



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

ARTHUR E. LUNDVALL, JR.
VICE PRESIDENT
SUPPLY

July 27, 1982

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 and 50-318
NUREG-0737 Item III.D.3.4

- References: (a) Letter from R. A. Clark to A. E. Lundvall, Jr., dated June 24, 1982
- (b) Letter from A. E. Lundvall, Jr., to R. C. Haynes, dated November 16, 1981

Gentlemen:

Information requested in reference (a) is provided as enclosures to this letter. Enclosure (1) has been excerpted and updated from a previous plant-wide evaluation on Self-Contained Breathing Apparatus (SCBA) for accidents and assumptions described in Regulatory Guide 1.41. The conclusion of the original evaluation was submitted in reference (b). Enclosure (2) provides an analysis of control room infiltration.

Should you have further questions regarding this matter, we would be pleased to discuss them with you.

Very truly yours,

AEL/JNN:gvj
Enclosures

cc: J. A. Biddison, Jr., Esquire
G. F. Trowbridge, Esquire
Mr. D. H. Jaffe - NRC
Mr. R. E. Architzel - NRC

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ENCLOSURE (1)

**EVALUATION OF SELF-CONTAINED BREATHING APPARATUS (SCBA)
REQUIRED FOR THE CONTROL ROOM IN THE EVENT OF AN
EMERGENCY AT CALVERT CLIFFS NUCLEAR POWER PLANT**

The present quantities of SCBA available in the Control Room for use during emergencies were determined previously on the basis of our Site Emergency Plant (SEP). The SEP required that SCBA be available for emergency use by operations personnel.

<u>Location of Equipment</u>	<u>Reserved For Use By</u>	<u>MSA 401 Quantity</u>	<u># Spare Air Bottles</u>	<u>Maximum Use Time (man-time)</u>
Control Room	Operators	7	2	2-1/4 hr (135 min.)

An evaluation was performed in November 1981, to determine whether existing SCBA equipment was adequate to afford respiration protection for emergency response personnel in the event of an accident at Calvert Cliffs. The following conditions were used in the evaluation:

1. Major accident in progress that includes a significant release of airborne radioactive iodine and particulate material simultaneously inplant and offsite.
2. Control Room facilities are activated and manned with absolute minimum number of individuals required to mitigate the accident.
3. All other emergency response personnel have been evacuated from the plant (including OSC personnel).
4. SCBA continuous use time estimated as 10 hours - based on Reactor Safety Study (WASH-1400/NUREG-75/014) of a maximum duration of release.
5. Reliefs required for onsite personnel required to remain in plant.

Discussions were held with the Manager of Nuclear Power, the General Supervisor-Operations, General Supervisor - Radiation Safety, General Supervisor - Electrical and Controls, General Foreman - Maintenance (PMD), and the Fire Protection Inspector to determine the number of individuals who would be required to remain in the control room under the adverse conditions stated above. A maximum SCBA continuous use time is considered to be equal to the maximum duration of the atmospheric release for a Class 9 PWR Accident (Category PWR 6 and 7) for emergency center personnel. The maximum use time and the minimum number of personnel required to be afforded proper respiratory protection was used in determining the minimum number of SCBA and spare bottles needed for emergency use at Calvert Cliffs.

ENCLOSURE (I)

**EVALUATION OF SELF-CONTAINED BREATHING APPARATUS (SCBA)
REQUIRED FOR THE CONTROL ROOM IN THE EVENT OF AN
EMERGENCY AT CALVERT CLIFFS NUCLEAR POWER PLANT**

<u>CONTROL ROOM</u>	<u># SCBA* (BIOPAK-60P) REQUIRED</u>	<u>NUMBER SPARE BOTTLE (1 HR USE)</u>	<u>RECOMMENDED STORAGE LOCATION</u>
Plant Superintendent (1)	1	9	Control Room
Shift Supervisor (2)	2	18	Control Room
Sr. Control Room Operator	2	18	Control Room
Control Room Operator (3)	3	27	Control Room
ECCM (Ops) (1)	1	9	Control Room
Nuclear Plant Oper. (5)	5	45	Control Room
NRC Resident Inspector (1)	1	9	Control Room
# SCBA total	<u>15</u>	<u>135</u>	

*Based on 10 hour continuous use duration - Class 9 (WASH-1400)

CONCLUSION:

Present quantities of BIOPAK-60P SCBA and sufficient additional air supply bottles on site exceed the requirements of Regulatory Guide 1.78 for accidents and assumptions described in Regulatory Guide 1.41. The training program to qualify and to booth test Emergency Control Room personnel in the use of BIOPAK-60P (replacing MSA-401) is expected to be completed by the next Emergency Response Drill, September 28, 1982.

ENCLOSURE (2)

CONTROL ROOM INFILTRATION ANALYSIS

Air paths between the Control Room complex to outside in the normal Control Room HVAC system consist of one common relief air discharge and two outside air intake ducts, one for fan/coil unit 11 and one for fan/coil unit 12. These ducts have motorized modulating dampers for normal operational control of the mixture of outside and return air supplied to the Control Room system. Radiation detectors sensing outside air conditions will place the system in a 100% recirculation mode with outside air intake and relief damper closed if radiation is detected outside of the Auxiliary Building. A second set of motorized dampers between the control dampers and the outside will also close, providing an additional seal for the air intake and relief openings. These dampers close air tight against resilient seals.

The Smoke Removal System has individual air paths to and from the Control Room and each cable spreading room, with a common outside air intake and exhaust duct. Motorized dampers in each air path, one supply and one return, are normally kept closed and open only on operator command. The six smoke removal system dampers close air tight against resilient seals.

The kitchen adjacent to the shift supervisor's office has an exhaust fan which draws air from the Control Room. When the radiation detector is activated, this fan is shut down and the exhaust duct isolated from the outside by an automatic damper.

We have concluded that the existing system is safe from infiltration of outside atmosphere under emergency operating conditions because:

1. Redundant dampers in the Control Room air supply system provide positive isolation when in the 100% recirculation mode.
2. The Smoke Removal System is normally closed with positive sealing dampers which eliminate any possibility of infiltration through this system.
3. The kitchen exhaust is sealed and the fan shut off when in the recirculation mode which prevents infiltration through this system.