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 AUTH. NAME AUTHOR AFFILIATION
 SHALLER, D.V. INDIANA & MICHIGAN POWER CO.
 RECIP. NAME RECIPIENT AFFILIATION
 OFFICE OF NUCLEAR REACTOR REGULATION

SUBJECT: FORWARDS OCT 1978-DEC 1978 MONTHLY REPTS RE IMPINGEMENT OF FISH.

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INDIANA & MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT
P.O. Box 458, Bridgman, Michigan 49106

March 5, 1979

Directorate of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20545

Docket No. 50-315
50-316

Gentlemen:

Pursuant to the requirements of Section 4.1.2.1.2 of the Appendix B Environmental Technical Specifications for the Donald C. Cook Nuclear Plant, the attached monthly reports on impingement of fish are submitted.

These reports cover the months of October, November and December 1978.

Sincerely,

for D. V. Shaller
Plant Manager

DVS:ab

cc: R. W. Jurgensen
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Attachment

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A007
5/11

MONTH: OCTOBER, 1978

WEIGHT IN KILOGRAMS
TEMPERATURE IN DEGREES CENTIGRADE
PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

	1		2		3		4		5		6		7		8	
TEMP C	NO SAMPLING		19.1		NO SAMPLING		NO SAMPLING		NO SAMPLING		16.7		NO SAMPLING		NO SAMPLING	
SPECIES	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT
SP	0	0.0	79	0.47	0	0.0	0	0.0	0	0.0	447	3.76	0	0.0	0	0.0
AL	0	0.0	442	2.00	0	0.0	0	0.0	0	0.0	203	4.45	0	0.0	0	0.0
SH	0	0.0	3	0.05	0	0.0	0	0.0	0	0.0	1	0.01	0	0.0	0	0.0
YP	0	0.0	6	0.46	0	0.0	0	0.0	0	0.0	95	10.12	0	0.0	0	0.0
TP	0	0.0	22	0.21	0	0.0	0	0.0	0	0.0	256	2.75	0	0.0	0	0.0
WS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	11	1.21	0	0.0	0	0.0
LS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	2.30	0	0.0	0	0.0
LT	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
MS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	0.04	0	0.0	0	0.0
CX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.33	0	0.0	0	0.0
SS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.01	0	0.0	0	0.0
CC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
GS	0	0.0	1	0.75	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
KC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	26	0.12	0	0.0	0	0.0
BG	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.01	0	0.0	0	0.0
BR	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	2.46	0	0.0	0	0.0
WC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.02	0	0.0	0	0.0
HA	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	1.40	0	0.0	0	0.0
TOTALS	0	0.0	553	3.94	0	0.0	0	0.0	0	0.0	1057	29.02	0	0.0	0	0.0
PERCENT	0.0	0.0	19.17	4.25	0.0	0.0	0.0	0.0	0.0	0.0	36.64	31.31	0.0	0.0	0.0	0.0

MONTH: OCTOBER, 1978

WEIGHT IN KILOGRAMS
TEMPERATURE IN DEGREES CENTIGRADE
PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

	9		10		11		12		13		14		15		16	
TEMP C	NO SAMPLING		16.0		NO SAMPLING		NO SAMPLING		NO SAMPLING		16.6		NO SAMPLING		NO SAMPLING	
SPECIES	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT
SP	0	0.0	133	1.00	0	0.0	0	0.0	0	0.0	92	0.85	0	0.0	0	0.0
AL	0	0.0	69	1.14	0	0.0	0	0.0	0	0.0	95	1.04	0	0.0	0	0.0
SM	0	0.0	3	0.13	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
YP	0	0.0	3	0.49	0	0.0	0	0.0	0	0.0	2	0.15	0	0.0	0	0.0
TP	0	0.0	75	0.73	0	0.0	0	0.0	0	0.0	63	0.71	0	0.0	0	0.0
WS	0	0.0	3	0.23	0	0.0	0	0.0	0	0.0	4	5.36	0	0.0	0	0.0
LS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LT	0	0.0	1	3.80	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NS	0	0.0	3	0.02	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
CH	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SS	0	0.0	1	0.01	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
CC	0	0.0	1	0.00	0	0.0	0	0.0	0	0.0	1	4.00	0	0.0	0	0.0
GS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.52	0	0.0	0	0.0
XC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BG	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BR	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.01	0	0.0	0	0.0
WC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
MA	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTALS	0	0.0	292	7.55	0	0.0	0	0.0	0	0.0	259	12.63	0	0.0	0	0.0
PERCENT	0.0	0.0	10.12	8.15	0.0	0.0	0.0	0.0	0.0	0.0	8.98	13.63	0.0	0.0	0.0	0.0

