IMPINGEMENT MONITORING PROGRAM

REPORT NO. 16 - JULY 1978

SALEM NUCLEAR GENERATING STATION
UNIT NO. 1

DOCKET NO. 50-272
OPERATING LICENSE NO. DPR-70

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
NEWARK, NEW JERSEY
AUGUST 18, 1978

P77 54 19

SUMMARY

This is the sixteenth monthly impingement monitoring program report required by Section 3.1.2.2 of the Environmental Technical Specifications (ETS). The ETS are Appendix B of the Salem Nuclear Generating Station (SNGS) Operating License No. DPR-70. The tabular summaries attached include daily estimates of the number and weight of fish impinged on the Circulating Water System (CWS) traveling screens (Table 2) and the Service Water System (SWS) traveling screens (Table 3). CWS operation is also summarized (Table 1).

The monitoring program required by the ETS at both the CWS and SWS consisted of three 24-hour sampling periods per week. The CWS screens were sampled four times per 24-hour period at approximately six-hour intervals. Samples were collected by diverting approximately three minutes of screen wash water to the counting pool located on the north end of the CWS intake structure. Survival rates were calculated for CWS samples only. SWS screen samples consisted of either one 24-hour or two 12-hour samples per day. These samples consisted of all fish impinged and found in the trash baskets located on the intake structure proper.

On June 19, 1978 large numbers of juvenile (age 0+) weakfish (Cynoscion regalis), were first taken at the CWS intake. In response to these large numbers, additional impingement samples were collected to supplement those required by the ETS. The data from these non-ETS samples were incorporated into Table 2. However, there is a bias in the mean estimated number per 24-hours shown in Table 2 because samples were taken at non-uniform intervals. The regular monitoring data are taken at 6-hour intervals. PSE&G has developed a revised computational technique which provides a more representative estimate of the total number of weakfish impinged per 24-hours (or fractional portion) by factoring the time interval into the estimation procedure. The estimate is based on a calendar day instead of an ETS sampling day. Survival estimates are weighted by actual number of weakfish impinged. The results are shown in Table 4 and are those on which our impact assessment is based. This revised technique will replace the current estimation technique reflected in Table 2 in all future monthly reports.

Weakfish Population Estimates

In order to estimate the population of juvenile weakfish in the lower Delaware River, two population surveys were undertaken on July 20-21 and August 2-3, 1978. The river was divided into three regions for these surveys:

South region - river mile 0 to 40
Plant (study area) region - river mile 40 to 60
North region - river mile 60 to 73

The population estimates for the two surveys were:

Region	July 20-21	Aug 2-3
South	696,000,000	173,000,000
Plant (study area)	83,000,000	32,000,000
North	8,000,000	9,000,000
Total	787,000,000	214,000,000

These estimates were obtained by bottom trawling with a nylon 4.9-meter semi-balloon otter trawl with 3.8-cm stretch body mesh and 3.2-cm stretch cod-end mesh fitted with a 1.3-cm stretch inner liner mesh. Fixed distance trawls were taken in the three regions using a simple random sampling design. A total of 185, 88 and 20 grids were established for the south, plant and north regions, respectively. A total of 127, 79 and 39 samples were taken, respectively in each region. The total area of each region was computed as was the total number of possible trawls in each region to obtain complete bottom coverage.

The population estimate were calculated as follows:

$$\text{Population Estimate}_1 = C \cdot \bar{X} \cdot \text{Eff} \cdot \text{Den}$$

where:

C = Total area of region/area covered by a trawl haul

$\bar{X}$ = Total number of specimens taken/total number of hauls in region

Eff = 4; The gear efficiency of a 4.9 meter otter trawl for juvenile spot and Atlantic croaker has been reported as 6 and 25%, respectively (Loesh, 1976). It is assumed that for weakfish a 25% gear efficiency is reasonable, resulting in a multiplier of 4 for gear efficiency.

Den = 3; Weakfish are semi-demersal and it is assumed that all are concentrated in the bottom 2-meters of the water column since the bottom trawl has a height of 0.67-meters. (person. comm: S. Marinovich, 1978). A multiplier of 3 for gear coverage was used.

Bay population estimates were also calculated for June 21 and July 4, 1978 utilizing trawl data collected from the regular ETS monitoring program within the plant area only. Based on the assumptions that (1) the population of weakfish estimated from July 20-21 and August 2-3 trawl samples bore the same relationship to trawl samples on June 21 and July 5 and (2) the relative distribution between the Plant region, and the North and South regions remained the same among all four dates. The estimated population could be calculated using:

$$\text{Population Estimate}_2 = C \cdot \bar{X} \cdot \text{Eff} \cdot \text{Den} \cdot \text{Reg}$$

where:

Reg = 10; assume that the plant region sampled June 21 and July 5 represented approximately 10% of the entire bay wide area monitored on July 20-21 and August 2-3.

The resulting Bay population based on Population Estimate 2 would be:

	June 21	July 5
Total	1,240,000,000	546,000,000

Comparison of bay wide population estimates and impingement levels provides the following:

Date	Daily Estimated Number Impinged	Plant (Study) Area Population Estimate	Bay Wide Population Estimate	% Weakfish Plant (Study) Area Impinged	% Weakfish In Bay Area Impinged
June 21	6.7×10^3	1.2×10^8	1.2×10^9	0.006	0.0006
July 5	4.3×10^5	5.5×10^7	5.5×10^8	0.8	0.08
July 20-21	3.3×10^4	8.3×10^7	7.9×10^8	0.04	0.004
Aug. 2-3	1.5×10^4	3.2×10^7	2.1×10^8	0.05	0.007

Between July 20-21 and August 2-3 the weakfish population in the study region decreased from 7.9×10^8 to 2.1×10^8. During the same period it was estimated that SNGS impinged a total of 6.3×10^5 weakfish. Since it has been demonstrated that the daily weighted survival ranged from 53 to 79% with a weighted mean of 70%, the impact of impingement on the weakfish population contributed to less than 0.03% of the observed population decrease.

All available data on population size and impingement number and survival indicate that impingement losses at SNGS did not constitute a significant impact on the 1978 year class of juvenile (0+) weakfish.

LE 1. - START TIME AND DURATION OF IMPINGEMENT SAM S AT THE CIRCULATING WATER INTAKE, S.N.G.S. UNITS 1 AND 2,
1 JULY THROUGH 31 JULY 1978. DETRITUS WEIGHT (KG/MIN), WATER TEMPERATURE (C), PUMPS IN OPE ION
AND SCREEN SPEEDS ARE INDICATED (0=OFF, *=ON, 1=5 FT/MIN, 2=10 FT/MIN, 3=15 FT/MIN, 4=20 FT/MIN).

DATE	SAMPLE START TIME	DUR. (MIN)	DETRITUS WEIGHT (KG/MIN)	WATER TEMPERATURE (C)	CIRCULATING WATER INTAKE BAYS	1 3 B	1 3 A	1 2 B	1 2 A	1 1 B	1 1 A	2 1 A	2 1 B	2 2 A	2 2 B	2 3 A	2 3 B
07/04/78	1037	3	0.33	21.0	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/04/78	1810	3	1.00	22.5	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/04/78	2200	3	0.66	21.6	PUMPS (5)	*	*	*	*	*	0	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/05/78	0600	3	6.00	21.2	PUMPS (5)	*	*	*	*	0	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/05/78	1130	3	1.33	22.8	PUMPS (5)	*	*	*	*	0	*	-	-	-	-	-	-
					SCREENS (5)	*	*	*	*	0	*	-	-	-	-	-	-
07/05/78	1800	3	2.76	22.0	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/05/78	2300	3	0.31	23.2	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/06/78	0500	3	8.00	21.5	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/06/78	1200	3	1.26	23.9	PUMPS (5)	*	*	*	0	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/06/78	1750	3	1.73	23.7	PUMPS (5)	*	*	*	0	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	*	0	*	*	-	-	-	-	-	-
07/06/78	2300	3	0.53	23.5	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/07/78	1140	3	1.00	24.1	PUMPS (5)	*	*	*	*	0	*	-	-	-	-	-	-
					SCREENS (5)	*	*	*	*	0	*	-	-	-	-	-	-
07/10/78	1046	3	1.40	25.5	PUMPS (5)	*	*	*	*	*	0	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/10/78	1302	3	0.73	25.0	PUMPS (5)	*	*	*	*	*	0	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT
PSE&G, NEWARK, N.J.

