TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

July 14, 1982

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Denton:

In the Matter of) Docket Nos. 50-327
Tennessee Valley Authority) 50-328

Enclosed for your information is a letter from Mohamed T. El-Ashry (TVA) to Paul J. Traina (EPA) dated May 18, 1982 on "Sequoyah Nuclear Plant (SQN) - NPDES Permit No. TN0026450 Polychlorinated Biphenyls (PCBs) Incident (M10,284)." The subject letter summarizes events surrounding the neutral ground transformer explosion that occurred on January 19, 1982 resulting in the discharge of PCBs to the diffuser pond.

If you have any questions, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

Sworn to and subscribed before me
this 14th day of July 1982.

Notary Public

My Commission Expires 4/8/86

Enclosure
cc: U.S. Nuclear Regulatory Commission (Enclosure)
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

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Mr. Paul J. Traina, Director
Water Management Division
U.S. Environmental Protection Agency, Region IV
345 Courtland Street, NE.
Atlanta, Georgia

SEQUOYAH NUCLEAR PLANT (SQN) - NPDES PERMIT NO. TN 0026450 - PCB INCIDENT (M10,284)

Dear Mr. Traina:

As requested during a recent telephone conversation between your Douglas Lankford and Michael Hines of my staff, the following is a summary of the events surrounding the SQN PCB incident.

On January 19, 1982 at approximately 7:41 p.m., the neutral ground transformer located in the turbine building faulted, resulting in an explosion. The transformer was ripped apart, spreading an unknown quantity of the dielectric fluid as a sticky, very viscous residue onto the building structures, equipment, and floor in the immediate vicinity of the failed transformer. The dielectric fluid supplied by Westinghouse for the transformer was manufactured under the trade name Inerteen (generally referred to as Askarel 1242) and is primarily composed of chlorobenzene and polychlorinated biphenyls (PCBs).

At the time of the transformer failure, SQN was having a scheduled maintenance outage. As a result of this outage, the piping system from the turbine building sump was being repaired. The repairs to the piping system prevented us from realigning the sump discharge from the condenser cooling water channel to the chemical-holding pond until January 23, 1982. TVA notified EPA of this work in a December 21, 1981 letter from me to Howard D. Zeller. This work was also discussed between A. H. Loudermilk of my staff and Mr. Lankford of your staff during a December 7, 1981 telephone conversation.

The National Response Center and the Tennessee Division of Water Quality Control were notified on January 20, 1982 of the accident and of the potential loss of PCBs. Water samples were collected from the sump on January 20, 1982 because of the potential PCB contamination of part of the turbine building drainage system and sump. The results of the turbine building sump samples were obtained on the morning of January 21, 1982 and indicated a minor concentration of PCBs in the sump. A sampling program was established by TVA, in consultation with your office and the State of Tennessee, and the results are shown in Tables I and II (enclosed).

On January 26, 1982 we contracted the services of Calgon's Activated Carbon Division to treat the PCB-contaminated water being held in the chemical-holding pond. The Calgon filter units were started up on January 31, 1982 and were shutdown on February 25, 1982 after treating 10 million gallons of PCB-contaminated water. Since February 25, 1982, we have been discharging directly from the chemical-holding pond (Table II). Based on our calculations,

Mr. Paul J. Traina, Director

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we estimate that the maximum amount of PCBs released to the diffuser pond during the first three days of the accident was 12.02 pounds (Table I). In our estimation, that amount has decreased to less than 0.5 pounds released to the diffuser pond since cleanup and treatment was started. The results of our sampling program show no detectable concentrations of PCBs in the Tennessee River in the vicinity of SQN or downstream of the plant for approximately 70 miles. Our extensive efforts to monitor and minimize the PCB discharges to the Tennessee River by rerouting the turbine building sump discharge and installing the Calgon unit have cost TVA approximately $250,000 to date.

Based on our review of the data and the present PCB concentrations being detected, we request permission to realign our turbine building piping system back to its normal route through the yard drainage pond and diffuser pond to the Tennessee River and to discontinue all PCB sampling. If you have any questions concerning this information, please call Michael Hines at FTS 872-8971 or (205) 386-2971 in Muscle Shoals, Alabama.

Sincerely,

Original Signed By
M. T. El-Ashry

Mohamed T. El-Ashry, Ph.D.
Assistant Manager of Natural
Resources (Environment)

JWH:SWH:SRW:PSR:JGD
Enclosures
cc (Enclosures):
Mr. D. Elmo Lunn, Director
Tennessee Department of Public Health
Division of Water Quality Control
150 Ninth Avenue, North
TERRA Building
Nashville, Tennessee 37203

Mr. Jack McCormick, Basin Manager
Chattanooga Basin Office
Division of Water Quality Control
2501 Milne Street
Chattanooga, Tennessee 37406

