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VICE PRESIDENT
SUPPLY

October 11, 1984

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

ATTENTION: Mr. J. R. Miller, Chief
Operating Reactors Branch #3

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2, Docket Nos. 50-317 & 50-318
Request for Amendment

- ATTACHMENTS:
- (1) Proposed Unit Nos. 1 & 2 Radiological Effluent Technical Specifications for Environmental Monitoring (T.S. Section 1.0, Section 3/4.12, and Section 5.0)
 - (2) Proposed Appendix B Part I title page reflecting precedence of Appendix A T.S. Section 3/4.12, and marked-up Appendix B Section 3.0 indicating deletion.
 - (3) Remainder of the Proposed Unit Nos. 1 & 2 Radiological Effluent Technical Specifications (Sections 3/4.3, 3/4.11, and 6.0)
 - (4) Unit Nos. 1 & 2 Offsite Dose Calculation Manual (ODCM)
 - (5) Unit Nos. 1 & 2 Process Control Program (PCP)

Gentlemen:

The Baltimore Gas and Electric Company hereby requests an amendment to its operating License No. DPR-53 and DPR-69 for Calvert Cliffs Unit Nos. 1 & 2, respectively, with the submittal of the enclosed changes to the Technical Specifications.

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PROPOSED CHANGES (FCR 79-46)

1. Changes to allow implementation of the Environmental Monitoring Program, by January 1, 1985:
 - a. As shown in Attachment (1), replace pages 1-1 and 5-1 with the revised marked up pages, and add the new pages of section 1.0 and Technical Specification section 3/4.12. Replace page 5-2 with new page 5-2, Figure 5.1-1.
 - b. As shown in Attachment (2) replace the Appendix B part I title page with the revised marked-up page and delete Appendix B part I, section 3.0.
2. Changes to fully implement the Radiological Effluent Technical Specifications by July 1, 1985:
 - a. Delete Appendix B Part I of the Technical Specifications in its entirety.
 - b. Replace page IV and XVI with marked-up pages, Add new index pages for section 3/4.11 and its Bases, Add new pages 3/4 3-47 through 3/4 3-56, Add new pages 3/4 11-1 through 3/4 11-17, Add new pages B 3/4 3-4, B 3/4 11-1 through B 3/4 11-6, Replace pages 6-7, 6-11, 6-13, 6-16 through 6-20 with revised and marked-up pages, Add new pages 6-24 and 6-25, and Replace Appendix B Part I title page with marked-up page indicating its entire deletion.

DISCUSSION

On November 23, 1983, the Nuclear Regulatory Commission contacted the Baltimore Gas and Electric Company and requested we reopen discussions on Radiological Effluent Technical Specifications (RETS), which had not been addressed since our April 23, 1982 submittal.

RETS discussions recommenced in March 1984. The latest revision of the model RETS (Revision 3, DRAFT 7" of NUREG 0472) formed the basis for subsequent discussions. Our staff submitted a marked-up copy of the model RETS, then met with the NRC staff (Radiological Assessment Branch) on May 22, 1984, to review our proposals. This meeting allowed our staffs to achieve a clearer understanding of the technical positions held by both organizations and produced substantial agreements which are reflected in this submittal. Because of the significant progress made during RETS discussions and the improvements to NUREG 0472, we committed on June 5, 1984, to a final submittal within about six months. This application fulfills that commitment.

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Our review of the logistical and programmatic requirements to support RETS has identified the need to implement RETS in two phases. In the first phase we would implement the environmental monitoring Technical Specifications and in the second phase the effluent Technical Specifications. Discussions with the NRC staff have indicated the feasibility of establishing two implementation dates for these phases by issuing two separate license amendments. We therefore request our Technical Specifications be amended to allow implementation of the environmental monitoring section of RETS by January 1, 1985, and implementation of the remainder of RETS by July 1, 1985.

The first amendment should include the pages of Attachment (1), which make additions or changes to:

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| Technical Specification Section 1.0 | -- Definitions, |
| Technical Specification Section 3/4.12 | -- Radiological Environmental Monitoring and its Bases, and |
| Technical Specification Section 5.0 | -- Design Features |

To avoid errors of interpretation and the potential for confusion regarding the Appendix B, Part I Technical Specifications, delete Appendix B Part I Section 3.0, and replace the Appendix B Part I title page with the revised title page (see Attachment 2).

The second amendment should promulgate the remainder of the RETS as submitted in Attachment (3), with an effective date of July 1, 1985, and entirely delete Appendix B Part I, Environmental Technical Specifications.

DISCUSSION OF RETS SUBMITTAL AND ITS DIFFERENCES WITH NUREG-0472

As agreed to by your staff, we have prepared a revised package instead of marked-up NUREG-0472 pages. Some pages of our current Technical Specifications, especially in section 6.0, Administrative Controls, have been marked up to indicate the insertion of RETS requirements in appropriate locations. The goals of our package preparation have been to provide a set of proposed Radiological Effluent Technical Specifications that:

- 1) reflect the agreements achieved with the Commission staff,
- 2) provide for the plant specific design and system capabilities at Calvert Cliffs, and
- 3) follow the format of the NUREG-0472 model RETS.