TABLE 1. - (CONTINUED).

DATE	SAMPLE START TIME	DUR. (MIN)	DETRITUS WEIGHT (KG/MIN)	WATER TEMPERATURE (C)	CIRCULATING WATER INTAKE BAYS	1 3 B	1 3 A	1 2 B	1 2 A	1 1 B	1 1 A	2 1 A	2 1 B	2 2 A	2 2 B	2 3 A	2 3 B
07/10/78	1750	3	2.60	25.9	PUMPS (4)	*	*	*	0	*	0	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/10/78	2100	1	21.30	25.3	PUMPS (5)	*	*	*	*	*	0	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/11/78	0000	3	2.33	25.3	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/11/78	0500	3	8.33	25.3	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/12/78	0932	1	5.00	22.1	PUMPS (5)	*	*	*	0	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/12/78	1200	3	1.00	22.9	PUMPS (5)	*	*	*	0	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	*	0	*	*	-	-	-	-	-	-
07/12/78	1520	3	0.70	25.5	PUMPS (5)	*	*	*	0	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/12/78	1801	3	1.16	24.7	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/12/78	2035	2	7.25	25.1	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/13/78	0000	3	3.33	24.3	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/13/78	0545	3	0.70	23.1	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/13/78	0912	2	3.15	24.1	PUMPS (5)	*	*	*	*	*	0	-	-	-	-	-	-
					SCREENS (5)	*	*	*	*	*	0	-	-	-	-	-	-
07/13/78	1200	1	4.20	24.4	PUMPS (5)	*	*	*	*	*	0	-	-	-	-	-	-
					SCREENS (5)	*	*	*	*	*	0	-	-	-	-	-	-
07/13/78	1815	3	0.33	25.3	PUMPS (5)	*	*	*	*	*	0	-	-	-	-	-	-
					SCREENS (5)	*	*	*	*	*	0	-	-	-	-	-	-

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 1. - (CONTINUED).

DATE	SAMPLE START TIME	DUR. (MIN)	DETRITUS WEIGHT (KG/MIN)	WATER TEMPERATURE (C)	CIRCULATING WATER INTAKE BAYS	13B	13A	12B	12A	11B	11A	21A	21B	22A	22B	23A	23B
07/14/78	0000	3	7.66	24.3	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/14/78	0600	3	0.50	23.7	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/17/78	0915	3	1.00	24.0	PUMPS (5)	0	*	*	*	*	*	0	0	0	0	0	0
					SCREENS (8)	*	*	*	*	*	*	0	*	0	*	0	0
07/17/78	1200	3	11.66	24.0	PUMPS (5)	0	*	*	*	*	*	0	0	0	0	0	0
					SCREENS (8)	*	*	*	*	*	*	0	*	0	*	0	0
07/17/78	1520	1	32.00	25.0	PUMPS (7)	0	*	*	*	*	*	0	*	0	*	0	0
					SCREENS (7)	0	*	*	*	*	*	0	*	0	*	0	0
07/17/78	1800	3	3.23	26.0	PUMPS (5)	0	*	*	*	*	*	0	0	0	0	0	0
					SCREENS (5)	0	*	*	*	*	*	0	0	0	0	0	0
07/17/78	2106	3	0.83	25.3	PUMPS (5)	0	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (5)	0	*	*	*	*	*	-	-	-	-	-	-
07/18/78	0000	3	4.00	24.9	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/18/78	0300	1	4.00	25.0	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/18/78	0600	3	1.66	25.0	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/18/78	0900	3	3.03	24.8	PUMPS (3)	*	0	0	*	0	*	-	-	-	-	-	-
					SCREENS (5)	*	0	*	*	*	*	-	-	-	-	-	-
07/18/78	1030	1	2.10	25.0	PUMPS (3)	*	0	0	*	0	*	-	-	-	-	-	-
					SCREENS (5)	*	0	*	*	*	*	-	-	-	-	-	-
07/18/78	1200	3	5.00	25.0	PUMPS (3)	*	0	*	0	*	0	-	-	-	-	-	-
					SCREENS (4)	*	0	*	*	0	*	-	-	-	-	-	-
07/18/78	1400	1	16.30	25.5	PUMPS (3)	*	0	*	0	*	0	-	-	-	-	-	-
					SCREENS (5)	*	0	*	*	*	*	-	-	-	-	-	-

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 1. - (CONTINUED).

DATE	SAMPLE START TIME	DUR. (MIN)	DETRITUS WEIGHT (KG/MIN)	WATER TEMPERATURE (C)	CIRCULATING WATER INTAKE BAYS	13B	13A	12B	12A	11B	11A	21A	21B	22A	22B	23A	23B
07/18/78	1600	1	8.20	25.5	PUMPS (3)	*	0	*	0	*	0	-	-	-	-	-	-
					SCREENS (5)	*	0	*	*	*	*	-	-	-	-	-	-
07/18/78	1800	3	4.16	25.5	PUMPS (3)	*	0	*	0	*	0	-	-	-	-	-	-
					SCREENS (4)	*	*	*	*	0	0	-	-	-	-	-	-
07/18/78	2115	1	1.80	26.1	PUMPS (2)	*	0	*	0	0	0	-	-	-	-	-	-
					SCREENS (4)	*	*	*	0	*	0	-	-	-	-	-	-
07/18/78	2230	1	0.50	26.0	PUMPS (2)	0	*	*	0	0	0	-	-	-	-	-	-
					SCREENS (4)	*	*	*	0	*	0	-	-	-	-	-	-
07/19/78	0000	3	3.16	25.3	PUMPS (2)	0	*	*	0	0	0	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/19/78	0200	1	0.90	24.9	PUMPS (2)	0	*	*	0	0	0	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/19/78	0430	1	1.40	24.9	PUMPS (2)	0	0	*	0	*	0	-	-	-	-	-	-
					SCREENS (4)	*	0	*	*	0	*	-	-	-	-	-	-
07/19/78	0600	3	0.93	26.0	PUMPS (2)	0	0	*	0	*	0	-	-	-	-	-	-
					SCREENS (4)	*	0	*	*	0	*	-	-	-	-	-	-
07/19/78	0900	1	4.10	25.0	PUMPS (3)	*	0	*	0	*	0	-	-	-	-	-	-
					SCREENS (5)	*	*	*	0	*	*	-	-	-	-	-	-
07/19/78	1200	3	2.76	26.5	PUMPS (5)	*	*	*	0	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	*	0	*	*	-	-	-	-	-	-
07/19/78	1345	1	12.50	25.5	PUMPS (4)	*	*	*	0	*	0	0	0	0	0	0	0
					SCREENS (6)	*	*	*	0	*	0	0	*	0	*	0	0
07/19/78	1500	1	15.00	26.0	PUMPS (5)	*	*	*	0	*	*	-	-	-	-	-	-
					SCREENS (4)	*	*	*	0	*	0	-	-	-	-	-	-
07/19/78	1800	3	4.06	27.0	PUMPS (4)	*	*	*	0	*	0	-	-	-	-	-	-
					SCREENS (4)	*	*	*	0	*	0	-	-	-	-	-	-
07/19/78	0025	3	0.40	25.5	PUMPS (4)	*	*	*	0	*	0	-	-	-	-	-	-
					SCREENS (4)	*	*	*	0	*	0	-	-	-	-	-	-

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TABLE 1. - (CONTINUED).

