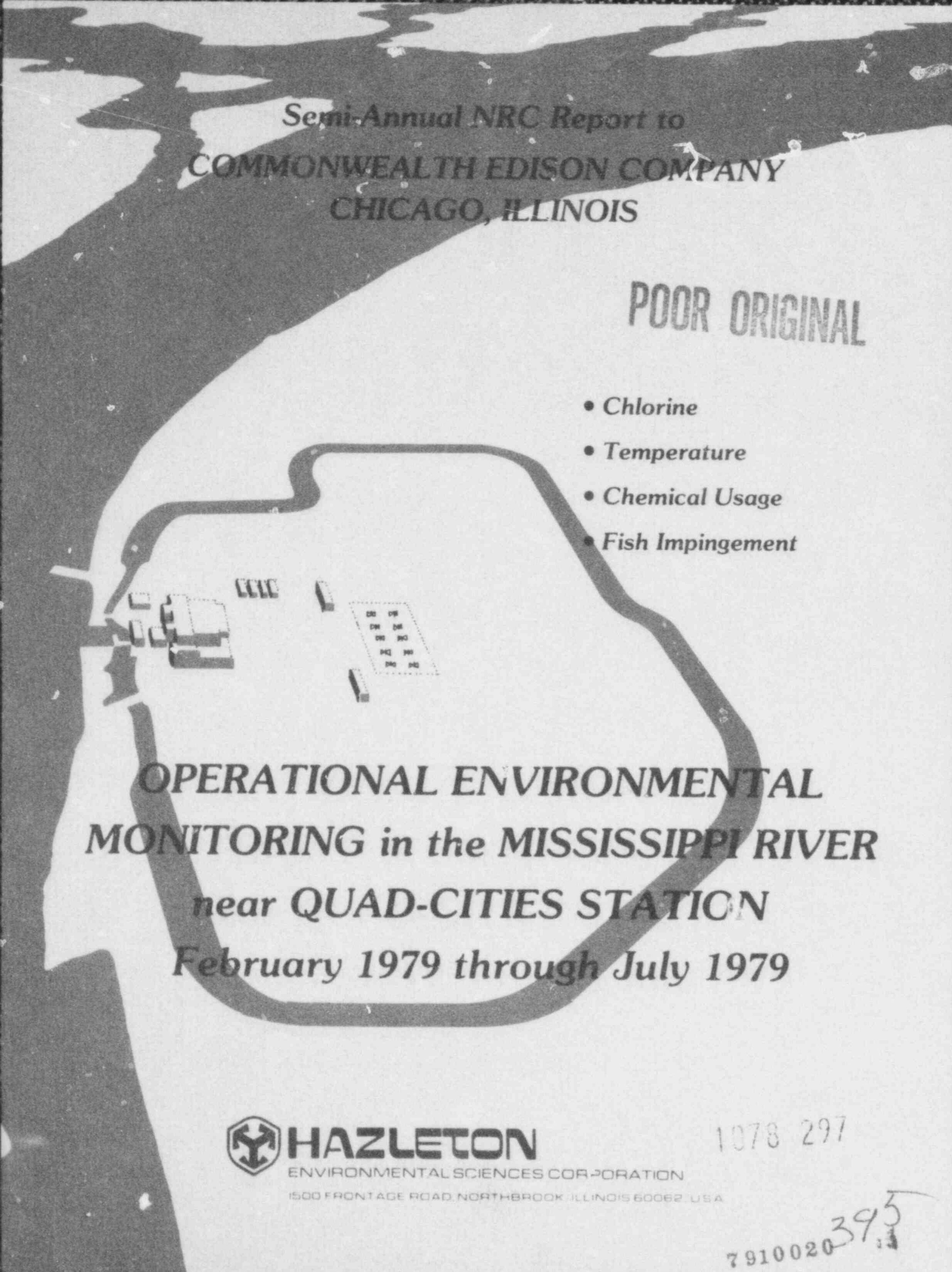
Semi-Annual NRC Report to

COMMONWEALTH EDISON COMPANY
CHICAGO, ILLINOIS

POOR ORIGINAL



- Chlorine
- Temperature
- Chemical Usage
- Fish Impingement

OPERATIONAL ENVIRONMENTAL MONITORING in the MISSISSIPPI RIVER near QUAD-CITIES STATION

February 1979 through July 1979

HAZLETON
ENVIRONMENTAL SCIENCES CORPORATION
1500 FRONTAGE ROAD, NORTHBROOK, ILLINOIS 60062, USA

1078 297

7910020395

HAZLETON
ENVIRONMENTAL SCIENCES CORPORATION
1500 FRONTAGE ROAD, NORTHBROOK, ILLINOIS 60062, USA

SEMI-ANNUAL NRC REPORT TO
COMMONWEALTH EDISON COMPANY
CHICAGO, ILLINOIS

OPERATIONAL ENVIRONMENTAL MONITORING
IN THE MISSISSIPPI RIVER NEAR
QUAD-CITIES STATION

February 1979 through July 1979

PREPARED AND SUBMITTED
BY
HAZLETON ENVIRONMENTAL SCIENCES

Approved by: G.W. Lutterbie/RDA
G. W. Lutterbie, M.S.
Project Manager

B.G. Johnson/RDA
B. G. Johnson, Ph.D.
Vice President and Technical Director

1078 298

1 October 1979

PHONE (312) 564-0700 ◦ TELEX 28-9483 (HAZES NBRK)

TABLE OF CONTENTS

1078 299

PREFACE

The Quad-Cities Station is a nuclear fueled steam electric generating facility located near Cordova, Illinois, adjacent to Pool 14 of the Mississippi River about 21 miles north of the Davenport-Moline-Rock Island area.

This report is presented as required by the Nuclear Regulatory Commission Operating Licenses DRP-29 and DRP-30 non-radiological technical specifications for Quad-Cities Station Units 1 and 2. These specifications require the submission of semi-annual reports describing the results of environmental monitoring for the total chlorine used in condenser chlorination, temperature monitoring, station chemical usage, and fish impingement.

The monitoring results for the six-month period February 1979 through July 1979 are herein reported.

1078 300

Chapter 1

TOTAL CHLORINE MONITORING

Margaret A. George

OPERATIONAL ENVIRONMENTAL MONITORING

IN THE MISSISSIPPI RIVER NEAR QUAD-CITIES STATION

February 1979 through July 1979

1078 301

TABLE OF CONTENTS

1078 302

LIST OF TABLES

1078 303

Chapter 1

TOTAL CHLORINE MONITORING

by

Margaret A. George

I. Introduction

Total residual chlorine monitoring during Quad-Cities condenser chlorination began on 27 July 1972 and has continued through this study period, February through July 1979. During this period, the Station operated in the open cycle cooling mode using the diffuser pipes, in the closed cycle cooling mode using the spray canal, or a combination open and closed cycle mode of condenser cooling in which half the cooling water was discharged through the north and/or south diffuser pipes while the other half circulated within the closed cycle spray canal system (see Appendix D for details). On April 25, the chlorine injection time increased from twenty minutes per unit to forty minutes per unit.

The objectives of this study were:

1. to document total residual chlorine concentrations in the Mississippi River upstream and downstream from the Quad-Cities Station and at the point of discharge to the diffuser and/or blowdown pipes;

2. to monitor variations in chlorine concentrations during condenser chlornation in the station's discharge bay during the open or combination open and closed cycle mode of condenser cooling or in the spray canal during the closed cycle mode; and

3. to compare all chlorine concentrations determined during this study to the surveillance requirements approved in the technical specifications by the U.S. Nuclear Regulatory Commission (1974).

II. Field and Analytical Procedures

Total residual chlorine concentrations were determined during condenser chlorination four times per month in compliance with the non-radiological technical specifications for the Quad-Cities Station (USNRC 1974). Measurements were made in the Mississippi River before, during, and after condenser chlorination and also in either the discharge bay or spray canal of the station at frequent time intervals during chlorination. Sampling locations are described in Tables 1.1. and 1.2.

Concentrations of total residual chlorine were determined in the discharge bay (Location 7) during the combination cycle cooling mode and in the spray canal (Location 9) during the closed cycle cooling mode. In both the discharge bay and spray canal, chlorine concentrations were determined at about two to five minute intervals starting at the time of condenser chlorination and ending approximately twenty minutes after termination or when chlorine levels were below the analytical limit of 0.01 mg/l.

1078 304

Table 1.1. Description of sampling locations monitored, February through July 1978.

Sampling Location	Description
6	At the intake forebay of the station.
7	At the entrance to the diffuser pipe in the discharge canal of the station.
9	At the entrance to the blowdown pipe in the spray canal.
21	Downstream from the diffuser pipes.
22	Downstream from the blowdown pipe.
23	Upstream from the diffuser pipe.
24	At the point of discharge from the diffuser pipe.
26	Upstream from the blowdown pipe.
30	South edge of intake.

305

Table 1.2. Sampling locations monitored for total residual chlorine during condenser chlorination, February through July 1979.

Station Operationg Condition	Sampling Frequency	Sampling Locations	Replicates	Depth
Open and Combination Cycle	4 times per month	Discharge bay (7)	Single	Tap
		Upstream discharge pipe (23)	Single	One meter
		Discharge pipe (24)	Single	One meter
		Downstream discharge pipe (21)	Single	One meter
		Intake forebay (6)	Single	One meter
Closed cycle	4 times per month	Spray canal (9)	Single	Tap
		Upstream blowdown pipe (26)	Single	One meter
		Downstream blowdown pipe (22)	Single	One meter
		Intake forebay (6)	Single	One meter
		South end of Intake (30)	Single	One meter

1078 306

Samples in the river were collected at a depth of one meter using a Kemmerer sampler unless cold weather rendered the water sampler inoperable. At those times bottles were filled directly, as they were at the station locations. Samples were analyzed immediately after collection by method 409C (A.P.H.A. et al. 1976). A Fischer and Porter Amperometric Titrator having an analytical detection limit of 0.01 mg/l was used for analysis of all samples.

III. Results and Discussion

Throughout this study period, all chlorine concentrations were within the U.S. Nuclear Regulatory Commission 1974 surveillance requirements, as summarized in Table 1.3.

Station operation data during the chlorination cycles monitored from February through July 1979 are shown in Table 1.4.

Total residual chlorine data from February through July 1978 are presented in Tables 1.5 through 1.10.

IV. Summary and Conclusions

1. Chlorine monitoring was conducted 24 times during operation of the Quad-Cities condenser chlorination system from February through July 1979. Total residual chlorine was not detected in the Mississippi River upstream or downstream from the station, indicating dissipation of chlorine before reaching the river and compliance with the Commonwealth Edison Company - U.S. Environmental Protection Agency (1976) recommended limit of 0.20 mg/l.

2. Total chlorine concentrations in the discharge bay and spray canal during the entire reporting period were within the limits approved by the U.S. Nuclear Regulatory Commission.

V. References Cited

A.P.H.A., A.W.W.A., and W.P.C.F. 1976. Standard methods for the examination of water and wastewater. 14th Ed. Amer. Public Health Assn., Washington, D.C. 1193 pp.

Commonwealth Edison Company. 1976. Chlorine reduction study for Quad-Cities Station. Proposed literature by the U.S.E.P.A. and Commonwealth Edison Company letter dated 29 January 1976.

U.S. Nuclear Regulatory Commission. 1974. Appendix B to operating license DPR-29 and DPR-30: non-radiological technical and specifications and basis for Quad-Cities Station Units 1 and 2 Rock Island, Illinois. Commonwealth Edison Company. Docket numbers 50-254 and 50-265. Washington, D.C. 15 pp.

Table 1.3. Average detectable chlorine concentrations, Quad-Cities Station, February through July 1979.

Sampling Date	No. Circulating Water Pumps Operating	USNRC Allowable Limit[a] (mg/1)	Observed Average Detectable Concentration[b] (mg/1)	Location Monitored on Sampling Date
1 February 1979	5	0.60	c	Spray Canal
21 February 1979	6	0.50	c	Spray Canal
23 February 1979	5	0.60	c	Spray Canal
28 February 1979	3	1.00	c	Discharge Bay
7 March 1979	6	0.50	c	Discharge Bay
14 March 1979	6	0.50	c	Spray Canal
27 March 1979	6	0.50	c	Discharge Bay
29 March 1979	6	0.50	c	Discharge Bay
12 April 1979	6	0.50	c	Discharge Bay
20 April 1979	6	0.50	0.06	Discharge Bay
24 April 1979	6	0.50	0.14	Discharge Bay
27 April 1979	6	0.50	0.13	Discharge Bay
4 May 1979	6	0.50	0.17	Discharge Bay
11 May 1979	6	0.50	0.27	Discharge Bay
17 May 1979	6	0.50	0.20	Discharge Bay
24 May 1979	6	0.50	0.17	Discharge Bay
15 June 1979	6	0.50	c	Discharge Bay
20 June 1979	6	0.50	0.10	Discharge Bay
22 June 1979	6	0.50	0.05	Discharge Bay
27 June 1979[d]	6	0.50	0.10	Discharge Bay
13 July 1979	6	0.50	0.11	Discharge Bay
18 July 1979	6	0.50	0.18	Discharge Bay
23 July 1979	6	0.50	0.17	Discharge Bay
27 July 1979	6	0.50	0.25	Discharge Bay

[a]Maximum total chlorine concentration (mg/1) allowable in the discharge bay or spray canal as averaged over the injection cycle according to the U.S. Nuclear Regulatory Commission (1974).

[b]The maximum detectable total chlorine concentration determined as averaged over the injection cycle for the number of circulating pumps operating is defined according to Commonwealth Edison (1976) as the arithmetic mean of detectable chlorine concentrations (0.01 mg/1 or higher) during any particular monitoring period during a sodium hypochlorite injection cycle.

[c]No chlorine detected.

[d]Observed average detectable concentration may be in error. After sampling had been completed, Hazleton personnel were informed by station personnel that the injection cycle had begun at 1020, not 1030 as previously told.

1078 308

POOR ORIGINAL

Table 1.4. Sampling dates for total residual chlorine monitoring during condenser chlorination and Quad-Cities Station operating conditions, February through July 1979.

Date	Station Operation	Number of Circulating Water Pumps Operating	Number of Lift Pumps Operating	Injection Period of Station Condenser Chlorination (hour)	Locations Monitored at Station	Mississippi River Locations Monitored	Number of Total Chlorine Determinations Performed
1 Feb 1979	closed cycle	5	3	1030 to 1115	spray canal (9)	upstream (6,26,30) downstream (22)	30
21 Feb 1979	closed cycle	6	3	1030 to 1110	spray canal (9)	upstream (6,26,30) downstream (22)	24
23 Feb 1979	closed cycle	5	3	1030 to 1110	spray canal (9)	upstream (6,26,30) downstream (22)	34
28 Feb 1979	combination cycle	3	2	1030 to 1110	discharge bay (7)	upstream (6,23) downstream (21,24)	34
3 Mar 1979	combination cycle	6	4	1030 to 1110	discharge bay (7)	upstream (6,23) downstream (21,24)	30
14 Mar 1979	closed cycle	6	5	1030 to 1110	spray canal (9)	upstream (6,23,30) downstream (22)	32
27 Mar 1979	combination cycle	6	3	1030 to 1115	discharge bay (7)	upstream (6,23) downstream (21,24)	32
29 Mar 1979	combination cycle	6	3	1030 to 1115	discharge bay (7)	upstream (6,23) downstream (21,24)	34
12 April 1979	combination cycle	6	5	1030 [illegible] 1110	discharge bay [illegible]	upstream [illegible] 23) downstream [illegible],24)	34
20 April 1979	combination cycle	6	3	1[illegible]30 to 1110	discharge bay (7)	upstream (6,23) downstream (21,24)	36
24 April 1979	combination cycle	6	3	[illegible] to 1110	discharge bay (7)	upstream (6,23) downstream (21,24)	47
27 April 1979	combination cycle	6	3	1030 to 1110	discharge bay (7)	upstream (6,23) downstream (21,24)	40
4 May 1979	combination cycle	6	3	1030 to 1110	discharge bay (7)	upstream (6,23) downstream (21,24)	36
11 May 1979	combination cycle	6	3	0920 to 1045	discharge bay (7)	upstream (6,23) downstream (21,24)	35
17 May 1979	combination cycle	6	3	1030 to 1155	discharge bay (7)	upstream (6,23) downstream (21,24)	48
24 May 1979	combination cycle	6	3	1030 to 1155	discharge bay (7)	upstream (6,23) downstream (21,24)	52
15 June 1979	combination cycle	6	3	1030 to 1145	discharge bay (7)	upstream (6,23) downstream (21,24)	26
20 June 1979	combination cycle	6	3	1030 to 1200	discharge bay (7)	upstream (6,23) downstream (21,24)	40
22 June 1979	combination cycle	6	3	1030 to 1200	discharge bay (7)	upstream (6,23) downstream (21,24)	31
27 June 1979	combination cycle	6	3	1020 to 1155	discharge bay (7)	upstream (6,23) downstream (21,24)	32
13 July 1979	combination cycle	6	3	1030 to 1155	discharge bay (7)	upstream (6,23) downstream (21,24)	45
18 July 1979	combination cycle	6	3	1030 to 1155	discharge bay (7)	upstream (6,23) downstream (21,24)	48
23 July 1979	combination cycle	6	3	1030 to 1200	discharge bay (7)	upstream (6,23) downstream (21,24)	49
27 July 1979	combination cycle	6	3	1020 to 1145	discharge bay (7)	upstream (6,23) downstream (21,24)	52

1078 309

Table 1.5. Total residual chlorine concentrations measured during condenser chlorination, February 1979.

Sampling Date Station Operating Cycle Hour of Chlorination	Mississippi River Upstream Near Intake (Location 6)		Downstream of Intake (Location 30)		Upstream of Blowdown Pipe (Location 26)		Downstream of Blowdown Pipe (Location 22)		Spray Canal Location 9	
	(hour)	(mg/l)	(hour)	(mg/l)	(hour)	(mg/l)	(hour)	(mg/l)	(hour)	(mg/l)
1 February 1979	1030	<0.01	1035	<0.01					1038	<0.01
Closed Cycle					1040	<0.01			1041	<0.01
1030 to 1115									1044	<0.01
							10-5	<0.01	1047	<0.01
	1050	<0.01							1050	<0.01
									1053	<0.01
			1055	<0.01					1056	<0.01
									1059	<0.01
					1100	<0.01			1102	<0.01
							1105	<0.01	1105	<0.01
									1108	<0.01
	1110	<0.01							1111	<0.01
									1114	<0.01
			1115	<0.01					1117	<0.01
									1120	<0.01
									1123	<0.01
					1125	<0.01			1126	<0.01
							1130	<0.01	1130	<0.01
21 February 1979									1020	<0.01
Closed Cycle									1025	<0.01
1030 to 1110	1030	<0.01	1030	<0.01	1030	<0.01	1030	<0.01	1045	<0.01
									1050	<0.01
									1055	<0.01
									1100	<0.01
	1102	<0.01	1103	<0.01	1105	<0.01			1105	<0.01
							1106	<0.01	1110	<0.01
	1115	<0.01							1115	<0.01
			1116	<0.01	1117	<0.01	1118	<0.01	1120	<0.01
									1125	<0.01
									1130	<0.01
22 February 1979									1025	<0.01
Closed Cycle	1028	<0.01	1029	<0.01	1030	<0.01			1030	<0.01
1030 to 1110							1031	<0.01	1033	<0.01
									1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	<0.01
									1051	<0.01
									1054	<0.01
									1057	<0.01
	1059	<0.01	1100	<0.01					1100	<0.01
					1101	<0.01	1102	<0.01	1103	<0.01
									1106	<0.01
									1109	<0.01
									1112	<0.01
	1115	<0.01							1115	<0.01
			1116	<0.01	1117	<0.01	1118	<0.01	1118	<0.01
									1121	<0.01
									1124	<0.01
									1127	<0.01
									1130	<0.01

1078 310

Table 1.5. (continued)

Sampling Date Station Operating Cycle Hour of Chlorination	Mississippi River Upstream Near Intake (Location 6) (hour)	 (mg/l)	Upstream of Diffuser Pipe (Location 23) (hour)	 (mg/l)	Diffuser Pipe (Location 24) (hour)	 (mg/l)	Downstream of Diffuser Pipe (Location 21) (hour)	 (mg/l)	Discharge Canal Location 7 (hour)	 (mg/l)
28 February 1979									1025	<0.01
Combination Cycle	1030	<0.01							1030	<0.01
1030 to 1110			1031	<0.01	1033	<0.01			1033	<0.01
							1035	<0.01	1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	<0.01
									1051	<0.01
									1054	<0.01
									1057	<0.01
	1058	<0.01	1059	<0.01					1100	<0.01
					1101	<0.01	1103	<0.01	1103	<0.01
									1106	<0.01
									1109	<0.01
									1112	<0.01
	1113	<0.01	1114	<0.01					1115	<0.01
					1117	<0.01	1118	<0.01	1118	<0.01
									1121	<0.01
									1124	<0.01
									1127	<0.01
									1130	<0.01

1078 311

POOR ORIGINAL

Table 1.6. Total residual chlorine concentrations measured during condenser chlorination, March 1979.

Sampling Date / Station Operating Cycle / Hour of Chlorination	Mississippi River Upstream Near Intake (Location 6) (hour)	(mg/l)	Upstream of Diffuser Pipe (Location 23) (hour)	(mg/l)	Diffuser Pipe (Location 24) (hour)	(mg/l)	Downstream of Diffuser Pipe (Location 21) (hour)	(mg/l)	Discharge Canal Location 7 (hour)	(mg/l)
7 March 1979	1027	<0.01	1028	<0.01	1030	<0.01			1025	<0.01
Combination Cycle									1030	<0.01
1030 to 1110							1031	<0.01	1033	<0.01
									1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	<0.01
									1051	<0.01
									1054	<0.01
	1058	<0.01	1059	<0.01					1057	<0.01
									1100	<0.01
					1101	<0.01	1102	<0.01	1103	<0.01
									1106	<0.01
									1109	<0.01
	*		*		*		*		1112	<0.01
									1115	<0.01
									1118	<0.01
									1121	<0.01
									1124	<0.01
									1127	<0.01
									1130	<0.01
	Mississippi River Upstream Near Intake (Location 6) (hour)	**(mg/l)**	**Downstream of Intake (Location 30) (hour)**	**(mg/l)**	**Upstream of Blowdown Pipe (Location 26) (hour)**	**(mg/l)**	**Downstream of Blowdown Pipe (Location 22) (hour)**	**(mg/l)**	**Spray Canal Location 9 (hour)**	**(mg/l)**
14 March 1979	1020	<0.01	1020	<0.01	1022	<0.01	1022	<0.01		
Closed Cycle									1030	<0.01
1030 to 1110									1033	<0.01
									1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	<0.01
									1051	<0.01
	1056	<0.01	1056	<0.01					1054	<0.01
									1057	<0.01
					1058	<0.01	1058	<0.01	1100	<0.01
									1103	<0.01
									1106	<0.01
	1112	<0.01	1112	<0.01					1109	<0.01
									1112	<0.01
					1114	<0.01	1114	<0.01	1115	<0.01
									1118	<0.01
									1120	<0.01
									1125	<0.01
									1130	<0.01
	Mississippi River Upstream Near Intake (Location 6) (hour)	**(mg/l)**	**Upstream of Diffuser Pipe (Location 23) (hour)**	**(mg/l)**	**Diffuser Pipe (Location 24) (hour)**	**(mg/l)**	**Downstream of Diffuser Pipe (Location 21) (hour)**	**(mg/l)**	**Discharge Canal Location 7 (hour)**	**(mg/l)**
27 March 1979	1030	<0.01								
Combination Cycle									1030	<0.01
1030 to 1115									1033	<0.01
							1035	<0.01	1036	<0.01
					1040	<0.01			1039	<0.01
			1045	<0.01					1042	<0.01
									1045	<0.01
	1050	<0.01							1048	<0.01
									1051	<0.01
									1054	<0.01
							1055	<0.01	1057	<0.01
					1100	<0.01			1100	<0.01
			1105	<0.01					1103	<0.01
									1106	<0.01
	1110	<0.01							1109	<0.01
									1112	<0.01
							1115	<0.01	1115	<0.01
									1118	<0.01
									1120	<0.01
					1125	<0.01			112[illegible]	<0.01
			1130	<0.01					1130	<0.01

1078 312

POOR ORIGINAL

Table 1.6. (continued)

Sampling Date Station Operating Cycle Hour of Chlorination	Mississippi River Upstream Near Intake (Location 6)		Upstream of Diffuser Pipe (Location 20)		Diffuser Pipe (Location 24)		Downstream of Diffuser Pipe (Location 21)		Discharge Canal Location 7	
	(hour)	(mg/l)	(hour)	(mg/l)	(hour)	(mg/l)	(hour)	(mg/l)	(hour)	(mg/l)
29 March 1979[b]	1025	<0.01							1025	<0.01
Combination Cycle			1026	<0.01	1027	<0.01	1027	<0.01	1030	<0.01
1030 to 1110									1033	<0.01
									1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	<0.01
									1051	<0.01
									1054	<0.01
	1055	<0.01	1056	<0.01	1057	<0.01	1057	<0.01	1057	<0.01
									1100	<0.01
									1103	<0.01
									1106	<0.01
									1109	<0.01
	1110	<0.01	1111	<0.01	1112	<0.01	1112	<0.01	1112	<0.01
									1115	<0.01
									1118	<0.01
									1121	<0.01
									1124	<0.01
									1127	<0.01
									1130	<0.01

[a] Samples not collected due to airboat problems
[b] Station personnel indicated that there were problems with the injection pumps and there would probably not be any chlorine in the samples

1078 313

Total 1.7. Total residual chlorine concentrations measured during condenser chlorination, April 1979.