MONTH: OCTOBER, 1978

WEIGHT IN KILOGRAMS

TEMPERATURE IN DEGREES CENTIGRADE

PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

	17		18		19		20		21		22		23		24	
TEMP C	NO SAMPLING		15.3		NO SAMPLING		NO SAMPLING		NO SAMPLING		14.4		NO SAMPLING		NO SAMPLING	
SPECIES	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT
SP	0	0.0	29	0.25	0	0.0	0	0.0	0	0.0	52	0.52	0	0.0	0	0.0
AL	0	0.0	105	1.29	0	0.0	0	0.0	0	0.0	68	1.71	0	0.0	0	0.0
SN	0	0.0	1	0.05	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
YP	0	0.0	1	0.15	0	0.0	0	0.0	0	0.0	2	0.20	0	0.0	0	0.0
TP	0	0.0	7	0.07	0	0.0	0	0.0	0	0.0	2	0.03	0	0.0	0	0.0
WS	0	0.0	1	1.07	0	0.0	0	0.0	0	0.0	1	1.55	0	0.0	0	0.0
LS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	1.20	0	0.0	0	0.0
LT	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	2.50	0	0.0	0	0.0
MS	0	0.0	1	0.01	0	0.0	0	0.0	0	0.0	1	0.01	0	0.0	0	0.0
CH	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
CC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
GS	0	0.0	19	0.48	0	0.0	0	0.0	0	0.0	7	0.20	0	0.0	0	0.0
XC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BG	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BR	0	0.0	1	0.01	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
WC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
MA	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTALS	0	0.0	165	3.39	0	0.0	0	0.0	0	0.0	135	7.93	0	0.0	0	0.0
PERCENT	0.0	0.0	5.72	3.65	0.0	0.0	0.0	0.0	0.0	0.0	4.68	8.55	0.0	0.0	0.0	0.0

MONTH: OCTOBER, 1978

WEIGHT IN KILOGRAMS

TEMPERATURE IN DEGREES CENTIGRADE

PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

	25		26		27		28		29		30		31					
TEMP C	NO SAMPLING		14.3		NO SAMPLING		NO SAMPLING		NO SAMPLING		14.6		NO SAMPLING					
SPECIES	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	TOT.	NO.	TOT.	WT.
SP	0	0.0	125	1.23	0	0.0	0	0.0	0	0.0	36	0.30	0	0.0	295		9.37	
AL	0	0.0	186	2.73	0	0.0	0	0.0	0	0.0	36	0.93	0	0.0	1204		15.28	
SH	0	0.0	2	0.05	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	10		0.30	
YP	0	0.0	2	0.18	0	0.0	0	0.0	0	0.0	7	0.04	0	0.0	119		11.80	
TP	0	0.0	7	0.10	0	0.0	0	0.0	0	0.0	1	0.01	0	0.0	433		4.60	
WS	0	0.0	1	0.47	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	21		9.90	
LS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2		3.50	
LT	0	0.0	3	11.27	0	0.0	0	0.0	0	0.0	2	9.56	0	0.0	7		27.13	
MS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	10		0.08	
CM	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1		0.33	
SS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.02	0	0.0	4		0.04	
CC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2		4.00	
GS	0	0.0	7	0.24	0	0.0	0	0.0	0	0.0	7	1.10	0	0.0	42		3.28	
XC	0	0.0	1	0.01	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	27		0.13	
BG	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1		0.01	
BR	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6		2.49	
WC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1		0.02	
HA	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1		1.40	
TOTALS	0	0.0	334	16.27	0	0.0	0	0.0	0	0.0	90	11.96	0	0.0	2985		92.70	
PERCENT	0.0	0.0	11.58	17.56	0.0	0.0	0.0	0.0	0.0	0.0	3.12	12.90	0.0	0.0	100.00		100.00	