DATE	SAMPLE START TIME	DUR. (MIN)	DETRITUS WEIGHT (KG/MIN)	WATER TEMPERATURE (C)	CIRCULATING WATER INTAKE BAYS	13B	13A	12B	12A	11B	11A	21A	21B	22A	22B	23A	23B
07/20/78	0300	1	3.00	25.2	PUMPS (3)	*	*	0	0	*	0	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/20/78	0600	3	1.66	25.0	PUMPS (3)	*	*	0	0	*	0	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/20/78	0900	1	2.40	25.0	PUMPS (3)	*	*	0	0	*	0	0	0	0	0	0	0
					SCREENS (7)	*	*	0	*	*	*	0	*	*	0	0	0
07/20/78	1030	1	3.50	26.0	PUMPS (4)	*	*	0	*	*	0	0	0	0	0	0	0
					SCREENS (7)	*	*	0	*	*	*	0	*	*	0	0	0
07/20/78	1200	3	5.10	25.5	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (7)	*	*	0	*	*	*	0	*	*	0	0	0
07/20/78	1600	1	11.00	26.0	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/20/78	1800	3	5.80	26.0	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/21/78	0045	3	4.00	25.0	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/21/78	0300	3	1.66	23.9	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/21/78	0600	3	5.00	24.0	PUMPS (6)	*	*	*	*	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/21/78	0930	1	12.50	25.5	PUMPS (5)	*	*	*	*	0	*	0	0	0	0	0	0
					SCREENS (7)	*	*	*	*	0	*	0	0	0	0	*	*
07/21/78	1200	3	1.10	26.2	PUMPS (5)	*	*	*	*	0	*	0	0	0	0	0	0
					SCREENS (7)	*	*	*	*	0	*	0	0	0	*	*	0
07/21/78	1420	1	6.00	26.8	PUMPS (5)	*	*	*	*	0	*	0	0	0	0	0	0
					SCREENS (8)	*	*	*	*	0	*	*	0	0	*	*	0
07/21/78	1530	1	7.80	26.5	PUMPS (4)	*	*	*	0	0	*	0	0	0	0	0	0
					SCREENS (5)	*	*	*	*	0	*	0	0	0	0	0	0

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 1. - (CONTINUED).

DATE	SAMPLE START TIME	DUR. (MIN)	DETRITUS WEIGHT (KG/MIN)	WATER TEMPERATURE (C)	CIRCULATING WATER INTAKE BAYS	13B	13A	12B	12A	11B	11A	21A	21B	22A	22B	23A	23B
07/21/78	1800	3	6.66	26.5	PUMPS (5)	*	*	*	0	*	*	-	-	-	-	-	-
					SCREENS (6)	*	*	*	*	*	*	-	-	-	-	-	-
07/21/78	2130	1	2.50	27.1	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	0	2	5	2	*	*	-	-	-	-	-	-
07/22/78	0000	3	0.86	27.0	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/22/78	0245	1	1.00	26.7	PUMPS (4)	*	*	0	*	*	0	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/22/78	0600	3	4.00	26.2	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/24/78	0910	1	7.00	27.9	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/24/78	1200	3	16.66	27.0	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/24/78	1500	3	1.00	27.8	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/24/78	1800	3	4.00	28.1	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/24/78	2101	1	5.20	26.0	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/25/78	0000	3	3.00	25.2	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/25/78	0304	3	3.33	24.9	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/25/78	0600	3	4.93	23.8	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	*	*	0	*	*	*	-	-	-	-	-	-
07/26/78	0900	1	3.40	25.0	PUMPS (4)	*	*	0	*	*	0	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-

TABLE 1. - (CONTINUED).

DATE	SAMPLE START TIME	DUR. (MIN)	DETRITUS WEIGHT (KG/MIN)	WATER TEMPERATURE (C)	CIRCULATING WATER INTAKE BAYS	1 3 B	1 3 A	1 2 B	1 2 A	1 1 B	1 1 A	2 1 A	2 1 B	2 2 A	2 2 B	2 3 A	2 3 B
07/26/78	1200	3	0.50	26.8	PUMPS (4)	*	*	0	*	*	0	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/26/78	1330	3	2.20	27.4	PUMPS (4)	*	*	0	*	*	0	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/26/78	1500	3	1.23	27.1	PUMPS (4)	*	*	0	*	*	0	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/26/78	1800	3	0.33	27.0	PUMPS (4)	*	*	0	*	*	0	-	-	-	-	-	-
					SCREENS (5)	1	4	1	1	1	1	-	-	-	-	-	-
07/26/78	2103	1	4.10	26.5	PUMPS (4)	*	*	0	*	*	0	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/27/78	0000	3	0.96	26.2	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/27/78	0300	3	1.10	26.7	PUMPS (4)	*	*	0	*	*	0	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/27/78	0600	3	0.40	20.9	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/27/78	0910	3	1.73	26.9	PUMPS (4)	*	*	0	*	*	0	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/27/78	1200	3	2.33	27.0	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/27/78	1500	3	0.66	26.9	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/27/78	1800	3	0.18	26.4	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/27/78	2115	1	1.00	28.0	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/28/78	0000	3	2.00	26.8	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

ABLE 1. - (CONTINUED).

DATE	SAMPLE START TIME	DUR. (MIN)	DETRITUS WEIGHT (KG/MIN)	WATER TEMPERATURE (C)	CIRCULATING WATER INTAKE BAYS	1 3 B	1 3 A	1 2 B	1 2 A	1 1 B	1 1 A	2 1 A	2 1 B	2 2 A	2 2 B	2 3 A	2 3 B
07/28/78	0320	3	0.73	26.7	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	2	2	0	4	2	2	-	-	-	-	-	-
07/28/78	0600	3	0.33	25.0	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	1	4	0	1	1	1	-	-	-	-	-	-
07/31/78	0930	3	0.73	25.9	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	1	3	0	1	1	1	-	-	-	-	-	-
07/31/78	1200	3	5.00	26.4	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	1	1	0	1	1	1	-	-	-	-	-	-
07/31/78	1510	3	7.10	26.9	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	2	2	0	1	1	1	-	-	-	-	-	-
07/31/78	1800	3	0.93	28.0	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	1	1	0	1	1	1	-	-	-	-	-	-
07/31/78	2200	1	7.50	26.0	PUMPS (5)	*	*	0	*	*	*	-	-	-	-	-	-
					SCREENS (5)	1	1	0	1	1	1	-	-	-	-	-	-

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 2. - IMPINGEMENT - S.N.G.S. CIRCULATING WATER SYSTEM INTAKE, JULY 1 THROUGH JULY 31 1978

SAMPLING PERIOD - 07/04/78 1037 THROUGH 07/05/78 0600

SPECIES	N	CF	% SURVIVAL L	D	D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	MAX.	LENGTH (MM) MIN.	MAX.
C. REGALIS	4	4	71	24	4	3345	401400	63800.5	5179.92	7705.6	.2	4.6	37.5	72.5
A. MITCHILLI	4	4	37	53	9	679	81480	53093.5	1913.76	1024.3	1.6	6.5	52.5	87.5
B. TYRANNUS	4	4	42	33	23	21	2520	3144.5	53.28	64.1	1.1	3.6	42.5	62.5
T. MACULATUS	4	4	95	4	0	136	16320	8541.6	477.12	237.3	1.2	6.7	32.5	267.5
C. SAPIDUS	4	4	93	6	0	18	2160	1440.0	1610.28	1367.7	25.0	144.5	77.5	152.5
S. AQUOSUS	4	3	100	0	0	8	960	1036.9	23.52	24.0	1.1	4.3	42.5	67.5
P. FLAVESCENS	4	1	100	0	0	1	120	240.0	36.60	73.2	30.5	30.5	132.5	132.5
M. MENIDIA	4	1	0	100	0	2	240	480.0	3.12	6.2	1.2	1.4	37.5	37.5
L. XANTHURUS	4	2	70	23	6	64	7680	15041.7	131.76	250.8	.4	4.9	32.5	67.5
R. MARGINATA	4	2	0	100	0	2	240	277.1	66.72	79.3	23.0	32.6	132.5	192
P. SALTATRIX	4	1	100	0	0	3	360	720.0	18.72	37.4	3.4	8.3	67.5	97
P. CROMIS	4	1	100	0	0	2	240	480.0	3.36	6.7	.9	1.9	47.5	47.5
A. ROSTRATA	4	1	0	100	0	1	120	240.0	21.24	42.4	17.7	17.7	212.5	212.5
TOTAL						4282	513840		9539.40					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL; L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 2. - (CONTINUED).