Sampling Date Station Operating Cycle Hour of Chlorination	Mississippi River Upstream Near Intake (Location 6) (hour)	(mg/1)	Upstream of Diffuser Pipe (Location 23) (hour)	(mg/1)	Diffuser Pipe (Location 24) (hour)	(mg/1)	Downstream of Diffuser Pipe (Location 21) (hour)	(mg/1)	Discharge Canal Location 7 (hour)	(mg/1)
12 April 1979	1028	<0.01							1027	<0.01
Combination Cycle			1030	<0.01					1030	<0.01
1030 to 1110					1032	<0.01			1033	<0.01
							1034	<0.01	1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	<0.01
									1051	<0.01
									1054	<0.01
	1055	<0.01	1057	<0.01					1057	<0.01
					1059	<0.01			1100	<0.01
							1101	<0.01	1103	<0.01
									1106	<0.01
									1109	<0.01
									1112	<0.01
	1115	<0.01							1115	<0.01
			1117	<0.01					1118	<0.01
					1119	<0.01	1121	<0.01	1121	<0.01
									1124	<0.01
									1127	<0.01
									1130	<0.01
20 April 1979	1030	<0.01	1032	<0.01	1033	<0.01			1033	<0.01
Combination Cycle							1034	<0.01	1040	<0.01
1030 to 1110									1042	<0.01
									1045	<0.01
									1047	<0.01
									1050	<0.01
									1052	<0.01
	1055	<0.01							1055	0.03
			1057	<0.01					1057	0.07
					1059	<0.01			1059	0.08
							1100	<0.01	1100	0.08
									1102	0.10
									1105	0.10
									1107	0.08
									1110	0.08
									1112	0.06
	1113	<0.01	1115	<0.01					1115	0.03
					1117	<0.01			1117	0.03
							1118	<0.01	1120	0.03
									1122	0.03
									1125	0.10
									1127	0.03
									1130	0.03
									1135	<0.01

1078 314

Table 1.7. (continued)

Sampling Date Station Operating Cycle Hour of Chlorination	Mississippi River Upstream Near Intake (Location 6) (hour)	(mg/l)	Upstream of Diffuser Pipe (Location 23) (hour)	(mg/l)	Diffuser Pipe (Location 24) (hour)	(mg/l)	Downstream of Diffuser Pipe (Location 21) (hour)	(mg/l)	Discharge Canal Location 7 (hour)	(mg/l)
24 April 1979	1025	<0.01	1026	<0.01	1026	<0.01			1025	<0.01
Combination Cycle							1027	<0.01	1030	<0.01
1030 to 1110									1033	<0.01
									1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	<0.01
	1050	<0.01	1051	<0.01	1051	<0.01			1051	<0.01
							1052	<0.01	1054	<0.01
									1057	<0.01
									1100	0.02
									1103	0.05
									1106	0.10
									1108	0.11
									1109	0.11
	1110	<0.01							1110	0.12
			1111	<0.01	1111	<0.01	1112	<0.01	1112	0.13
									1114	0.15
									111[illegible]	0.17
									1117	0.17
									1118	0.19
									1120	0.16
									1121	0.15
									1123	0.16
									1124	0.25
									1126	0.16
									1127	0.19
									1130	0.17
									1133	0.20
									1136	0.17
									1139	0.12
									1142	0.09
									1145	0.01
									1148	<0.01
27 April 1979	1030	<0.01							1030	<0.01
Combination Cycle			1032	<0.01	1033	<0.01			1033	<0.01
1030 to 1110							1034	<0.01	1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	<0.01
									1051	<0.01
									1054	<0.01
									1057	<0.01
	1058	<0.01	1100	<0.01					1100	0.02
					1101	<0.01	1102	<0.01	1103	0.06
									1106	0.06
									1108	0.10
									1110	0.13
									1112	0.15
	1115	<0.01							1115	0.17
			1117	<0.01					1117	0.19
					1118	<0.01	1119	<0.01	1119	0.20
									1121	0.15
									1123	0.19
									1126	0.20
									1128	0.21
									1130	0.19
									1133	0.15
									1136	0.06
									1139	0.02
									1142	<0.01

1078 315

Table 1.8. Total residual chlorine concentrations measured during condenser chlorination, May 1979.

Sampling Date / Station Operating Cycle / Hour of Chlorination	Mississippi River Upstream Near Intake (Location 6)		Upstream of Diffuser Pipe (Location 23)		Diffuser [illegible] (Locati[illegible])		Downstream of Diffuser Pipe (Location 21)		Discharge Canal Location 7	
	(hour)	(mg/l)	(hour)	(mg/l)	(hour)	(mg/l)	(hour)	(mg/l)	(hour)	(mg/l)
4 May 1979	1030	<0.01							1030	<0.01
Combination Cycle			1032	<0.01	1033	<0.01			1033	<0.01
1030 to 1110							1034	<0.01	1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	0.02
									1048	0.08
									1051	0.13
									1054	0.16
									1057	0.21
	1100	<0.01							1100	0.22
			1102	<0.01					1102	0.26
					1103	<0.01	1104	<0.01	1106	0.11
									1108	0.20
									1110	0.21
									1112	0.22
	1115	<0.01							1115	0.25
			1117	<0.01					1117	0.23
					1118	<0.01	1119	<0.01	1120	0.25
									1123	0.27
									1126	0.17
									1129	0.09
									1132	0.02
									1135	<0.01
11 May 1979	0910	<0.01	0910	<0.01	0910	<0.01	0910	<0.01	092[illegible]	<0.01
Combination Cycle									0924	<0.01
0920 to 1045									0927	<0.01
									0930	<0.01
									0933	<0.01
									0936	<0.01
									0939	<0.01
	0940	<0.01	0940	<0.01	0940	<0.01	0940	<0.01	0942	0.05
									0945	0.22
									0947	0.24
									0950	0.31
									0952	0.33
									0955	0.36
									0958	0.36
	1000	<0.01	1000	<0.01	1000	<0.01	1000	<0.01	1000	0.3[illegible]
									1006	0.39
									1009	0.39
									1012	0.35
									1016	0.33
									1021	0.18
									1024	0.08
									1027	0.02
									1030	<0.01
17 May 1979	1025	<0.01	1027	<0.01					1027	<0.01
Combination Cycle					1029	<0.01			1030	<0.01
1030 to 1155							1031	<0.01	1033	<0.01
									1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	0.06
									1051	0.11
									1054	0.16
									1057	0.19
							1100	<0.01	1100	0.23
					1102	<0.01			1103	0.21
			1104	<0.01					1106	0.20
	1107	<0.01							1109	0.18
									1112	0.25
									1115	0.25
	1116	<0.01	1118	<0.01					1118	0.22
					1120	<0.01			1121	0.20
							1122	<0.01	1124	0.20
									1127	0.19
									1130	0.19
									1133	0.24
									1136	0.27
									1139	0.27
									1142	0.31

1078 316

POOR ORIGINAL

Table 1.8. (continued)

Sampling Date Station Operating Cycle Hour of Chlorination	Mississippi River Upstream Near Intake (Location 6) (hour)	(mg/l)	Upstream of Diffuser Pipe (Location 23) (hour)	(mg/l)	Diffuser Pipe (Location 24) (hour)	(mg/l)	Downstream of Diffuser Pipe (Location 21) (hour)	(mg/l)	Discharge Canal Location 7 (hour)	(mg/l)
17 May 1979									1145	0.19
Combination Cycle									1148	0.20
1030 to 1155									1151	0.23
(continued)									1154	0.24
									1157	0.28
									1200	0.23
									1203	0.15
									1206	0.05
									1209	<0.01
									1212	<0.01
24 May 1979	1025	<0.01	1028	<0.01	1030	<0.01			1030	<0.01
Combination Cycle							1032	<0.01	1033	<0.01
1030 to 1155									1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	<0.01
									1051	<0.01
									1054	<0.01
									1057	<0.01
					1102	<0.01	1100	<0.01	1100	<0.01
			1103	<0.01					1103	<0.01
	1106	<0.01							1106	<0.01
									1109	0.05
									1112	0.09
									1115	0.12
									1118	0.18
									1121	0.19
									1124	0.19
									1127	0.17
									1130	0.18
									1133	0.22
									1136	0.23
									1139	0.23
									1142	0.18
									1145	0.15
									1148	0.13
									1151	0.18
									1154	0.20
							1155	<0.01	1157	0.19
			1200	<0.01	1158	<0.01			1200	0.21
	1202	<0.01							1203	0.20
									1206	0.22
									1209	0.20
									1212	0.20
									1215	0.22
									1218	0.15
									1221	0.10
									1224	0.02
									1227	<0.01

1078 317

POOR ORIGINAL

Table 1.9. Total residual chlorine concentrations measured during condenser chlorination, June 1979.

Sampling Date Station Operating Cycle Hour of Chlorination	Mississippi River Upstream Near Intake (Location 6) (hour)	(mg/l)	Upstream of Diffuser Pipe (Location 23) (hour)	(mg/l)	Diffuser Pipe (Location 24) (hour)	(mg/l)	Downstream of Diffuser Pipe (Location 21) (hour)	(mg/l)	Discharge Canal Location 7 (hour)	(mg/l)
									1030	<0.01
15 June 1979 Combination Cycle 1030 to 1145	1030	<0.01	1031	<0.01	1031	<0.01	1035	<0.01	1033	<0.01
									1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	<0.01
	1050	<0.01	1051	<0.01	1051	<0.01	1051	<0.01	1051	<0.01
									1054	<0.01
									1057	<0.01
									1100	<0.01
									1103	<0.01
									1106	<0.01
									1109	<0.01
									1112	<0.01
									1115	<0.01
									1118	<0.01
									1121	<0.01
									1124	<0.01
									1127	<0.01
									1130	<0.01
									1133	<0.01
									1136	<0.01
									1139	<0.01
									1142	<0.01
									1145	<0.01
	1150	<0.01	1151	<0.01	1151	<0.01	1151	<0.01		
									1027	<0.01
20 June 1979 Combination Cycle 1030 to 1200	1029	<0.01	1031	<0.01	1032	<0.01	1033	<0.01	1030	<0.01
									1033	<0.01
									1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	<0.01
									1051	<0.01
									1054	<0.01
									1057	<0.01
	1058	<0.01	1100	<0.01	1101	<0.01	1102	<0.01	1100	<0.01
									1103	0.05
									1106	0.03
									1109	0.05
									1112	0.03
									1115	0.03
									1118	0.05
									1121	0.03
									1124	0.14
									1127	0.12
									1130	0.12
									1133	0.09
									1136	0.09
									1139	0.07
									1142	0.07
									1145	0.15
									1148	0.16
									1151	0.14
									1154	0.15
									1157	0.15
									1200	0.19
									1203	0.19
									1206	0.14
	1208	<0.01	1209	<0.01	1210	<0.01	1211	<0.01	1029	0.12
									1212	0.04
									1215	0.02
									1218	<0.01
									1221	<0.01
									1224	<0.01
22 June 1979 Combination Cycle 1030 to 1200	1030	<0.01	1032	<0.01	1033	<0.01	1034	<0.01	1030	<0.01
									1033	<0.01
									1036	<0.01
									1039	<0.01
									1042	<0.01
									1048	<0.01
									1051	<0.01
									1054	<0.01
									1057	<0.01

1078 318

POOR ORIGINAL

Table 1.9. (continued)

Sampling Date Station Operating Cycle Hour of Chlorination	Mississippi River Upstream Near Intake (Location 6) (hour)	(mg/l)	Upstream of Diffuser Pipe (Location 23) (hour)	(mg/l)	Diffuser Pipe (Location 24) (hour)	(mg/l)	Downstream of Diffuser Pipe (Location 21) (hour)	(mg/l)	Discharge Canal Location 7 (hour)	(mg/l)
22 June 1979	1100	<0.01							1100	<0.01
Combination Cycle			1102	<0.01	1103	<0.01			1103	<0.01
1030 to 1200							1104	<0.01	1106	<0.01
									1109	<0.01
									1112	<0.01
									1115	<0.01
									1118	<0.01
									1121	<0.01
									1124	<0.01
									1127	<0.01
									1130	<0.01
									1133	0.05
									1136	0.05
									1139	<0.01
									1142	<0.01
									1145	<0.01
									1148	<0.01
									1151	<0.01
									1154	<0.01
									1157	<0.01
	1200	<0.01							1200	<0.01
			1202	<0.01	1203	<0.01	1204	<0.01		
27 June 1979										
Combination Cycle	1030	<0.01	1032	<0.01	1033	<0.01			1033	0.06
1020 to 1155							1034	<0.01	1036	0.06
									1039	0.06
									1042	0.10
									1045	0.11
									1048	0.13
									1051	0.11
									1054	0.11
									1057	0.11
	1100	<0.01							1100	0.11
									1103	0.12
			1102	<0.01	1103	<0.01	1104	<0.01	1106	0.11
									1109	0.07
									1112	0.10
									1115	0.11
									1118	0.11
									1121	0.15
									1124	0.13
									1127	0.08
									1130	0.03
									1133	<0.01
									1136	<0.01
									1139	<0.01
									1142	<0.01
									1145	<0.01
									1148	<0.01
									1151	<0.01
									1154	<0.01
									1157	<0.01
	1200	<0.01							1200	<0.01
			1202	<0.01	1203	<0.01			1203	<0.01
							1204	<0.01	1206	<0.01

1078 319

Table 1.10 Total residual chlorine concentrations measured during condenser chlorination, July 1979.

Sampling Date Station Operating Cycle Hour of Chlorination	Mississippi River Upstream Near Intake (Location 6) (hour)	(mg/l)	Upstream of Diffuser Pipe (Location 23) (hour)	(mg/l)	Diffuser Pipe (Location 24) (hour)	(mg/l)	Downstream of Diffuser Pipe (Location 21) (hour)	(mg/l)	Discharge Canal Location 7 (hour)	(mg/l)
13 July 1979	1027	<0.01							1027	<0.01
Combination Cycle			1028	<0.01	1028	<0.01	1028	<0.01	1030	<0.01
1030 to 1155									1033	<0.01
									1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	0.08
									1048	0.08
									1051	0.10
									1054	0.10
									1057	0.10
									1100	0.11
									1103	0.12
									1106	0.14
									1109	0.14
	1110	<0.01	1111	<0.01	1111	<0.01	1111	<0.01	1112	0.13
									1115	0.13
									1118	0.11
									1121	0.09
									1124	0.10
									1127	0.12
									1130	0.12
									1133	0.12
									1136	0.14
									1139	0.14
									1142	0.12
									1145	0.12
									1148	0.10
									1151	0.08
									1154	0.08
									1157	0.06
	1200	<0.01							1200	<0.01
			1201	<0.01	1201	<0.01	1201	<0.01	1203	<0.01
18 July 1979	1025	<0.01	1026	<0.01	1026	<0.01	1026	<0.01	1027	<0.01
Combination Cycle									1033	<0.01
1030 to 1155									1036	<0.01
									1039	<0.01
									1042	<0.01
									1045	<0.01
									1048	<0.01
									1051	0.06
									1054	0.10
									1057	0.12
									1100	0.12
									1103	0.13
									1106	0.12
									1109	0.12
	1110	<0.01	1111	<0.01	1111	<0.01	1111	<0.01	1112	0.13
									1115	0.14
									1118	0.13
									1121	0.14
									1124	0.18
									1127	0.14
									1130	0.14
									1133	0.12
									1136	0.14
									1139	0.15
									1142	0.15
									1145	0.10
									1148	0.11
									1151	0.57
									1154	0.54
									1157	0.55
	1200	<0.01							1200	0.55
			1201	<0.01	1201	<0.01	1201	<0.01	1203	0.22
									1206	0.08
									1209	0.04
									1212	<0.01
									1215	<0.01

1078 320

Table 1.10 (continued)

POOR ORIGINAL

Sampling Date / Station Operating Cycle / Hour of Chlorination	Mississippi River Upstream Near Intake (Location 6) (hour)	(mg/l)	Upstream of Diffuser Pipe (Location 23) (hour)	(mg/l)	Diffuser Pipe (Location 24) (hour)	(mg/l)	Downstream of Diffuser Pipe (Location 21) (hour)	(mg/l)	Discharge Canal Location 7 (hour)	(mg/l)
23 July 1979									1027	<0.01
Combination Cycle	1030	<0.01							1030	<0.01
1030 to 1200			1032	<0.01	1033	<0.01			1033	<0.01
							1034	<0.01	1036	<0.01
									1039	<0.01
									1042	0.11
									1045	0.11
									1048	0.12
									1051	0.14
									1054	0.15
									1057	0.15
									1100	0.16
									1103	0.19
	1105	<0.01							1106	0.23
			1107	<0.01	1108	<0.01	1109	<0.01	1109	0.23
									1112	0.27
									1115	0.20
									1118	0.15
									1121	0.15
									1124	0.17
									1127	0.12
									1130	0.21
									1133	0.23
									1136	0.23
									1139	0.23
									1142	0.23
									1145	0.20
									1148	0.20
									1151	0.19
									1154	0.17
									1157	0.07
	1200	<0.01							1200	0.05
			1202	<0.01	1203	<0.01			1203	<0.01
							1204	<0.01	1206	<0.01
									1209	<0.01
									1212	<0.01
									1215	<0.01
27 July 1979									1015	<0.01
Combination Cycle									1018	<0.01
1020 to 1145									1021	<0.01
									1024	<0.01
	1025	<0.01	1027	<0.01					1027	<0.01
					1023	<0.01	1029	<0.01	1030	<0.01
									1033	<0.01
									1036	<0.01
									1039	0.15
									1042	0.18
									1045	0.23
									1048	0.30
									1051	0.34
									1054	0.34
									1057	0.30
	1100	<0.01							1100	0.27
			1102	<0.01	1103	<0.01			1103	0.32
							1104	<0.01	1106	0.33
									1109	0.34
									1112	0.29
									1115	0.29
									1118	0.20
									1121	0.18
									1124	0.17
									1127	0.19
									1130	0.23
									1133	0.28
									1136	0.29
									1139	0.30
									1142	0.30
									1145	0.30
									1148	0.30
									1151	0.28
									1154	0.19
									1157	0.19
	1200	<0.01							1200	0.03
			1202	<0.01	1203	<0.01			1203	<0.01
							1204	<0.01	1206	<0.01
									1209	<0.01
									1212	<0.01

1078 321

Chapter 2

TEMPERATURE MONITORING

Gayle L. Shipley

OPERATIONAL ENVIRONMENTAL MONITORING

IN THE MISSISSIPPI RIVER NEAR QUAD-CITIES STATION

February 1979 through July 1979

1078 322

TABLE OF CONTENTS

1078 323

LIST OF TABLES

1078 324

Chapter 2

TEMPERATURE MONITORING

by

Gayle L. Shipley

I. Introduction

This report presents the results of continuous monitoring of water temperature in the Mississippi River near the Quad-Cities Station from February through July 1979.

The objectives of this study were:

1. to provide an hourly record of the temperature regime of the Mississippi River in the vicinity of the Quad-Cities Station including the observation of any downstream thermal changes resulting from station operation; and

2. to identify diurnal, seasonal, and other normal or periodic variations in river water temperature.

II. Field and Analytical Procedures

Eight sensors were used to record temperatures hourly near the Quad-Cities Station. One sensor was located upstream near the Illinois shore. Four sensors were placed along a transect 600 ft downstream from the diffuser pipes. One sensor was placed at the entrance to the intake bay in the center of the opening. One sensor was in the discharge bay near the port to the diffuser pipes. One sensor was in the cooling canal at the cold end. The sensors were two to three feet above the river bottom. Temperatures were also measured manually upstream in the mid-channel of the Mississippi River and in the Wapsipinicon River on a weekly basis.

Water temperatures at the continuous monitoring locations were measured in situ with ultralinear silicon sensitors having a range of 32 to 100F (0 to 38C) and an accuracy of $\pm$ 1.0% of full scale. The sensors were wired to the station control room. The output of the analyzers was continuously recorded on a Honeywell class 15 multipoint recorder.

To check the operation of the continuous sensors, manual temperature readings were taken at weekly intervals with a calibrated Whitney thermometer. The observed temperatures were compared to those on the Honeywell recorder to insure correct system functioning.

Prior to temperature sensor installation, the 32F and 100F points on the analyzer scale were set using individual resistance (ohm) inputs for the cable

1078 325

and sensor. On occasions when discharge temperatures exceeded 100F, adjustments were performed on the analyzer to permit recording. Temperatures measured manually at the upstream, mid-channel location in the Mississippi River and in the Wapsipinicon River were obtained using a calibrated Whitney thermometer.

Minimum, maximum, and mean values for temperature were calculated on a daily basis throughout the study period. To facilitate interpretation of data downstream from the diffusers, temperatures downstream at sensor locations A, B, C, and D were averaged.

Daily and monthly maximum and mean temperature differences (ΔT) were computed from hourly differences. These hourly differences were obtained by subtracting temperatures at the station's intake from those at the discharge, and upstream temperatures from those downstream from the station. In determining the maximum daily ΔT values, the largest hourly difference between the highest reading of the four downstream sensors and the temperature recorded by the upstream sensor at the same hour was used.

III. Results and Discussion

A. Natural Variations in River Water Temperature

Upstream temperatures in the Mississippi River near the Quad-Cities Station during February through July 1979 followed typical seasonal trends and ranged from 32.0 to 81.9F (Table 2.1; see also Appendix A).

Temperatures in the Mississippi River upstream and downstream from the station were affected by factors unrelated to station operation. These factors included both climatic and hydrological conditions. Examples of the latter were the influence of the Wapsipinicon River, which caused significant temperature variation in the Mississippi River near its confluence, and surface runoff into shallow waters.

Temperatures at the upstream sensor, located in relatively shallow water, reflected the influence of natural factors to a greater extent then either upstream or downstream main channel temperatures. Temperatures at the two upstream locations usually were similar; however, the effects of solar absorption, changes in atmospheric temperature, and surface runoff were more pronounced in shallow water and occasionally led to temperature differences between these locations (Appendices C and G). In addition, warming of shallow water by solar radiation or surface runoff periodically resulted in negative ΔT values between the upstream and downstream locations (Appendix B).

Findings similar to those discussed above were observed in Langford's study (1972) which indicated that significant variations in water temperature may occur due to changing hydrological and meteorological conditions unrelated to station operation.

1078 326

Table 2.1. Monthly mean, minimum and maximum temperatures, Quad-Cities Station, February through July 1979.

		Temperature (°F)				
Month	Min.-Max.[a]	Upstream	Intake	Cooling Canal	Discharge	Downstream
February 1979	mean	32.1	36.2	57.4	80.3	32.1
	min.-max.	32.0-32.8	32.0-67.5	32.0-82.3	51.3-106.8	32.0-33.7
March 1979	mean	32.7	37.2	74.8	85.9	32.7
	min.-max.	32.0-38.7	32.0-61.5	60.9-89.1	64.2-106.8	32.0-38.2
April 1979	mean	42.8	45.4	75.2	87.5	44.3
	min.-max.	34.2-54.9	34.6-56.6	59.4-89.1	64.8-100.5	34.3-54.1
May 1979	mean	62.8	61.0	79.3	92.0	60.9
	min.-max.	52.5-68.9	48.8-70.0	63.3-89.7	67.5-107.0	49.5-68.4
June 1979	mean	72.6	72.5	86.7	101.1	72.4
	min.-max.	67.2-78.5	66.2-79.8	76.2-93.4	93.5-101.9	66.7-76.8
July 1979	mean	78.0	77.8	92.4	106.7	78.5
	min.-max.	74.0-81.9	72.8-81.9	85.0-97.2	110.0-117.5	73.6-82.6

[a]Minimum and maximum hourly temperatures recorded during each month.

1078 327

B. Station Related Variations in Water Temperature

The maximum monthly temperature differences in the river upstream and downstream from the station ranged from 1.7 to 4.3 F between February and July 1979; monthly mean ΔT values ranged from <0.1 to 0.5 F. A summary of temperature differences between the discharge and intake as well as between sensors downstream and upstream from the station is presented in Table 2.2 along with power output. Daily maximum and mean ΔT values are shown in Appendix B.

Temperature differences between downstream and upstream sensors for the August to January period complied with the standard for thermal discharge in the Mississippi River promulgated by the Illinois Pollution Control Board (1972).

During August 1977 through July 1979, heated water from the spray canal was occasionally observed entering the intake bay area. This flow of warm water from the spray canal occurred during periods of closed cycle cooling and frequently elevated water temperatures near the intake temperature sensor location (Appendix G).

IV. Summary and Conclusions

1. Monthly mean differences in the Mississippi River water temperatures downstream and upstream from the Quad-Cities Station during the February through July 1979 study period ranged from <0.1 to 0.5 F.

2. Temperatures in the river were in compliance with Illinois' thermal standards during the February through July 1979 period of study.

3. Natural hydrological and meterological factors resulted in significant temperature differences among sensors that were unrelated to station operation.

4. During the February through July 1979 study period, temperatures measured at the intake sensor were frequently elevated by the heated water from the spray canal while closed cycle cooling was utilized.

V. References Cited

Illinois Pollution Control Board. 1972. Illinois pollution control board rules and regulations Chapter 3: water pollution. Part II: Water Quality Standards. Rule 203 General Standards, 7 March 1972. Including amendments adopted on or before 6 March 1975. 36 pp.