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As requested by the Radiological Assessment Branch Staff at our May 22, 1984, meeting, we are providing information as part of this letter to help clarify any substantive differences between the Calvert Cliffs proposal and NUREG-0472. No discussion is made of minor items that are either simple differences of form or were agreed to at the May 22 meeting. Additionally, model Technical Specifications that were deleted because they were not applicable to Calvert Cliffs or are already in the Calvert Cliffs Technical Specifications are not discussed.

1. Specification Tables 4.3-12 and 4.3-13, Instrument Surveillance Tables

Liquid and Gaseous Effluent Monitoring Instrumentation Surveillance Tables were modified to reflect the capabilities of the installed equipment. An alarm only occurs on circuit failure or downscale failure. None of the instruments have a trip or alarm function for "controls not set in the operate mode". Pre-discharge instrument checks and shiftly verification of instrument indications performed in accordance with Operating Instructions precludes errors such as "controls not set in the operate mode".

2. Effect of 10 CFR Part 50.73

To conform with existing Technical Specifications which reflect the recent addition of Part 50.73 to Title 10 of the Code of Federal Regulations, this RETS submittal has deleted references to Licensee Event Reports where Special Reports are required, and deleted the NUREG-0472 section on Thirty-Day Written Reports.

3. Specification 3.11.1.1, Dissolved or Entrained Noble Gases

In accordance with Specification 3.11.1.1, the concentration of radioactive material released in liquid effluents shall be limited to the concentration specified in 10 CFR 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases.

Dissolved gases shall be accounted for in the Semiannual Effluent Report in accordance with Regulatory Guide 1.21. Dissolved gases in liquid waste are not considered as a limiting condition of operation since:

- a. 10 CFR 20 does not address dissolved gases in water.
- b. 10 CFR 20 MPCs in air do not apply
- c. Based on historical effluent data, the contribution of dissolved gases to total liquid effluent activity is considered insignificant.

4. Specification 3.11.1.3, Liquid Radwaste Treatment System

Since the liquid radwaste treatment system is common to both units, the dose limits shall be established on a per plant basis rather than per Unit. In addition, the limit is for a three month (92 day period) rather than a 31 day period. This allows the limiting conditions of 0.06 mrem to total body and 0.2 mrem to any organ to be increased by a factor of 6 (2 units x 3 months) and sets the total limits for Calvert Cliffs at 0.36 mrem (total body) and 1.20 mrem (any organ) for a 92 day period.

5. Specifications 3.11.2.1, 3.11.2.3 Radioactive Gaseous Effluents

In accordance with Technical Specification 3.11.2.1 and 3.11.2.3, the dose rate due to gaseous effluents shall be limited to 1500 mrems/year and the dose limited to 15 mrems during any calendar quarter and 30 mrems during any calendar year to any organ from I-131 and particulates with half lives greater than eight days.

Iodine-133 has been removed from these Specifications since its dose contribution is insignificant compared to that of I-131. Even though at 1% failed fuel I-133 is 1.5 times more abundant than I-131, the dose factors for I-131 for the milk and vegetation pathway are, respectively, a factor 110 and 70 times the I-133 dose factors. At a minimum, the I-131 dose contribution would be 50 times that of I-133. Therefore, I-133 is considered an insignificant contributor for the dose and dose rate to any organ.

Tritium is not considered for these Specifications since a review of the historical plant data revealed the dose contribution from tritium has been less than 0.001% of the dose limit of 30 mrems/year for all inhalation/ingestion pathways and all age groups.

Iodine-133 and tritium will continue to be reported in the Semiannual Effluent Release Report as required by Regulatory Guide 1.21.

6. Specifications 3.11.2.2, 3.11.2.3, 3.11.2.4 Gaseous Effluents

Since the waste gas system is common to both units and the distance (approximately 150 ft.) between the two main vent effluent stacks is insignificant compared to the distance from the stacks to the site boundary, the two stacks shall be considered a common effluent point. The dose rate and dose commitments for gaseous waste shall be established on a per plant basis for a 92 day period. The limiting conditions of Specification 3.11.2.2, 3.11.2.3, and 3.11.2.4 have been increased by a factor of 6 from the model Specification to include two Units for a 92 day period, as discussed in our May 22, 1984, meeting.

7. Specification 3.11.2.6 Gas Storage Tanks

The radioactivity limit of noble gases in the waste gas decay tank (58,500 Ci) is based on 1% failed fuel as described in the Updated Final Safety Analyses Report (Chapter 14, Section 22 - Waste Gas Incident). In order to achieve this level of activity, the Xe-133 specific activity in Reactor Coolant would have to reach 181 uCi/cc. As a conservative measure, the waste gas decay tank activity shall be monitored as required by Specification 3.11.2.6 when the Xe-133 activity in the Reactor Coolant exceeds 150 uCi/cc.