SAMPLING PERIOD - 07/05/78 1130 THROUGH 07/06/78 0500

SPECIES	N	CF	% SURVIVAL L	D	D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	MAX.	LENGTH (MM) MIN.	MAX.
C. REGALIS	4	4	65	29	5	3701	444120	88390.2	7765.44	6745.5	.2	4.8	32.5	72.5
A. MITCHILLI	4	4	48	43	8	497	59640	70176.7	1037.16	720.7	1.4	6.2	57.5	87.5
T. MACULATUS	4	4	100	0	0	215	25800	19632.6	894.00	743.6	1.2	90.4	2.5	162.5
P. DENTATUS	4	2	100	0	0	3	360	459.5	539.52	623.1	4.7	223.7	87.5	292.5
S. FUSCUS	4	1	100	0	0	1	120	240.0	.12	.2	.1	.1	47.5	47.5
P. FLAVESCENS	4	1	100	0	0	1	120	240.0	64.08	128.1	53.4	53.4	127.5	127.5
P. SALTATRIX	4	2	0	0	100	2	240	277.1	11.88	17.6	2.1	7.8	62.5	87.5
B. TYRANNUS	4	2	62	37	0	22	2640	3849.9	138.48	250.4	.4	68.4	42.5	152.5
S. AQUOSUS	4	3	92	4	4	36	4320	4451.3	82.92	89.6	.6	4.8	42.5	67.5
C. SAPIDUS	4	3	100	0	0	14	1680	1939.8	1099.56	995.5	27.4	140.4	37.5	152.5
R. MARGINATA	4	2	100	0	0	11	1320	1633.6	350.16	449.9	8.8	40.5	117.5	212.5
M. MARTINICA	4	1	0	0	0	1	120	240.0	7.44	14.8	6.2	6.2	92.5	92.5
M. AMERICANA	4	1	0	0	0	1	120	240.0	72.96	145.9	60.8	60.8	162.5	162.5
L. XANTHURUS	4	1	0	100	0	2	240	480.0	6.72	13.4	1.2	4.4	52.5	67.5
TOTAL						4507	540840		12070.44					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 2. - (CONTINUED).

SAMPLING PERIOD - 07/06/78 1200 THROUGH 07/07/78 1140

SPECIES	N	CF	% SURVIVAL L	D	D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	MAX.	LENGTH (MM) MIN.	MAX.
C. REGALIS	4	4	62	33	4	794	95280	84553.1	1636.56	1056.2	.2	166.4	32.5	247.5
A. MITCHILLI	4	4	26	70	3	119	14280	5670.9	411.00	207.4	1.8	8.4	57.5	87.5
T. MACULATUS	4	4	93	2	4	111	13320	16592.4	308.52	326.3	.8	6.1	37.5	62.5
S. AQUOSUS	4	2	100	0	0	11	1320	1811.9	28.56	35.0	2.0	4.4	32.5	72.5
B. TYRANNUS	4	3	50	50	0	4	480	391.9	11.76	8.9	2.1	3.2	57.5	57.5
P. SALTATRIX	4	3	100	0	0	4	480	391.9	30.12	28.6	4.1	9.0	77.5	97.5
L. XANTHURUS	4	1	0	0	0	1	120	240.0	3.60	7.2	3.0	3.0	62.5	62.5
M. AMERICANA	4	1	0	0	0	1	120	240.0	45.60	91.2	38.0	38.0	132.5	132.5
C. SAPIDUS	4	2	100	0	0	6	720	831.3	349.32	408.9	25.0	92.4	2.5	107.5
R. MARGINATA	4	1	100	0	0	3	360	720.0	184.20	368.4	44.1	55.7	207.5	222.5
M. MENIDIA	4	1	0	100	0	1	120	240.0	.96	1.9	.8	.8	42.5	42.5
TOTAL						1055	126600		3010.20					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

TABLE 2. - (CONTINUED).

SAMPLING PERIOD - 07/10/78 1046 THROUGH 07/11/78 0500

SPECIES	N	CF	% SURVIVAL L	% SURVIVAL D	% SURVIVAL D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	6	6	66	28	5	2360	237600	71916.9	3612.48	3774.1	.4	6.2	32.5	82.5
A. MITCHILLI	6	6	36	45	17	475	41360	37691.9	1224.80	1027.8	.4	6.2	57.5	92.5
T. MACULATUS	6	6	99	0	0	227	20400	24983.5	813.60	979.7	1.5	28.5	37.5	117.5
S. AQUOSUS	6	4	90	10	0	17	1360	2197.8	35.12	55.2	1.1	4.1	47.5	72.5
L. XANTHURUS	6	1	0	0	0	1	80	195.9	12.08	29.5	15.1	15.1	102.5	102.5
B. TYRANNUS	6	5	75	13	11	41	3440	4133.7	87.28	105.5	1.1	5.1	47.5	72.5
M. AMERICANA	6	2	0	0	100	2	160	247.8	112.00	197.3	39.0	101.0	137.5	187.5
C. SAPIDUS	6	6	90	9	0	31	3280	2474.0	1596.16	1261.1	15.0	158.3	42.5	152.5
P. SALTATRIX	6	3	50	25	25	6	480	607.1	18.56	23.6	3.3	4.8	67.5	82.5
S. MARINA	6	1	0	0	0	2	480	1175.7	6.00	14.6	1.2	1.3		
M. MENIDIA	6	3	100	0	0	32	7200	16935.2	39.84	90.6	1.0	2.0	42.5	57.5
M. MARTINICA	6	2	66	33	0	10	800	1735.0	41.28	84.7	3.8	7.5	82.5	92.5
R. MARGINATA	6	1	66	33	0	12	960	2351.5	277.76	680.3	6.7	28.1	112.5	212.5
TOTAL						3216	317600		7876.96					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

TABLE [redacted] - (CONTINUED).

SAMPLING PERIOD - 07/12/78 0932 THROUGH 07/13/78 0545

SPECIES	N	CF	% SURVIVAL L	D	D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	MAX.	LENGTH (MM) MIN.	MAX.
C. REGALIS	7	7	63	28	7	3782	323314	88679.5	4344.20	3723.2	.2	5.4	32.5	87.5
A. MITCHILLI	7	7	30	60	8	650	51291	46077.0	1553.69	1362.7	1.5	7.0	52.5	82.5
T. MACULATUS	7	7	95	0	4	216	20982	16854.1	725.76	675.8	.8	10.7	42.5	77.5
L. XANTHURUS	7	3	33	66	0	4	411	583.1	15.56	25.5	1.0	5.1	47.5	72.5
S. AQUOSUS	7	4	100	0	0	8	822	1063.0	26.88	36.8	1.9	4.8	52.5	72.5
C. SAPIDUS	7	7	94	5	0	21	1782	1098.5	1517.72	1212.4	9.7	206.3	47.5	167.5
C. CARPIO	7	1	100	0	0	1	68	181.4	342.85	907.1	500.0	500.0	377.5	377.5
B. TYRANNUS	7	3	60	20	20	10	685	1234.9	22.08	33.8	1.9	5.0	52.5	72.5
P. SALTATRIX	7	3	33	33	33	3	205	256.5	11.17	15.6	3.1	8.2	62.5	87.5
[redacted]. MARGINATA	7	1	85	0	14	7	480	1269.9	66.30	175.4	11.3	40.6	137.5	197.5
M. MARTINICA	7	1	50	50	0	2	137	362.8	8.16	21.5	5.6	6.3	92.5	97.5
TOTAL						4704	400177		8634.37					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

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SALEM NUCLEAR GENERATING STATION UNIT 1
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TABLE 2. - (CONTINUED).