Langford, T. E. 1972. A comparative assessment of thermal effects in some British and North American rivers. Pages 319-351 in R. T. Oglesby, C. A. Carlson, and J. A. McCann, eds. River ecology and man. Academic Press, New York.

1078 328

Table 2.2. Monthly maximum and mean temperature differences(ΔT), and average megawatt power output, Quad-Cities Station, February through July 1979.

Month and Year	Temperature Difference (°F)				Average Megawatt Output (percent of capacity		
	Discharge Minus Intake		Downstream Minus Upstream		Unit 1	Unit 2	Total Station
	Max.	Mean	Max.	Mean			
February 1979	66.7	44.5	1.7	<0.1	0	79	40
March 1979	68.4	50.7	1.8	<0.1	79	81	80
April 1979	51.7	42.1	3.9	<0.1	90	74	82
May 1979	44.9	34.0	3.4	0.5	68	82	75
June 1979	34.8	27.2	4.3	<0.1	94	79	86
July 1979	36.6	29.1	4.6	0.3	94	75	84

Chapter 3

CHEMICAL USE

Margaret A. George

OPERATIONAL ENVIRONMENTAL MONITORING

IN THE MISSISSIPPI RIVER NEAR QUAD-CITIES STATION

February 1979 through July 1979

1078 330

TABLE OF CONTENTS

1078 331

LIST OF TABLES

1078 332

Chapter 3

CHEMICAL USAGE

by

Margaret A. George

I. Introduction

The purpose of this chapter is to document chemical usage at the Quad-Cities Station including chlorine consumption (chlorine demand). A monthly log of chemicals used in connection with demineralizers and circulating and service water is tabulated in compliance with U.S. Nuclear Regulatory Commission (1974) requirements. The data for this chapter were obtained by Hazleton ES personnel from Station personnel for inclusion in this report.

II. Field and Analytical Procedures

Water samples for chlorine analysis were collected at the Station's inlet water box approximately three times per week. Free chlorine consumption was determined in accordance with surveillance requirements approved by the U.S. Nuclear Regulatory Commission (1974). These samples were collected through a bypass valve located at the inlet water box and were representative of intake cooling water used by the Station.

All samples were collected by Quad-Cities Station personnel and analyzed using a Wallace and Tiernan or Fischer and Porter Amperometric Titrator by Method 409C (A.P.H.A. et al. 1976), which has an analytical detection limit of 0.01 mg/l.

III. Results and Discussion

The results of chlorine analyses have been compiled in Table 3.1. A summary of monthly chemical use and consumption at the station has been tabulated in Table 3.2 to comply with U.S. Nuclear Regulatory Commission specifications (1974).

IV. References Cited

A.P.H.A., A.W.W.A., and W.P.C.F. 1976. Standard methods for the examination of water and wastewater. 14th ed. Amer. Public Health Assn., Washington, D.C. 1193 pp.

U.S. Nuclear Regulatory Commission. 1974. Appendix B to operating license DPR-29 and DPR-30: non-radiological technical specifications and bases for Quad-Cities Station Unit 1 and 2 Rock Island, Illinois. Commonwealth Edison Company and Iowa-Illinois Gas and Electric Company. Docket numbers 50-254 and 50-265. Washington, D.C. 15 pp.

1078 333

Table 3.1. Chlorine dose, free chlorine residual, free chlorine consumption and sodium hypochlorite injection flow rate into condensers at the Quad-Cities Station, February through July 1979, as provided by Quad-Cities Station personnel.

Date	Chlorine Dose (mg/l-NaOCℓ)	Free Chlorine Residue (mg/l)	Free Chlorine Consumption (mg/l)[a]	Sodium Hypochlorite Injection Flow Rate Into Condensers (gallons/minute)[b]
5 February 1979	2.20	0.95	1.25	4.98[c]
6	2.20	0.25	1.95	4.98
7	2.20	0.42	1.75	4.98
13	2.55	0.75	1.80	5.40
14	2.55	0.50	2.05	6.15
16	2.55	0.45	2.10	6.30
19	2.48	0.78	1.70	5.1
20	2.48	0.94	1.51	4.53
23	2.48	0.78	1.70	5.1
26	2.41	1.10	1.31	4.00
28	2.41	0.50	1.91	4.25
5 March	2.27	0.65	1.62	4.86
6	2.27	0.65	1.62	4.23
7	2.27	0.26	2.01	6.14
9	2.36	0.07	2.29	6.58
13	2.37	1.22	1.15	5.70
16	2.37	1.32	1.05	3.15
19	2.55	0.68	1.87	5.61
21	2.55	1.24	1.31	3.93
23	2.55	1.72	0.83	2.49
26	2.98	2.47	0.51	3.80
28	2.98	2.22	0.76	4.19
30	2.98	2.47	0.51	3.80
2 April	2.98	2.51	0.47	5.8
4	2.98	1.53	1.46	No injection[d]
6	2.98	1.28	1.70	No injection[d]
9	2.95	0.98	1.97	4.03
12	2.98	1.80	1.18	4.18
16	2.77	1.94	0.83	3.06
20	2.77	1.44	1.33	2.28
23[e]	2.84	1.47	1.37	10.1
24	2.84	1.82	1.02	6.93
27	2.84	2.00	0.84	19.31
30	2.84	1.88	0.96	8.80
4 May	2.91	1.84	1.07	19.70
5	2.91	1.26	1.65	14.90
7	2.98	1.82	1.16	19.80
9	2.50	1.05	1.45	8.45
11	2.55	1.17	1.38	17.76
14	2.55	1.05	1.50	7.6

1078 334

Table 3.1 (continued)

Date	Chlorine Dose (mg/l-NaOCℓ)	Free Chlorine Residue (mg/l)	Free Chlorine Consumption (mg/l)[a]	Sodium Hypochlorite Injection Flow Rate Into Condensers (gallons/minute)[b]
May (continued)				
18	2.55	0.79	1.76	18.4
22	2.09	1.26	0.83	10.2
24	2.02	1.53	0.49	5.45
30	1.98	0.93	1.05	10.64
31	1.98	0.76	1.22	10.91
5 June	1.98	0.88	1.10	10.77
11	1.98	0.46	1.52	8.94
15	1.98	1.17	0.81	10.26
18	2.27	1.02	1.25	11.33
20	2.27	0.75	1.52	8.23
22	2.27	1.35	0.92	19.50
25	2.27	1.35	0.92	10.44
27	2.27	1.02	1.25	20.00
6 July	2.34	1.56	0.78	No injection[d]
7	2.34	1.69	0.65	No injection[d]
9	2.30	0.94	1.36	No injection[d]
11	2.30	0.94	1.36	9.95
16	2.70	1.94	0.76	13.50[f]
17	2.70	1.53	1.16	13.50
24	2.70	1.01	1.69	4.20
26	3.39	1.47	1.92	6.75

[a]Free chlorine consumption = chlorine dose - free chlorine residual.

[b]Sodium hypochlorite flow rate injection into condensers - $\frac{A \times B}{1.92}$

A = total chlorine dose (free chlorine consumption + excess).

B = maximum number of operating circulating water pumps for either unit.

[c]During the week of 5 February 1979 no field analyses were conducted. Values calculated using previous weeks correction factor.

[d]No injection - pumps out of service.

[e]Starting the week of 23 April 1979 and continuing through the end of July 1979 chlorine injection time increased from 20 to 40 minutes.

[f]Based on data obtained 17 July 1979.

1078 335

Table 3.2. Chemical usage and consumption at the Quad-Cities Station, February through July 1979, as provided by Quad-Cities Station personnel.

Usages and Chemicals	Feb 1979	Mar 1979	Apr 1979	May 1979	June 1979	July 1979	Total Jan - Jul 1979
Demineralizers							
Sulfuric acid (H_2SO_4) (pounds)	17,526	11,580	3,860	8,841	7,720	6,755	68,018
Sodium hydroxide (NaOH) (pounds)	6,727	4,200	1,800	2,827	3,000	2,400	25,581
Circulating and Service Water							
Sodium hypochlorite (NaOCl) (pounds)	145,551	355,348	127,260	507,828	814,464	756,288	2,833,641
Domestic Water and Sewage							
Sodium hypochlorite (NaOCl) (pounds)	20	20	20	20	20	20	140
Closed Cooling Water							
Sodium nitrite ($NaNO_2$) (pounds)	23	20	43	10	10	30	163

Chapter 4

IMPINGEMENT INVESTIGATION

Gary Wilson Lutterbie

1078 337

OPERATIONAL ENVIRONMENTAL MONITORING

IN THE MISSISSIPPI RIVER NEAR QUAD-CITIES STATION

February 1979 through July 1979

TABLE OF CONTENTS

1078 338

LIST OF FIGURES

1078 359

LIST OF TABLES

1078 340

Chapter 4

IMPINGLMENT INVESTIGATION

By

Gary Wilson Lutterbie

I. Introduction

Impingement investigations have been conducted by Hazleton Environmental Sciences since 1973 (Johnson 1973, Latvaitis et al. 1974, 1977, Latvaitis 1974, 1975a, 1975b, 1976a, 1976b, 1976c, Pallo and Latvaitis 1977, Pallo 1977, 1978a, 1978b). The present report discusses the results of studies conducted during the period February 1979 through July 1979 to evaluate the nature and magnitude of fish impingement at the Quad-Cities Station.

Quad-Cities Station employs three protective structures to prevent submerged and floating debris and fishes from entering the plant intake pumps and condenser tubes. The first of these structures is a floating boom at the mouth of the intake canal designed to prevent the entrance of logs or the large floating materials into the canal. The second protective structure is a series of vertical bar grills with three-inch spacings which are located in front of the crib house entrance. Directly behind the bar grills are the standard traveling screens with 3/8 inch square openings which are employed to further reduce the entrainment of fishes and debris. Materials that are trapped on the vertical bar grills are removed by a mechanical lift and dumped into a trash basket. Small materials impinged by the intake current onto the traveling screens are retained on these screens until washed into trash baskets at pre-set time intervals or when screens are activated by reduction in intake water volume due to the collection of debris. A schematic representation of the intake structure is presented in Figure 4.1.

II. Field and Analytical Procedures

Twice per week trash baskets were allowed to accumulate fishes and debris for approximately 24 hours. Small mesh (3/8" x 3/8") trash baskets were used exclusively during the period covered by this report. Fishes contained in each 24 hour collection were identified, counted, and length range, average weight, total weight and incidence of parasitism were recorded by species. Scientific and common names of all fishes reported follow Bailey (1970).

III. Results and Discussion

Results of counts, relative abundance and weight determinations of impinged fishes collected during February 1979 through July 1979 are presented in Table 4.1. A total of 7,886 fishes were collected during 55 sampling days. Total number, weights and fish species impinged and collected varied among the sampling dates. The three most abundant fishes impinged were mooneyes, freshwater drum and gizzard shad, comprising 28.4, 18.6 and 12.5% respectively, (59.5% in total) of the numerical catch. The remaining catch was distributed among 58 species.

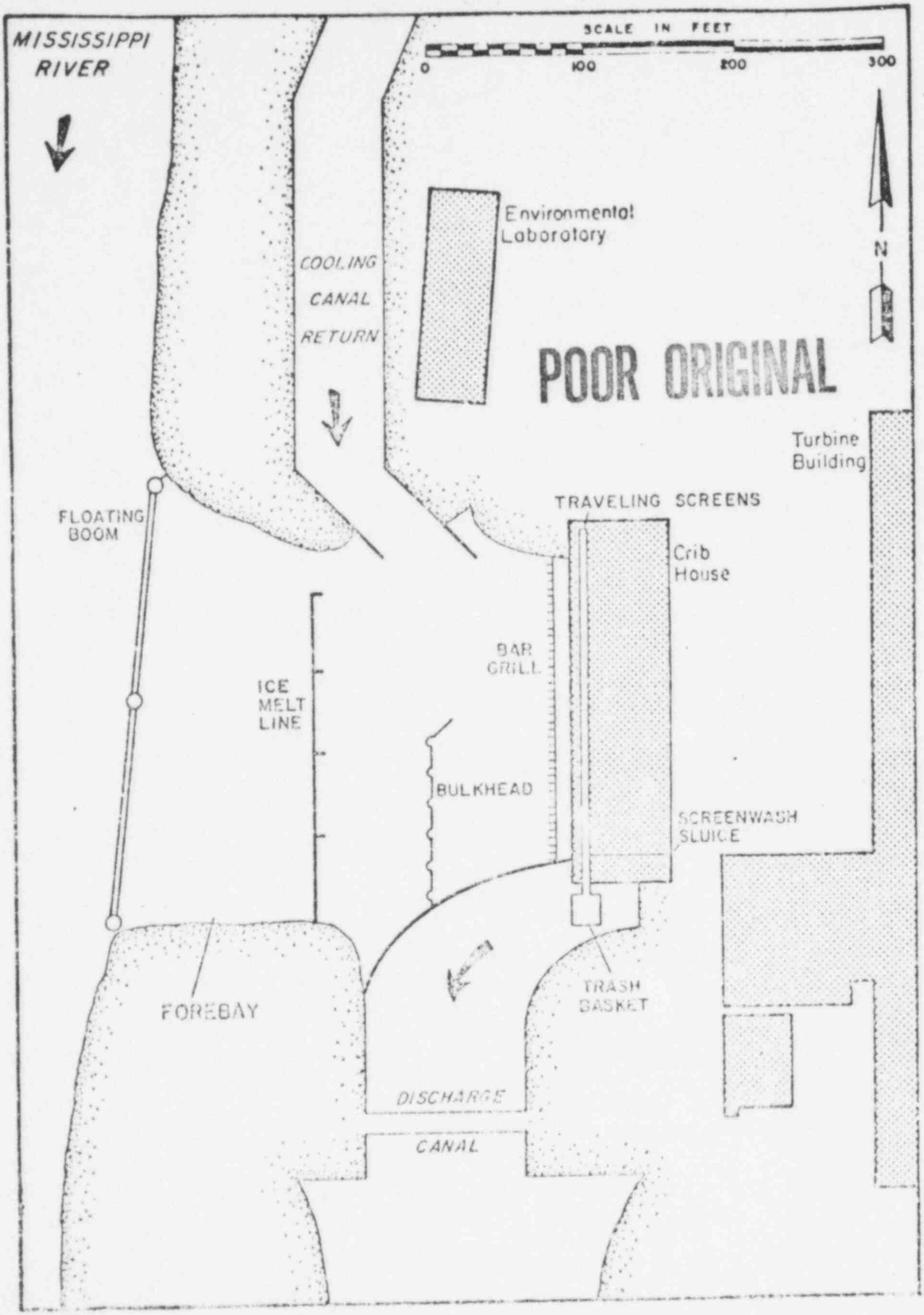


Figure 4.1. Schematic representation of the Quad-Cities Station intake bay.

1078 342

Table 4.1. Number, total weight, average weight per fish, relative abundance and total length range of fishes removed from traveling intake screens and collected from trash baskets at Quad-Cities Station, February 1979 through July 1979.

Species	February	March	April	May	June	July	Total Weight (grams)	Average Weight (grams)	Total Number	Percentage of Total catch	Total Length Range (mm)
Silver lamprey	1	1	1	0	2	0	268	53.6	5	0.06	247-320
Shovelnose sturgeon	0	0	0	1	0	0	15	15.0	1	0.01	-290
Paddlefish	0	0	1	0	0	0	366	366.0	1	0.01	-554
Longnose gar	1	1	24	7	0	8	11,778	287.3	41	0.52	74-744
Shortnose gar	1	3	9	1	1	24	5,882	150.8	39	0.49	117-595
Bowfin	0	0	1	0	20	14	3,232	92.3	35	0.44	121-526
Gizzard shad	810	104	13	8	1	50	76,619	77.7	986	12.50	48-405
Goldeye	0	0	0	0	1	0	455	455.0	1	0.01	-367
Mooneye	5	1,867	242	54	22	51	278,775	124.4	2,241	28.42	52-368
Brown trout	0	0	0	1	0	0	68	68.0	1	0.01	-197
Central mudminnow	0	1	3	1	0	0	49	9.8	5	0.06	79-121
Grass pickeral	0	0	5	0	3	2	203	20.3	10	0.13	81-195
Northern pike	0	0	2	0	17	4	2,021	87.9	23	0.29	92-384
Carp	0	6	1	0	10	37	10,384	192.3	54	0.68	28-485
Silver chub	0	2	27	0	11	26	785	11.9	66	0.84	57-178
Golden shiner	0	0	2	3	0	0	82	16.4	5	0.06	73-140
Pallid shiner	0	0	1	0	0	0	1	1.0	1	0.01	- 56
Emerald shiner	4	2	1	3	23	2	114	3.2	35	0.44	63- 97
River shiner	0	2	0	0	0	1	7	2.3	3	0.04	58- 70
Spotfin shiner	0	0	0	0	0	1	6	6.0	1	0.01	- 85
Spottail shiner	1	0	0	0	0	0	19	19.0	1	0.01	-137
Weed shiner	0	0	0	0	1	0	3	3.0	1	0.01	- 55
Fathead minnow	0	1	1	0	0	0	7	3.5	2	0.02	62- 76
Bullhead minnow	0	0	0	0	0	1	3	3.0	1	0.01	- 70
Creek chub	0	0	2	0	0	0	76	38.0	2	0.02	139-186
Carpiodes sp.	0	1	0	2	14	0	119	7.0	17	0.22	58-111
River carpsucker	4	9	9	4	0	3	5,589	192.7	29	0.37	80-455
Quillback	0	10	1	2	0	0	2,678	206.0	13	0.16	155-365
Highfin carpsucker	0	0	1	0	0	0	331	331.0	1	0.01	-292
Ictiobus sp.	0	0	0	0	4	193	348	1.8	197	2.50	23- 80
Smallmouth buffalo	2	8	6	5	3	1	9,738	318.3	25	0.32	85-460
Bigmouth buffalo	0	1	1	0	0	6	829	103.6	8	0.10	47-350
Black buffalo	0	0	0	0	1	0	2,200	2200.0	1	0.01	-549
Spotted sucker	0	1	0	0	0	0	431	431.0	1	0.01	-375
Shorthead redhorse	0	1	2	1	14	1	2,151	113.2	19	0.24	76-412
Black bullhead	0	9	340	4	2	1	14,791	41.5	356	4.51	58-234
Yellow bullhead	0	0	1	0	0	0	8	8.0	1	0.01	- 94
Channel catfish	17	102	260	116	55	59	29,100	47.8	609	7.72	39-550
Stonecat	0	0	0	4	2	6	136	11.3	12	0.15	76-[illegible]
Tadpole madtom	0	5	8	3	10	6	147	4.6	32	0.40	53-105
Flathead catfish	7	9	8	1	0	0	1,766	70.6	25	0.32	72-438
Trout - perch	0	0	1	0	0	0	4	4.0	1	0.01	- 55
White bass	23	18	32	15	1	284	12,618	33.8	373	4.73	36-340
Yellow bass	0	0	1	0	0	0	190	190.0	1	0.01	-283
Rock bass	0	0	0	0	1	0	97	97.0	1	0.01	-165
Green sunfish	0	0	3	3	2	0	154	19.2	8	0.10	66-121
Pumpkinseed	0	8	27	7	0	0	168	4.0	42	0.53	45-105
Warmouth	0	1	0	0	0	0	12	12.0	1	0.01	- 91
Orangespotted sunfish	0	1	8	2	7	6	151	6.3	24	0.30	50- 94
Bluegill	4	32	120	233	112	4	17,603	34.8	505	6.40	27-190
Largemouth bass	0	2	4	3	5	10	1,301	54.2	24	0.30	65-294
Pomoxis sp.	0	0	0	0	3	160	205	1.2	163	2.07	36- 67
White crappie	3	3	15	26	26	5	3,207	41.1	78	0.90	66-264
Black crappie	0	4	38	29	31	10	5,894	52.6	112	1.40	65-270
Yellow perch	0	2	53	2	3	4	2,968	46.4	64	0.80	46-269
Logperch	2	5	11	2	0	0	84	4.2	20	0.20	71- 86

Table 4.1 Continued

Species	February	March	April	May	June	July	Total Weight (grams)	Average Weight (grams)	Total Number	Percentage of Total catch	Total Length Range (mm)
River darter	0	1	35	1	0	1	148	3.7	38	0.40	50- 78
Stizostedion sp.	0	0	0	0	1	12	29	2.2	13	0.10	51- 90
Sauger	2	3	4	3	13	1	2,889	111.1	26	0.30	148-345
Walleye	1	5	4	2	1	2	1,274	84.9	15	0.10	90-325
Freshwater drum	163	178	649	338	21	121	163,747	111.4	1,470	18.60	40-489
Total number	1,051	2,409	1,978	887	444	1,117			7,886		
Total species	18	36	44	33	35	35			61		
Total weight (gr.)	76,269	299,911	175,892	83,978	26,106	12,167	674,323				
Sampling days	8	8	11	10	8	10					

HAZLETON ENVIRONMENTAL SCIENCES

1078 344

The total weight of impinged fishes was 674,323 gm (1485 lbs.). The bulk of the catch by weight consisted of mooneyes (41.3%), freshwater drum (24.3%) and gizzard shad (11.4%).

The mooneye catch consisted primarily of juveniles and adults, whereas the catch of gizzard shad and freshwater drum was mainly young-of-the-year and juveniles. The average weight for the other species of 48.6 gm, would indicate that the majority of other fishes impinged were young-of-the-year and juveniles.

Parasitized fishes were few during the study period. The most common parasite observed was Philometra sp. This nematode was most frequently observed in the freshwater drum (Table 4.2).

No federal, Illinois or Iowa (Miller 1972, Smith 1979, Roosa 1977) endangered fish species were observed in impingement collections.

IV. Summary and Conclusions

The most abundant fishes impinged during February 1979 through July 1979 were juvenile and adult mooneyes, and juvenile and young-of-the-year freshwater drum and gizzard shad. The majority of additional fish species impinged also consisted of young-of-the-year and juveniles.

V. References Cited

Bailey, R.M. 1970. A list of common and scientific names of fishes from the United States and Canada. 3rd ed. Am. Fish. Soc. Spec. Publ. 6, 150 pp.

Johnson, D.L. 1973. Fish population and life history study. Pages 228-292 in H.O. Eiler and J.J. Delfino, eds. River near Quad-Cities Station (February 1973 through July 1973). Report prepared for Commonwealth Edison Company, Chicago, Illinois, by Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois.

Latvaitis, P.B. 1974. Fish population and life history studies. Pages 265-316 in R.P. Markel., Ed., Operational environmental monitoring in the Mississippi River near Quad-Cities Station (February 1974 through July 1974). Report prepared for Commonwealth Edison Company, Chicago, Illinois by Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois.

________. 1975a. Fish population and life history studies. Pages 219-283 in R.M. Gerhold, ed., Operational environmental monitoring in the Mississippi River near Quad-Cities Station (August 1974 through January 1975). Report prepared for Commonwealth Edison Company, Chicago, Illinois, by Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois.

________. 1975b. Impingement investigation. Pages 113-129 in R.M. Gerhold, ed., Operational environmental monitoring in the Mississippi River near Quad-Cities Station (February 1975 through July 1975). Report prepared for Commonwealth Edison Company, Chicago, Illinois, by Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois.

Table 4.2. External parasites of impinged fishes enumerated during impingement studies at Quad-Cities Station, February 1979 through July 1979.

Month	Infected Species	Disorder	Number Afflicted
February	Carp	Popeye[a]	1
	Freshwater drum	Popeye	7
March	Freshwater drum	Popeye	69
	Carp	Popeye	1
	Creek chub	Black spot[b]	4
April	Freshwater drum	Popeye	44
	Freshwater drum	Fungus[c]	12
	Creek chub	Fungus	1
	Black bullhead	Fungus	29
	Channel catfish	Fungus	11
	Yellow perch	Black spot	1
	Bluegill	Fungus	2
May	Freshwater drum	Popeye	1
June	None	-	-
July	Spotfin shiner	Anchor worm[d]	1

[a] Philometra sp.

[b] Neaseus sp. or Uvulifer sp.

[c] Saprolengia sp.

[d] Lernaea cyprinacea

1078 346

_________. 1976a. Impingement investigation. Pages 125-168 in R.M. Gerhold, ed., Operational environmental monitoring in the Mississippi River near Quad-Cities Station (February 1975 through January 1976). Prepared for Commonwealth Edison Company, Chicago, Illinois, by NALCO Environmental Sciences, Northbrook, Illinois.

_________. 1976b. Impingement investigation. Pages 119-136 in R.M. Gerhold, ed., Operational environmental monitoring in the Mississippi River near Quad-Cities Station (August 1975 through January 1976). Prepared for Commonwealth Edison Company, Chicago, Illinois, by NALCO Environmental Sciences, Northbrook, Illinois.

_________. 1976c. Impingement investigation. Pages 89-106 in R.M. Gerhold, ed., Operational environmental monitoring in the Mississippi River near Quad-Cities Station (February 1976 through July 1976). Prepared for Commonwealth Edison Company, Chicago, Illinois, by NALCO Environmental Sciences, Northbrook, Illinois.

_________. D.M. Coon and D. E. Patulski. 1974. Fish population and life history studies. Pages 190-260 in H. O. Eiler and J. J. Delfino, eds., Operational environmental monitoring in the Mississippi River near Quad-Cities Station (August 1973 through January 1974). Prepared for Commonwealth Edison Company, Chicago, Illinois, by NALCO Environmental Sciences, Northbrook, Illinois.

