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ELECTRIC ENGINEERING  
DEPARTMENT

August 11, 1983

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

Dear Sir:

SUBJECT: Calvert Cliffs Nuclear Power Plant  
Units 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 on June 14, 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  $214 \pm 10$  pCi/Kg(wet). The oyster samples collected  
the same day from the Kenwood Beach sampling location (the background  
location) showed Ag-110m concentration of  $19 \pm 5$  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 0.003% 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.  
These levels are reportable on the basis of the Calvert Cliffs ETS exceedance  
criterion which is "ten times the background", where "background" is the "mini-  
mum detectable concentration" in the control sample.

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

8308250099 830811  
PDR ADOCK 05000371  
R PDR

IE23  
1/0

<u>Period</u>	<u>Unit 1</u>	<u>Unit 2</u>
April 1983	80.91	99.44
May 1983	99.05	94.96
June 1983	87.60	96.64

During operation of Units 1 and 2, the circulating-water-pump data logs show that, on the average, at least five pumps (each rated at 200,000 GPM) per Unit were in operation. 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. At the maximum release rate the radwaste concentration is decreased at least by a factor of about  $8 \times 10^3$  prior to discharge into the Bay.

Based on Ag-110m concentration observed in oyster samples for the second 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 0.07 mrem and less than  $1.0 \times 10^{-4}$  mrem, respectively.

These doses are small fractions (the total potential dose is less than 0.5%) 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/few

cc: Document Control Desk  
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