SAMPLING PERIOD - 07/13/78 0912 THROUGH 07/14/78 0600

SPECIES	N	CF	% SURVIVAL L	D	D*	NUMBER COLLECTED	MEAN NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN WT/24 HRS (KG)	STANDARD DEVIATION	(GM) MIN.	(GM) MAX.	(MM) MIN.	(MM) MAX.
C. REGALIS	8	5	69	26	3	1731	230400	31691.4	3326.40	6036.5	.1	137.0	32.5	242.5
A. MITCHILLI	8	5	42	50	7	92	11220	20597.5	358.74	690.4	1.3	5.7	52.5	87.5
T. MACULATUS	8	5	97	0	2	115	12480	18833.0	534.03	776.0	1.2	10.5	42.5	77.5
R. MARGINATA	8	2	71	0	28	7	510	946.5	160.35	298.6	11.1	49.2	142.5	207.5
P. SALTATRIX	8	3	100	0	0	3	330	527.9	20.31	40.2	3.5	8.1	72.5	82.5
B. TYRANNUS	8	2	100	0	0	3	210	394.0	5.01	10.1	1.7	3.8	57.5	67.5
C. SAPIDUS	8	5	94	0	5	19	1620	2067.5	1556.76	1960.1	12.7	233.1	67.5	162.5
M. AMERICANA	8	1	0	0	100	1	180	509.1	44.28	125.2	24.6	24.6	122.5	122.5
S. AQUOSUS	8	2	75	0	25	9	780	1449.9	35.70	66.1	3.4	5.6	67.5	82.5
S. MARINA	8	1	100	0	0	1	60	169.7	.30	.8	.5	.5	62.5	87.5
TOTAL						1981	257790		6041.88					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

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SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE . - (CONTINUED).

SAMPLING PERIOD - 07/17/78 0915 THROUGH 07/18/78 0600

SPECIES	N	CF	% SURVIVAL L	D	D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	MAX.	LENGTH (MM) MIN.	MAX.
C. REGALIS	8	8	83	11	5	827	76500	61044.9	1351.26	1088.1	.4	7.5	32.5	87.5
A. MITCHILLI	8	8	50	45	4	267	22980	21988.0	555.84	519.7	.2	4.9	52.5	82.5
T. MACULATUS	8	8	98	1	0	111	8700	5981.1	395.70	289.5	1.3	38.7	37.5	132.5
L. XANTHURUS	8	3	100	0	0	6	480	769.7	39.96	67.6	4.8	11.4	67.5	92.5
B. TYRANNUS	8	5	53	38	7	13	1140	1472.4	102.54	193.8	1.6	33.8	52.5	132.5
P. SALTATRIX	8	4	75	0	25	4	240	256.5	30.54	56.0	3.1	34.2	72.5	137.5
M. MENIDIA	8	3	83	16	0	6	360	559.1	2.16	3.7	.2	1.3	27.5	52.5
C. SAPIDUS	8	7	94	2	2	35	2220	2590.4	1988.70	2439.4	14.8	153.4	42.5	162.5
P. DENTATUS	8	1	100	0	0	1	60	169.7	165.48	468.0	275.8	275.8	307.5	307.5
S. AQUOSUS	8	3	100	0	0	5	420	598.2	16.38	24.0	2.7	4.9	62.5	72.5
R. MARGINATA	8	2	100	0	0	7	540	1071.3	148.92	369.5	9.4	57.0	122.5	212.5
TOTAL						1282	113640		4797.48					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

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PSE&G, NEWARK, N.J.

TABLE [illegible]. - (CONTINUED).

SAMPLING PERIOD - 07/18/78 0900 THROUGH 07/19/78 0600

SPECIES	N	CF	% SURVIVAL L	D	D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	MAX.	LENGTH (MM) MIN.	MAX.
C. REGALIS	12	11	62	29	8	225	12040	12711.9	253.04	308.1	.4	7.1	37.5	92.5
A. MITCHILLI	12	7	38	50	11	18	1520	2193.2	34.64	47.0	.3	4.2	57.5	82.5
B. TYRANNUS	12	2	50	0	50	2	80	186.8	3.00	7.1	4.5	4.5	67.5	67.5
T. MACULATUS	12	10	96	2	1	90	4880	4575.8	452.36	663.2	2.1	392.4	42.5	397.5
M. AMERICANA	12	2	100	0	0	2	160	426.0	138.56	478.3	1.1	115.1	42.5	202.5
M. MARTINICA	12	2	100	0	0	3	200	478.1	1.20	3.0	.4	.7	42.5	57.5
A. ROSTRATA	12	1	0	0	100	1	40	138.5	6.48	22.4	16.2	16.2	197.5	197.5
C. SAPIDUS	12	4	100	0	0	12	640	1009.6	504.64	967.1	13.0	146.2	47.5	147.5
L. XANTHURUS	12	2	50	50	0	2	160	426.0	14.64	34.5	6.9	15.9	82.5	102.5
R. MARGINATA	12	2	60	0	40	5	440	1252.6	107.00	344.0	9.0	41.3	122.5	192.5
S. AQUOSUS	12	2	100	0	0	3	120	298.3	2.76	6.5	1.0	3.1	42.5	62.5
P. SALTATRIX	12	2	0	50	50	2	160	426.0	9.48	22.3	4.5	10.2	77.5	102.5
TOTAL						365	20440		1527.80					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

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PSE&G, NEWARK, N.J.

TABLE 2. - (CONTINUED).

SAMPLING PERIOD - 07/19/78 0900 THROUGH 07/20/78 0600

SPECIES	N	CF	% SURVIVAL L	% SURVIVAL D	% SURVIVAL D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	8	8	69	21	8	396	30600	28176.9	556.62	491.8	.5	6.0	42.5	92.5
T. MACULATUS	8	8	100	0	0	103	10140	6872.2	436.74	308.1	1.5	8.6	42.5	72.5
B. TYRANNUS	8	2	75	25	0	4	600	1512.4	18.72	50.6	1.2	5.0	52.5	67.5
L. XANTHURUS	8	3	33	66	0	3	180	248.4	14.10	24.1	1.9	13.0	72.5	97.5
C. SAPIDUS	8	6	88	0	11	9	1020	940.5	773.76	693.9	8.1	151.1	47.5	132.5
A. MITCHILLI	8	6	43	53	2	41	6060	11124.4	145.80	263.9	1.6	4.4	52.5	87.5
S. AQUOSUS	8	1	100	0	0	1	180	509.1	5.40	15.2	3.0	3.0	62.5	62.5
R. MARGINATA	8	2	50	0	50	2	120	222.1	10.08	26.4	11.0	15.7	2.5	147.5
P. SALTATRIX	8	1	0	100	0	1	60	169.7	3.12	8.8	5.2	5.2	77.5	77.5
TOTAL						560	48960		1964.34					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

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PSE&G, NEWARK, N.J.

TABLE ● - (CONTINUED).