_________, M.S. Pallo and B.I. Muench. 1977. Impingement investigation. Pages 85-97 in R.M. Gerhold, ed., Operational environmental monitoring in the Mississippi River near Quad-Cities Station (February 1976 through January 1977). Prepared for Commonwealth Edison Company, Chicago, Illinois, by NALCO Environmental Sciences, Northbrook, Illinois.

Miller, R. R. 1972. Threatened freshwater fishes of the United States. Trans. Am. Fish Soc. Vol. 101, No. 2, 239-252.

Pallo, M.S. and P.B. Latvaitis. 1977. Impingement investigation. Pages 85-97 in R.M. Gerhold, ed., Operational environmental monitoring in the Mississippi River near Quad-Cities Station (August 1976 through January 1977). Prepared for Commonwealth Edison Company, Chicago, Illinois, by NALCO Environmental Sciences, Northbrook, Illinois.

_________. 1977. Impingement investigation. Pages 49-62 in R.M. Gerhold, ed., Operational environmental monitoring in the Mississippi River near Quad-Cities Station (February 1977 through July 1977). Prepared for Commonwealth Edison Company, Chicago, Illinois, by NALCO Environmental Sciences, Northbrook, Illinois.

_________. 1978a. Impingement investigations. Pages 41-55 in R.M. Gerhold, ed., Operational environmental monitoring in the Mississippi River near Quad-Cities Station (August 1977 through January 1978). Prepared for Commonwealth Edison Company, Chicago, Illinois, by NALCO Environmental Sciences, Northbrook, Illinois.

__________. 1978b. Impingement investigations. Pages 41-56 in Operational environmental monitoring in the Mississippi River near Quad-Cities Station (February 1978 through July 1978). Prepared for Commonwealth Edison Company, Chicago, Illinois, by NALCO Environmental Sciences, Northbrook, Illinois.

Roosa, D. N. 1977. Endangered and threatened fish of Iowa. Special Report of the Preseves Board. No. 1, Des Moines, Iowa, 25 p.

Smith, W. P. 1979. The fishes of Illinois. University of Illinois Press, Urbana, Illinois, 314 p.

1078 348

APPENDIX A

(Related to Chapter 2 of Text)

SUMMARY OF DAILY MINIMUM, MAXIMUM AND
MEAN WATER TEMPERATURES

QUAD-CITIES STATION 1078 349

February 1979 through July 1979

TABLE 1. SUMMARY OF DAILY MINIMUM, MAXIMUM, AND MEAN WATER TEMPERATURES (F), QUAD-CITIES STATION, FEBRUARY, 1979.

DAY	UPSTREAM MIN.	UPSTREAM MAX.	UPSTREAM MEAN	INTAKE MIN.	INTAKE MAX.	INTAKE MEAN	COOLING CANAL COLD END MIN.	COOLING CANAL COLD END MAX.	COOLING CANAL COLD END MEAN	DISCHARGE MIN.	DISCHARGE MAX.	DISCHARGE MEAN	DOWNSTREAM MIN.	DOWNSTREAM MAX.	DOWNSTREAM MEAN
1	32.0	32.0	32.0	32.0	67.5	34.4	51.2	58.7	55.9	54.0	83.3	70.0	32.0	32.7	32.0
2	32.0	32.0	32.0	32.0	32.0	32.0	46.0	50.6	47.7	55.0	70.0	58.4	32.0	32.3	32.0
3	32.0	32.0	32.0	32.0	32.1	32.0	38.2	45.9	43.3	50.3	57.7	53.7	32.0	32.0	32.0
4	32.0	32.1	32.0	32.0	32.2	32.0	32.0	37.5	33.4	51.3	75.2	55.8	32.0	32.2	32.0
5	32.0	32.0	32.0	32.0	32.0	32.0	33.0	34.0	33.5	70.7	76.3	75.5	32.0	32.0	32.0
6	32.0	32.2	32.0	32.0	44.9	34.2	32.0	37.7	33.0	73.7	85.7	76.3	32.0	32.0	32.0
7	32.0	32.1	32.0	41.5	46.8	44.5	50.3	66.5	57.9	88.3	101.8	95.4	32.0	32.0	32.0
8	32.0	32.2	32.0	43.0	46.0	44.5	46.0	51.0	48.9	93.3	96.8	95.1	32.0	32.0	32.0
9	32.0	32.2	32.0	41.5	45.7	44.0	40.1	72.8	52.1	90.1	95.2	92.4	32.0	32.7	32.0
10	32.0	32.1	32.0	38.5	50.3	41.3	57.9	82.3	70.7	*9999	*9999	*9999	32.0	32.0	32.0
11	32.0	32.0	32.0	32.0	40.5	37.0	44.2	59.5	53.6	*9999	*9999	*9999	32.0	32.0	32.0
12	32.0	32.1	32.0	32.0	41.7	36.4	32.0	47.0	41.5	67.3	78.0	72.4	32.0	32.8	32.1
13	32.0	32.1	32.0	32.0	42.7	39.2	43.5	56.5	51.6	67.0	96.0	82.4	32.0	33.0	32.1
14	32.0	32.2	32.0	35.7	40.6	38.0	51.4	57.3	54.2	89.8	101.4	97.5	32.0	33.4	32.4
15	32.0	32.2	32.0	34.7	43.0	38.2	51.0	57.3	54.9	78.3	103.7	100.5	32.0	33.2	32.3
16	32.0	32.3	32.1	32.6	37.2	34.9	56.8	68.0	64.5	72.4	85.1	79.5	32.0	32.2	32.0
17	32.0	32.2	32.0	33.0	39.8	35.5	61.8	66.3	64.1	75.5	80.3	78.0	32.0	32.0	32.0
18	32.0	32.2	32.1	32.0	39.8	33.8	54.0	63.3	59.0	59.0	77.5	64.5	32.0	32.3	32.0
19	32.0	32.3	32.1	32.0	42.2	35.8	53.5	61.0	56.6	60.5	70.1	64.5	32.0	32.0	32.0
20	32.0	32.8	32.2	32.0	37.7	32.9	60.8	68.3	63.7	65.4	81.5	72.8	32.0	32.5	32.1
21	32.0	32.7	32.1	32.0	39.0	33.6	65.5	72.0	68.6	76.7	90.1	83.3	32.0	32.9	32.1
22	32.0	32.3	32.1	33.2	51.3	42.2	72.2	75.7	73.5	89.7	96.3	92.3	32.0	33.0	32.3
23	32.0	32.3	32.1	33.5	45.8	38.3	67.8	79.3	72.9	72.6	99.7	89.1	32.0	33.2	32.1
24	32.0	32.7	32.3	32.0	46.6	35.8	67.7	73.9	71.9	83.5	93.3	88.9	32.0	33.6	32.4
25	32.0	32.7	32.4	32.0	34.8	32.1	62.6	67.2	65.1	78.5	86.4	82.0	32.0	33.2	32.3
26	32.2	32.7	32.3	32.0	38.0	33.0	57.2	78.0	72.4	88.3	98.7	93.1	32.0	33.0	32.1
27	32.0	32.7	32.3	32.0	32.0	32.0	70.8	79.7	73.6	85.0	93.5	89.0	32.0	33.2	32.1
28	32.0	32.7	32.2	32.0	55.5	33.5	62.1	78.1	70.4	66.8	106.8	83.6	32.0	33.7	32.4

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

HAZLETON ENVIRONMENTAL SCIENCES

POOR ORIGINAL

1078 350

TABLE 2. SUMMARY OF DAILY MINIMUM, MAXIMUM, AND MEAN WATER TEMPERATURES (F), QUAD-CITIES STATION. MARCH, 1979

DAY	UPSTREAM MIN.	UPSTREAM MAX.	UPSTREAM MEAN	INTAKE MIN.	INTAKE MAX.	INTAKE MEAN	COOLING CANAL COLD END MIN.	COOLING CANAL COLD END MAX.	COOLING CANAL COLD END MEAN	DISCHARGE MIN.	DISCHARGE MAX.	DISCHARGE MEAN	DOWNSTREAM MIN.	DOWNSTREAM MAX.	DOWNSTREAM MEAN
1	32.0	32.7	32.1	32.0	32.5	32.1	62.1	69.9	65.1	65.0	71.8	67.2	32.0	33.5	32.5
2	32.0	32.3	32.1	32.0	32.7	32.1	60.9	66.8	63.4	64.2	73.4	69.6	32.0	32.8	32.3
3	32.0	32.2	32.0	32.0	32.0	32.0	66.8	84.3	76.5	75.2	95.0	88.2	32.0	32.4	32.0
4	32.0	32.6	32.1	32.0	32.0	32.0	67.1	84.0	73.1	79.5	94.6	83.3	32.0	33.2	32.2
5	32.0	32.5	32.1	32.0	33.0	32.2	70.4	76.8	73.5	85.0	97.2	91.0	32.0	33.1	32.2
6	32.0	32.8	32.2	32.0	33.2	32.3	*9999	*9999	*9999	86.4	100.4	94.8	32.0	33.5	32.3
7	32.0	32.5	32.2	32.0	32.8	32.1	*9999	*9999	*9999	65.9	88.0	77.7	32.0	33.2	32.3
8	32.1	32.6	32.3	32.0	32.8	32.2	74.3	76.9	75.4	72.5	91.3	83.7	32.0	33.2	32.2
9	32.0	33.1	32.3	32.0	44.6	35.1	76.8	79.9	78.3	91.5	95.7	93.4	32.0	32.3	32.1
10	32.0	32.8	32.2	32.0	48.4	44.5	78.3	80.1	79.9	*9999	*9999	*9999	32.0	32.5	32.0
11	32.0	33.1	32.3	32.0	[illegible]	41.2	75.8	83.1	80.1	*9999	*9999	*9999	32.0	32.8	32.1
12	32.0	33.2	32.3	[illegible]	[illegible]	44.8	81.2	86.1	83.9	*9999	*9999	*9999	32.0	32.6	32.1
13	32.0	33.4	32.5	43.3	49.1	45.9	81.6	89.1	86.1	95.4	106.8	100.8	32.0	32.8	32.1
14	32.0	32.3	32.0	44.5	50.0	47.5	80.8	84.6	82.0	96.2	102.5	98.4	32.0	32.4	32.0
15	32.0	32.3	32.0	45.0	49.3	47.6	*9999	*9999	*9999	*9999	*9999	*9999	32.0	32.5	32.1
16	32.0	32.5	32.1	32.0	48.4	39.2	*9999	*9999	*9999	*9999	*9999	*9999	32.0	33.2	32.5
17	32.0	32.0	32.0	32.0	33.0	32.0	*9999	*9999	*9999	*9999	*9999	*9999	32.0	33.2	32.3
18	32.0	32.8	32.2	32.0	38.2	33.0	*9999	*9999	*9999	*9999	*9999	*9999	32.0	33.0	32.5
19	32.0	32.8	32.3	32.0	48.0	41.3	*9999	*9999	*9999	*9999	*9999	*9999	32.2	33.8	32.8
20	32.0	32.3	32.1	32.0	45.3	40.6	*9999	*9999	*9999	*9999	*9999	*9999	32.0	33.7	32.5
21	32.0	32.3	32.0	36.8	61.5	48.2	*9999	*9999	*9999	*9999	*9999	*9999	32.0	32.8	32.1
22	32.0	32.6	32.2	33.8	38.0	36.1	*9999	*9999	*9999	*9999	*9999	*9999	32.0	32.7	32.2
23	32.0	33.8	33.1	34.2	43.2	37.1	*9999	*9999	*9999	*9999	*9999	*9999	32.0	34.3	33.2
24	32.1	33.0	32.4	32.0	41.8	35.4	*9999	*9999	*9999	*9999	*9999	*9999	32.0	33.7	33.0
25	32.0	32.5	32.1	32.0	32.3	32.1	*9999	*9999	*9999	*9999	*9999	*9999	32.0	33.6	32.6
26	32.3	32.7	32.5	32.6	33.2	32.8	*9999	*9999	*9999	*9999	*9999	*9999	32.0	33.5	32.8
27	32.2	33.7	32.8	32.6	33.7	33.2	62.8	63.8	63.4	73.3	76.7	76.0	32.0	34.6	32.9
28	33.4	34.4	34.0	33.2	35.0	34.0	63.4	74.3	68.6	70.4	90.1	82.1	32.8	34.8	33.8
29	33.8	35.8	34.6	34.8	36.5	35.4	71.5	76.7	73.9	86.5	90.7	89.5	33.5	35.9	34.5
30	35.6	38.7	37.5	36.7	42.2	39.6	70.[illegible]	77.3	74.6	89.0	93.5	91.0	34.1	38.2	35.9
31	37.7	38.7	38.1	40.8	42.4	41.7	71.0	72.2	71.7	89.0	91.9	90.3	35.0	38.1	36.5

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

HAZLETON ENVIRONMENTAL SCIENCES

POOR ORIGINAL

1078 351

TABLE 3. SUMMARY OF DAILY MINIMUM, MAXIMUM, AND MEAN WATER TEMPERATURES (F), QUAD-CITIES STATION, APRIL, 1979.

DAY	UPSTREAM MIN.	UPSTREAM MAX.	UPSTREAM MEAN	INTAKE MIN.	INTAKE MAX.	INTAKE MEAN	SOUTH INTAKE MIN.	SOUTH INTAKE MAX.	SOUTH INTAKE MEAN	DISCHARGE MIN.	DISCHARGE MAX.	DISCHARGE MEAN	DOWNSTREAM MIN.	DOWNSTREAM MAX.	DOWNSTREAM MEAN
1	35.8	37.6	36.7	38.8	40.8	39.9	66.4	71.5	68.8	80.4	83.0	82.2	34.7	37.6	36.5
2	35.2	36.2	35.6	34.9	36.1	35.4	69.8	70.8	70.3	82.1	83.3	82.8	34.5	36.5	35.4
3	34.9	36.7	35.6	34.6	36.8	35.7	70.2	73.2	71.7	82.5	87.9	84.9	34.2	37.2	35.5
4	35.3	37.4	36.5	36.8	37.4	37.0	70.1	73.7	72.1	81.3	86.8	84.8	35.0	37.6	36.4
5	35.4	38.0	36.9	36.5	36.7	37.5	59.5	73.8	68.7	73.4	86.8	82.1	38.3	39.8	39.1
6	34.2	36.5	35.4	33.5	36.2	34.8	59.4	70.5	65.4	71.0	83.5	78.8	35.6	39.4	37.8
7	36.0	37.5	36.7	35.1	37.4	36.3	64.8	70.6	67.4	70.5	83.6	74.9	36.4	39.5	38.0
8	37.3	38.0	37.6	37.4	38.6	38.0	65.0	71.6	68.4	71.7	84.9	79.3	37.3	39.6	38.2
9	*9999	*9999	*9999	37.6	38.6	38.3	70.5	72.7	71.6	83.7	86.9	85.2	37.5	39.8	38.1
10	*9999	*9999	*9999	37.0	38.9	37.9	70.0	72.5	71.4	81.5	85.4	84.0	36.9	38.8	37.7
11	*9999	*9999	*9999	37.5	39.1	38.6	69.0	72.0	70.4	81.0	86.5	83.9	35.5	39.7	38.2
12	39.0	42.5	41.0	38.6	43.5	40.8	71.1	77.5	75.6	84.0	90.9	88.9	35.6	43.3	40.2
13	42.1	44.0	43.0	43.5	44.9	44.2	74.9	76.7	75.8	86.7	92.3	89.9	40.7	44.1	42.4
14	43.2	45.5	44.3	44.5	46.5	45.5	72.0	76.6	73.3	82.4	86.4	83.9	42.2	45.1	43.6
15	44.8	45.5	45.1	46.0	48.3	46.9	71.0	76.4	73.0	83.0	92.3	86.1	43.0	46.5	44.6
16	45.0	47.1	45.9	48.4	49.7	48.7	76.5	80.5	78.5	92.5	95.9	94.4	45.0	47.5	46.1
17	47.1	49.7	48.1	49.0	50.5	49.7	77.7	80.4	79.1	93.0	96.0	94.5	46.5	49.2	47.4
18	47.5	50.5	49.0	47.5	49.8	48.7	77.9	80.2	78.9	92.5	96.4	95.6	47.5	50.7	48.7
19	47.0	49.7	48.1	47.6	49.6	48.7	76.7	81.2	79.2	88.0	94.4	92.6	47.7	50.7	48.8
20	47.5	49.0	47.9	48.1	49.5	48.6	78.5	85.7	82.4	90.6	96.6	94.2	44.5	51.4	48.6
21	49.0	50.1	49.7	49.0	50.1	49.6	80.2	85.3	81.9	88.6	93.0	90.5	48.2	50.8	49.5
22	50.5	53.0	52.0	50.0	53.0	51.5	81.0	84.9	83.0	88.5	95.3	91.8	49.8	53.5	51.2
23	52.5	54.9	53.9	53.0	55.2	53.9	81.9	87.5	84.9	92.5	100.5	97.4	52.0	56.1	53.2
24	52.9	54.6	54.0	55.1	56.2	55.5	86.2	87.5	86.9	97.5	100.3	99.2	53.4	57.4	55.2
25	*9999	*9999	*9999	54.6	56.6	55.8	82.9	89.1	87.3	95.0	100.0	98.6	54.1	56.0	55.0
26	*9999	*9999	*9999	54.6	56.2	55.4	79.5	82.6	80.6	86.5	95.1	93.1	54.0	56.0	54.8
27	*9999	*9999	*9999	52.0	55.4	54.0	68.0	80.0	74.4	70.0	87.5	81.2	52.0	55.5	53.8
28	*9999	*9999	*9999	51.4	55.7	53.2	65.0	76.5	71.5	69.2	95.4	90.0	51.0	53.3	52.0
29	*9999	*9999	*9999	50.0	55.4	53.4	73.0	76.5	74.8	65.5	96.1	86.9	50.6	52.8	51.6
30	*9999	*9999	*9999	48.5	50.0	49.0	64.5	72.0	67.4	64.8	84.0	72.7	49.0	50.9	49.7

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

HAZLETON ENVIRONMENTAL SCIENCES

POOR ORIGINAL

1078 352

TABLE 4. SUMMARY OF DAILY MINIMUM, MAXIMUM, AND MEAN WATER TEMPERATURES (F), QUAD-CITIES STATION, MAY, 1979.

DAY	UPSTREAM MIN.	UPSTREAM MAX.	UPSTREAM MEAN	INTAKE MIN.	INTAKE MAX.	INTAKE MEAN	COOLING CANAL COLD END MIN.	COOLING CANAL COLD END MAX.	COOLING CANAL COLD END MEAN	DISCHARGE MIN.	DISCHARGE MAX.	DISCHARGE MEAN	DOWNSTREAM MIN.	DOWNSTREAM MAX.	DOWNSTREAM MEAN
1	*9999	*9999	*9999	48.9	49.9	49.4	72.9	76.9	74.8	84.9	90.5	87.2	49.5	51.6	50.3
2	*9999	*9999	*9999	48.8	50.1	49.7	76.7	80.5	78.8	90.5	92.3	91.5	49.8	52.2	51.0
3	*9999	*9999	*9999	49.0	51.7	50.5	76.1	80.2	78.5	90.5	94.8	92.7	50.0	52.3	50.9
4	*9999	*9999	*9999	50.8	52.0	51.6	78.5	83.0	80.7	88.5	96.6	94.0	50.5	53.5	51.3
5	*9999	*9999	*9999	51.5	53.5	52.5	77.1	81.8	79.1	85.2	94.4	89.8	51.5	53.5	52.1
6	*9999	*9999	*9999	53.3	55.6	54.4	81.5	83.4	82.3	92.0	97.3	94.9	51.8	55.0	52.8
7	52.5	56.1	54.7	55.8	58.7	57.6	81.6	84.5	83.2	94.0	100.5	98.5	52.0	57.6	55.9
8	57.7	58.8	58.4	59.0	62.0	60.5	75.9	85.0	82.1	83.4	100.7	91.7	57.5	60.6	58.7
9	61.2	62.8	62.0	61.1	63.3	62.1	74.7	88.0	83.0	84.6	100.3	94.7	59.6	62.0	60.8
10	*9999	*9999	*9999	63.3	65.0	64.0	65.5	88.5	86.9	100.3	105.3	103.3	59.7	64.0	61.8
11	62.1	63.1	62.5	61.3	64.6	63.0	70.9	87.1	76.4	76.6	98.5	83.3	59.2	64.0	62.4
12	*9999	*9999	*9999	59.5	62.5	61.0	56.5	78.9	72.6	75.9	96.9	88.6	60.0	63.2	61.9
13	*9999	*9999	*9999	60.7	61.6	61.1	68.6	79.0	70.9	67.5	78.5	73.3	60.3	63.4	61.5
14	*9999	*9999	*9999	59.9	61.0	60.7	71.0	79.0	74.0	75.9	95.5	84.8	60.0	62.9	61.4
15	*9999	*9999	*9999	59.1	61.0	60.1	77.0	82.4	79.3	85.9	98.0	93.0	59.2	62.5	60.9
16	*9999	*9999	*9999	60.9	62.3	61.6	78.5	85.0	82.4	95.6	107.0	100.4	59.4	62.5	61.3
17	*9999	*9999	*9999	61.7	63.2	62.5	79.1	84.5	81.4	93.4	100.5	95.3	61.1	64.2	62.7
18	65.1	66.5	65.8	63.5	65.5	64.4	83.6	88.0	85.6	99.9	106.5	103.6	63.0	66.0	63.7
19	64.5	66.7	65.4	65.5	67.3	66.3	84.0	85.9	85.0	103.6	106.4	105.0	63.1	67.0	64.5
20	64.5	65.8	65.2	67.0	68.1	67.4	80.0	84.5	82.5	*9999	*9999	*9999	63.4	67.3	65.2
21	62.9	65.8	64.1	66.0	67.3	66.4	79.3	83.8	81.7	*9999	*9999	*9999	63.0	67.3	64.8
22	64.6	66.0	65.3	65.3	66.2	65.8	79.5	84.4	82.2	*9999	*9999	*9999	62.7	66.5	64.7
23	62.0	66.0	63.5	62.4	66.0	64.4	79.0	84.1	81.5	*9999	*9999	*9999	62.5	66.1	64.2
24	60.0	62.0	60.9	61.0	62.2	61.3	68.7	80.6	77.5	*9999	*9999	*9999	60.5	63.6	61.6
25	58.7	60.6	59.6	60.7	62.0	61.4	63.3	69.0	66.1	*9999	*9999	*9999	59.0	62.0	60.6
26	58.0	61.3	59.4	60.2	62.5	61.6	67.4	73.0	69.1	*9999	*9999	*9999	58.3	62.4	60.4
27	57.0	61.6	58.6	59.1	62.5	60.5	66.3	71.3	68.7	*9999	*9999	*9999	59.0	62.5	60.3
28	61.0	63.0	61.8	62.6	65.2	64.0	71.0	82.0	76.9	*9999	*9999	*9999	61.3	64.1	62.4
29	61.3	63.4	62.4	65.0	66.5	65.7	79.6	85.5	82.6	*9999	*9999	*9999	61.6	65.0	63.7
30	62.8	65.6	64.0	66.0	69.6	67.8	83.6	89.7	86.6	*9999	*9999	*9999	64.0	67.5	65.3
31	65.0	68.9	67.9	68.5	70.0	69.7	85.5	88.6	87.0	*9999	*9999	*9999	65.7	68.4	67.0

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1078 353

TABLE 5. SUMMARY OF DAILY MINIMUM, MAXIMUM, AND MEAN WATER TEMPERATURES (F), QUAD-CITIES STATION, JUNE, 1979.