TABLE I - SUMMARY OF PCB ANALYSES

Date	TBS PCB CONC (ppb)	TBS FLOW (MGD)	LBS PCB RELEASED FROM TBS	CALGON EFFLUENT PCB CONC (ppb)	CALGON UNIT FLOW (MGD)	LBS PCB RELEASED FROM CALGON UNIT	PCB CONC FROM - DIFFUSER DISCHARGE (ppb)
1/20/82	326	0.15 C	0.41	-	-	-	-
1/21/82	213	0.20 C	0.36	-	-	-	< 10
1/22/82	4650	0.29 C	11.25 (12.02 lbs)	-	-	-	7
1/23/82	1920	0.32 C	5.12	-	-	-	-
1/24/82	100	0.36	0.30	-	-	-	< 0.1
1/25/82	48	0.50	0.20	-	-	-	< 0.1
1/26/82	-	0.54	-	-	-	-	-
1/27/82	1500	0.22	2.75	-	-	-	< 0.1
1/28/82	36	0.50	0.15	-	-	-	< 0.1
1/29/82	500	0.22	0.92	-	-	-	< 0.1
1/30/82	110	0.20	0.18	-	-	-	< 0.1
1/31/82	110	0.75 C	0.69	< 0.1	0.29	2.4 X 10^{-5}	< 0.1
2/01/82	290	0.90 C	2.18	0.8	0.29	4.8 X 10^{-5}	< 0.1
2/02/82	130	0.43 C	0.47	< 0.1	0.29	2.4 X 10^{-5}	< 0.1
2/03/82	140	0.38 C	0.44	< 0.1	0.29	2.4 X 10^{-5}	< 0.1
2/04/82	56	0.56 C	0.26	0.2	0.29	4.8 X 10^{-5}	< 0.1
2/05/82	110	0.29 C	0.27	0.2	0.29	4.8 X 10^{-5}	< 0.1
2/06/82	44	1.05 C	0.39	0.2	0.40	6.6 X 10^{-5}	< 0.1
2/07/82	-	0.51 C	-	0.9	0.65	4.8 X 10^{-5}	< 0.1
2/08/82	8	0.47	0.03	0.3	0.36	9.0 X 10^{-5}	< 0.1
2/09/82	15	0.57	0.07	0.7	0.65	3.8 X 10^{-4}	< 0.1
2/10/82	200	0.43	0.72	0.5	0.29	1.2 X 10^{-4}	< 0.1
2/11/82	16	0.77	0.10	0.6	0.37	1.8 X 10^{-4}	< 0.1
2/12/82	26	0.54	0.12	0.4	0.37	1.2 X 10^{-4}	< 0.1
2/13/82	-	0.52	-	-	-	-	-
2/14/82	-	0.71 C	-	-	-	-	-
2/15/82	75	0.55 C	0.34	0.5	0.56	2.3 X 10^{-4}	< 0.1
2/16/82	88	1.20 C	0.88	0.3	0.57	1.4 X 10^{-4}	< 0.1
2/17/82	48	0.48	0.19	0.4	0.62	1.9 X 10^{-4}	< 0.1
2/18/82	450	0.59	2.21	< 0.1	0.60	5 X 10^{-5}	< 0.1
2/19/82	28	0.51	0.12	< 0.1	0.57	4.8 X 10^{-5}	< 0.1
2/20/82	-	0.31	-	-	-	-	-
2/21/82	-	0.35	-	-	-	-	-
2/22/82	33	1.04	0.29	< 0.1	0.32	2.7 X 10^{-4}	< 0.1
2/23/82	29	1.07	0.26	< 0.1	0.22	1.8 X 10^{-4}	< 0.1
2/24/82	8.8	0.43	0.03	< 0.1	0.22	1.8 X 10^{-4}	< 0.1
2/25/82	19	0.78	0.12	-	-	-	< 0.1

TABLE II - SUMMARY OF PCB ANALYSES

Date	TBS PCB CONC (ppb)	TBS FLOW (MGD)	LBS PCB RELEASED FROM TBS	EFFLUENT DISCHARGE FROM CHEMICAL POND PCB CONC (ppb)	FLOW - CHEMICAL POND (MGD)	LBS PCB RELEASED FROM CHEMICAL POND	PCB CONC FROM - DIFFUSER DISCHARGE (ppb)
3/01/82	4	1.04	0.03	0.4	0.29	9.7 X 10-4	<0.1
3/04/82	17	0.46	0.07	-	0.29	-	<0.1
3/08/82	<10	0.85	0.07	0.1	0.29	2.4 X 10-5	<0.1
3/11/82	19	0.71	0.11	1.2	0.29	2.9 X 10-3	<0.1
3/15/82	31	1.00	0.26	2.2	0.29	1.0 X 10-2	<0.1
3/18/82	20	0.72	0.12	3.5	0.29	1.0 X 10-2	<0.1
3/22/82	55	0.60	0.28	3.3	0.29	1.0 X 10-2	<0.1
3/25/82	79	0.47	0.31	4.1	0.29	1.0 X 10-2	<0.1
3/29/82	180	0.64	0.95	1.8	0.29	4.2 X 10-3	<0.1
4/01/82	110	0.72	0.66	5.2	0.29	1.0 X 10-2	<0.1
4/05/82	<10	0.96	0.08	1.4	0.29	3.4 X 10-3	<0.1
4/08/82	11	1.13	0.10	1.0	0.29	2.4 X 10-3	<0.1
4/12/82	<10	0.86	0.07	1.2	0.29	2.9 X 10-3	<0.1
4/15/82	19	1.11	0.18	-	0.29	-	<0.1
4/19/82	-	0.90	-	-	0.29	-	<0.1
4/22/82	<10	0.86	0.07	0.9	0.29	2.0 X 10-3	<0.1

NOTE: C denotes calculated.