SAMPLING PERIOD - 07/20/78 0900 THROUGH 07/21/78 0600

SPECIES	N	CF	% SURVIVAL L	D	D*	NUMBER COLLECTED	MEAN NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN WT/24 HRS (KG)	STANDARD DEVIATION	(GM) MIN.	(GM) MAX.	(MM) MIN.	(MM) MAX.
C. REGALIS	8	8	71	20	8	580	39720	27359.0	766.98	521.4	.7	9.0	37.5	97.5
T. MACULATUS	8	8	100	0	0	105	8580	6934.2	426.24	304.3	1.8	40.6	42.5	277.5
A. MITCHILLI	8	7	44	48	6	358	22320	45065.2	615.06	1254.4	.3	5.4	32.5	82.5
L. XANTHURUS	8	2	50	50	0	2	120	222.1	13.80	25.8	10.0	13.0	87.5	97.5
R. MARGINATA	8	4	100	0	0	5	420	540.4	88.26	148.6	7.5	58.2	2.5	212.5
C. SAPIDUS	8	5	100	0	0	10	840	758.9	504.84	692.6	7.6	213.0	47.5	282.5
M. MARTINICA	8	1	0	100	0	1	180	509.1	8.82	24.9	4.9	4.9	87.5	87.5
I. CATUS	8	1	0	0	100	1	60	169.7	198.60	561.7	331.0	331.0	397.5	397.5
B. TYRANNUS	8	4	75	25	0	8	480	811.3	26.40	42.4	4.0	8.5	57.5	82.5
S. AQUOSUS	8	1	100	0	0	1	60	169.7	4.50	12.7	7.5	7.5	82.5	82.5
M. MENIDIA	8	1	0	100	0	1	60	169.7	.66	1.8	1.1	1.1	32.5	32.5
P. SALTATRIX	8	1	0	0	100	1	60	169.7	5.64	15.9	9.4	9.4	97.5	97.5
TOTAL						1073	72900		2659.80					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

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TABLE 2. - (CONTINUED).

SAMPLING PERIOD - 07/21/78, 0930 THROUGH 07/22/78 0600

SPECIES	N	CF	% SURVIVAL L	% SURVIVAL D	% SURVIVAL D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	9	9	74	19	5	505	36000	22821.4	651.36	486.6	.4	9.0	37.5	97.5
A. MITCHILLI	9	9	44	50	4	476	30613	43481.6	843.68	1215.7	.1	5.4	27.5	82.5
T. MACULATUS	9	9	98	0	1	163	19146	24992.7	803.52	1076.6	1.2	9.3	42.5	77.5
B. TYRANNUS	9	5	61	30	7	13	800	1018.2	85.49	172.1	3.8	90.5	57.5	182.5
L. XANTHURUS	9	5	87	12	0	8	533	697.4	31.14	33.9	3.0	11.6	57.5	92.5
M. MENIDIA	9	1	0	100	0	1	53	160.0	.58	1.7	1.1	1.1	32.5	32.5
P. SALTATRIX	9	1	0	0	100	1	53	160.0	5.01	15.0	9.4	9.4	97.5	97.5
R. MARGINATA	9	2	100	0	0	3	373	953.3	48.90	129.0	10.4	16.7	127.5	157.5
C. SAPIDUS	9	7	84	10	5	19	1866	1834.7	1586.13	1566.7	14.5	213.7	57.5	177.5
S. AQUOSUS	9	1	100	0	0	2	320	960.0	7.04	21.1	1.4	3.0	57.5	62.5
TOTAL						1191	89757		4062.85					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL; L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

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SALEM NUCLEAR GENERATING STATION UNIT 1
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TABLE 2. - (CONTINUED).

SAMPLING PERIOD - 07/24/78 0910 THROUGH 07/25/78 0600

SPECIES	N	CF	% SURVIVAL L	D	D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	MAX.	LENGTH (MM) MIN.	MAX.
C. REGALIS	8	8	78	17	3	623	49980	32139.4	969.42	620.3	.5	16.4	42.5	117.5
A. MITCHILLI	8	8	31	67	1	279	23100	20839.8	575.28	497.8	.5	5.4	32.5	82.5
L. XANTHURUS	8	4	57	42	0	7	660	1024.2	59.10	94.9	2.9	28.2	62.5	117.5
T. MACULATUS	8	7	95	3	1	85	6060	4223.2	436.02	418.1	2.0	111.7	42.5	167.5
C. SAPIDUS	8	6	96	3	0	33	2100	2809.8	1206.54	2369.4	21.3	244.7	72.5	182.5
B. TYRANNUS	8	5	76	16	6	59	5100	6988.6	342.78	402.9	.9	41.6	42.5	147.5
R. MARGINATA	8	2	100	0	0	2	120	222.1	28.92	67.6	8.0	40.2	112.5	197.5
M. AMERICANA	8	1	50	0	50	2	360	1018.2	356.04	1007.0	34.8	163.0	142.5	217.5
P. DENTATUS	8	1	100	0	0	14	840	2375.8	63.90	180.7	3.7	30.2	52.5	67.5
P. EVOLANS	8	1	100	0	0	1	60	169.7	1.68	4.7	2.8	2.8	37.5	37.5
M. MENIDIA	8	2	50	50	0	6	360	841.2	8.46	19.6	1.8	2.9	47.5	67.5
I. NEBULOSUS	8	1	0	0	100	1	60	169.7	2.88	8.1	4.8	4.8	67.5	67.5
A. AESTIVALIS	8	1	100	0	0	1	60	169.7	4.98	14.0	8.3	8.3	97.5	97.5
P. SALTATRIX	8	2	50	0	50	2	120	222.1	15.66	30.8	9.0	17.1	92.5	122.5
TOTAL						1115	88980		4071.66					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

TABLE - (CONTINUED).

SAMPLING PERIOD - 07/26/78 0900 THROUGH 07/27/78 0600

SPECIES	N	CF	% SURVIVAL L	D	D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	MAX.	LENGTH (MM) MIN.	MAX.
C. REGALIS	9	9	65	26	7	242	14933	17773.6	303.84	403.1	.7	7.9	42.5	97.5
T. MACULATUS	9	9	94	3	1	56	4693	5601.7	316.53	512.9	1.7	60.0	42.5	147.5
B. TYRANNUS	9	8	64	23	11	17	1546	2183.5	139.73	173.6	2.4	81.8	57.5	172.5
C. SAPIDUS	9	4	66	16	16	6	746	1422.1	924.16	2016.6	51.5	188.7	92.5	147.5
A. MITCHILLI	9	8	38	44	16	65	3786	2972.9	82.61	68.4	.3	4.6	32.5	82.5
P. EVOLANS	9	1	100	0	0	1	53	160.0	1.06	3.2	2.0	2.0	47.5	47.5
L. XANTHURUS	9	2	0	50	50	2	106	211.6	24.05	55.1	11.0	34.1	92.5	127.5
M. MENIDIA	9	4	92	7	0	13	693	1021.3	12.53	21.8	.5	5.0	42.5	92.5
P. SALTATRIX	9	1	100	0	0	1	53	160.0	5.06	15.2	9.5	9.5	92.5	92.5
S. AQUOSUS	9	1	100	0	0	1	160	480.0	5.44	16.3	3.4	3.4	62.5	62.5
R. MARGINATA	9	1	0	0	100	1	53	160.0	4.80	14.4	9.0	9.0	127.5	127.5
TOTAL						405	26822		1819.81					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 2. - (CONTINUED).

SAMPLING PERIOD - 07/27/78 0910 THROUGH 07/28/78 0600

SPECIES	N	CF	% SURVIVAL L	% SURVIVAL D	% SURVIVAL D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	8	8	76	17	5	191	11700	8708.0	250.68	161.4	1.0	9.5	42.5	97.5
A. MITCHILLI	8	7	40	56	3	89	5340	7208.8	118.92	166.7	.5	4.4	32.5	82.5
L. XANTHURUS	8	3	100	0	0	3	180	248.4	22.20	31.3	10.5	15.2	92.5	102.5
T. MACULATUS	8	8	98	0	2	50	3600	2323.3	199.98	127.0	2.3	52.0	47.5	137.5
C. SAPIDUS	8	7	73	26	0	19	1500	1438.5	1344.72	1524.1	43.5	166.0	82.5	152.5
B. TYRANNUS	8	5	50	16	33	12	1080	1468.2	257.22	379.4	4.6	138.9	62.5	197.5
M. MENIDIA	8	4	68	31	0	16	960	2146.6	15.84	26.9	.8	6.0	42.5	92.5
S. AQUOSUS	8	1	100	0	0	1	60	169.7	1.98	5.6	3.3	3.3	67.5	67.5
M. AMERICANA	8	2	0	50	50	2	120	222.1	40.50	110.1	2.3	65.2	52.5	177.5
TOTAL						383	24540		2252.04					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 2. - (CONTINUED).

