERFIO system in each LEOF, and one (1) redundant ERFIO system in the CEOF. The accuracy of data in each EOF will be equal to the accuracy of data in the TSC.

In each LEOF an ERFIO with a single CPU will receive data from the station DCP computer system in the TSC. The ERFIO processor located in the CEOF will consist of a functionally redundant computer system. Data will be received by the CEOF ERFIO Processor from both DCPs. This data will be transmitted from each DCP via a set of high speed redundant serial data links.

All required data will be passed to the EOF ERFIOs which will drive the required color graphic peripherals and printers. EOF personnel will interact with the ERFIO processor via color graphic display consoles. The number of consoles, the functions to be performed at each console, and the design of the consoles are being determined.

The design of consoles and displays will be human factor engineered and independently reviewed.

The ERFIO computers for the LEOFs will be installed in the existing simulator computer rooms of the training centers, the interim LEOFs. These computer rooms will not be hardened as this is neither practical nor required.

The ERFIO computers will include complete color graphics and man machine interface software.

All EOF graphic display consoles can:

1. Display a parameter's current or time dependent rate-of-change value.

2. Trend a parameter's current or time dependent rate-of-change value. (Simulated strip chart recording, X-Y plotting, and bar charts (both horizontal and vertical).)

3. Assign any parameter to a group of variables for subsequent display.

4. Display the current values of any previously defined group of parameters.

5. Display any pre-defined color graphic diagram and its associated parameter data. (Those displays related directly to the console purpose will be available for call-up with a minimum of keystrokes.)

6. Replay pre-event and post-event historical data.

In addition to the graphic capability, gray scale or color video copiers will be provided to obtain a hard copy of any color CRT screen desired. Also, "receive only" (RO) printers will be provided to allow printed logs, trends, etc. to be recorded.

NRC POSITION:

The EOF will be:

(h) Provided with up-to-date plant records (drawings, schematic diagrams, etc.), procedures, emergency plans and environmental information (such as geophysical data) needed to perform EOF functions.

VEPCO RESPONSE:

(h) The CEOF and LEOFs will have ready access to up-to-date plant records, procedures, and emergency plans needed to exercise the overall management of the emergency response resources.

NRC POSITION:

The EOF will be:

(i) Staffed using Table 2 (previous guidance approved by the Commission) as a goal. Reasonable exceptions to goals for the number of additional staff personnel and response times for their arrival should be justified and will be considered by NRC staff.

VEPCO RESPONSE:

(i) The EOFs will be staffed to provide the overall management of resources and the continuous evaluation and coordination of activities during and after an accident. Upon EOF activation, designated personnel will report directly to the LEOF to achieve full functional operation within one and one half (1 1/2) hours.

The LEOF will be manned with the designated personnel described in the Corporate Emergency Response Plan with Corporate support personnel continuously manning the CEOF during the emergency. In the event that the LEOF is evacuated, the personnel in the CEOF would immediately assume the role of the personnel who had evacuated the LEOF.

The LEOF and backup CEOF staff will participate in EOF activation drills, which will be conducted periodically in accordance with Vepco's Corporate Emergency Response Plan. The drills will include operation of all facilities that will be used to perform EOF functions.

NRC POSITION:

The EOF will be:

(j) Provided with industrial security when it is activated to exclude unauthorized personnel and when it is idle to maintain its readiness.

VEPCO RESPONSE:

(j) The LEOFs will be located on site but outside the security boundary. The LEOFs will be constructed adjacent or connected to the existing training centers, which are provided with adequate security protection.

The LEOFs can be provided timely security protection when activated. The present LEOF conceptual design includes three (3) double door vestibules which can be used to control access. The details of security for these facilities will be developed prior to the completion of their construction and will be similar to those for the CEOF.

When the CEOF is manned, the corporate office Security staff will ensure that appropriate access controls are augmented. Additional off-duty Security personnel will be required to report for duty. All access points into the corporate headquarters will be either locked or under the administrative control of the corporate office Security Staff. Procedures will be implemented to guarantee that increased access controls are maintained.

NRC POSITION:

The EOF will be:

(k) Designed taking into account good human factors engineering principles.

VEPCO RESPONSE:

(k) Vepco has contracted a human factors engineering consultant to review the design of all EOFs. Consultant personnel have interviewed Vepco personnel involved in the emergency response effort, and reviewed emergency plans and related NRC and industry documents to develop a basis for their design review.

The consultant will also be involved in determining the number, size, and type of computer peripherals to be available for each work station, the voice communications links and equipment for each work station, and the format and types of color graphic displays which will be available on CRTs.