MONTH: OCTOBER, 1978

WEIGHT IN KILOGRAMS
TEMPERATURE IN DEGREES CENTIGRADE
PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

SPECIES	DAILY AVG NUMBER	STD DEV NUMBER	DAILY AVG WEIGHT	STD DEV WEIGHT	PERCENT NUMBER	TOTAL NUMBER	PERCENT WEIGHT	TOTAL WEIGHT	ESTIMATED TOTALS FOR MONTH NUMBER	WEIGHT
SP	124.38	136.65	1.05	1.15	34.49	995	9.06	8.39	3855	32.53
AL	150.50	131.31	1.91	1.19	41.73	1204	16.48	15.28	4665	59.19
SH	1.25	1.28	0.04	0.05	0.35	10	0.32	0.30	38	1.16
YP	14.75	32.50	1.47	3.50	4.09	118	12.73	11.80	457	45.71
TP	54.13	86.42	0.58	0.93	15.01	433	4.96	4.60	1677	17.83
WS	2.63	3.66	1.24	1.77	0.73	21	10.68	9.90	81	38.37
LS	0.25	0.46	0.44	0.86	0.07	2	3.78	3.50	7	13.56
LT	0.88	1.13	3.39	4.59	0.24	7	29.27	27.13	27	105.15
MS	1.25	1.83	0.01	0.02	0.35	10	0.09	0.08	38	0.32
CH	0.13	0.35	0.04	0.12	0.03	1	0.36	0.33	3	1.39
SS	0.50	0.76	0.01	0.01	0.14	4	0.04	0.04	15	0.16
CC	0.25	0.46	0.50	1.41	0.07	2	4.32	4.00	7	15.51
GS	5.25	6.43	0.41	0.38	1.46	42	3.54	3.28	162	12.71
XC	3.38	9.15	0.02	0.04	0.94	27	0.14	0.13	104	0.51
BG	0.13	0.35	0.00	0.00	0.03	1	0.01	0.01	3	0.02
BR	0.75	1.39	0.31	0.87	0.21	6	2.69	2.49	23	9.65
WC	0.13	0.35	0.00	0.01	0.03	1	0.03	0.02	3	0.09
MA	0.13	0.35	0.17	0.49	0.03	1	1.51	1.40	3	5.42
TOTAL	360.63	316.25	11.59	8.30	100.00	2885	100.00	92.70	11179	359.19

THERE WERE 8 DAYS ON WHICH SAMPLES WERE TAKEN.
ESTIMATED TOTALS FOR THIS MONTH ARE BASED ON 31 DAYS OF IMPINGEMENT.

EXECUTION TERMINATED 14:50:03 T=.92 RC=0 \$.50

MONTH: NOVEMBER, 1973

WEIGHT IN KILOGRAMS
TEMPERATURE IN DEGREES CENTIGRADE
PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

	1		2		3		4		5		6		7		8	
TEMP C	NO SAMPLING		NO SAMPLING		15.1		NO SAMPLING		NO SAMPLING		NO SAMPLING		15.5		NO SAMPLING	
SPECIES	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT
SP	0	0.0	0	0.0	24	0.18	0	0.0	0	0.0	0	0.0	51	0.44	0	0.0
AL	0	0.0	0	0.0	91	1.46	0	0.0	0	0.0	0	0.0	68	1.40	0	0.0
YP	0	0.0	0	0.0	162	1.24	0	0.0	0	0.0	0	0.0	140	2.54	0	0.0
TP	0	0.0	0	0.0	1	0.01	0	0.0	0	0.0	0	0.0	1	0.01	0	0.0
LS	0	0.0	0	0.0	2	2.67	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LT	0	0.0	0	0.0	6	20.67	0	0.0	0	0.0	0	0.0	4	15.05	0	0.0
TH	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
GS	0	0.0	0	0.0	8	0.10	0	0.0	0	0.0	0	0.0	4	0.15	0	0.0
XC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTALS	0	0.0	0	0.0	294	26.33	0	0.0	0	0.0	0	0.0	268	19.59	0	0.0
PERCENT	0.0	0.0	0.0	0.0	27.66	31.37	0.0	0.0	0.0	0.0	0.0	0.0	25.21	23.33	0.0	0.0