DAY	UPSTREAM MIN.	UPSTREAM MAX.	UPSTREAM MEAN	INTAKE MIN.	INTAKE MAX.	INTAKE MEAN	COOLING CANAL COLD END MIN.	COOLING CANAL COLD END MAX.	COOLING CANAL COLD END MEAN	DISCHARGE MIN.	DISCHARGE MAX.	DISCHARGE MEAN	DOWNSTREAM MIN.	DOWNSTREAM MAX.	DOWNSTREAM MEAN
1	67.2	69.0	68.1	68.5	69.6	69.2	82.2	86.5	84.8	*9999	*9999	*9999	66.7	69.4	67.8
2	69.3	70.8	69.9	69.3	71.3	70.2	84.6	88.5	86.5	*9999	*9999	*9999	67.7	70.4	68.9
3	70.0	71.6	70.8	70.6	73.0	71.8	84.9	89.5	87.2	*9999	*9999	*9999	68.5	71.0	69.7
4	70.1	71.6	70.8	71.8	72.9	72.4	86.1	89.0	87.4	*9999	*9999	*9999	68.5	71.5	70.0
5	70.0	71.1	70.3	72.0	73.5	72.6	89.0	90.3	89.0	*9999	*9999	*9999	69.5	71.0	70.3
6	69.0	70.7	69.7	71.4	72.5	72.0	85.5	92.5	89.0	*9999	*9999	*9999	69.6	70.8	70.2
7	70.8	72.0	71.6	71.0	72.3	72.0	89.6	92.6	91.3	*9999	*9999	*9999	70.0	72.2	71.5
8	72.2	73.5	72.7	72.3	73.5	72.8	82.2	92.5	88.8	*9999	*9999	*9999	71.7	73.7	72.9
9	71.2	73.0	72.4	71.5	73.5	72.3	83.4	87.3	85.6	*9999	*9999	*9999	71.0	74.5	73.2
10	70.8	72.6	71.7	68.4	72.4	71.0	77.8	87.5	81.8	*9999	*9999	*9999	70.0	74.7	72.5
11	69.1	70.9	70.1	66.2	68.2	67.3	79.3	85.0	82.1	*9999	*9999	*9999	69.0	72.6	71.0
12	70.1	71.6	71.0	68.0	71.5	70.1	77.9	81.0	79.4	*9999	*9999	*9999	70.7	73.2	72.4
13	71.6	73.0	72.4	70.5	73.8	71.5	76.2	81.4	79.0	*9999	*9999	*9999	72.0	73.5	72.6
14	69.8	74.5	73.0	71.0	73.6	72.4	77.0	83.5	80.3	*9999	*9999	*9999	71.6	73.5	72.8
15	74.1	76.4	75.3	72.3	75.5	73.8	75.4	89.7	83.8	*9999	*9999	*9999	72.5	75.1	73.6
16	76.0	77.9	77.1	74.0	77.1	75.5	88.1	92.0	89.9	*9999	*9999	*9999	73.1	76.3	74.8
17	76.5	78.5	77.7	75.3	77.5	76.1	87.1	91.6	89.2	*9999	*9999	*9999	73.5	76.8	75.1
18	73.1	77.0	75.4	71.4	75.2	73.7	84.4	86.5	85.6	*9999	*9999	*9999	72.5	76.5	74.3
19	72.1	74.5	73.4	69.5	73.1	71.4	84.5	92.2	87.9	*9999	*9999	*9999	71.5	74.0	73.0
20	72.9	74.6	73.9	72.4	74.4	73.4	89.6	91.8	90.7	*9999	*9999	*9999	73.0	75.0	74.3
21	72.9	74.5	73.5	72.1	74.5	73.2	89.5	92.8	90.7	*9999	*9999	*9999	73.0	75.7	74.3
22	73.8	75.1	74.5	73.6	76.0	74.6	84.3	92.6	89.9	*9999	*9999	*9999	74.0	76.0	74.9
23	70.6	74.5	73.1	71.5	74.1	73.2	78.5	84.1	81.2	*9999	*9999	*9999	71.5	75.6	74.0
24	70.3	71.6	70.9	70.7	72.5	71.5	80.0	86.8	83.4	*9999	*9999	*9999	70.5	74.9	72.5
25	71.9	72.5	72.2	71.3	73.4	72.2	83.2	89.0	86.4	*9999	*9999	*9999	71.0	75.6	73.4
26	72.4	73.9	73.0	71.1	73.9	72.7	86.5	91.0	89.0	*9999	*9999	*9999	71.4	74.5	72.6
27	72.9	74.0	73.6	72.9	73.5	73.2	89.4	92.6	91.2	101.9	107.4	104.6	71.8	74.9	72.5
28	72.7	74.5	73.8	72.9	75.3	74.0	91.0	93.4	92.1	100.4	109.5	102.9	72.0	74.5	73.2
29	72.9	75.0	74.0	73.5	75.0	74.4	88.0	91.3	89.5	97.5	102.6	100.2	72.4	74.6	73.3
30	72.0	73.9	73.1	72.6	74.7	73.7	88.0	90.3	89.2	93.5	102.6	98.9	72.0	73.9	72.8

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

HAZLETON ENVIRONMENTAL SCIENCES

POOR ORIGINAL

1078 354

TABLE 6. SUMMARY OF DAILY MINIMUM, MAXIMUM, AND MEAN WATER TEMPERATURES (F), QUAD-CITIES STATION, JULY, 1979.

DAY	UPSTREAM MIN.	UPSTREAM MAX.	UPSTREAM MEAN	INTAKE MIN.	INTAKE MAX.	INTAKE MEAN	SOUTH INTAKE MIN.	SOUTH INTAKE MAX.	SOUTH INTAKE MEAN	DISCHARGE MIN.	DISCHARGE MAX.	DISCHARGE MEAN	DOWNSTREAM MIN.	DOWNSTREAM MAX.	DOWNSTREAM MEAN
1	74.0	75.7	75.0	73.9	75.9	74.8	87.2	90.5	89.1	96.2	105.2	101.3	73.6	74.9	74.3
2	75.4	77.4	76.5	74.8	77.8	76.1	87.9	92.8	90.2	103.8	112.0	107.5	74.7	78.9	76.4
3	76.1	77.0	76.6	75.7	77.0	76.2	88.8	94.2	91.3	105.7	111.5	108.9	74.5	78.0	76.1
4	*9999	*9999	*9999	74.9	76.8	75.7	86.6	92.6	89.0	101.2	109.4	103.5	74.4	75.3	74.9
5	74.6	75.9	75.5	73.2	75.0	74.3	85.0	89.6	87.0	101.1	105.0	103.6	74.1	74.9	74.5
6	75.9	76.5	76.3	72.8	74.3	73.6	87.0	90.6	88.7	101.3	105.6	103.7	74.7	75.3	75.1
7	76.5	76.9	76.6	73.1	74.8	73.9	88.7	91.0	89.9	103.0	106.9	105.0	75.1	75.6	75.3
8	76.5	77.0	76.5	73.[illegible]	75.5	74.6	88.7	93.0	90.8	99.0	109.1	105.5	75.6	76.1	75.8
9	76.5	77.5	76.9	74.6	77.2	75.9	91.5	94.9	93.3	107.3	112.2	109.7	76.1	77.6	76.7
10	76.9	77.1	77.0	76.4	77.2	76.8	92.2	94.5	93.6	109.5	110.9	110.1	76.9	77.5	77.2
11	77.0	77.3	77.1	77.8	78.4	78.1	94.4	95.8	95.2	109.6	111.5	110.8	77.5	78.3	77.8
12	78.3	79.0	78.5	77.8	78.8	78.4	93.8	95.7	95.1	110.0	112.7	111.2	78.0	79.9	78.7
13	79.2	80.4	79.8	77.5	79.6	78.4	91.6	95.2	94.0	108.5	112.4	110.0	77.6	79.9	78.9
14	76.7	79.5	77.9	77.3	78.5	77.8	91.4	96.5	93.7	105.4	114.0	109.1	76.8	78.7	77.5
15	77.9	79.0	78.4	77.5	79.3	78.3	93.7	96.5	95.2	109.0	115.0	112.0	77.6	78.9	78.4
16	78.2	78.8	78.6	78.2	79.6	78.8	92.7	95.5	93.7	108.7	115.0	110.6	78.2	79.3	78.9
17	77.8	78.5	78.1	77.5	78.9	78.2	89.8	92.7	91.3	105.2	109.0	107.7	78.0	79.9	78.9
18	77.9	79.0	78.2	77.0	79.1	77.9	90.0	92.2	91.4	105.5	109.5	107.7	78.0	79.5	78.8
19	78.2	79.0	78.6	77.5	80.0	78.7	91.0	93.2	92.2	106.5	116.5	109.4	78.4	80.4	79.3
20	78.0	78.8	78.3	77.5	80.5	78.9	90.0	94.4	92.6	105.6	112.2	109.5	78.5	80.0	79.1
21	78.0	79.1	78.4	78.0	80.6	79.3	87.4	93.4	90.4	90.7	109.0	97.9	78.6	80.6	79.5
22	78.1	79.5	78.6	78.5	80.6	79.4	89.6	94.0	91.6	97.7	108.0	103.4	78.9	81.3	79.8
23	78.6	79.5	79.1	78.0	80.6	79.3	92.5	96.0	94.2	107.0	110.5	108.7	78.3	80.6	79.7
24	78.5	80.0	79.3	78.9	81.9	79.9	89.5	97.0	94.1	88.8	107.9	99.2	77.4	80.6	79.4
25	79.1	79.6	79.4	79.0	80.4	79.6	87.6	96.0	91.1	84.2	109.6	99.3	78.7	80.9	79.6
26	78.8	79.8	79.4	78.3	80.5	79.3	93.9	96.1	95.2	106.5	117.5	109.4	78.4	80.5	79.5
27	79.2	80.0	79.5	79.6	80.5	80.1	93.0	96.0	94.7	104.3	110.8	106.5	76.5	80.9	79.6
28	*9999	*9999	*9999	79.0	81.5	80.0	90.5	96.3	93.9	*9999	*9999	*9999	76.8	81.0	79.3
29	*9999	*9999	*9999	79.3	81.3	80.2	92.0	96.7	94.4	*9999	*9999	*9999	77.2	81.3	79.5
30	78.0	78.5	78.2	78.8	80.3	79.7	92.8	97.1	95.3	109.0	111.6	110.9	77.0	82.6	79.6
31	78.3	81.9	80.0	78.0	80.5	79.2	92.1	97.2	94.5	97.5	110.7	106.1	78.6	82.1	80.3

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1078 355

APPENDIX B

(Related to Chapter 2 of Text)

SUMMARY OF DAILY TEMPERATURE DIFFERENCES

QUAD-CITIES STATION

February 1979 through July 1979

1078 356

TABLE 1. SUMMARY OF TEMPERATURE DIFFERENTIALS (Δ), QUAD-CITIES STATION, FEBRUARY 1979.

POOR ORIGINAL

	TEMPERATURES (F)			
	DISCHARGE MINUS INTAKE		DOWNSTREAM MINUS UPSTREAM	
DAY	MAX.	MEAN	MAX.	MEAN
1	49.1	35.6	0.7	0.0
2	38.0	26.4	0.3	0.0
3	25.7	21.7	0.0	0.0
4	43.2	23.8	0.2	0.0
5	44.3	43.5	0.0	0.0
6	44.5	42.1	0.0	-0.0
7	55.4	50.9	0.0	-0.0
8	52.4	50.6	0.0	-0.0
9	51.5	46.9	0.7	0.0
10	*9999	*9999	0.0	-0.0
11	*9999	*9999	0.0	0.0
12	41.2	37.7	0.8	0.0
13	55.5	43.2	0.9	0.1
14	64.0	59.6	1.4	0.4
15	66.7	62.3	1.2	0.3
16	48.7	44.6	0.2	-0.0
17	47.1	42.6	0.0	-0.0
18	41.7	30.8	0.1	-0.0
19	36.6	28.7	0.0	-0.1
20	46.5	40.0	0.5	-0.0
21	56.6	49.7	0.6	-0.0
22	57.9	50.1	1.0	0.2
23	57.0	50.8	1.0	0.0
24	56.5	53.0	1.2	0.0
25	54.4	49.9	0.9	-0.0
26	63.5	60.1	0.5	-0.2
27	61.5	57.0	0.8	-0.2
28	68.0	50.1	1.7	0.2

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1078 357

TABLE 2. SUMMARY OF TEMPERATURE DIFFERENTIALS (Δ), QUAD-CITIES STATION, MARCH 1979.

	TEMPERATURES (F)			
	DISCHARGE MINUS INTAKE		DOWNSTREAM MINUS UPSTREAM	
DAY	MAX.	MEAN	MAX.	MEAN
1	39.8	35.1	1.5	0.4
2	41.4	37.5	0.8	0.3
3	63.0	56.2	0.4	-0.0
4	62.6	51.3	1.2	0.2
5	65.2	58.8	1.0	0.0
6	66.4	62.5	0.9	0.1
7	56.0	45.6	1.1	0.0
8	59.1	51.5	0.7	-0.1
9	65.2	61.1	0.2	-0.2
10	*9999	*9999	0.6	-0.1
11	*9999	*9999	0.8	-0.2
12	*9999	*9999	0.5	-0.3
13	59.8	54.9	0.0	-0.4
14	52.7	49.8	0.4	0.0
15	*9999	*9999	0.5	0.0
16	*9999	*9999	1.2	0.3
17	*9999	*9999	1.2	0.3
18	*9999	*9999	0.3	0.3
19	*9999	*9999	1.8	0.5
20	*9999	*9999	1.7	0.4
21	*9999	*9999	0.5	0.0
22	*9999	*9999	0.3	-0.0
23	*9999	*9999	1.0	0.0
24	*9999	*9999	1.6	0.7
25	*9999	*9999	1.4	0.5
26	*9999	*9999	1.0	0.3
27	45.6	42.8	1.1	0.2
28	55.1	48.1	1.0	-0.1
29	55.4	54.1	1.5	-0.1
30	54.6	51.5	1.2	-1.5
31	50.5	48.5	0.2	-1.6

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1078 358

TABLE 3. SUMMARY OF TEMPERATURE DIFFERENTIALS (Δ), QUAD-CITIES STATION, APRIL 1979.

POOR ORIGINAL

	TEMPERATURES (F)			
	DISCHARGE MINUS INTAKE		DOWNSTREAM MINUS UPSTREAM	
DAY	MAX.	MEAN	MAX.	MEAN
1	43.6	42.3	0.9	-0.2
2	48.0	47.4	1.0	-0.1
3	51.7	49.1	1.3	-0.0
4	49.6	47.7	1.1	-0.2
5	49.5	44.6	3.5	2.1
6	49.3	44.0	3.9	2.3
7	48.3	38.7	2.7	1.3
8	40.4	41.3	1.8	0.4
9	48.5	46.9	*9999	*9999
10	47.6	40.1	*9999	*9999
11	45.2	45.3	*9999	*9999
12	50.0	48.0	2.5	0.4
13	47.6	45.7	1.0	-0.6
14	41.6	38.5	0.8	-0.7
15	44.1	39.3	1.1	-0.5
16	47.4	45.7	0.9	0.3
17	46.6	44.9	0.6	-0.7
18	48.0	46.9	1.4	-0.3
19	45.7	43.9	2.5	0.7
20	47.6	45.6	1.5	0.6
21	43.0	40.9	1.5	-0.2
22	42.6	40.5	1.4	-0.5
23	45.7	43.5	1.9	-0.7
24	45.0	43.6	3.7	1.2
25	45.8	42.8	*9999	*9999
26	39.5	37.7	*9999	*9999
27	33.0	27.2	*9999	*9999
28	41.4	36.3	*9999	*9999
29	42.0	33.5	*9999	*9999
30	35.3	23.7	*9999	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1078 359

TABLE 4. SUMMARY OF TEMPERATURE DIFFERENTIALS (Δ), QUAD-CITIES STATION, MAY 1979.

POOR ORIGINAL

	TEMPERATURES (F)			
	DISCHARGE MINUS INTAKE		DOWNSTREAM MINUS UPSTREAM	
DAY	MAX.	MEAN	MAX.	MEAN
1	40.7	37.8	*9999	*9999
2	42.8	41.7	*9999	*9999
3	44.1	42.3	*9999	*9999
4	44.9	42.4	*9999	*9999
5	40.9	37.3	*9999	*9999
6	42.2	40.4	*9999	*9999
7	42.0	40.9	2.6	0.8
8	41.6	31.2	0.1	-0.6
9	39.1	33.5	-0.9	-1.3
10	40.5	38.6	*9999	*9999
11	35.1	20.3	1.2	0.2
12	35.7	27.6	*9999	*9999
13	17.8	12.2	*9999	*9999
14	35.0	24.2	*9999	*9999
15	38.8	32.9	*9999	*9999
16	44.7	38.8	*9999	*9999
17	37.4	33.8	*9999	*9999
18	41.5	39.2	-0.2	-1.7
19	40.5	39.2	2.5	-0.9
20	*9999	*9999	2.0	-0.0
21	*9999	*9999	2.3	0.7
22	*9999	*9999	0.7	-0.6
23	*9999	*9999	1.5	0.7
24	*9999	*9999	1.9	0.5
25	*9999	*9999	2.3	1.1
26	*9999	*9999	2.5	1.0
27	*9999	*9999	3.4	1.7
28	*9999	*9999	1.7	0.6
29	*9999	*9999	3.0	1.3
30	*9999	*9999	2.9	1.3
31	*9999	*9999	2.7	-0.9

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1078 360

IMAGE EVALUATION TEST TARGET (MT-3)

6″

IMAGE EVALUATION
TEST TARGET (MT-3)

6″

IMAGE EVALUATION TEST TARGET (MT-3)

6″

TABLE 5. SUMMARY OF TEMPERATURE DIFFERENTIALS (Δ), QUAD-CITIES STATION, JUNE 1979.

POOR ORIGINAL

	TEMPERATURES (F)			
	DISCHARGE MINUS INTAKE		DOWNSTREAM MINUS UPSTREAM	
DAY	MAX.	MEAN	MAX.	MEAN
1	*9999	*9999	0.8	-0.3
2	*9999	*9999	0.4	-1.0
3	*9999	*9999	0.1	-1.1
4	*9999	*9999	0.5	-0.8
5	*9999	*9999	0.9	0.0
6	*9999	*9999	1.5	0.5
7	*9999	*9999	0.6	-0.0
8	*9999	*9999	1.4	0.1
9	*9999	*9999	2.5	0.8
10	*9999	*9999	2.0	0.6
11	*9999	*9999	3.2	0.9
12	*9999	*9999	2.4	1.4
13	*9999	*9999	1.5	0.2
14	*9999	*9999	3.7	-0.2
15	*9999	*9999	-0.3	-1.7
16	*9999	*9999	-0.5	-2.3
17	*9999	*9999	-1.1	-2.6
18	*9999	*9999	0.3	-1.3
19	*9999	*9999	1.5	-0.4
20	*9999	*9999	1.7	0.3
21	*9999	*9999	1.3	0.8
22	*9999	*9999	2.2	0.3
23	*9999	*9999	4.3	1.0
24	*9999	*9999	4.3	1.6
25	*9999	*9999	3.4	1.3
26	*9999	*9999	1.9	-0.4
27	34.0	31.3	1.3	-1.1
28	34.8	28.9	1.3	-0.5
29	27.6	25.7	1.0	-0.7
30	28.3	25.2	0.7	-0.3

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 001

POOR ORIGINAL

TABLE 6. SUMMARY OF TEMPERATURE DIFFERENTIALS (Δ), QUAD-CITIES STATION, JULY 1979.

	TEMPERATURES (F)			
	DISCHARGE MINUS INTAKE		DOWNSTREAM MINUS UPSTREAM	
DAY	MAX.	MEAN	MAX.	MEAN
1	30.4	26.5	0.4	-0.6
2	34.4	31.4	1.8	-0.2
3	35.3	32.7	1.0	0.1
4	33.9	27.9	*9999	*9999
5	31.3	29.3	-0.2	-0.9
6	31.9	30.2	-0.9	-1.2
7	32.2	31.2	-1.2	-1.3
8	34.1	30.9	-0.5	-0.8
9	35.4	33.8	1.1	-0.2
10	34.0	33.3	0.5	0.2
11	33.4	32.7	0.5	0.4
12	34.2	32.9	0.4	-0.2
13	32.8	31.6	0.0	-1.4
14	36.4	31.3	0.2	-0.4
15	36.1	33.7	0.2	-0.1
16	36.6	31.9	0.7	0.4
17	31.0	29.4	1.9	0.8
18	31.0	29.8	1.5	0.6
19	36.5	30.6	1.9	0.7
20	32.7	30.6	1.5	0.7
21	30.4	18.6	2.3	1.0
22	28.4	24.0	2.6	1.1
23	31.0	29.4	1.7	0.7
24	26.7	19.3	1.9	0.1
25	29.9	19.7	1.4	0.2
26	38.6	30.2	1.4	0.0
27	30.7	26.5	0.9	0.2
28	*9999	*9999	*9999	*9999
29	*9999	*9999	*9999	*9999
30	32.8	31.1	4.5	2.2
31	31.5	26.9	3.5	0.4

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 002

APPENDIX C

(Related to Chapter 2 of Text)

WEEKLY TEMPERATURE IN THE WAPSIPINICON AND MISSISSIPPI RIVERS

QUAD-CITIES STATION

February 1979 through July 1979

1079 003

Table 1. Temperatures in the Wapsipinicon River and Mississippi River (upstream, mid-channel) February through July 1979.

Month and Year	Date	Temperatures (°F) Wapsipinicon River	Mississippi River
February 1979	February 1	32.0	32.0
	21	32.0	32.0
	28	32.0	32.0
March 1979	March 7	32.0	32.0
	14	32.0	32.0
	27	34.9	32.7
April 1979	April 4	38.7	35.8
	11	38.8	37.6
	20	48.2	47.3
	27	54.0	53.6
May 1979	May 4	50.9	50.2
	11	62.4	62.1
	17	64.2	61.7
	24	61.2	61.0
June 1979	June 1	68.5	67.1
	8	75.2	72.3
	13	73.2	71.4
	20	74.3	73.8
	27	74.5	72.3
July 1979	July 2	76.1	75.9
	5[a]	72.7 (73.9)	74.3 (73.6)
	12	76.1	77.9
	17	76.6	78.8
	23	79.9	79.9
	27	80.1	80.1
	30	79.2	77.9

[a]Temperatures taken twice on July 5.

1079 004

APPENDIX D

(Related to Chapter 2 of Text)

CHRONOLOGY OF CHANGES IN STATION OPERATING CONDITIONS

QUAD-CITIES STATION

February 1979 through July 1979

1079 005

Table 1. Chronology of changes in station operating conditions, Feburary through July 1979. Operating conditions from a date and time listed were fixed until the next change

Month	Date Day	Time (hour)	Lift Pumps Operating (number)	Circulating Water Pumps Operating (number)	Mode of Station Operation (condenser) cooling
February	1	1200	3	4	Closed cycle
		1240	3	4	Combination cycle: spray canal and north diffuser pipe
		1300	3	5	
		1330	3	5	Combination cycle: spray canal and north and south diffuser pipes
		2300	0	5	Open cycle: north and south diffuser pipes
	4	1500	0	5	Open cycle: south diffuser pipe partially open
		1833	0	4	
		1850	0	3	
		1942	0	4	
		2115	0	3	
		2130	0	3	Closed cycle: both diffuser pipes closed
		2132	0	3	Open cycle: south diffuser
		2150	0	2	
	5	1500	0	2	Open cycle: north and south diffuser pipes
	6	1500	1	2	Combination cycle: spray canal and diffuser pipe with south diffuser partially open
	7	1420	2	2	
		1440	1	2	
		1630	2	2	
		1712	1	2	
	8	1500	1	3	Combination cycle: spray canal and north and south diffuser pipes
	10	0240	1	2	
		0748	1	0	
		0748	0	0	Open cycle: north and south diffuser pipes
		1820	0	3	
	11	2315	1	3	Combination cycle: spray canal and north and south diffuser pipes
	12	0200	1	3	Closed cycle
		0205	0	3	Open cycle: north and south diffuser pipes
		0235	1	3	Combination cycle: spray canal and north and south diffuser pipes
		0435	0	3	Open cycle: north and south diffuser pipes

1079 006

Table 1. Continued.

Month	Date Day	Time (hour)	Lift Pumps Operating (number)	Circulating Water Pumps Operating (number)	Mode of Station Operation (condenser) cooling
February (cont'd)		0550	1	3	Combination cycle: spray canal and north and south diffuser pipes
		0735	0	3	Open cycle: north and south diffuser pipes
		0925	1	3	Combination cycle: spray canal and north and south diffuser pipes
		1135	0	3	Open cycle: north and south diffuser pipes
		1450	1	3	Combination cycle: spray canal and north and south diffuser pipes
		1640	2	3	
		1707	1	3	
		21[illegible]	2	3	
	13	0700	2	3	Combination cycle: spray canal and north diffuser pipe
	14	0700	2	3	Closed cycle
	15	2140	2	4	
		2145	2	5	
		2230	2	4	
	16	0008	2	5	
	18	0700	3	5	
	21	0845	3	6	
		0945	3	5	
		1545	4	5	
		1710	3	5	
	26	1800	4	6	
		2350	4	6	Combination cycle: spray canal and south diffuser partially open
March	9	1627	5	6	Combination cycle: spray canal and south diffuser partially open
		1648	5	6	Closed cycle
	16	0900	4	6	
		0945	3	6	
		1010	2	6	
		1035	1	6	
		2300	1	6	Combination cycle: spray canal and north and south diffuser pipes
	17	0300	1	6	Combination cycle: spray canal and south diffuser pipe
		0310	2	6	
		0335	3	6	
		0420	4	6	

Table 1. 'ontinued.

Month	Date Day	Time (hour)	Lift Pumps Operating (number)	Circulating Water Pumps Operating (number)	Mode of Station Operation (condenser) cooling
March	17	0455	5	6	
		0515	5	6	Closed cycle
	21	1625	3	6	
		1740	1	6	
		1821	1	6	Combination cycle: spray canal and north and south diffuser pipes
	22	1230	2	6	
		1310	3	6	
		1320	4	6	
		1600	4	6	Combination cycle: spray canal and north diffuser pipe with south diffuser pipe partially open
	23	1805	3	6	Combination cycle: spray canal and north and south diffuser pipes
April	20	2202	4	6	
		2204	3	6	
	28	0240	2	6	
		0245	2	3	
	29	1805	2	5	
		1810	3	6	
May	8	1043	2	6	
		1057	1	6	Combination cycle: spray canal and south diffuser pipe with north diffuser pipe partially open
	9	0020	3	6	Combination cycle: spray canal and south diffuser pipe
	25	0725	2	3	
		0800	2	5	
		0808	2	6	
	30	0935	3	6	
June	8	1010	3	6	Combination cycle: spray canal and south diffuser pipe with north diffuser pipe partially open
		1107	2	6	
		1140	2	6	Combination cycle: spray canal and north and south diffuser pipes
		1215	1	6	
		1813	1	6	Combination cycle: spray canal and south diffuser pipe with north diffuser pipe partially open
		1940	2	6	Combination cycle: spray canal and south diffuser pipe
		2025	3	6	
	11	0035	3	6	Combination cycle: spray canal and south diffuser pipe with north diffuser pipe partially open

1079 008

Table 1. Continued.