SAMPLING PERIOD - 07/31/78 0930 THROUGH 07/31/78 2200

SPECIES	N	CF	% SURVIVAL L	D	D*	TOTAL NUMBER COLLECTED	MEAN ESTIMATED NUMBER/ 24 HOURS	STANDARD DEVIATION	MEAN ESTIMATED WT/24 HRS (KG)	STANDARD DEVIATION	WEIGHT (GM) MIN.	MAX.	LENGTH (MM) MIN.	MAX.
C. REGALIS	5	5	78	12	8	128	15168	7331.5	283.96	153.7	.4	5.3	32.5	82.5
A. MITCHILLI	5	4	48	51	0	41	3936	5921.7	101.85	162.7	1.6	4.5	52.5	77.5
A. PSEUDOHARENGUS	5	1	0	100	0	1	96	214.6	110.40	246.8	115.0	115.0	247.5	247.5
C. SAPIDUS	5	3	100	0	0	10	960	1175.7	1265.66	1533.7	47.2	225.0	102.5	182.5
L. XANTHURUS	5	1	100	0	0	1	96	214.6	3.84	8.5	4.0	4.0	67.5	67.5
B. TYRANNUS	5	3	83	16	0	6	576	625.8	70.84	109.4	2.9	46.8	57.5	152.5
T. MACULATUS	5	4	100	0	0	14	1728	1204.7	71.71	55.9	2.4	9.2	52.5	77.5
I. NEBULOSUS	5	1	100	0	0	1	96	214.6	4.03	9.0	4.2	4.2	67.5	67.5
TOTAL						202	22656		1912.29					

N = NUMBER OF SAMPLES.
CF = CATCH FREQUENCY (NUMBER OF SAMPLES IN WHICH THE SPECIES APPEARED).
% SURVIVAL: L = LIVE; D = DEAD; D* = DAMAGED.
MEAN ESTIMATED NUMBER PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY MULTIPLYING THE THE RATE PER MIN. OF THE SPECIMENS IN EACH SAMPLE BY 1440 TO OBTAIN A 24-HOUR ESTIMATE. THE ESTIMATED NUMBER FOR EACH SAMPLE WAS SUMMED AND DIVIDED BY THE NUMBER OF SAMPLES TO OBTAIN THE MEAN.
MEAN ESTIMATED WEIGHT PER 24 HOURS FOR EACH SPECIES WAS CALCULATED BY THE SAME METHOD AS MEAN ESTIMATED NUMBER.

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 3. - IMPINGEMENT - S.N.G.S. SERVICE WATER SYSTEM INTAKE, 1 JULY 1978 TO 31 JULY 1978.

SAMPLING PERIOD - 07/04/78 0730 TO 07/05/78 0730

NUMBER OF PUMPS 3 - 3

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	953	1087.50	.7	3.7	37.5	72.5
A. MITCHILLI	43	146.00	2.5	5.2	57.5	87.5
R. MARGINATA	3	72.60	18.0	30.0	162.5	177.5
B. TYRANNUS	4	9.20	1.7	3.2	52.5	57.5
T. MACULATUS	17	64.80	2.1	4.2	42.5	62.5
P. SALTATRIX	2	19.00	4.3	14.7	77.5	117.5
S. AQUOSUS	4	9.10	.5	3.0	37.5	67.5
TOTAL	1026	1408.20				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE [illegible] - (CONTINUED).

SAMPLING PERIOD - 07/05/78 0730 TO 07/06/78 0730

NUMBER OF PUMPS 3 - 4

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
A. MITCHILLI	44	110.10	1.7	4.6	52.5	77.5
C. REGALIS	371	696.40	.5	4.0	32.5	72.5
T. MACULATUS	14	39.70	.7	5.1	37.5	67.5
S. AQUOSUS	17	31.60	1.4	3.5	42.5	62.5
P. NIGROMACULATUS	1	54.20	54.2	54.2	157.5	157.5
R. MARGINATA	1	31.70	31.7	31.7	192.5	192.5
B. TYRANNUS	1	1.30	1.3	1.3	52.5	52.5
TOTAL	449	965.00				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 3. - (CONTINUED).

SAMPLING PERIOD - 07/06/78 0730 TO 07/07/78 0730

NUMBER OF PUMPS 4 - 4

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
B. TYRANNUS	2	5.40	2.5	2.9	52.5	57.5
S. AQUOSUS	26	59.00	1.3	4.8	42.5	72.5
A. MITCHILLI	38	117.80	2.5	5.1	57.5	87.5
T. MACULATUS	28	84.90	1.5	4.5	42.5	67.5
P. SALTATRIX	1	4.30	4.3	4.3	72.5	72.5
A. ROSTRATA	1	3.40	3.4	3.4	127.5	127.5
C. REGALIS	322	359.60	.7	3.5	32.5	67.5
P. NIGROMACULATUS	1	23.60	23.6	23.6	127.5	127.5
L. XANTHURUS	1	1.20	1.2	1.2	42.5	42.5
C. SAPIDUS	5	163.40	63.9	63.9	57.5	122.5
TOTAL	425	822.60				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE - (CONTINUED).

SAMPLING PERIOD - 07/10/78 0730 TO 07/11/78 0900

NUMBER OF PUMPS 4 - 4

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	641	1093.00	.5	4.1	32.5	82.5
A. MITCHILLI	53	163.00	2.5	4.9	52.5	82.5
T. MACULATUS	11	36.60	1.1	6.2	42.5	62.5
S. AQUOSUS	13	34.70	.9	4.5	42.5	72.5
P. SALTATRIX	1	3.50	3.5	3.5	67.5	67.5
A. ROSTRATA	1	10.50	10.5	10.5	107.5	107.5
C. SAPIDUS	5	232.20	9.2	125.0	52.5	157.5
P. DENTATUS	2	29.10	3.5	25.6	67.5	137.5
R. MARGINATA	1	46.90	46.9	46.9	207.5	207.5
B. TYRANNUS	3	13.60	4.0	5.0	67.5	72.5
A. AESTIVALIS	1	11.50	11.5	11.5	92.5	92.5
TOTAL	732	1674.60				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE [illegible]. - (CONTINUED).

SAMPLING PERIOD - 07/12/78 0730 TO 07/13/78 0730

NUMBER OF PUMPS 4 - 4

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	522	764.00	1.0	4.8	32.5	82.5
R. MARGINATA	1	40.00	40.0	40.0	192.5	192.5
A. MITCHILLI	30	70.60	1.2	4.5	57.5	77.5
S. AQUOSUS	5	15.80	1.8	5.4	52.5	72.5
T. MACULATUS	6	19.50	1.3	4.5	37.5	67.5
B. TYRANNUS	2	4.80	2.0	2.8	52.5	62.5
C. SAPIDUS	2	148.10	2.8	13.2	57.5	57.5
P. SALTATRIX	1	16.80	16.8	16.8	117.5	117.5
M. AMERICANA	1	2.70	2.7	2.7	57.5	57.5
M. MARTINICA	2	10.50	4.6	5.9	82.5	92.5
TOTAL	572	1092.80				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 3. - (CONTINUED).

