



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

ELECTRIC ENGINEERING
DEPARTMENT

September 28, 1984

Region 1
U.S. N.R.C.
631 Park Avenue
King of Prussia, PA 19406

Dear Sirs:

Appendix B-Part II of the Facility Operating License Nos. DPR-53 and DPR-69 Calvert Cliffs Nuclear Power Plant in the Environmental Protection Plan Section 4.1 states unusual fish kills are to be reported. Regulatory Guide 10.1 Appendix A No. 181, Nonroutine Environmental Operating Report, requires notification within 30 days of the event.

On August 28, 1984 Calvert Cliffs Nuclear Power Plant Unit 1 reactor and turbine were manually tripped. At 9:50 p.m. on August 28, 1984 #11 circulating water pump was stopped when 11A and 11B traveling screens developed a 40 inch differential water level due to a massive influx of fish blanketing the screens. Subsequently, at 9:56 p.m. 12A and 12B screens developed a differential water level of 50 inches resulting in stopping #12 circulating water pump and the reactor was manually tripped.

The Outside Operators Log for August 28, 1984 shows severe anoxic conditions in the Chesapeake Bay adjacent to the Calvert Cliffs Nuclear Power Plant. In the early afternoon (1 p.m.) when oxygen concentrations should be greater than 5.5 mg/l, the dissolved oxygen measured 1.7 mg/l. The severe anoxic conditions (less than 3 mg/l) at least 12 hours before the impingement event probably resulted in severely stressed or morbid fish. Under these unusual circumstances there is little that can be done to prevent the fish kill but the Biofouling Task Force is working to improve the performance of the traveling screens.

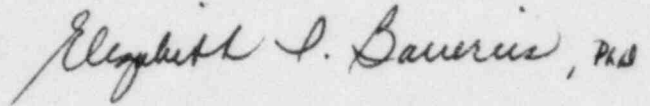
Copies of the report by the biologist performing the impingement sampling and the Outside Operators Log for August 28, 1984 are attached.

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PDR ADOCK 05000317
S PDR

11 IE25

If you have any questions regarding this letter report,
please call me at 301/234-6533.

Sincerely,

A handwritten signature in cursive script that reads "Elizabeth I. Bauereis, PhD". The signature is written in dark ink and is positioned above the typed name.

Elizabeth I. Bauereis, PhD
Senior Biologist

EIB/few

Attachment

cc: Document Control Desk

BENEDICT ESTUARINE RESEARCH LABORATORY

September 20, 1984

Dr. Elizabeth I. Bauereis
Baltimore Gas and Electric Company
1 Center Plaza
P. O. Box 1475
Baltimore, MD 21203

Dear Dr. Bauereis:

Please accept this letter as a formal report of an unusually large impingement event at the Calvert Cliffs Nuclear Power Plant on 28 August 1984.

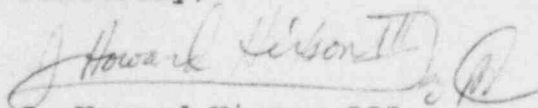
Impingement sampling was scheduled to begin at 2100 hrs at Unit 2. When I arrived at the site there were large numbers of fish in the intake embayment; however, very few fish were collected during a 15-min sampling period. Subsequent sampling at Unit 1 yielded a somewhat higher impingement rate (~50/min). The dissolved oxygen (DO) level in front of intake screen 11A at 2100 hrs was 3.0 mg/l.

By 2140 the impingement rate had increased to ~1000/min with a corresponding DO of 1.1 mg/l. At 2150 the impingement rate had jumped to \approx 3000/min. The majority of impinged fish (~95%) were spot (*Leiostomus xanthurus*) with the remainder comprised of Atlantic menhaden (*Brevoortia tyrannus*) and Atlantic croaker (*Micropogonias undulatus*).

The high impingement rate continued until 2230, by which time the DO level had fallen to 0.2 mg/l. At 2300 hrs DO levels had risen to 2.0 mg/l and impingement rate had dropped to ~250/min. The impingement rate continued to decrease and by 2400 hrs was less than 20/min.

If you have any comments on this report or require further information regarding this unusual event, please call me.

Sincerely,


J. Howard Hixson III
Biologist

JHH:ja

POINT	HI LIM	LO LIM	21 D/G ROOM AIR TEMP.	FUEL OIL STORAGE TANK NO. 21 T.S.	FUEL OIL STORAGE TANK NO. 11 T.S.	HYDROGEN STORAGE UNIT				D.I. WATER STORAGE TANK LEVEL	DIESEL FIRE PP. F.O. LEVEL	FIRE SYSTEM PRESSURE	PRETREATED WATER STORAGE TANK NO. 11 LEVEL	PRETREATED WATER STORAGE TANK NO. 12 LEVEL	CONDENSATE STOR. TANK NO. 11 LEVEL T.S.	CONDENSATE STOR. TANK NO. 12 LEVEL T.S.	CONDENSATE STOR. TANK NO. 21 LEVEL T.S.	HYPOCHLORITE STORAGE TANK LEVEL *	
1 AM						ACTIVE BANK PRESSURE	ACTIVE BANK TEMPERATURE	RESERVE BANK PRESSURE	RESERVE BANK TEMPERATURE										
5 AM																			
9 AM																			
1 PM																			
5 PM																			
9 PM																			

READINGS TAKEN WHEN SYSTEM IN SERVICE. MONITOR INTAKE AREA FOR SIGNS OF A FISH KILL. * DUE TO USAGE *** TAKEN ONLY DURING THE PERIOD OF JUNE 1 - SEPT. 30. AT 1 MG/L, CAREFULLY

POINT	HI LIM	LO LIM	NO. 11 PROPANE STORAGE TANK LEVEL	NO. 12 PROPANE STORAGE TANK LEVEL	NITROGEN TRUCK BANK PRESSURE	DISCHARGE BEACON LIGHT ON	INTAKE WATER DISSOLVED OXYGEN ***	Waste Oil Collection TK. # 11	Diesel Gen. Room's Waste Oil Collection Tank	TIME OF SAMPLE	OBSERVED GRAVITY	OBSERVED TEMP.	API GRAVITY CORRECTED (60°)	CORRECTED API GRAVITY IS 30 TO 39 YES NO	TICKET NUMBER	AMOUNT RECEIVED	RECEIVED FROM
1 AM							1.9										
5 AM							1.9										
9 AM							2.7										
1 PM							1.7										
5 PM																	
9 PM																	

11/12 WNT'S NOT OVER FLOWING