MONTH: NOVEMBER, 1978

WEIGHT IN KILOGRAMS

TEMPERATURE IN DEGREES CENTIGRADE

PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

TEMP °C	9		10		11		12		13		14		15		16	
	NO SAMPLING NUMBER	WEIGHT	NO SAMPLING NUMBER	WEIGHT	11.6 NUMBER	WEIGHT	NO SAMPLING NUMBER	WEIGHT	NO SAMPLING NUMBER	WEIGHT	NO SAMPLING NUMBER	WEIGHT	NO SAMPLING NUMBER	WEIGHT	NO SAMPLING NUMBER	WEIGHT
SPECIES																
SP	0	0.0	0	0.0	6	0.03	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
AL	0	0.0	0	0.0	65	1.35	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
YP	0	0.0	0	0.0	137	3.64	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TP	0	0.0	0	0.0	4	0.05	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LT	0	0.0	0	0.0	1	4.20	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
CH	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
GS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
XC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTALS	0	0.0	0	0.0	213	8.97	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
PERCENT	0.0	0.0	0.0	0.0	20.04	10.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MONTH: NOVEMBER, 1978

WEIGHT IN KILOGRAMS

TEMPERATURE IN DEGREES CENTIGRADE

PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

	17		18		19		20		21		22		23		24	
TEMP C	NO SAMPLING		NO SAMPLING		NO SAMPLING		NO SAMPLING		NO SAMPLING		NO SAMPLING		NO SAMPLING		NO SAMPLING	
SPECIES	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT
SP	3	3.3	3	3.3	0	0.0	3	3.3	3	0.3	3	0.0	0	0.0	0	0.0
AL	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
YP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	3.0	3	3.3
TP	3	3.3	0	0.0	0	0.0	0	0.0	0	0.0	3	0.0	0	0.0	0	0.0
LS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	3.0
LT	0	0.0	0	0.0	0	0.0	0	3.0	3	3.3	3	0.3	3	3.0	3	3.0
CH	3	3.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.0	0	0.0	3	0.0
GS	0	0.0	0	0.0	0	0.0	0	0.0	3	0.0	0	0.0	0	0.0	0	0.0
XC	0	0.0	0	3.0	0	0.0	0	3.3	3	0.3	3	0.0	0	0.0	0	0.0
TOTALS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
PERCENT	3.3	3.3	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0

MONTH: NOVEMBER, 1978

WEIGHT IN KILOGRAMS

TEMPERATURE IN DEGREES CENTIGRADE

PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

TF4P C	25		26		27		28		29		30		31		TOT. NO.	TOT. WT.
	NO SAMPLING NUMBER	WEIGHT	NO SAMPLING NUMBER	WEIGHT	7.9 NUMBER	WEIGHT	NO SAMPLING NUMBER	WEIGHT	NO SAMPLING NUMBER	WEIGHT	NO SAMPLING NUMBER	WEIGHT	NO SAMPLING NUMBER	WEIGHT		
SPECIES																
SP	0	0.0	0	0.0	9	0.08	0	0.0	0	0.0	0	0.0	0	0.0	90	0.74
AL	0	0.0	0	0.0	266	13.29	0	0.0	0	0.0	0	0.0	0	0.0	497	17.18
YP	0	0.0	0	0.0	1	0.38	0	0.0	0	0.0	0	0.0	0	0.0	440	7.80
TP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6	0.07
LS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	2.67
LT	0	0.0	0	0.0	2	5.60	0	0.0	0	0.0	0	0.0	0	0.0	13	4.52
CH	0	0.0	0	0.0	1	9.60	0	0.0	0	0.0	0	0.0	0	0.0	1	0.00
GS	0	0.0	0	0.0	3	0.39	0	0.0	0	0.0	0	0.0	0	0.0	15	0.33
XC	0	0.0	0	0.0	6	0.03	0	0.0	0	0.0	0	0.0	0	0.0	6	0.03
TOTALS	0	0.0	0	0.0	288	29.36	0	0.0	0	0.0	0	0.0	0	0.0	1763	83.95
PERCENT	0.0	0.0	0.0	0.0	27.09	34.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.00	100.00

