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ELECTRIC ENGINEERING  
DEPARTMENT

September 26, 1983

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50-318

The Regional Administrator  
U.S. NRC Region 1  
631 Park Avenue  
King of Prussia, PA 19406

Dear Sir:

SUBJECT: Calvert Cliffs Nuclear Power Plant  
Unit Nos. 1 and 2  
License Nos. DPR-53 and 69  
Nonroutine Radiological Environmental  
Operating Report

This report is submitted to comply with the requirements of  
Appendix B Environmental Technical Specification Section 5.6.2.b.

Oyster samples were collected during August, 1983 from the Camp  
Conoy sampling location and analyzed for gamma-emitting radionuclides as  
required. The results of the analyses showed the presence of Ag-110m  
concentration of  $118 \pm 8$  pCi/Kg(wet). The oyster samples collected during  
the same period from the Kenwood Beach sampling location (the background  
location) showed Ag-110m concentration of 11.8 pCi/Kg(wet).

The release rate of radioactive effluents during the period of  
interest was less than 5% of the allowable release limit specified in the  
Environmental Technical Specification (ETS) Section 2.3 Liquid Effluents,  
Specification A.7. The maximum concentration of Ag-110m in the effluent  
prior to discharge into the Bay was less than 0.002% of the limit specified  
in 10 CFR Part 20, Appendix B, for unrestricted areas.

Oysters have a natural tendency to highly bioconcentrate environ-  
mental silver. As a result of the bioconcentration, oyster muscle tissue  
show radioactive silver at levels observed in samples collected during 1983.  
It should be pointed out that Camp Conoy samples for the third quarter show  
a decrease in Ag-110m concentration of about 45% compared to the second  
quarter samples. This reduction in Ag-110m concentration is probably largely  
due to depuration.

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For the period of interest in 1983, the monthly percent capacity factors for both Units were as follows:

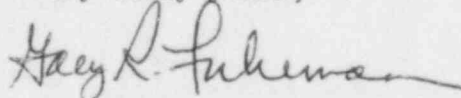
<u>Period</u>	<u>Unit 1</u>	<u>Unit 2</u>
July 1983	96.17	94.37
August 1983	88.49	71.95

The processed radwaste from the combined waste processing system for Units 1 and 2 was released into the circulating water prior to discharge into the Bay. The radwaste may be released at a design rate that can range from 10 GPM to a maximum of 120 GPM. In practice, the releases are made at a predetermined rate depending upon the measured concentration of radionuclides in the radwaste, the ETS limits, as well as the established ALARA objectives. Using the circulating-water-pump data for the period of interest, it is estimated that at the maximum release rate the radwaste concentration is decreased at least by a factor of about  $1 \times 10^4$  prior to discharge into the Bay.

Based on Ag-110m concentration observed in oyster samples for the third quarter of 1983, the potential total doses to the GI-Tract and the Whole Body of a maximum exposed individual (with the consumption rate of 5 kilogram/year and the dose conversion factors as recommended in Reg. Guide 1.109, Rev. 1, October 1977) are estimated at less than 0.04 mrem and less than  $0.6 \times 10^{-4}$  mrem, respectively.

These doses are small fractions (the total potential dose is less than 0.2%) of the permissible limit of 25 mrem/year to members of the general public as set forth in 40 CFR Part 190 "Environmental Radiation Protection Standards for Nuclear Power Operations", and are therefore considered to be of insignificant consequence to the health and safety of the public.

Very truly yours,



Gary R. Fuhrman, Director  
Environmental Studies & Monitoring

GRF/mgl

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