



CHARLES CENTER • P. O. BOX 1475 • BALTIMORE, MARYLAND 21203

December 31, 1981

ARTHUR E. LUNDVALL, JR.  
VICE PRESIDENT  
SUPPLY

Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attn: Mr. Robert A. Clark, Chief  
Operating Reactors Branch #3  
Division of Licensing



Subject: Calvert Cliffs Nuclear Power Plant  
Units Nos. 1 & 2, Dockets Nos. 50-317 & 50-318  
Meteorological & Radiological Functions of  
Emergency Planning

- References:
- (a) NUREG-0737 Item III.A.2
  - (b) BG&E letter dated 6/25/81 from A. E. Lundvall, Jr. to Office of NRR, Meteorological Functions of Emergency Planning; Request for Extension of Date.

Gentlemen:

Reference (a) contains functional criteria and schedules for emergency response facilities and capabilities. Among these is a guideline to submit to NRC by 7/1/81 a description of the upgraded meteorological and radiological assessment facilities which will be provided to meet the associated functional criteria as specified in Reference (a).

Reference (b) informed you that we had not had sufficient time to evaluate our interim facilities and that we would work toward supplying that information by January 1, 1982. The following paragraphs contain the requested descriptions of our upgraded facilities.

Meteorological Facilities

We are currently upgrading our meteorological monitoring system at the Calvert Cliffs Nuclear Power Plant. Meteorological information is presently being gathered from instrumentation located on the plant microwave tower. However, with the advent of NUREG-0654 and proposed Revision 1 to Reg. Guide 1.23, we decided to re-assess our meteorological monitoring system.

Based upon our evaluation it was decided a new meteorological tower would have several advantages over the microwave tower. First, it would minimize the possibility of interference from the tower's structure (microwave tower has a larger structure relative to towers typically dedicated to meteorological monitoring). It would also minimize

A046  
3  
1/0

8201070056 811231  
PDR ADDCK 05000317  
PDR

potential electronic interference and finally, it would vastly improve accessibility of the instrumentation for maintenance and calibration. Thus, a new meteorological tower was erected in relatively close proximity to the microwave tower.

The new tower is currently being instrumented and is scheduled to be fully operational by April 1, 1982. Sufficient instrumentation will remain on the microwave tower so that it can serve as a backup tower.

The new primary tower is being instrumented in accordance with Reg. Guide 1.23 and will consist of measurements of wind speed, wind direction, standard deviation of horizontal wind direction and ambient temperature at both the 60 m and 10 m levels. In addition, vertical temperature difference will be measured between the two levels and precipitation will be measured near the base of the tower. Instruments have been supplied by Meteorology Research, Inc.

The siting, maintenance, servicing schedules and data availability will be in accordance with the requirements of Reg. Guide 1.23.

Current plans are to use the lower level of wind instrumentation on the microwave tower as a back up to the primary tower. This may be re-evaluated in the future based on the performance of the installation.

#### Radiological Dose Assessment Facilities

Baltimore Gas and Electric Company (BG&E) has addressed the criteria of NUREG-0654, Appendix 2 by installing a minicomputer-based dose assessment system. The system, as currently configured, consists of purchased, leased, and rented components and has been operational since April, 1981.

Meteorological data are collected from existing instrumentation with strip chart recorders located in the control room. By April, 1982, a new meteorological tower will be operational as described above with strip chart recorders located at the base of the tower. This new system will become the primary instrumentation system. Main vent noble gases measured by existing instrumentation from Units 1 and 2 are also fed directly into the system.

Analog data from all of the existing instrumentation are available in the control room and fed into an analog to digital converter system, manufactured by Computer Products, Inc. (CPI), and physically located in the Technical Support Center (TSC). Analog data from the new meteorological tower will be converted to digital data and transmitted to the TSC via a new CPI remote serial link, located in the field. All equipment mentioned thus far will be owned by BG&E.

Digital data are fed into a Sperry Univac V77-200 minicomputer, located in the TSC, for temporary storage. The V77-200 is currently being leased from Pickard, Lowe, and Garrick, Inc. (PLG) and should become the property of BG&E in the near future.

The V77-200 Data Recording Terminal (DRT) collects, performs quality control checking, averages, and stores the meteorological and radioeffluent data. This DRT is currently configured to support one (1) 300 baud dial-up phone line for remote interrogation of system parameters and one (1) 1200 baud dial-up line for data transfer to a host computer for processing and long term data storage. (Note: The DRT can also be interrogated by a teletype console located in the TSC.)

BG&E is currently leasing additional software and hardware facilities through (PLG). The system uses PLG's MIDAS Class A software model for transport and diffusion which has been made site - specific for the Calvert Cliffs Nuclear Power Plant. The host computer routinely calls the Data Recording Terminal and requests the transfer of all data (15 minute averages) from the last four hours. If the call is somehow missed after a number of tries, then the DRT automatically saves one 15 minute sample as representative of the entire hour. This frees up storage space in the DRT to ensure that data is not lost over long periods of time due to communications problems. A maximum of four days of hourly averages can be stored.

Should an emergency situation ever develop at Calvert Cliffs, emergency procedures would direct plant personnel to interrogate the system. When this is done, the system goes into an emergency mode and will request updated information approximately every 15 minutes.

BG&E has leased PLG's software routines excluding the Broadcast routines and the "Class B" model. All of these routines can be added to PLG's host computer if required and after the "Class B" model is better defined.

Tektronix Model 4014-1 Graphic Display Terminals and Model 4631 Hard Copy Units have been rented and installed at the following locations:

- . Control Room
- B) CC
- C) Alternate ECC
- D) BG&E Electric Test Department
- E) Division of Radiation Control (State of Maryland)

In addition to previously installed dial-up channels, two dedicated (i.e., private) dial lines have been installed for exclusive use by BG&E personnel. PLG will presently support one 300 baud dial-up and at least three 1200 baud full-duplex dial-up phone lines including the two private BG&E lines. At least one additional 1200 baud full-duplex line is available.

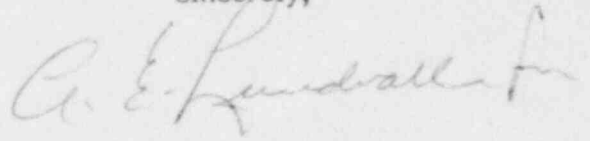
The number and location of terminals are currently being reviewed in order to evaluate purchase options.

Based on the current remote terminal locations, and additional telephone and radio communications facilities, BG&E and the State of Maryland should be capable of adequately monitoring conditions and have available an adequate dose assessment modeling system. State and county governments will have representatives at BG&E's emergency facilities and will have access to the dose assessment capabilities provided by BG&E.

As a point of information, we are in the process of finalizing the design and construction schedule for the Calvert Cliffs Emergency Operations Facility (EOF). As currently projected, the EOF will be completed in the last quarter of 1983. We realize that this does not meet the NRC objective of October 1982, but we are making a good faith effort to develop a cost effective design which will provide continued assurance of the public health and safety while optimizing engineering practicality and functionality.

If you have any questions concerning this information, we would be pleased to discuss it with you.

Sincerely,

A handwritten signature in cursive script, appearing to read "C. E. Lundvall".

cc: J. A. Biddison, Esquire  
G. F. Trowbridge, Esquire  
D. H. Jaffe - NRC  
R. E. Architzel, Resident I&E Inspector