SAMPLING PERIOD - 07/13/78 0730 TO 07/14/78 0730

NUMBER OF PUMPS 4 - 4

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	249	426.70	1.2	4.8	37.5	77.5
A. MITCHILLI	22	58.60	2.1	4.0	57.5	72.5
S. AQUOSUS	3	8.30	2.5	4,0	57.5	62.5
B. TYRANNUS	3	37.50	1.1	33.5	42.5	142.5
T. MACULATUS	3	8.60	2.7	3.0	52.5	57.5
L. XANTHURUS	1	2.30	2.3	2.3	57.5	57.5
R. MARGINATA	1	15.00	15.0	15.0	147.5	147.5
M. AMERICANA	1	1.20	1.2	1.2	42.5	42.5
TOTAL	283	558.20				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE . - (CONTINUED).

SAMPLING PERIOD - 07/17/78 0730 TO 07/18/78 0730

NUMBER OF PUMPS 4 - 4

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	86	176.90	.8	4.6	42.5	87.5
A. MITCHILLI	23	57.60	1.7	4.6	52.5	82.5
T. MACULATUS	16	53.00	1.8	5.0	42.5	72.5
L. XANTHURUS	1	3.60	3.6	3.6	62.5	62.5
S. AQUOSUS	4	9.40	2.1	3.4	52.5	62.5
R. MARGINATA	1	12.00	12.0	12.0	127.5	127.5
TOTAL	131	312.50				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 3. - (CONTINUED).

SAMPLING PERIOD - 07/18/78 0730 TO 07/19/78 0730

NUMBER OF PUMPS 4 - 4

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	49	111.20	.4	5.2	42.5	87.5
R. MARGINATA	1	48.10	48.1	48.1	207.5	207.5
L. XANTHURUS	5	31.10	.5	22.4	52.5	112.5
T. MACULATUS	5	15.30	1.3	4.2	47.5	72.5
A. MITCHILLI	1	3.30	3.3	3.3	72.5	72.5
S. AQUOSUS	3	9.50	2.0	3.1	52.5	72.5
B. TYRANNUS	2	3.90	1.5	2.4	62.5	67.5
TOTAL	66	222.40				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 3. - (CONTINUED).

SAMPLING PERIOD - 07/19/78 0730 TO 07/20/78 0730

NUMBER OF PUMPS 4 - 4

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	47	93.40	.9	6.0	42.5	82.5
P. DENTATUS	1	9.10	9.1	9.1	102.5	102.5
L. XANTHURUS	1	1.80	1.8	1.8	52.5	52.5
A. MITCHILLI	8	24.20	1.7	3.5	57.5	72.5
I. NEBULOSUS	1	2.30	2.3	2.3	52.5	52.5
B. TYRANNUS	2	5.40	1.5	3.9	47.5	67.5
R. MARGINATA	1	20.00	9.8	10.2	132.5	132.5
S. AQUOSUS	2	9.90	4.4	5.5	72.5	77.5
T. MACULATUS	16	64.60	2.9	5.6	47.5	67.5
C. SAPIDUS	1	19.40	19.4	19.4	62.5	62.5
TOTAL	80	250.10				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
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TABLE . - (CONTINUED).

SAMPLING PERIOD - 07/24/78 0730 TO 07/25/78 0730

NUMBER OF PUMPS 4 - 4

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	122	226.90	1.0	7.6	42.5	97.5
B. TYRANNUS	56	346.00	2.8	6.4	57.5	77.5
A. MITCHILLI	63	123.60	2.8	4.2	57.5	87.5
T. MACULATUS	17	53.70	2.8	4.7	47.5	57.5
M. MENIDIA	22	51.40	2.2	3.1	42.5	67.5
M. AMERICANA	1	27.80	27.8	27.8	132.5	132.5
TOTAL	281	829.40				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 3. - (CONTINUED).

SAMPLING PERIOD - 07/26/78 0730 TO 07/27/78 0730

NUMBER OF PUMPS 4 - 4

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	116	190.60	1.3	3.5	42.5	77.5
M. AMERICANA	1	78.00	78.0	78.0	172.5	172.5
B. TYRANNUS	1	5.30	5.3	5.3	77.5	77.5
A. MITCHILLI	1	1.30	1.3	1.3	57.5	57.5
P. SALTATRIX	1	8.30	8.3	8.3	97.5	97.5
I. NEBULOSUS	1	174.20	8.3	8.3		
TOTAL	121	457.70				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 3. - (CONTINUED).

SAMPLING PERIOD - 07/27/78 0730 TO 07/28/78 0730

NUMBER OF PUMPS 4 - 4

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	12	33.10	1.5	3.6	52.5	77.5
A. MITCHILLI	3	8.80	2.7	3.1	62.5	72.5
T. MACULATUS	2	8.30	3.8	4.5	57.5	62.5
S. FUSCUS	1	0.50	.5	.5	97.5	97.5
B. TYRANNUS	1	5.10	5.1	5.1	67.5	67.5
TOTAL	19	55.80				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 3. - (CONTINUED).

SAMPLING PERIOD - 07/31/78 0730 TO 08/01/78 0730

NUMBER OF PUMPS 4 - 4

SPECIES	TOTAL NUMBER COLLECTED	TOTAL WT.(GM) COLLECTED	WEIGHT (GM) MIN.	WEIGHT (GM) MAX.	LENGTH (MM) MIN.	LENGTH (MM) MAX.
C. REGALIS	94	189.80	1.0	7.2	42.5	87.5
A. MITCHILLI	1	2.70	2.7	2.7	67.5	67.5
L. XANTHURUS	1	21.30	21.3	21.3	112.5	112.5
T. MACULATUS	1	16.10	16.1	16.1	92.5	92.5
B. TYRANNUS	1	5.60	5.6	5.6	72.5	72.5
TOTAL	98	235.50				

IMPINGEMENT MONITORING PROGRAM
SALEM NUCLEAR GENERATING STATION UNIT 1
PSE&G, NEWARK, N.J.

TABLE 4
DAILY WEAKFISH EXTRAPOLATED IMPINGEMENT AND SURVIVAL RATES*
SALEM NUCLEAR GENERATING STATION

DATE	ESTIMATED NUMBER PER PERIOD *	PERIOD OF ESTIMATE (HR)	WEIGHTED SURVIVAL(%)	MIN*OBSERVED SURVIVAL (%)	MAX*OBSERVED SURVIVAL (%)
070478	133900	24	77	63	83
070578	427200	24	69	53	75
070678	302100	24	65	32	78
070778	257200	7	53	53	63
071078	60900	10	NA	NA	NA
071178	343800	24	NA	NA	NA
071278	477300	24	NA	NA	NA
071378	128400	24	62	51	87
071478	85400	24	NA	NA	NA
071578	138200	24	NA	NA	NA
071678	124900	24	NA	NA	NA
071778	101100	24	NA	NA	NA
071878	31500	24	76	43	100
071978	23300	24	70	50	100
072078	26900	24	69	50	91
072178	39400	24	75	56	86
072278	28000	24	NA	NA	NA
072378	111000	24	NA	NA	NA
072478	55100	24	72	61	88
072578	128000	24	NA	NA	NA
072678	33800	24	65	0	80
072778	14700	24	70	55	100
072878	16100	24	NA	NA	NA
072978	23000	24	NA	NA	NA
073078	48600	24	NA	NA	NA
073178	40200	24	79	57	96
080178	33600	24	NA	NA	NA
080278	17300	24	79	54	100
080378	13600	24	67	0	100
080478	15300	24	NA	NA	NA
080578	28100	24	NA	NA	NA
080678	11100	24	NA	NA	NA
080778	8300	24	78	0	100
080878	8300	24	NA	NA	NA
080978	18400	24	65	0	77
081078	21200	24	74	0	100
081178	26700	24	NA	NA	NA
081278	31100	24	NA	NA	NA
081378	17400	24	NA	NA	NA
081478	32200	24	70	50	100

* ESTIMATED OVER DESIGNATED PERIOD