Month	Date Day	Time (hour)	Life Pumps Operating (number)	Circulating Water Pumps Operating (number)	Mode of Station Operation (condenser) cooling
June	11	0150	2	6	
		0205	2	6	Combination cycle: spray canal and north and south diffuser pipes
		0220	1	6	
		0340	0	6	Open cycle: north and south diffuser pipes
	15	0110	1	6	Combination cycle: spray canal and north and south diffuser pipes
		0145	1	6	Combination cycle: spray canal and south diffuser pipe with north diffuser pipe partially open
		0250	2	6	
		0515	3	6	
		0523	3	6	Combination cycle: spray canal and south diffuser pipe
July	24	0750	3	6	Combination cycle: spray canal and south diffuser pipe with north diffuser pipe partially open.
		0825	2	6	
		1020	1	6	Combination cycle: spray canal and north and south diffuser pipes.
	25	0720	1	6	Combination cycle: spray canal and south diffuser pipe with north diffuser pipe partially open.
		0755	2	6	
		0905	3	6	
		0930	3	6	Combination cycle: spray canal and south diffuser pipe
	27	1410	3	6	Combination cycle: spray canal and south diffuser pipe with north diffuser pipe partially open
		1420	2	6	
		1435	1	6	
		1525	1	6	Combination cycle: spray canal and north and south diffuser pipes
		1335	0	6	Open cycle: north and south diffuser pipes
		2200	1	6	Combination cycle: spray canal and north and south diffuser pipes
		2210	1	6	Combination cycle: spray canal and south diffuser pipe with north diffuser pipe partially open.
		2321	1	6	Combination cycle: spray canal and south diffuser pipe.
		2325	2	6	
		2337	3	6	
	31	0635	3	6	Combination cycle: spray canal and south diffuser pipe with north diffuser pipe partially open

1079 009

Table 1. Continued.

Month	Date Day	Time (hour)	Life Pumps Operating (number)	Circulating Water Pumps Operating (number)	Mode of Station Operation (condenser) cooling
July (cont.)	31	0710	2	6	
		0740	3	6	
		0910	3	6	Combination cycle: spray canal and south diffuser pipe
		1215	3	6	Combination cycle: spray canal and south diffuser pipe with north diffuser pipe partially open
		1310	2	6	
		1345	1	6	
		1415	0	6	Open cycle: north and south diffuser pipes
		1725	0	6	Open cycle: south diffuser pipe with north diffuser partially open
		1740	1	6	Combination cycle: spray canal and south diffuser pipe with north diffuser partially open
		1800	2	6	
		1825	2	6	Combination cycle: spray canal and south diffuser pipe
		1842	3	6	

1079 010

APPENDIX E

(Related to Chapter 2 of Text)

DAILY MEGAWATT POWER OUTPUT
(PERCENT OF CAPACITY)

QUAD-CITIES STATION

February 1979 through July 1979

1079 011

Table 1. Daily megawatt power output (percent of capacity), Quad-Cities Station, February 1979.

Date	Unit 1	Unit 2	Station Average	Remarks
1	0	88	44	
2	0	87	44	
3	0	87	44	
4	0	87	44	
5	0	86	43	
6	0	86	43	
7	0	85	42	
8	0	85	42	
9	0	70	35	
10	0	0	0	
11	0	1	0	
12	0	66	33	
13	0	85	42	
14	0	88	44	
15	0	87	44	
16	0	97	48	
17	0	87	44	
18	0	63	32	
19	0	68	34	
20	0	77	38	
21	0	86	43	
22	0	94	47	
23	0	83	42	
24	0	96	48	
25	0	95	48	
26	0	97	48	
27	11	96	54	
28	0	97	48	

1079 012

Table 2. Daily megawatt power output (percent of capacity), Quad-Cities Station, March 1979.

Date	Unit 1	Unit 2	Station Average	Remarks
1	0	96	48	
2	20	97	58	
3	47	95	71	
4	54	84	69	
5	69	96	82	
6	77	95	86	
7	36	94	65	
8	64	94	79	
9	82	89	86	
10	92	78	85	
11	66	83	74	
12	75	73	74	
13	89	67	78	
14	97	70	84	
15	97	72	84	
16	98	79	88	
17	95	72	84	
18	88	72	80	
19	83	67	75	
20	87	72	80	
21	88	68	78	
22	87	78	82	
23	81	74	78	
24	95	86	90	
25	83	46	64	
26	98	69	84	
27	98	78	88	
28	98	86	92	
29	98	94	96	
30	98	92	95	
31	98	92	95	

1079 013

Table 3. Daily megawatt power output (percent of capacity), Quad-Cities Station, April 1979.

Date	Unit 1	Unit 2	Station Average	Remarks
1	86	87	86	
2	98	87	92	
3	97	92	94	
4	96	90	93	
5	98	90	94	
6	98	88	93	
7	79	79	79	
8	86	87	86	
9	97	89	93	
10	95	88	92	
11	98	85	92	
12	98	86	92	
13	92	85	88	
14	75	78	76	
15	82	82	82	
16	93	86	90	
17	91	85	88	
18	87	84	86	
19	86	80	83	
20	86	77	82	
21	77	74	76	
22	79	76	78	
23	87	78	82	
24	87	79	83	
25	83	78	80	
26	90	69	80	
27	93	32	62	
28	94	0	47	
29	84	0	42	
30	93	21	57	

Table 4. Daily megawatt power output (percent of capacity), Quad-Cities Station, May 1979.

Date	Unit 1	Unit 2	Station Average	Remarks
1	96	60	78	
2	95	71	83	
3	96	79	88	
4	92	88	90	
5	73	92	82	
6	95	83	89	
7	94	85	90	
8	91	89	90	
9	92	88	90	
10	84	84	84	
11	4	85	44	
12	0	84	42	
13	0	70	35	
14	28	89	58	
15	50	89	70	
16	82	88	85	
17	70	88	79	
18	87	87	87	
19	95	86	90	
20	79	83	81	
21	89	87	88	
22	93	86	90	
23	97	85	91	
24	75	49	62	
25	0	62	31	
26	0	72	36	
27	6	80	43	
28	68	89	78	
29	88	90	89	
30	97	89	93	
31	97	78	88	

Table 5. Daily megawatt power output (percent of capacity), Quad-Cities Station, June 1979.

Date	Unit 1	Unit 2	Station Average	Remarks
1	98	89	94	
2	95	88	92	
3	98	77	88	
4	98	88	93	
5	98	87	92	
6	97	87	92	
7	96	78	87	
8	98	76	87	
9	56	77	66	
10	85	77	81	
11	97	82	90	
12	98	87	92	
13	98	85	92	
14	97	84	90	
15	97	76	86	
16	97	79	88	
17	84	79	82	
18	97	83	90	
19	97	79	88	
20	96	84	90	
21	97	82	90	
22	97	48	72	
23	96	30	63	
24	89	78	84	
25	95	84	90	
26	96	81	88	
27	98	81	90	
28	98	78	88	
29	98	80	89	
30	96	79	88	

1079 016

Table 6. Daily megawatt power output (percent of capacity), Quad-Cities Station, July 1979.

Date	Unit 1	Unit 2	Station Average	Remarks
1	89	80	84	
2	90	80	85	
3	98	79	88	
4	82	73	78	
5	97	78	88	
6	98	79	88	
7	98	78	88	
8	95	76	86	
9	98	78	88	
10	98	77	88	
11	98	77	88	
12	98	77	88	
13	98	76	87	
14	97	76	86	
15	98	75	86	
16	98	76	87	
17	98	75	86	
18	98	75	86	
19	98	75	86	
20	98	74	86	
21	53	74	64	
22	78	72	75	
23	96	74	85	
24	97	73	85	
25	98	69	84	
26	97	74	86	
27	88	73	80	
28	93	73	83	
29	97	64	80	
30	97	72	84	
31	98	71	84	

APPENDIX F

(Related to Chapter 2 of Text)

PERCENT RECOVERY OF TEMPERATURE DATA AND
EXPLANATION OF DATA LOSSES

QUAD-CITIES STATION

February 1979 through July 1979

Table 1. Percent recovery of temperature data from the continuous monitoring system at Quad-Cities Station, February - July 1979.

Month	Year	Percent Recovery Temperature Monitoring
February	1979	83
March	1979	75
April	1979	76
May	1979	70
June	1979	73
July	1979	70

Table --. Summary of temperature data loss at Quad-Cities Station, February through July 1979.

Month	Date and Time	Monitoring Location	Remarks
February	2/1/79 at 0100 hrs until 2/28/79 at 2400 hrs	Sensor D	Sensor malfunction
	2/2/79 at 0600 hrs until 2/2/79 at 1000 hrs	Upstream Intake Discharge Sensor A Sensor B Sensor C Cooling Canal	[illegible] jammed
	2/9/79 at 1500 hrs until 2/12/79 at 1500 hrs	Discharge	Sensor malfunction
	2/19/79 at 0700 hrs until 2/19/79 at 0900 hrs	Sensor C	Erratic readings
	2/23/79 at 0700 hrs until 2/23/79 at 1000 hrs	Upstream Intake Discharge Sensor A Sensor B Sensor C Cooling Canal	Paper ran out
March	3/1/79 at 0100 hrs until 3/31/79 at 2400 hrs	Sensor D	Sensor malfunction
	3/5/79 at 2100 hrs until 3/8/79 at 1600 hrs	Cooling Canal	Sensor malfunction
	3/9/79 at 1800 hrs until 3/13/79 at 0800 hrs	Discharge	

1079 040

Table 2. (continued)

Month	Date and Time	Monitoring Location	Remarks
March (cont.)	3/14/79 at 0100 hrs until 3/27/79 at 1400 hrs	Discharge Cooling Canal	Unable to adjust sensors to field measurements
	3/16/79 at 2100 hrs until 2400 hrs	Upstream Intake Sensor A Sensor B Sensor C	Paper ran out
April	4/1/79 at 0100 hrs until 4/30/79 at 2400 hrs	Sensor D	Sensor malfunction
	4/3/79 at 1600 hrs until 4/6/79 at 1600 hrs	Sensor B	Erratic readings
	4/3/79 at 1800 hrs	Sensor A	Erratic readings
	4/4/79 at 1700 hrs until 4/5/79 at 0300 hrs	Sensor A	Erratic readings
	4/4/79 at 2100 hrs until 4/6/79 at 1500 hrs	Sensor C	Erratic readings
	4/5/79 at 1500 hrs	Sensor A	Erratic readings
	4/8/79 at 1500 hrs until 1600 hrs	Sensor A	Erratic readings
	4/8/79 at 1500 hrs until 4/12/79 at 1200 hrs	Upstream	Erratic readings
	4/11/79 at 0400 hrs until 0600 hrs and at 1600 hrs until 2000 hrs	Sensor A	Erratic readings
	4/15/79 at 1200 hrs until 4/15/79 at 2000 hrs	Upstream Intake Cooling Canal Discharge Sensor A Sensor B Sensor C	Paper ran out

1079 021

Table 2. (continued)

Month	Date and Time	Monitoring Location	Remarks
April (cont.)	4/20/79 at 1500 hrs until 4/21/79 at 1000 hrs	Upstream	Erratic readings
	4/20/79 at 1600 hrs until 4/30/79 at 2400 hrs	Sensor A	Sensor malfunction
	4/21/79 at 2400 hrs until 4/22/79 at 0800 hrs	Upstream	Erratic readings
	4/24/79 at 0700 hrs until 4/30/79 at 2400 hrs	Upstream	Sensor malfunction
May	5/1/79 at 0100 hrs until 5/31/79 at 2400 hrs	Sensor D	Sensor malfunction
	5/1/79 at 0100 hrs until 5/18/79 at 1700 hrs	Upstream	Sensor malfunction
	5/1/79 at 0100 hrs until 5/4/79 at 1200 hrs	Sensor A	Sensor malfunction
	5/4/79 at 2400 hrs until 5/10/79 at 2400 hrs	Sensor C	Sensor malfunction
	5/7/79 at 0200hrs until 5/7/79 at 1000 hrs	Intake Cooling Canal Discharge Sensor B	Paper ran out
	5/9/79 at 0900 hrs until 5/10/70 at 2100 hrs	Discharge	Erratic readings
	5/18/79 at 2000 hrs	Sensor B	Erratic reading
	5/19/79 at 1500 hrs until 5/31/79 at 2400 hrs	Discharge	Erratic readings possible sensor malfunction

Table 2. (continued)

Month	Date and Time	Monitoring Location	Remarks
May (Cont.)	5/31/79 at 0400 hrs until 5/31/79 at 1000 hrs	Upstream	Erratic readings
June	6/1/79 at 0100 hrs until 6/27/79 at 1600 hrs	Discharge	Sensor malfunction
	6/1/79 at 0100 hrs until 6/22/79 at 1300 hrs	Sensor D	Sensor malfunction
	6/9/79 at 1300 hrs	Upstream Sensor A	Erratic reading
	6/9/79 at 1700 hrs	Upstream	Erratic reading
	6/9/79 at 2200 hrs until 6/10/79 at 0800 hrs	Upstream	Erratic readings
	6/12/79 at 2100 hrs until 6/13/79 at 0700 hrs	Upstream	Erratic readings
	6/12/79 at 2200 hrs until 6/13/79 at 0500 hrs	Sensor A	Erratic readings
	6/18/79 at 0900 hrs until 6/18/79 at 1400 hrs	Upstream	Erratic readings
	6/18/79 at 0900 hrs until 6/18/79 at 1200 hrs	Sensor A	Erratic readings
	6/22/79 at 0100 hrs until 6/30/79 at 2400 hrs	Sensor A	Possible sensor malfunction
	6/23/79 at 0500 hrs until 6/23/79 at 0700 hrs	Sensor D	Erratic readings

1079 023

Table 2. (continued)

Month	Date and Time	Monitoring Location	Remarks
June (Cont.)	6/26/79 at 0700 hrs until 6/26/79 at 2300 hrs	Sensor D	Erratic readings
	6/26/79 at 0900 hrs until 6/27/79 at 1500 hrs	Sensor C	Erratic readings
	6/26/79 at 2400 hrs until 6/27/79 at 1600 hrs	Sensor D	Erratic readings
	6/27/79 at 2000 hrs until 6/27/79 at 2300 hrs	Sensor D	Erratic readings
	6/27/79 at 2400 hrs	Sensor D	Erratic readings
	6/28/79 at 0100 hrs until 6/29/79 at 1700 hrs	Sensor C	Erratic readings
	6/28/79 at 0300 hrs until 6/28/79 at 0500 hrs	Sensor D	Erratic readings
	6/28/79 at 2400 hrs	Sensor D	Erratic reading
	6/29/79 at 0900 hrs	Sensor D	Erratic reading
	6/29/79 at 1200 hrs	Upstream Sensor D	Erratic reading
	6/29/79 at 1700 hrs until 6/29/79 at 1900 hrs	Sensor D	Erratic readings
	6/29/79 at 1900 hrs until 6/30/79 at 2400 hrs	Sensor C	Sensor malfunction
	6/29/79 at 2100 hrs	Discharge Sensor D	Erratic reading
	6/30/79 at 1800 hrs	Sensor D	Erratic reading

Table 2. (continued)

Month	Date and Time	Monitoring Location	Remarks
July	7/1/79 at 0100 hrs until 7/17/79 at 1300 hrs	Sensor A	Sensor malfunction
	7/1/79 at 0100 hrs until 7/2/79 at 1200 hrs	Sensor C	Sensor malfunction
	7/2/79 at 2000 hrs	Sensor C	Erratic reading
	7/2/79 at 2400 hrs until 7/12/79 at 1400 hrs	Sensor C	Erratic readings
	7/3/79 at 1100 hrs until 7/31/79 at 2400 hrs	Sensor D	Sensor malfunction
	7/3/79 at 1200 hrs until 7/5/79 at 1200 hrs	Upstream	Sensor malfunction
	7/5/79 at 1400 hrs	Upstream Intake Cooling Canal Discharge Sensor B	Printer turned off by CECo personnel for calibration
	7/10/79 at 1200 hrs until 7/11/79 at 0900 hrs	Upstream Intake Cooling Canal Discharge Sensor B	Paper ran out
	7/11/79 at 1500 hrs	Sensor B Intake	Erratic reading
	7/11/79 at 1500 hrs until 7/13/79 at 1400 hrs	Upstream	Sensor malfunction
	7/12/79 at 1800 hrs	Sensor C	Erratic reading
	7/13/79 at 1300 hrs until 7/16/79 at 1300 hrs	Sensor C	Sensor malfunction

Table 2. (continued)

Month	Date and Time	Monitoring Location	Remarks
July (cont.)	7/13/79 at 2300 hrs until 7/14/79 at 0100 hrs	Upstream	Erratic readings
	7/14/79 at 0700 hrs until 7/14/79 at 1000 hrs	Upstream	Erratic readings
	7/25/79 at 0100 hrs until 7/30/79 at 1200 hrs	Sensor C	Sensor malfunction
	7/27/79 at 1900 hrs until 7/30/79 at 1200 hrs	Upstream	Unable to adjust to field measurements. During this time CECo personnel adjusted the recorder without taking ground truths.
	7/27/79 at 1400 hrs until 7/30/79 at 1200 hrs	Discharge	Sensor malfunction

1079 026

APPENDIX G

(Related to Chapter 2 of Text)

HOURLY WATER TEMPERATURE DATA

QUAD-CITIES STATION

February 1979 through July 1979

POOR ORIGINAL

TABLE 1. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 1, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	33.5	57.5	82.6	32.0	32.0	32.0	*9999
200	32.0	33.5	57.0	82.1	32.0	32.0	32.0	*9999
300	32.0	33.5	56.7	81.7	32.0	32.0	32.0	*9999
400	32.0	33.5	56.6	81.5	32.0	32.0	32.0	*9999
500	32.0	33.5	56.5	81.6	32.0	32.0	32.0	*9999
600	32.0	33.5	56.2	81.6	32.0	32.0	32.0	*9999
700	32.0	33.5	56.2	81.3	32.0	32.0	32.0	*9999
800	32.0	33.5	55.9	81.0	32.0	32.0	32.0	*9999
900	32.0	33.5	55.9	81.0	32.0	32.0	32.0	*9999
1000	32.0	33.5	56.4	81.2	32.0	32.0	32.0	*9999
1100	32.0	33.5	56.7	81.2	32.0	32.0	32.0	*9999
1200	32.0	33.5	56.7	81.0	32.0	32.0	32.0	*9999
1300	32.0	57.5	58.2	83.3	32.0	32.0	32.0	*9999
1400	32.0	35.8	58.7	72.7	32.2	32.3	32.7	*9999
1500	32.0	32.0	57.8	54.5	32.0	32.2	32.0	*9999
1600	32.0	32.0	57.4	54.2	32.0	32.1	32.0	*9999
1700	32.0	32.0	57.6	54.0	32.0	32.1	32.0	*9999
1800	32.0	32.0	56.2	54.0	32.0	32.1	32.0	*9999
1900	32.0	32.0	54.7	54.7	32.0	32.2	32.0	*9999
2000	32.0	32.0	53.6	54.6	32.0	32.3	32.0	*9999
2100	32.0	32.0	53.3	54.8	32.0	32.3	32.0	*9999
2200	32.0	32.0	52.5	54.4	32.0	32.2	32.0	*9995
2300	32.0	32.0	51.6	54.4	32.0	32.3	32.0	*9999
2400	32.0	32.0	51.2	55.3	32.0	32.2	32.0	*9999

TABLE 2. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 2, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	32.0	50.6	55.0	32.0	32.3	32.0	*9999
200	32.0	32.0	50.3	58.0	32.0	32.0	32.0	*9999
300	32.0	32.0	49.8	58.2	32.0	32.3	32.0	*9999
400	32.0	32.0	49.5	58.1	32.0	32.2	32.0	*9999
500	32.0	32.0	48.7	58.0	32.0	32.2	32.0	*9999
600	32.0	32.0	48.6	58.0	32.0	32.1	32.0	*9999
700	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
800	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
900	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1000	32.0	32.0	46.6	57.8	32.0	32.0	32.0	*9999
1100	32.0	32.0	46.9	57.9	32.0	32.0	32.0	*9999
1200	32.0	32.0	46.7	70.0	32.0	32.0	32.0	*9999
1300	32.0	32.0	47.5	59.3	32.0	32.0	32.0	*9999
1400	32.0	32.0	47.4	57.8	32.0	32.0	32.0	*9999
1500	32.0	32.0	47.8	57.8	32.0	32.0	32.0	*9999
1600	32.0	32.0	47.7	57.7	32.0	32.0	32.0	*9999
1700	32.0	32.0	47.6	57.8	32.0	32.0	32.0	*9999
1800	32.0	32.0	47.5	57.8	32.0	32.0	32.0	*9999
1900	32.0	32.0	47.3	58.0	32.0	32.0	32.0	*9999
2000	32.0	32.0	46.8	58.0	32.0	32.0	32.0	*9999
2100	32.0	32.0	46.5	58.0	32.0	32.0	32.0	*9999
2200	32.0	32.0	46.4	58.0	32.0	32.0	32.0	*9999
2300	32.0	32.0	46.0	58.0	32.0	32.0	32.0	*9999
2400	32.0	32.0	46.0	57.4	32.0	32.0	32.0	*9999

TABLE 3. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 3, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	32.0	45.9	57.5	32.0	32.0	32.0	*9999
200	32.0	32.0	45.6	57.6	32.0	32.0	32.0	*9999
300	32.0	32.0	45.3	57.5	32.0	32.0	32.0	*9999
400	32.0	32.0	45.2	57.7	32.0	32.0	32.0	*9999
500	32.0	32.0	45.2	57.2	32.0	32.0	32.0	*9999
600	32.0	32.0	44.9	57.5	32.0	32.0	32.0	*9999
700	32.0	32.0	44.7	57.5	32.0	32.0	32.0	*9999
800	32.0	32.0	44.3	57.0	32.0	32.0	32.0	*9999
900	32.0	32.0	43.7	57.4	32.0	32.0	32.0	*9999
1000	32.0	32.0	43.5	57.3	32.0	32.0	32.0	*9999
1100	32.0	32.0	43.5	50.3	32.0	32.0	32.0	*9999
1200	32.0	32.0	43.7	53.2	32.0	32.0	32.0	*9999
1300	32.0	32.0	43.0	54.2	32.0	32.0	32.0	*9999
1400	32.0	32.0	43.3	50.5	32.0	32.0	32.0	*9999
1500	32.0	32.0	44.8	50.5	32.0	32.0	32.0	*9999
1600	32.0	32.0	44.4	50.4	32.0	32.0	32.0	*9999
1700	32.0	32.0	43.7	50.5	32.0	32.0	32.0	*9999
1800	32.0	32.0	43.3	50.7	32.0	32.0	32.0	*9999
1900	32.0	32.0	42.3	50.6	32.0	32.0	32.0	*9999
2000	32.0	32.0	41.7	50.5	32.0	32.0	32.0	*9999
2100	32.0	32.0	40.8	50.7	32.0	32.0	32.0	*9999
2200	32.0	32.0	39.7	50.7	32.0	32.0	32.0	*9999
2300	32.0	32.0	38.7	51.0	32.0	32.0	32.0	*9999
2400	32.0	32.1	38.2	51.5	32.0	32.0	32.0	*9999

TABLE 4. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 4, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	32.2	37.5	51.5	32.0	32.0	32.1	*9999
200	32.1	32.1	36.5	51.3	32.0	32.0	32.2	*9999
300	32.0	32.2	35.0	52.2	32.0	32.0	32.0	*9999
400	32.0	32.2	35.2	52.0	32.0	32.0	32.0	*9999
500	32.0	32.0	34.7	52.0	32.0	32.0	32.0	*9999
600	32.0	32.0	34.4	52.0	32.0	32.0	32.0	*9999
700	32.0	32.0	33.0	52.0	32.0	32.0	32.0	*9999
800	32.0	32.0	32.5	52.1	32.0	32.0	32.0	*9999
900	32.0	32.0	32.0	52.0	32.0	32.0	32.0	*9999
1000	32.0	32.0	32.0	52.0	32.0	32.0	32.0	*9999
1100	32.0	32.0	32.0	52.0	32.0	32.0	32.0	*9999
1200	32.0	32.0	32.0	52.1	32.0	32.0	32.0	*9999
1300	32.0	32.0	32.0	52.3	32.0	32.0	32.0	*9999
1400	32.0	32.0	32.5	52.4	32.0	32.0	32.0	*9999
1500	32.0	32.0	32.1	52.4	32.0	32.0	32.0	*9999
1600	32.0	32.0	32.7	52.3	32.0	32.0	32.0	*9999
1700	32.0	32.0	32.5	52.4	32.0	32.0	32.0	*9999
1800	32.0	32.0	32.8	52.3	32.0	32.0	32.0	*9999
1900	32.0	32.0	33.0	55.9	32.0	32.0	32.0	*9999
2000	32.0	32.0	33.2	69.5	32.0	32.0	32.0	*9999
2100	32.0	32.0	33.3	59.4	32.0	32.0	32.0	*9999
2200	32.0	32.0	33.2	67.5	32.0	32.0	32.0	*9999
2300	32.0	32.0	33.0	74.5	32.0	32.0	32.0	*9999
2400	32.0	32.0	33.5	75.2	32.0	32.2	32.0	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 028