4TH: NOVEMBER, 1978

WEIGHT IN KILOGRAMS

TEMPERATURE IN DEGREES CENTIGRADE

PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

SPECIES	DAILY AVG NUMBER	STD DEV NUMBER	DAILY AVG WEIGHT	STD DEV WEIGHT	PERCENT NUMBER	TOTAL NUMBER	PERCENT WEIGHT	TOTAL WEIGHT	ESTIMATED TOTALS FOR MONTH NUMBER	ESTIMATED TOTALS FOR MONTH WEIGHT
SP	22.50	20.57	0.18	0.18	8.47	93	1.99	3.74	675	5.54
AL	122.50	96.37	4.30	5.99	46.10	490	20.47	17.18	3675	128.86
YP	110.00	73.52	1.95	1.43	41.39	440	9.29	7.80	3300	58.48
TP	1.50	1.73	0.02	0.02	0.56	6	0.09	0.17	45	0.50
IS	0.50	1.00	0.67	1.34	0.19	2	3.19	2.67	15	20.06
LT	3.25	2.22	11.38	7.85	1.22	13	54.23	45.52	97	341.44
CH	3.25	0.50	2.40	4.80	0.09	1	11.44	9.50	7	72.00
GS	3.75	3.30	0.08	0.06	1.41	15	0.40	0.33	112	2.49
XC	1.50	3.00	0.01	0.02	0.56	6	0.04	0.03	45	0.24
TOTAL	265.75	36.88	20.99	8.95	100.00	1063	100.00	83.95	7972	629.61

THERE WERE 4 DAYS ON WHICH SAMPLES WERE TAKEN.

ESTIMATED TOTALS FOR THIS MONTH ARE BASED ON 30 DAYS OF IMPINGEMENT.

EXECUTION TERMINATED 02:33:29 T=.544 PC=0 \$.20

MONTH: DECEMBER, 1978

WEIGHT IN KILOGRAMS
TEMPERATURE IN DEGREES CENTIGRADE
PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

	1		2		3		4		5		6		7		8	
TEMP C	NO SAMPLING		NO SAMPLING		NO SAMPLING		NO SAMPLING		6.2		NO SAMPLING		NO SAMPLING		NO SAMPLING	
SPECIES	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT
SP	0	0.0	0	0.0	0	0.0	0	0.0	5	0.05	0	0.0	0	0.0	0	0.0
AL	0	0.0	0	0.0	0	0.0	0	0.0	189	9.37	0	0.0	0	0.0	0	0.0
SM	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
YP	0	0.0	0	0.0	0	0.0	0	0.0	2	0.11	0	0.0	0	0.0	0	0.0
TP	0	0.0	0	0.0	0	0.0	0	0.0	2	0.02	0	0.0	0	0.0	0	0.0
WS	0	0.0	0	0.0	0	0.0	0	0.0	1	0.40	0	0.0	0	0.0	0	0.0
LS	0	0.0	0	0.0	0	0.0	0	0.0	1	1.93	0	0.0	0	0.0	0	0.0
LT	0	0.0	0	0.0	0	0.0	0	0.0	4	14.06	0	0.0	0	0.0	0	0.0
CH	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ES	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LD	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
CP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
MS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BT	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SS	0	0.0	0	0.0	0	0.0	0	0.0	3	0.02	0	0.0	0	0.0	0	0.0
NP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
GS	0	0.0	0	0.0	0	0.0	0	0.0	14	0.56	0	0.0	0	0.0	0	0.0
XC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BB	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BR	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SR	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
CL	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BN	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTALS	0	0.0	0	0.0	0	0.0	0	0.0	221	26.53	0	0.0	0	0.0	0	0.0
PERCENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.31	23.67	0.0	0.0	0.0	0.0	0.0	0.0

