

TENNESSEE VALLEY AUTHORITY

KNOXVILLE, TENNESSEE 37902

OCT 20 1988

Mr. Philip L. Stewart, Manager
Chattanooga Field Office
Division of Water Pollution Control
2501 Milne Avenue
Chattanooga, Tennessee 37406-3399

Dear Mr. Stewart:

SEQUOYAH NUCLEAR PLANT (SQN) - FISH COUNTS IN THE INTAKE FOREBAY AND DIFFUSER POND

On August 1, TVA reported a kill of approximately 278 fish in the intake forebay which was apparently caused by low (0.2 - 0.5 ppm) dissolved oxygen (DO) levels in the water withdrawn from Chickamauga Reservoir. In response to a request by Ann McGregor, TVA began making daily counts of dead fish in the intake forebay and the diffuser pond on August 3.

The numbers and kinds of fish counted in the intake embayment and diffuser pond from August 3 through September 14, are summarized by date in Tables 1 and 2, respectively. Overall, a total of 392 dead fish of 13 different species were counted in the diffuser pond and 16,372 dead fish of 20 different species were counted in the intake embayment. The latter total includes an estimated 14,153 small (1-3 inches) mixed Threadfin and Gizzard Shad. The remaining 2,615 fish were adults of all other species. The small shad appeared only during the first week of the counts and for the most part were congregated at the end of the intake channel where they were mixed with thousands of dead Corbicula making precise counts impossible.

By the end of August, DO levels in the reservoir had improved dramatically and there was a corresponding reduction in the numbers of dead fish. On August 31, the DO level in the reservoir on the outside of the skimmer wall ranged from 9.4 ppm on the surface to 4.8 ppm on the bottom (15 meter depth). On September 15, DO readings at seven stations in the intake forebay ranged from 5.8 to 4.2 ppm.

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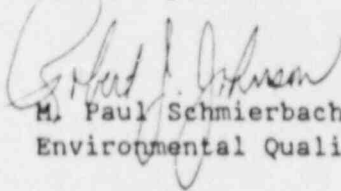
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Because of the improved conditions in the reservoir and plant intake, fish counts were terminated on September 15.

If you or your staff have any questions regarding these matters, contact Abraham H. Loudermilk at (615) 632-6714 in Knoxville.

Sincerely,

for 
M. Paul Schmierbach, Manager
Environmental Quality

Enclosures

cc (Enclosures):

Mr. Bruce R. Barrett, Director
Water Management Division
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, NE.
Atlanta, Georgia 30365

Ms. S. C. Black, Assistant Director
for Projects
TVA Projects Division
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852

Mr. F. R. McCoy, Assistant Director
for Inspection Programs
TVA Projects Division
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Region II
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Atlanta, Georgia 30323

Sequoyah Resident Inspector
Sequoyah Nuclear Plant
2600 Igou Ferry Road
Soddy Daisy, Tennessee 37379

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Mr. Ralph M. Sinclair
Manager, Permits Section
Division of Water Pollution Control
Tennessee Department of Health
and Environment
TERRA Building
150 Ninth Avenue, North
Nashville, Tennessee 37219-5404

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Mr. David Young, Fish Habitat Biologist
Tennessee Wildlife Resources Agency
216 East Penfield Street
Crossville, Tennessee 38555

TABLE 1

Species and Numbers of Dead Fish Observed in Sequoyah Nuclear Plant
Intake Embayment, August 3 through September 14, 1988

Species	Survey Dates												
	8/3	8/4	8/5	8/6	8/7	8/8	8/9	8/10	8/11	8/12	8/13	8/14	8/15
Freshwater Drum	28	27	13	33	94	201	16	12	9	17	11	1	
Bullhead			1										
Gizzard Shad	132	233	170	126	136	121	162	230		1			6
Largemouth Bass	8	3	9	5	18				5			1	
Bluegill			8	14	20				12			1	
Yellow Bass									2				
Skipjack Herring	12	8	27	38	8								
Blue Catfish	1	1			1					2	2		
Channel Catfish	1	1	3		2	1			4				
Sunfish	7		1			1	6	6		6	9		
Striped Bass				1	1	1							
Yellow Perch			1	1	2	1	1	2	33	2			
White Bass					2					1			
Redbreast Sunfish					1				1				
Spotted Bass						31	1	1					
White Crappie							1		1	1	1		
Flathead Catfish	2							1					
Warmouth									1				
Black Crappie									2				
Small Mixed Shad	<u>3000</u>	<u>1500</u>	<u>1500</u>	<u>200</u>	<u>200</u>	<u>2300</u>	<u>3500</u>	<u>300</u>	<u>928</u>	<u>463</u>	<u>262</u>	—	—
Totals	3191	1773	1733	418	485	2657	3687	552	997	493	285	3	6

TABLE 1 (Cont.)

Species and Number of Fish Observed at Site 3, Section 20 Nuclear Plant
 Intake System, August 14, 1983

Species	8/16	8/17	8/18	8/19	8/20	8/21	8/22	8/23	8/24	8/25	8/26	8/27	8/28	8/29	8/30	9/1	9/2	Totals
Freshwater Drum	2	1	1										1			1		543
Bullhead																		1
Gizzard Shad																		1,317
Largemouth Bass	4																	54
Bluegill																		54
Yellow Bass																		2
Skipjack Herring																		93
Blue Catfish	2	1																11
Channel Catfish																		13
Sunfish																		36
Striped Bass																		3
Yellow Perch																		43
White Bass	1																	4
Redbreast Sunfish																		2
Spotted Bass																		33
White Crappie																		4
Flathead Catfish																		3
Warmouth																		1
Black Crappie																		2
Small Mixed Shad	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<u>14,153</u>
Totals	9	5	1	2	11	60	1	1	1	1	1	1	1	1	1	1	1	16,372

*No survey done on 9/2/88; no dead fish observed on other dates not listed.

TABLE 2

Species and Numbers of Dead Fish Observed in Sequoyah Nuclear Plant
Diffuser Pond, August 3 through September 14, 1988

Species	Survey Dates*									Totals
	8/3	8/4	8/5	8/6	8/16	8/17	9/1	9/3	9/4	
Threadfin Shad								2		2
Freshwater Drum	20									20
Bullhead	3		3	1					1	8
Gizzard Shad	15	12	3		204	63				297
Largemouth Bass	5									5
Bluegill	33		1				4	5		43
Yellow Bass	1									1
Green Sunfish			1							1
Channel Catfish					2			1		3
Carp					1					1
Blue Catfish					7					7
Sunfish					3					3
White Bass	—	—	—	—	—	1	—	—	—	1
Totals	77	12	8	1	217	64	4	8	1	392

*No survey done on 9/2/88; no dead fish observed on other dates not listed.