TABLE 5. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 5, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	---DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	32.0	33.7	70.7	32.0	32.0	32.0	*9999
200	32.0	32.0	33.5	75.3	32.0	32.0	32.0	*9999
300	32.0	32.0	33.3	75.4	32.0	32.0	32.0	*9999
400	32.0	32.0	33.0	75.0	32.0	32.0	32.0	*9999
500	32.0	32.0	33.4	75.2	32.0	32.0	32.0	*9999
600	32.0	32.0	33.0	75.2	32.0	32.0	32.0	*9999
700	32.0	32.0	33.2	74.9	32.0	32.0	32.0	*9999
800	32.0	32.0	33.2	75.4	32.0	32.0	32.0	*9999
900	32.0	32.0	33.1	75.5	32.0	32.0	32.0	*9999
1000	32.0	32.0	33.2	75.7	32.0	32.0	32.0	*9999
1100	32.0	32.0	33.5	75.7	32.0	32.0	32.0	*9999
1200	32.0	32.0	33.5	75.8	32.0	32.0	32.0	*9999
1300	32.0	32.0	33.3	75.7	32.0	32.0	32.0	*9999
1400	32.0	32.0	33.6	75.8	32.0	32.0	32.0	*9999
1500	32.0	32.0	33.5	76.0	32.0	32.0	32.0	*9999
1600	32.0	32.0	33.4	76.0	32.0	32.0	32.0	*9999
1700	32.0	32.0	33.5	75.8	32.0	32.0	32.0	*9999
1800	32.0	32.0	33.7	75.8	32.0	32.0	32.0	*9999
1900	32.0	32.0	33.7	76.0	32.0	32.0	32.0	*9999
2000	32.0	32.0	33.8	76.1	32.0	32.0	32.0	*9999
2100	32.0	32.0	34.0	76.1	32.0	32.0	32.0	*9999
2200	32.0	32.0	34.0	76.3	32.0	32.0	32.0	*9999
2300	32.0	32.0	33.8	76.2	32.0	32.0	32.0	*9999
2400	32.0	32.0	33.8	76.1	32.0	32.0	32.0	*9999

TABLE 6. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 6, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	32.0	34.5	76.2	32.0	32.0	32.0	*9999
200	32.0	32.0	33.3	76.2	32.0	32.0	32.0	*9999
300	32.0	32.0	33.5	76.0	32.0	32.0	32.0	*9999
400	32.0	32.0	33.3	76.2	32.0	32.0	32.0	*9999
500	32.0	32.0	33.3	76.2	32.0	32.0	32.0	*9999
600	32.0	32.0	33.2	76.0	32.0	32.0	32.0	*9999
700	32.0	32.0	33.0	76.0	32.0	32.0	32.0	*9999
800	32.0	32.0	32.9	76.2	32.0	32.0	32.0	*9999
900	32.0	32.0	33.0	76.4	32.0	32.0	32.0	*9999
1000	32.0	32.0	33.3	76.3	32.0	32.0	32.0	*9999
1100	32.0	32.0	33.0	76.5	32.0	32.0	32.0	*9999
1200	32.0	32.0	33.0	75.3	32.0	32.0	32.0	*9999
1300	32.0	32.0	33.3	73.7	32.0	32.0	32.0	*9999
1400	32.0	32.0	33.6	73.7	32.0	[illegible]	32.0	*9999
1500	32.0	32.0	32.0	74.0	32.0	32.0	32.0	*9999
1600	32.0	32.0	32.0	75.0	32.0	32.0	32.0	*9999
1700	32.0	32.5	32.0	75.5	32.0	32.0	32.0	*9999
1800	32.0	36.4	32.0	76.2	32.0	32.0	32.0	*9999
1900	32.1	38.5	32.0	76.5	32.0	32.0	32.0	*9999
2000	32.2	39.8	32.0	76.6	32.0	32.0	32.0	*9999
2100	32.2	40.2	32.0	76.6	32.0	32.0	32.0	*9999
2200	32.2	36.9	32.0	76.8	32.0	32.0	32.0	*9999
2300	32.2	39.0	32.0	77.7	32.0	32.0	32.0	*9999
2400	32.1	44.9	37.7	85.7	32.0	32.0	32.0	*9999

TABLE 7. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 7, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	41.5	50.3	88.3	32.0	32.0	32.0	*9999
200	32.0	44.3	52.5	90.2	32.0	32.0	32.0	*9999
300	32.0	42.8	54.0	91.5	32.0	32.0	32.0	*9999
400	32.0	45.0	55.3	92.5	32.0	32.0	32.0	*9999
500	32.0	44.7	56.2	92.7	32.0	32.0	32.0	*9999
600	32.0	45.0	55.7	93.5	32.0	32.0	32.0	*9999
700	32.0	43.8	57.0	93.8	32.0	32.0	32.0	*9999
800	32.0	44.0	57.0	93.7	32.0	32.0	32.0	*9999
900	32.0	43.6	57.4	94.0	32.0	32.0	32.0	*9999
1000	32.0	42.5	58.0	94.2	32.0	32.0	32.0	*9999
1100	32.0	43.7	59.7	94.7	32.0	32.0	32.0	*9999
1200	32.0	43.1	62.7	95.6	32.0	32.0	32.0	*9999
1300	32.0	43.3	66.3	97.8	32.0	32.0	32.0	*9999
1400	32.0	43.8	66.5	95.2	32.0	32.0	32.0	*9999
1500	32.0	45.7	60.6	97.6	32.0	32.0	32.0	*9999
1600	32.0	45.0	65.5	90.2	32.0	32.0	32.0	*9999
1700	32.0	46.4	63.1	101.5	32.0	32.0	32.0	*9999
1800	32.1	46.9	59.2	99.3	32.0	32.0	32.0	*9999
1900	32.1	46.0	56.3	98.0	32.0	32.0	32.0	*9999
2000	32.0	45.7	55.7	98.4	32.0	32.0	32.0	*9999
2100	32.0	45.8	55.4	98.7	32.0	32.0	32.0	*9999
2200	32.0	45.0	54.7	98.5	32.0	32.0	32.0	*9999
2300	32.0	44.5	52.7	97.8	32.0	32.0	32.0	*9999
2400	32.0	46.2	52.0	97.2	32.0	32.0	32.0	*9999

TABLE 8. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 8, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	46.0	51.0	96.8	32.0	32.0	32.0	*9999
200	32.0	44.7	50.0	96.0	32.0	32.0	32.0	*9999
300	32.0	45.7	49.5	95.4	32.0	32.0	32.0	*9999
400	32.0	44.5	49.7	95.2	32.0	32.0	32.0	*9999
500	32.0	44.2	50.5	95.4	32.0	32.0	32.0	*9999
600	32.0	43.2	51.0	95.6	32.0	32.0	32.0	*9999
700	32.0	43.4	50.0	95.7	32.0	32.0	32.0	*9999
800	32.0	43.9	49.5	95.5	32.0	32.0	32.0	*9999
900	32.0	44.0	49.2	95.0	32.0	32.0	32.0	*9999
1000	32.0	44.0	49.3	95.1	32.0	32.0	32.0	*9999
1100	32.0	44.0	49.3	95.0	32.0	32.0	32.0	*9999
1200	32.0	44.5	49.5	95.3	32.0	32.0	32.0	*9999
1300	32.0	44.8	49.2	95.3	32.0	32.0	32.0	*9999
1400	32.0	44.3	49.2	95.2	32.0	32.0	32.0	*9999
1500	32.0	45.2	48.5	95.3	32.0	32.0	32.0	*9999
1600	32.0	44.7	48.2	95.0	32.0	32.0	32.0	*9999
1700	32.1	45.4	48.2	94.8	32.0	32.0	32.0	*9999
1800	32.2	45.9	[illegible]	94.7	32.0	32.0	32.0	*9999
1900	32.2	44.3	[illegible]	94.7	32.0	32.0	32.0	*9999
2000	32.1	44.8	48.3	94.8	32.0	32.0	32.0	*9999
2100	32.0	43.6	47.6	94.4	32.0	32.0	32.0	*9999
2200	32.0	44.8	47.3	94.2	32.0	32.0	32.0	*9999
2300	32.0	44.5	46.5	93.8	32.0	32.0	32.0	*9999
2400	32.0	43.0	46.0	93.3	32.0	32.0	32.0	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 029

POOR ORIGINAL

TABLE 9. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 9, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	44.8	46.0	93.0	32.0	32.0	32.0	*9999
200	32.0	43.7	45.6	93.0	32.0	32.0	32.0	*9999
300	32.0	43.7	45.0	92.7	32.0	32.0	32.0	*9999
400	32.0	41.5	44.0	92.8	32.2	32.3	32.0	*9999
500	32.0	42.0	43.4	93.2	32.2	32.5	32.2	*9999
600	32.0	43.4	42.8	93.2	32.0	32.6	32.0	*9999
700	32.0	41.5	41.8	92.8	32.0	32.7	32.3	*9999
800	32.0	43.8	41.2	92.4	32.0	32.3	32.0	*9999
900	32.0	43.5	40.2	91.5	32.0	32.0	32.0	*9999
1000	32.0	44.0	40.1	90.5	32.0	32.0	32.0	*9999
1100	32.0	43.7	41.0	90.1	32.0	32.0	32.0	*9999
1200	32.0	44.8	42.9	91.0	32.0	32.0	32.0	*9999
1300	32.0	45.7	45.2	92.6	32.0	32.0	32.0	*9999
1400	32.0	43.7	48.5	95.2	32.0	32.0	32.0	*9999
1500	32.0	45.7	51.8	*9999	32.0	32.0	32.0	*9999
1600	32.1	44.2	54.3	*9999	32.0	32.0	32.0	*9999
1700	32.1	44.7	57.3	*9999	32.0	32.0	32.0	*9999
1800	32.2	45.0	60.2	*9999	32.0	32.0	32.0	*9999
1900	32.1	45.0	65.3	*9999	32.0	32.0	32.0	*9999
2000	32.0	44.5	67.6	*9999	32.0	32.0	32.0	*9999
2100	32.0	44.0	70.0	*9999	32.0	32.0	32.0	*9999
2200	32.0	44.5	71.7	*9999	32.0	32.0	32.0	*9999
2300	32.0	43.7	72.6	*9999	32.0	32.0	32.0	*9999
2400	32.0	43.8	72.9	*9999	32.0	32.0	32.0	*9999

TABLE 10. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 10, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	42.0	73.8	*9999	32.0	32.0	32.0	*9999
200	32.0	41.9	76.7	*9999	32.0	32.0	32.0	*9999
300	32.0	42.2	78.2	*9999	32.0	32.0	32.0	*9999
400	32.0	44.2	79.8	*9999	32.0	32.0	32.0	*9999
500	32.0	43.3	81.3	*9999	32.0	32.0	32.0	*9999
600	32.0	43.2	82.3	*9999	32.0	32.0	32.0	*9999
700	32.0	43.3	82.0	*9999	32.0	32.0	32.0	*9999
800	32.0	43.5	80.5	*9999	32.0	32.0	32.0	*9999
900	32.0	50.3	78.0	*9999	32.0	32.0	32.0	*9999
1000	32.0	46.7	76.1	*9999	32.0	32.0	32.0	*9999
1100	32.0	44.3	74.2	*9999	32.0	32.0	32.0	*9999
1200	32.0	39.7	71.7	*9999	32.0	32.0	32.0	*9999
1300	32.0	39.5	70.3	*9999	32.0	32.0	32.0	*9999
1400	32.1	38.8	69.0	*9999	32.0	32.0	32.0	*9999
1500	32.0	38.7	67.7	*9999	32.0	32.0	32.0	*9999
1600	32.1	38.7	66.5	*9999	32.0	32.0	32.0	*9999
1700	32.0	38.7	65.0	*9999	32.0	32.0	32.0	*9999
1800	32.1	38.7	63.8	*9999	32.0	32.0	32.0	*9999
1900	32.0	38.7	62.5	*9999	32.0	32.0	32.0	*9999
2000	32.0	38.8	61.3	*9999	32.0	32.0	32.0	*9999
2100	32.0	38.5	59.9	*9999	32.0	32.0	32.0	*9999
2200	32.0	38.7	59.0	*9999	32.0	32.0	32.0	*9999
2300	32.0	38.7	58.3	*9999	32.0	32.0	32.0	*9999
2400	32.0	38.8	57.9	*9999	32.0	32.0	32.0	*9999

TABLE 11. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 11, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	38.5	56.8	*9999	32.0	32.0	32.0	*9999
200	32.0	38.5	56.9	*9999	32.0	32.0	32.0	*9999
300	32.0	38.5	56.2	*9999	32.0	32.0	32.0	*9999
400	32.0	38.4	55.8	*9999	32.0	32.0	32.0	*9999
500	32.0	38.2	55.2	*9999	32.0	32.0	32.0	*9999
600	32.0	38.2	55.0	*9999	32.0	32.0	32.0	*9999
700	32.0	38.7	54.3	*9999	32.0	32.0	32.0	*9999
800	32.0	38.6	54.2	*9999	32.0	32.0	32.0	*9999
900	32.0	38.7	54.2	*9999	32.0	32.0	32.0	*9999
1000	32.0	38.4	54.0	*9999	32.0	32.0	32.0	*9999
1100	32.0	38.3	54.7	*9999	32.0	32.0	32.0	*9999
1200	32.0	38.5	55.2	*9999	32.0	32.0	32.0	*9999
1300	32.0	38.1	55.3	*9999	32.0	32.0	32.0	*9999
1400	32.0	38.3	55.7	*9999	32.0	32.0	32.0	*9999
1500	32.0	38.7	55.7	*9999	32.0	32.0	32.0	*9999
1600	32.0	32.0	55.4	*9999	32.0	32.0	32.0	*9999
1700	32.0	32.0	58.5	*9999	32.0	32.0	32.0	*9999
1800	32.0	32.0	57.0	*9999	32.0	32.0	32.0	*9999
1900	32.0	34.6	45.3	*9999	32.0	32.0	32.0	*9999
2000	32.0	34.0	53.4	*9999	32.0	32.0	32.0	*9999
2100	32.0	36.7	50.6	*9999	32.0	32.0	32.0	*9999
2200	32.0	33.7	47.3	*9999	32.0	32.0	32.0	*9999
2300	32.0	40.5	46.0	*9999	32.0	32.0	32.0	*9999
2400	32.0	36.8	44.2	*9999	32.0	32.0	32.0	*9999

TABLE 12. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 12, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	37.5	43.3	*9999	32.0	32.0	32.0	*9999
200	32.0	38.0	34.7	*9999	32.0	32.0	32.0	*9999
300	32.0	32.5	32.0	*9999	32.0	32.0	32.0	*9999
400	32.0	33.5	33.3	*9999	32.0	32.0	32.0	*9999
500	32.0	36.7	37.0	*9999	32.0	32.0	32.0	*9999
600	32.0	32.5	38.7	*9999	32.0	32.0	32.0	*9999
700	32.0	38.8	39.8	*9999	32.0	32.0	32.0	*9999
800	32.0	40.1	40.5	*9999	32.0	32.0	32.0	*9999
900	32.0	39.0	40.8	*9999	32.0	32.0	32.0	*9999
1000	32.0	38.4	41.3	*9999	32.0	32.0	32.0	*9999
1100	32.0	39.3	40.7	*9999	32.0	32.0	32.0	*9999
1200	32.0	40.3	43.0	*9999	32.0	32.0	32.0	*9999
1300	32.1	41.7	39.9	*9999	32.0	32.2	32.0	*9999
1400	32.0	39.2	41.0	*9999	32.2	32.5	32.0	*9999
1500	32.0	37.3	43.7	70.7	32.0	32.6	32.0	*9999
1600	32.0	37.4	45.3	73.5	32.2	32.7	32.2	*9999
1700	32.0	37.8	45.7	78.0	32.1	32.8	32.0	*9999
1800	32.0	38.0	46.0	76.2	32.2	32.0	32.0	*9999
1900	32.0	34.2	45.6	74.5	32.3	32.8	32.0	*9999
2000	32.0	32.0	46.5	71.6	32.0	32.5	32.0	*9999
2100	32.0	32.0	47.0	73.2	32.0	32.0	32.0	*9999
2200	32.0	32.0	45.7	70.3	32.0	32.0	32.0	*9999
2300	32.0	32.0	44.5	68.3	32.0	32.0	32.0	*9999
2400	32.0	32.0	43.3	67.3	32.0	32.0	32.0	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 030

TABLE 13. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 13, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	32.0	43.5	67.0	32.0	32.0	32.0	*9999
200	32.0	32.0	43.7	67.5	32.0	32.0	32.0	*9999
300	32.0	35.3	45.5	69.4	32.0	32.0	32.0	*9999
400	32.0	39.3	45.5	70.0	32.0	32.0	32.0	*9999
500	32.0	40.9	49.5	74.0	32.0	32.0	32.0	*9999
600	32.0	40.3	50.0	76.7	32.0	32.0	32.0	*9999
700	32.0	40.0	53.6	76.5	32.0	32.5	32.0	*9999
800	32.0	39.5	50.2	77.1	32.0	32.5	32.0	*9999
900	32.0	39.9	50.2	77.0	32.0	32.0	32.0	*9999
1000	32.0	39.5	51.3	79.0	32.0	32.5	32.0	*9999
1100	32.0	39.7	53.2	78.7	32.0	32.7	32.0	*9999
1200	32.0	40.1	54.0	82.7	32.0	32.9	32.0	*9999
1300	32.0	43.4	55.2	84.6	32.0	32.8	32.1	*9999
1400	32.0	40.4	56.5	86.9	32.0	32.8	32.3	*9999
1500	32.1	37.3	56.0	91.0	32.0	33.0	32.2	*9999
1600	32.1	39.0	55.8	89.0	32.0	32.9	32.0	*9999
1700	32.0	41.7	55.9	[illegible]	[illegible]	32.3	32.0	*9999
1800	32.0	40.3	55.2	[illegible]	[illegible]	32.0	32.0	*9999
1900	32.0	40.0	56.2	93.8	32.0	32.0	32.0	*9999
2000	32.0	40.0	53.2	93.8	32.0	32.0	32.0	*9999
2100	32.0	40.5	51.0	96.0	32.0	32.0	32.0	*9999
2200	32.0	40.7	51.0	95.2	32.0	32.0	32.0	*9999
2300	32.0	39.5	51.0	89.5	32.0	32.0	32.0	*9999
2400	32.0	42.7	55.0	88.0	32.0	32.0	32.0	*9999

TABLE 14. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 14, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	40.6	57.3	92.4	32.0	32.0	32.0	*9999
200	32.0	40.2	56.0	96.8	32.0	32.0	32.0	*9999
300	32.0	40.5	53.8	95.5	32.0	32.0	32.4	*9999
400	32.0	38.6	52.9	92.5	32.2	32.5	32.0	*9999
500	32.0	39.5	54.3	89.9	32.1	32.6	32.0	*9999
600	32.0	36.8	56.7	90.2	32.0	32.8	32.3	*9999
700	32.2	39.0	57.2	90.0	32.2	32.8	32.5	*9999
800	32.0	36.4	57.3	97.6	32.3	33.0	32.6	*9999
900	32.0	35.7	56.4	98.4	32.2	33.0	32.8	*9999
1000	32.0	36.2	54.7	98.5	32.5	33.0	32.6	*9999
1100	32.1	36.5	53.0	97.8	32.5	33.3	32.6	*9999
1200	32.1	36.3	51.8	97.6	32.5	33.2	32.8	*9999
1300	32.0	37.0	51.5	97.7	32.6	33.3	32.8	*9999
1400	32.0	37.6	51.4	98.2	32.7	33.3	32.8	*9999
1500	32.0	37.5	51.8	98.4	32.5	33.4	32.8	*9999
1600	32.0	37.7	52.5	98.6	32.5	33.4	32.6	*9999
1700	32.0	37.8	53.8	98.6	32.6	33.2	32.0	*9999
1800	32.0	39.6	54.9	98.8	32.0	32.4	32.0	*9999
1900	32.0	38.8	54.7	100.5	32.0	32.0	32.0	*9999
2000	32.0	39.0	53.4	101.2	32.0	32.0	32.0	*9999
2100	32.0	38.0	52.8	100.7	32.0	32.0	32.0	*9999
2200	32.0	37.4	53.3	100.0	32.0	32.0	32.0	*9999
2300	32.0	37.8	54.7	100.5	32.0	32.0	32.0	*9999
2400	32.0	37.4	55.9	101.4	32.0	32.0	32.0	*9999

TABLE 15. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 15, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	39.2	56.5	102.5	32.0	32.0	32.0	*9999
200	32.0	39.2	56.8	103.0	32.0	32.0	32.0	*9999
300	32.0	39.2	56.4	103.2	32.0	32.0	32.0	*9999
400	32.0	39.3	55.5	103.2	32.0	32.0	32.0	*9999
500	32.0	38.6	57.0	103.0	32.0	32.0	32.0	*9999
600	32.0	38.1	57.1	103.0	32.0	32.0	32.0	*9999
700	32.0	38.7	57.2	103.5	32.0	32.0	32.0	*9999
800	32.0	38.3	57.3	103.7	32.0	32.0	32.0	*9999
900	32.0	36.8	57.0	103.5	32.0	32.0	32.8	*9999
1000	32.0	36.3	56.7	102.7	32.0	32.5	32.8	*9999
1100	32.0	36.7	56.3	102.7	32.2	32.7	32.9	*9999
1200	32.0	35.3	55.5	102.5	32.2	33.0	33.1	*9999
1300	32.2	36.7	55.0	102.5	32.3	33.0	32.9	*9999
1400	32.2	37.4	54.7	102.3	32.3	33.0	32.4	*9999
1500	32.2	39.0	54.5	102.0	32.5	33.0	32.6	*9999
1600	32.2	37.3	54.2	101.7	32.5	33.0	32.8	*9999
1700	32.2	38.5	54.0	102.0	32.5	33.1	32.9	*9999
1800	32.2	39.5	53.4	102.3	32.4	33.0	32.5	*9999
1900	32.0	39.7	52.7	102.0	32.6	33.2	33.0	*9999
2000	32.0	41.2	51.6	101.1	32.0	32.3	32.0	*9999
2100	32.0	43.0	51.3	100.8	32.0	32.0	32.0	*9999
2200	32.0	39.2	51.0	96.9	32.0	32.0	32.0	*9999
2300	32.0	35.1	51.3	78.3	32.0	32.0	32.0	*9999
2400	32.0	34.7	53.4	83.9	32.0	32.0	32.0	*9999

TABLE 16. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 16, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	34.2	57.5	72.4	32.0	32.0	32.0	*9999
200	32.0	34.2	62.0	73.2	32.0	32.0	32.0	*9999
300	32.0	35.9	67.7	80.5	32.0	32.0	32.0	*9999
400	32.0	36.5	64.0	85.1	32.0	32.0	32.0	*9999
500	32.0	35.8	63.5	78.9	32.0	32.0	32.0	*9999
600	32.0	35.4	56.8	76.6	32.0	32.0	32.0	*9999
700	32.0	36.0	61.0	73.8	32.0	32.0	32.0	*9999
800	32.0	36.1	64.5	77.7	32.0	32.0	32.0	*9999
900	32.0	37.2	55.3	82.7	32.0	32.0	32.0	*9999
1000	32.0	37.1	64.4	82.4	32.0	32.0	32.0	*9999
1100	32.0	34.5	62.3	80.3	32.1	32.0	32.0	*9999
1200	32.0	34.2	61.8	76.7	32.2	32.2	32.0	*9999
1300	32.0	34.2	64.0	77.3	32.0	32.0	32.0	*9999
1400	32.1	35.4	65.7	80.5	32.0	32.0	32.0	*9999
1500	32.2	34.2	67.7	82.8	32.0	32.0	32.0	*9999
1600	32.3	34.9	67.7	82.9	32.0	32.0	32.0	*9999
1700	32.2	35.0	65.7	81.3	32.0	32.0	32.0	*9999
1800	32.3	33.7	65.7	79.3	32.0	32.0	32.0	*9999
1900	32.2	34.3	67.3	80.7	32.0	32.0	32.0	*9999
2000	32.2	33.6	68.0	82.0	32.0	32.0	32.0	*9999
2100	32.2	35.7	67.5	82.0	32.0	32.0	32.0	*9999
2200	32.1	32.6	66.2	81.3	32.0	32.0	32.0	*9999
2300	32.0	32.9	64.9	79.3	32.0	32.0	32.0	*9999
2400	32.0	33.3	65.5	79.3	32.0	32.0	32.0	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 031