MONTH: DECEMBER, 1978

WEIGHT IN KILOGRAMS

TEMPERATURE IN DEGREES CENTIGRADE

PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

	9		10		11		12		13		14		15		16	
TENP C	5.6		NO SAMPLING		NO SAMPLING		NO SAMPLING		3.4		NO SAMPLING		NO SAMPLING		NO SAMPLING	
SPECIES	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT
SP	2	0.04	0	0.0	0	0.0	0	0.0	6	0.10	0	0.0	0	0.0	0	0.0
AL	104	4.55	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SM	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
YP	2	0.08	0	0.0	0	0.0	0	0.0	3	0.30	0	0.0	0	0.0	0	0.0
TP	3	0.03	0	0.0	0	0.0	0	0.0	4	0.05	0	0.0	0	0.0	0	0.0
WS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LT	2	5.75	0	0.0	0	0.0	0	0.0	2	8.70	0	0.0	0	0.0	0	0.0
CH	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ES	1	0.00	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LD	1	0.01	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
CP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
MS	2	0.02	0	0.0	0	0.0	0	0.0	7	0.11	0	0.0	0	0.0	0	0.0
BT	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SS	0	0.0	0	0.0	0	0.0	0	0.0	2	0.02	0	0.0	0	0.0	0	0.0
NP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
GS	18	0.53	0	0.0	0	0.0	0	0.0	10	0.42	0	0.0	0	0.0	0	0.0
XC	1	0.00	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BB	0	0.0	0	0.0	0	0.0	0	0.0	1	0.02	0	0.0	0	0.0	0	0.0
BD	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SR	1	0.28	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
CL	1	0.06	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BN	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTALS	138	11.37	0	0.0	0	0.0	0	0.0	35	9.72	0	0.0	0	0.0	0	0.0
PERCENT	13.31	10.15	0.0	0.0	0.0	0.0	0.0	0.0	3.38	8.68	0.0	0.0	0.0	0.0	0.0	0.0

MONTH: DECEMBER, 1978

WEIGHT IN KILOGRAMS
TEMPERATURE IN DEGREES CENTIGRADE
PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

	17		18		19		20		21		22		23		24	
TEMP C	4.6		NO SAMPLING		NO SAMPLING		NO SAMPLING		3.7		NO SAMPLING		NO SAMPLING		NO SAMPLING	
SPECIES	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT
SP	13	0.19	0	0.0	0	0.0	0	0.0	391	4.01	0	0.0	0	0.0	0	0.0
AL	2	0.09	0	0.0	0	0.0	0	0.0	17	0.06	0	0.0	0	0.0	0	0.0
SH	1	0.02	0	0.0	0	0.0	0	0.0	14	0.05	0	0.0	0	0.0	0	0.0
YP	6	0.64	0	0.0	0	0.0	0	0.0	41	2.59	0	0.0	0	0.0	0	0.0
TP	0	0.0	0	0.0	0	0.0	0	0.0	22	0.21	0	0.0	0	0.0	0	0.0
WS	1	0.22	0	0.0	0	0.0	0	0.0	1	1.60	0	0.0	0	0.0	0	0.0
LS	1	1.60	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LT	4	12.80	0	0.0	0	0.0	0	0.0	7	25.61	0	0.0	0	0.0	0	0.0
CH	2	0.58	0	0.0	0	0.0	0	0.0	5	0.68	0	0.0	0	0.0	0	0.0
ES	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LD	1	0.01	0	0.0	0	0.0	0	0.0	2	0.01	0	0.0	0	0.0	0	0.0
CP	1	3.88	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
MS	0	0.0	0	0.0	0	0.0	0	0.0	7	0.08	0	0.0	0	0.0	0	0.0
BT	4	0.33	0	0.0	0	0.0	0	0.0	5	0.39	0	0.0	0	0.0	0	0.0
NS	1	0.00	0	0.0	0	0.0	0	0.0	1	0.00	0	0.0	0	0.0	0	0.0
SS	1	0.02	0	0.0	0	0.0	0	0.0	24	0.23	0	0.0	0	0.0	0	0.0
NP	1	0.31	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
GS	13	4.19	0	0.0	0	0.0	0	0.0	23	2.45	0	0.0	0	0.0	0	0.0
XC	0	0.0	0	0.0	0	0.0	0	0.0	22	0.11	0	0.0	0	0.0	0	0.0
DB	0	0.0	0	0.0	0	0.0	0	0.0	1	0.06	0	0.0	0	0.0	0	0.0
BR	0	0.0	0	0.0	0	0.0	0	0.0	2	0.12	0	0.0	0	0.0	0	0.0
SB	0	0.0	0	0.0	0	0.0	0	0.0	5	1.27	0	0.0	0	0.0	0	0.0
CL	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BH	0	0.0	0	0.0	0	0.0	0	0.0	1	0.02	0	0.0	0	0.0	0	0.0
TOTALS	52	24.87	0	0.0	0	0.0	0	0.0	591	39.56	0	0.0	0	0.0	0	0.0
PERCENT	5.01	22.19	0.0	0.0	0.0	0.0	0.0	0.0	56.99	35.31	0.0	0.0	0.0	0.0	0.0	0.0