8. Specification Table 4.11-1, Deletion of Fe-55

Iron-55 has been deleted from Table 4.11-1. It can be shown that the maximum theoretical ratio of Fe-55 to Fe-59 is approximately 50, based on the following equation:

$$\frac{\text{Fe-55}}{\text{Fe-59}} = \frac{\sigma_{54} N_{54} (1-e^{-\lambda t})}{\sigma_{58} N_{58} (1-e^{-\lambda t})}$$

Where:

σ_{54} and σ_{58} are the microscopic neutron capture cross sections for Fe-54 and Fe-58,

N_{54} and N_{58} are the number of atoms of isotope Fe-54 and Fe-58,

λ is the radioactive decay constant for Fe-55 and Fe-59, and $(1-e^{-\lambda t})$ is the equilibrium fraction.

The effluent data from 1981 to present reveals that over the past 3-1/2 years, the Fe-59 contribution was 0.007% of the total liquid waste activity. Using the maximum theoretical ratio for Fe-55 to Fe-59 of 50, the average Fe-55 contribution would have been 0.35% of the total activity. The maximum yearly dose contribution from Fe-55 to the total body would have been 0.007 mrem and to any organ 0.03 mrem. These doses are insignificant contributions to the total dose from liquid waste at Calvert Cliffs.

9. Specification 3.12.1 Radiological Environmental Monitoring Program

- a. The words "when averaged over any calendar quarter" were deleted from ACTION statement b. The more conservative approach of submitting a Special Report on a per sample analysis basis if the reporting level is exceeded will be used.

- b. To clarify the time limit for reporting sample analysis results in excess of the reporting level, the phrase "after receiving the sample analysis" has been added to ACTION statement b. after the words ". . . prepare and submit to the Commission within 30 days. . ."
- c. The requirement for reporting in the Semiannual Radioactive Effluent Release Report has been replaced throughout section 3/4.12 by the Annual Radiological Environmental Operating Report. Based upon the organizational structure and assignment of responsibilities for environmental monitoring within the Baltimore Gas & Electric Company and upon the very nature of the Radiological Environmental Monitoring Program, the Annual Radiological Environmental Operating Report is the only appropriate document for reporting all comments and information regarding replacement samples and permanent changes in sampling locations. Therefore, all activities connected with the land use survey and all actions which derive from this survey will be performed by the Environmental Programs Unit and will be reflected in the Annual Radiological Environmental Operating Report.
- d. The ACTION c. statement to ". . . include in the report a revised figure(s) and table for the ODCM reflecting the new location(s)." has been deleted. When replacement samples are used, the ODCM table and figure(s) will not be changed. The ODCM table and figure(s) will be changed only under the conditions described in footnote a to Table 3.12-1.
- e. Milk sampling has been deleted permanently from the Radiological Environmental Monitoring Program. This option was discussed at the May 22, 1984, meeting. BG&E will use garden sites with three types of broad leaf vegetation instead of milk sampling or a combination of both. Over the history of the environmental sampling program, there have been very few milk cows in this area and their locations have changed several times. At times there have been no milk cows available for sampling. The use of garden sites will provide more control over sample availability and continuity in sampling locations.
- f. Groundwater and drinking water sampling requirements were eliminated. The area around Calvert Cliffs is not susceptible to contamination due to the hydraulic gradient and recharge properties.

Various other minor changes were made to Table 3.12-1 to eliminate unnecessary footnotes and clarify the requirements as discussed with Radiological Assessment Branch staff at the May 22, 1984, meeting.

10. The Specification 6.8.1 requirement to establish, implement, and maintain a written procedure covering a "Quality Assurance program for effluent and environmental monitoring, using the guidance in Regulatory Guide 1.21 Revision 1, June 1974 and Regulatory Guide 4.1, Revision 1, April 1975" has been deleted. The requirement of Specification 6.8.2 for the Plant Operations and Safety Review Committee (POSRC) to review the procedures and administrative policies of Specification 6.8.1 prior to implementation and periodically thereafter obviates the inclusion of a QA program procedure in this part of the Technical Specifications. Since POSRC has neither the authority, nor the necessary independence to review and approve Quality Assurance programs and procedures, it is inappropriate to include a QA program requirement under this specification. The RETS environmental and effluent monitoring programs will be included within the framework of the existing Quality Assurance program, in fact, these activities will be audited under the cognizance of the Off-Site Safety Review Committee as required by proposed Specification 6.5.2.8.i (item n). In essence, the RETS monitoring programs and their implementing procedures will be auditable and covered by BG&E's Quality Assurance program, without the need for a specification in section 6.8.1."

DETERMINATION OF SIGNIFICANT HAZARDS

The proposed changes are consistent with example ii of amendments considered not likely to involve significant hazards considerations as shown in Federal Register Notice 1487 dated April 6, 1983, since they pose an additional limitation, restriction, or control not presently included in the Technical Specifications.

- . There is no reduction in the margin of safety as a result of the proposed changes.
- . The changes will not result in any increase in the probability or consequences of any accident previously evaluated.
- . The changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

SAFETY COMMITTEE REVIEW

These proposed changes to the Technical Specifications and the determination of significant hazards have been reviewed by our Plant Operations and Off-Site Safety Review Committees, and they have concluded that implementation of these changes will not result in an undue risk to the health and safety of the public.