MONTH: DECEMBER, 1978

WEIGHT IN KILOGRAMS

TEMPERATURE IN DEGREES CENTIGRADE

PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

	25		26		27		28		29		30		31		TOT.	NO.	TOT.	WT.
TEMP C	4.5		NO SAMPLING		NO SAMPLING		NO SAMPLING		1.0		NO SAMPLING		NO SAMPLING					
SPECIES	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT				
SP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	417		4.39	
AL	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	312		14.07	
SM	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	15		0.07	
YP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	54		3.71	
TP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	31		3.31	
WS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3		2.2	
LS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2		3.53	
LT	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	19		66.92	
CH	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	7		1.26	
ES	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1		0.00	
ID	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4		0.04	
CP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1		3.88	
MS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	16		0.21	
BT	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	9		0.72	
NS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2		0.01	
SS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	30		0.29	
NP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1		0.31	
GS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	78		8.17	
XC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	23		0.11	
BB	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2		0.07	
BR	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2		0.12	
SR	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6		1.55	
CL	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1		0.06	
BN	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1		0.02	
TOTALS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1037		112.05	
PERCENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.00		100.00	

MONTH: DECEMBER, 1978

WEIGHT IN KILOGRAMS
TEMPERATURE IN DEGREES CENTIGRADE
PERCENTAGES ARE OF TOTAL SAMPLED THIS MONTH

SPECIES	DAILY AVG NUMBER	STD DEV NUMBER	DAILY AVG WEIGHT	STD DEV WEIGHT	PERCENT NUMBER	TOTAL NUMBER	PERCENT WEIGHT	TOTAL WEIGHT	ESTIMATED TOTALS FOR MONTH NUMBER	ESTIMATED TOTALS FOR MONTH WEIGHT
SP	59.57	146.22	0.63	1.49	40.21	417	3.92	4.39	1846	19.44
AL	44.57	74.08	2.01	3.66	30.09	312	12.56	14.07	1381	62.30
SM	2.14	5.24	0.01	0.02	1.45	15	0.06	0.07	66	0.31
YP	7.71	14.82	0.53	0.93	5.21	54	3.31	3.71	239	16.45
TP	4.43	7.91	0.04	0.07	2.99	31	0.28	0.31	137	1.37
WS	0.43	0.53	0.32	0.59	0.29	3	1.98	2.22	13	9.83
LS	0.29	0.49	0.50	0.87	0.19	2	3.15	3.53	8	15.63
LT	2.71	2.50	9.56	9.00	1.03	19	59.73	66.92	84	296.36
CH	1.00	1.91	0.18	0.31	0.68	7	1.12	1.26	31	5.56
ES	0.14	0.38	0.00	0.00	0.10	1	0.00	0.00	4	0.02
LD	0.57	0.79	0.01	0.01	0.39	4	0.03	0.04	17	0.16
CP	0.14	0.38	0.55	1.47	0.10	1	3.46	3.88	4	17.18
MS	2.29	3.30	0.03	0.05	1.54	16	0.19	0.21	70	0.95
BT	1.29	2.21	0.10	0.18	0.87	9	0.64	0.72	39	3.18
NS	0.29	0.49	0.00	0.00	0.19	2	0.01	0.01	8	0.03
SS	4.29	8.77	0.04	0.09	2.89	30	0.26	0.29	132	1.31
NP	0.14	0.38	0.04	0.12	0.10	1	0.27	0.31	4	1.36
GS	11.14	8.65	1.17	1.57	7.52	78	7.29	8.17	345	36.16
XC	3.29	8.26	0.02	0.04	2.22	23	0.10	0.11	101	0.51
BB	0.29	0.49	0.01	0.02	0.19	2	0.06	0.07	8	0.32
BR	0.29	0.76	0.02	0.04	0.19	2	0.10	0.12	8	0.52
SR	0.86	1.86	0.22	0.48	0.58	6	1.38	1.55	26	6.87
CL	0.14	0.38	0.01	0.02	0.10	1	0.06	0.06	4	0.29
BN	0.14	0.38	0.00	0.01	0.10	1	0.02	0.02	4	0.09
TOTAL	148.14	211.14	16.01	14.82	100.00	1037	100.00	112.05	4592	496.20

THERE WERE 7 DAYS ON WHICH SAMPLES WERE TAKEN.
ESTIMATED TOTALS FOR THIS MONTH ARE BASED ON 31 DAYS OF IMPINGEMENT.

EXECUTION TERMINATED 11:56:30 T=799 RC=0 \$.43