HAZLETON ENVIRONMENTAL SCIENCES

POOR ORIGINAL

TABLE 17. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 17, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	33.3	66.3	80.1	32.0	32.0	32.0	*9999
200	32.0	33.2	65.0	80.3	32.0	32.0	32.0	*9999
300	32.0	33.8	65.7	79.8	32.0	32.0	32.0	*9999
400	32.0	34.5	64.5	79.5	32.0	32.0	32.0	*9999
500	32.0	34.3	64.5	78.2	32.0	32.0	32.0	*9999
600	32.0	33.5	65.0	78.7	32.0	32.0	32.0	*9999
700	32.0	33.0	65.3	79.3	32.0	32.0	32.0	*9999
800	32.0	34.8	65.2	79.2	32.0	32.0	32.0	*9999
900	32.0	36.3	65.3	79.3	32.0	32.0	32.0	*9999
1000	32.0	37.7	64.4	79.3	32.0	32.0	32.0	*9999
1100	32.1	37.8	64.3	78.5	32.0	32.0	32.0	*9999
1200	32.1	35.1	64.2	78.0	32.0	32.0	32.0	*9999
1300	32.2	36.2	64.3	77.8	32.0	32.0	32.0	*9999
1400	32.2	34.5	64.2	77.8	32.0	32.0	32.0	*9999
1500	32.2	37.3	64.1	78.1	32.0	32.0	32.0	*9999
1600	32.2	39.3	63.5	77.7	32.0	32.0	32.0	*9999
1700	32.1	39.8	63.5	77.3	32.0	32.0	32.0	*9999
1800	32.0	36.3	63.3	77.2	32.0	32.0	32.0	*9999
1900	32.0	35.5	63.0	77.0	32.0	32.0	32.0	*9999
2000	32.0	35.5	62.7	76.6	32.0	32.0	32.0	*9999
2100	32.0	35.2	62.3	76.3	32.0	32.0	32.0	*9999
2200	32.0	36.0	62.0	75.8	32.0	32.0	32.0	*9999
2300	32.0	33.7	61.8	75.5	32.0	32.0	32.0	*9999
2400	32.0	34.4	62.3	75.5	32.0	32.0	32.0	*9999

TABLE 18. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 18, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	37.3	63.3	75.7	32.0	32.0	32.0	*9999
200	32.0	33.7	62.3	75.4	32.0	32.0	32.0	*9999
300	32.0	34.9	62.7	71.7	32.0	32.0	32.0	*9999
400	32.0	37.5	63.2	68.7	32.0	32.0	32.0	*9999
500	32.0	39.8	62.8	67.3	32.0	32.0	32.0	*9999
600	32.0	34.6	63.0	66.7	32.0	32.0	37.0	*9999
700	32.0	35.8	62.7	77.5	32.0	32.0	32.0	*9999
800	32.1	36.0	61.3	66.5	32.0	32.0	32.0	*9999
900	32.2	33.2	60.3	65.2	32.0	32.0	32.0	*9999
1000	32.2	32.0	60.2	63.5	32.2	32.0	32.0	*9999
1100	32.2	32.0	59.5	62.3	32.0	32.0	32.0	*9999
1200	32.2	32.0	59.8	62.5	32.1	32.3	32.0	*9999
1300	32.2	32.0	59.4	62.5	32.0	32.0	32.0	*9999
1400	32.2	32.0	58.7	62.0	32.0	32.0	32.0	*9999
1500	32.0	32.3	57.3	61.3	32.0	32.0	32.0	*9999
1600	32.0	32.5	56.7	60.5	32.0	32.0	32.0	*9999
1700	32.0	33.2	56.4	60.5	32.0	32.0	32.0	*9999
1800	32.0	32.0	56.5	60.3	32.0	32.0	32.0	*9999
1900	32.0	32.0	56.2	60.3	32.0	32.0	32.0	*9999
2000	32.0	33.0	55.5	60.4	32.0	32.0	32.0	*9999
2100	32.0	32.0	55.0	60.1	32.0	32.0	32.0	*9999
2200	32.0	33.4	55.1 *	59.7	32.0	32.0	32.0	*9999
2300	32.0	32.0	54.0	59.0	32.0	32.0	32.0	*9999
2400	32.0	35.3	54.0	59.3	32.0	32.0	32.0	*9999

TABLE 19. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 19, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	36.5	54.1	60.5	32.0	32.0	32.0	*9999
200	32.0	35.7	53.8	61.0	32.0	32.0	32.0	*9999
300	32.1	34.3	53.6	60.9	32.0	32.0	32.0	*9999
400	32.1	34.0	53.5	60.6	32.0	32.0	32.0	*9999
500	32.2	37.7	53.7	60.8	32.0	32.0	32.0	*9999
600	32.2	35.6	54.6	61.7	32.0	32.0	32.0	*9999
700	32.3	36.5	54.7	62.3	32.0	32.0	*9999	*9999
800	32.2	35.3	54.7	62.0	32.0	32.0	*9999	*9999
900	32.2	33.8	54.6	62.3	32.0	32.0	32.0	*9999
1000	32.0	34.2	54.7	62.3	32.0	32.0	32.0	*9999
1100	32.0	33.7	55.8	63.2	32.0	32.0	32.0	*9999
1200	32.0	32.0	56.3	63.8	32.0	32.0	32.0	*9999
1300	32.0	42.2	56.9	64.3	32.0	32.0	32.0	*9999
1400	32.0	35.5	57.0	65.0	32.0	32.0	32.0	*9999
1500	32.0	35.7	57.4	65.2	32.0	32.0	32.0	*9999
1600	32.0	36.4	58.0	66.0	32.0	32.0	32.0	*9999
1700	32.0	36.5	58.5	66.7	32.0	32.0	32.0	*9999
1800	32.0	32.9	58.0	67.5	32.0	32.0	32.0	*9999
1900	32.0	34.8	58.0	67.5	32.0	32.0	32.0	*9999
2000	32.0	37.9	59.0	67.5	32.0	32.0	32.0	*9999
2100	32.0	40.0	59.7	68.3	32.0	32.0	32.0	*9999
2200	32.0	36.6	60.0	68.8	32.0	32.0	32.0	*9999
2300	32.0	38.1	60.8	69.8	32.0	32.0	32.0	*9999
2400	32.3	33.5	61.0	70.1	32.0	32.0	32.0	*9999

TABLE 20. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 20, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.3	32.0	60.8	69.8	32.0	32.0	32.0	*9999
200	32.2	32.0	61.0	69.4	32.0	32.0	32.3	*9999
300	32.3	32.0	61.0	68.4	32.0	32.3	32.0	*9999
400	32.2	32.0	61.3	68.7	32.0	32.3	32.0	*9999
500	32.2	32.0	61.5	69.2	32.0	32.3	32.0	*9999
600	32.1	32.0	61.3	69.4	32.0	32.3	32.0	*9999
700	32.0	32.0	60.8	69.0	32.0	32.3	32.0	*9999
800	32.0	36.4	61.0	69.2	32.0	32.0	32.0	*9999
900	32.0	32.0	61.5	69.3	32.0	32.0	32.0	*9999
1000	32.0	32.0	62.0	69.7	32.0	32.3	32.0	*9999
1100	32.0	32.0	62.5	69.3	32.0	32.3	32.0	*9999
1200	32.0	32.0	62.8	70.3	32.0	32.0	32.0	*9999
1300	32.0	32.0	63.3	70.8	32.0	32.0	32.0	*9999
1400	32.0	32.0	64.3	72.0	32.0	32.3	32.0	*9999
1500	32.0	32.0	65.0	73.3	32.0	32.4	32.0	*9999
1600	32.0	32.0	65.2	73.7	32.0	32.5	32.0	*9999
1700	32.0	32.0	65.0	74.2	32.0	32.4	32.2	*9999
1800	32.0	32.0	66.5	75.6	32.0	32.2	32.0	*9999
1900	32.1	32.3	65.6	78.2	32.0	32.0	32.0	*9999
2000	32.1	34.8	66.3	79.2	32.0	32.0	32.0	*9999
2100	32.3	34.2	66.4	79.9	32.0	32.0	32.0	*9999
2200	32.7	37.7	66.1	79.7	32.0	32.0	32.0	*9999
2300	32.8	34.0	67.1	80.5	32.0	32.0	32.0	*9999
2400	32.5	35.5	68.3	81.5	32.0	32.0	32.3	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 032

TABLE 21. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 21, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.7	33.1	68.6	81.8	32.0	32.0	32.0	*9999
200	32.5	37.0	69.1	81.5	32.0	32.2	32.0	*9999
300	32.0	32.5	68.7	81.2	32.0	32.2	32.0	*9999
400	32.0	37.5	65.9	81.5	32.0	32.1	32.0	*9999
500	32.0	39.0	69.4	81.8	32.0	32.0	32.0	*9999
600	32.0	32.0	69.2	82.0	32.0	32.1	32.0	*9999
700	32.0	32.0	68.9	82.0	32.0	32.0	32.0	*9999
800	32.0	32.0	68.3	81.4	32.0	32.0	32.0	*9999
900	32.0	32.0	67.4	80.5	32.0	32.2	32.0	*9999
1000	32.0	32.0	67.4	76.7	32.0	32.2	32.0	*9999
1100	32.1	35.0	67.1	82.3	32.0	32.2	32.0	*9999
1200	32.1	32.0	66.7	80.9	32.0	32.3	32.0	*9999
1300	32.1	34.1	66.3	81.6	32.0	32.7	32.0	*9999
1400	32.1	37.9	66.0	81.5	32.2	32.7	32.0	*9999
1500	32.2	32.8	65.5	80.7	32.4	32.8	32.0	*9999
1600	32.3	33.7	65.5	81.5	32.4	32.9	32.0	*9999
1700	32.3	36.5	68.7	85.2	32.0	32.4	32.0	*9999
1800	32.3	34.0	69.0	86.5	32.0	32.1	32.0	*9999
1900	32.2	32.0	69.3	86.9	32.0	32.0	32.0	*9999
2000	32.2	37.0	69.2	86.9	32.3	32.0	32.0	*9999
2100	32.0	32.0	69.1	87.0	32.3	32.0	32.0	*9999
2200	32.0	32.0	71.4	88.8	32.0	32.0	32.0	*9999
2300	32.0	37.3	71.6	90.0	32.0	32.0	32.0	*9999
2400	32.0	35.1	72.0	90.1	32.0	32.0	32.0	*9999

TABLE 22. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 22, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	40.7	72.2	91.0	32.7	32.0	32.0	*9999
200	32.0	36.9	72.2	89.7	32.6	32.0	32.0	*9999
300	32.2	35.7	73.0	90.0	32.8	32.0	32.0	*9999
400	32.0	44.5	73.4	91.0	32.5	32.0	32.0	*9999
500	32.0	46.7	73.5	91.9	32.7	32.2	32.0	*9999
600	32.0	40.0	73.5	90.8	32.7	32.2	32.0	*9999
700	32.0	47.7	72.9	91.0	32.7	32.2	32.0	*9999
800	32.0	33.2	72.8	91.1	32.7	32.3	32.0	*9999
900	32.0	41.7	72.8	90.5	32.8	32.3	32.0	*9999
1000	32.1	40.6	73.0	91.0	32.8	32.5	32.0	*9999
1100	32.3	36.1	72.6	91.3	32.8	32.5	32.0	*9999
1200	32.2	43.1	73.3	91.8	32.8	32.5	32.0	*9999
1300	32.2	39.0	73.5	92.0	32.7	32.5	32.0	*9999
1400	32.3	44.0	73.2	92.5	32.7	32.5	32.0	*9999
1500	32.0	44.2	73.2	91.8	33.0	32.5	32.0	*9999
1600	32.0	43.2	73.5	92.5	33.0	32.4	32.0	*9999
1700	32.0	43.0	73.4	92.5	32.7	32.3	32.0	*9999
1800	32.0	39.0	73.5	92.5	32.7	32.3	32.0	*9999
1900	32.0	44.3	73.9	93.6	32.0	32.0	32.0	*9999
2000	32.0	45.1	74.3	94.4	32.0	32.0	32.0	*9999
2100	32.0	44.7	74.9	95.7	32.0	32.0	32.0	*9999
2200	32.0	48.0	75.0	96.3	32.0	32.0	32.0	*9999
2300	32.0	51.5	74.8	95.3	32.0	32.0	32.0	*9999
2400	32.0	45.7	75.7	96.0	32.0	32.0	32.0	*9999

TABLE 23. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 23, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	43.0	76.7	97.2	32.0	32.0	32.0	*9999
200	32.0	45.8	77.7	97.3	32.0	32.0	32.0	*9999
300	32.0	44.8	78.7	99.2	32.0	32.0	32.0	*9999
400	32.0	43.7	76.7	99.7	32.0	32.0	32.0	*9999
500	32.0	40.8	75.	97.8	32.0	32.0	32.3	*9999
600	32.0	43.5	79.3	86.5	32.0	32.5	32.4	*9999
700	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
800	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
900	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1000	32.1	35.2	77.3	85.2	32.0	32.5	32.0	*9999
1100	32.2	38.5	76.6	86.0	32.0	33.0	32.2	*9999
1200	32.3	35.0	69.3	84.7	32.0	33.1	32.3	*9999
1300	32.3	35.6	68.2	72.6	32.0	33.1	32.2	*9999
1400	32.2	34.5	67.8	82.2	32.0	33.2	32.2	*9999
1500	32.2	33.5	69.5	83.5	32.0	32.7	32.0	*9999
1600	32.1	38.0	69.8	87.0	32.0	32.3	32.0	*9999
1700	32.0	35.2	70.0	88.4	32.0	32.2	32.0	*9999
1800	32.0	35.7	66.7	87.8	32.2	32.0	32.0	*9999
1900	32.0	35.1	68.5	86.5	32.0	32.0	32.0	*9999
2000	32.0	35.2	69.0	86.8	32.0	32.0	32.0	*9999
2100	32.0	38.4	71.2	88.5	32.0	32.0	32.0	*9999
2200	32.0	36.3	72.2	91.3	32.0	32.0	32.0	*9999
2300	32.0	37.7	72.0	91.5	32.0	32.0	32.0	*9999
2400	32.0	39.5	71.3	91.3	32.0	32.0	32.0	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

TABLE 24. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 24, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	40.0	71.3	91.5	32.0	32.0	32.0	*9999
200	32.0	37.7	72.3	91.6	32.0	32.0	32.0	*9999
300	32.0	41.3	73.3	92.1	32.0	32.0	32.0	*9999
400	32.1	38.0	73.5	92.6	32.0	32.0	32.0	*9999
500	32.2	37.1	73.2	93.3	32.0	32.0	32.0	*9999
600	32.3	38.5	72.8	93.1	32.0	32.0	32.3	*9999
700	32.3	46.6	72.9	89.4	32.0	33.0	32.4	*9999
800	32.3	36.5	73.0	89.0	32.0	33.3	32.8	*9999
900	32.3	33.0	73.1	88.9	33.0	33.4	32.3	*9999
1000	32.4	43.0	73.7	90.2	32.0	33.5	32.3	*9999
1100	32.4	39.2	73.9	90.0	32.0	33.5	32.0	*9999
1200	32.5	37.1	73.4	89.7	32.0	33.5	32.2	*9999
1300	32.7	35.2	72.7	88.8	32.0	33.4	32.0	*9999
1400	32.7	34.5	72.4	88.3	32.1	33.6	32.2	*9999
1500	32.6	32.0	72.9	88.5	32.2	33.5	32.0	*9999
1600	32.6	33.5	72.3	89.7	32.2	33.5	32.0	*9999
1700	32.5	32.0	72.0	89.2	32.0	33.5	32.0	*9999
1800	32.3	32.0	71.2	87.3	32.0	33.4	32.0	*9999
1900	32.3	34.0	70.3	86.7	32.0	33.3	32.0	*9999
2000	32.3	32.0	69.8	85.7	32.0	33.4	32.0	*9999
2100	32.3	32.0	69.7	85.3	32.0	33.5	32.0	*9999
2200	32.3	32.0	69.6	85.4	32.1	33.5	32.0	*9999
2300	32.3	32.0	68.5	84.2	32.1	33.3	32.0	*9999
2400	32.3	32.0	67.7	83.6	32.1	33.3	32.0	*9999

1079 033

POOR ORIGINAL

TABLE 25. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 25, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.3	32.0	67.2	[illegible]	32.0	32.2	32.0	*9999
200	32.3	32.0	66.9	[illegible]	32.0	32.0	32.0	*9999
300	32.3	34.8	66.9	80.5	32.0	33.0	32.0	*9999
400	32.7	32.0	66.2	81.5	32.0	32.9	32.0	*9999
500	32.2	32.0	66.0	81.3	32.0	32.8	32.0	*9999
600	32.3	32.0	64.5	80.8	32.0	32.8	32.0	*9999
700	32.3	32.0	63.3	79.4	32.0	32.8	32.0	*9999
800	32.0	32.0	62.6	78.5	32.0	32.7	32.0	*9999
900	32.2	32.0	63.4	78.9	32.0	32.7	32.0	*9999
1000	32.3	32.0	63.4	79.8	32.0	32.7	32.0	*9999
1100	32.3	32.0	63.6	80.2	32.0	32.8	32.0	*9999
1200	32.5	32.0	63.5	80.5	32.0	32.6	32.0	*9999
1300	32.7	32.0	63.7	81.3	32.0	32.9	32.0	*9999
1400	32.7	32.0	63.8	81.5	32.0	33.0	32.0	*9999
1500	32.7	32.0	64.8	82.1	32.0	33.0	32.0	*9999
1600	32.7	32.0	65.0	83.0	32.0	33.0	32.0	*9999
1700	32.6	32.0	65.3	83.5	32.0	33.0	32.0	*9999
1800	32.4	32.0	65.3	83.5	32.0	32.9	32.0	*9999
1900	32.3	32.0	65.4	84.5	32.0	32.9	32.0	*9999
2000	32.3	32.0	65.7	84.3	32.0	33.0	32.0	*9999
2100	32.3	32.0	66.0	84.2	32.0	33.0	32.0	*9999
2200	32.3	32.0	66.4	85.0	32.0	33.0	32.0	*9999
2300	32.2	32.0	66.4	85.5	32.0	32.8	32.0	*9999
2400	32.3	32.0	66.7	86.4	32.0	32.7	32.0	*9999

TABLE 26. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 26, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.2	32.0	67.4	88.3	32.0	32.2	32.0	*9999
200	32.2	32.0	67.2	89.0	32.0	32.0	32.0	*9999
300	32.3	32.0	67.8	89.6	32.0	32.0	32.0	*9999
400	32.3	32.0	67.5	90.2	32.0	32.0	32.0	*9999
500	32.2	32.0	68.3	90.5	32.0	32.0	32.0	*9999
600	32.3	32.0	69.3	91.3	32.0	32.0	32.0	*9999
700	32.3	32.0	69.7	92.0	32.0	32.0	32.0	*9999
800	32.3	32.3	70.2	93.2	32.0	32.0	32.0	*9999
900	32.3	32.0	71.0	93.5	32.0	32.0	32.0	*9999
1000	32.5	32.8	71.3	94.1	32.0	32.0	32.0	*9999
1100	32.5	32.0	71.7	94.2	32.0	32.3	32.0	*9999
1200	32.4	32.0	72.0	93.2	32.0	32.7	32.0	*9999
1300	32.5	32.0	73.5	93.0	32.0	32.8	32.0	*9999
1400	32.7	32.0	73.9	93.5	32.0	32.9	32.0	*9999
1500	32.6	32.2	74.5	94.0	32.0	33.0	32.0	*9999
1600	32.5	32.0	75.2	94.7	32.0	33.0	32.0	*9999
1700	32.4	32.3	74.5	94.7	32.0	33.0	32.0	*9999
1800	32.3	32.0	74.4	95.5	32.0	32.6	32.0	*9999
1900	32.3	32.0	74.9	91.5	32.0	32.1	32.0	*9999
2000	32.2	36.7	77.0	96.0	32.0	32.0	32.0	*9999
2100	32.2	38.0	77.3	98.5	32.0	32.0	32.0	*9999
2200	32.2	38.0	78.0	98.7	32.0	32.0	32.0	*9999
2300	32.2	37.3	74.5	95.7	32.0	32.0	32.0	*9999
2400	32.2	32.0	77.4	90.3	32.0	32.0	32.0	*9999

TABLE 27. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 27, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.2	32.0	79.0	93.3	32.0	32.0	32.0	*9999
200	32.2	32.0	79.7	93.5	32.0	32.0	32.0	*9999
300	32.2	32.0	75.3	92.0	32.0	32.0	32.0	*9999
400	32.2	32.0	74.0	88.0	32.0	32.0	32.0	*9999
500	32.2	32.0	75.8	89.7	32.0	32.0	32.0	*9999
600	32.2	32.0	75.7	88.6	32.0	32.3	32.0	*9999
700	32.2	32.0	74.5	87.0	32.0	32.7	32.0	*9999
800	32.0	32.0	71.8	85.0	32.0	32.8	32.0	*9999
900	32.2	32.0	72.7	85.8	32.0	32.8	32.0	*9999
1000	32.2	32.0	72.5	86.3	32.0	32.8	32.0	*9999
1100	32.3	32.0	72.0	86.2	32.0	32.8	32.0	*9999
1200	32.5	32.0	70.8	85.4	32.0	33.0	32.0	*9999
1300	32.5	32.0	71.3	85.3	32.0	33.0	32.0	*9999
1400	32.6	32.0	71.6	87.3	32.0	33.0	32.0	*9999
1500	32.6	32.0	72.3	87.4	32.0	33.1	32.0	*9999
1600	32.7	32.0	72.0	87.6	32.0	33.2	32.0	*9999
1700	32.5	32.0	71.1	88.7	32.0	32.5	32.0	*9999
1800	32.5	32.0	73.0	89.8	32.0	32.3	32.0	*9999
1900	32.4	32.0	73.0	91.0	32.0	32.1	32.0	*9999
2000	32.3	32.0	72.8	91.0	32.0	32.0	32.0	*9999
2100	32.3	32.0	73.4	91.2	32.0	32.0	32.0	*9999
2200	32.4	32.0	73.8	91.7	32.0	32.0	32.0	*9999
2300	32.3	32.0	74.4	91.8	32.0	32.0	32.0	*9999
2400	32.3	32.0	74.0	92.3	32.0	32.0	32.0	*9999

TABLE 28. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. FEBRUARY 28, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.2	32.0	74.3	91.3	32.0	32.0	32.0	*9999
200	32.2	32.0	74.5	89.0	32.0	32.0	32.0	*9999
300	32.2	32.0	74.6	88.4	32.0	32.0	32.0	*9999
400	32.1	32.0	74.5	88.4	32.0	32.0	32.0	*9999
500	32.2	32.0	74.0	87.3	32.0	32.0	32.0	*9999
600	32.2	32.0	72.2	86.7	32.0	32.0	32.0	*9999
700	32.2	32.0	71.5	85.7	32.0	32.0	32.0	*9999
800	32.2	55.5	71.6	95.8	32.0	32.0	32.0	*9999
900	32.2	38.8	70.8	106.8	32.7	32.0	32.0	*9999
1000	32.3	37.5	68.8	99.7	32.0	32.0	32.0	*9999
1100	32.3	32.0	67.3	97.0	32.0	32.0	32.0	*9999
1200	32.3	32.0	65.2	94.4	32.0	32.0	32.0	*9999
1300	32.5	32.0	66.4	69.9	32.0	32.0	32.0	*9999
1400	32.5	32.0	68.6	80.5	32.0	32.0	32.0	*9999
1500	32.5	32.0	67.0	87.4	33.0	32.5	32.0	*9999
1600	32.3	32.3	66.0	81.2	33.0	32.7	33.2	*9999
1700	32.7	32.0	62.1	70.6	33.2	32.7	33.3	*9999
1800	32.0	32.1	68.3	68.8	33.5	32.5	33.3	*9999
1900	32.0	32.0	76.1	75.5	33.3	32.5	33.5	*9999
2000	32.0	32.0	75.1	79.0	33.3	32.5	33.7	*9999
2100	32.0	32.8	[illegible]	73.2	33.5	32.5	33.7	*9999
2200	32.0	32.0	65.3	66.8	33.2	32.5	32.2	*9999
2300	32.0	32.0	70.4	[illegible]	33.5	32.4	33.5	*9999
2400	32.0	32.0	73.2	74.3	33.3	32.3	33.6	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 034

TABLE 29. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MARCH 1, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	32.0	32.0	69.8	71.9	32.2	32.3	33.3	*9999
200	32.0	32.0	65.5	67.9	32.2	32.3	33.2	*9999
300	32.0	32.0	67.0	66.7	32.3	32.2	33.3	*9999
400	32.0	32.0	69.9	69.5	32.0	32.2	33.3	*9999
500	32.0	32.0	69.3	70.2	32.0	32.2	33.3	*9999
600	32.0	32.0	66.4	69.0	32.0	32.2	33.2	*9999
700	32.0	32.0	65.1	66.5	32.0	32.3	33.2	*9999
800	32.0	32.0	66.5	67.3	32.0	32.2	33.5	*9999
900	32.0	32.0	67.6	68.2	32.0	32.3	33.5	*9999
1000	32.0	32.0	66.1	67.5	32.0	32.5	33.5	*9999
1100	32.5	32.0	64.6	67.0	32.0	32.7	33.0	*9999
1200	32.2	32.7	63.7	66.5	32.0	32.7	33.0	*9999
1300	32.5	32.3	64.6	67.0	32.0	32.7	33.2	*9999
1400	32.7	32.5	64.6	67.5	32.0	32.7	33.3	*9999
1500	32.3	32.2	63.4	66.2	32.0	32.5	33.0	*9999
1600	32.2	32.2	63.4	66.2	32.0	32.5	33.0	*9999
1700	32.2	32.0	64.0	66.4	32.0	32.4	32.7	*9999
1800	32.2	32.0	63.9	66.8	32.0	32.4	33.0	*9999
1900	32.1	32.0	63.4	66.3	32.0	32.3	32.8	*9999
2000	32.0	32.0	62.9	66.3	32.0	32.4	32.8	*9999
2100	32.2	32.0	62.9	65.6	32.0	32.3	32.6	*9999
2200	32.1	32.0	62.9	66.0	32.0	32.2	32.6	*9999
2300	32.0	32.0	62.6	65.3	32.0	32.0	32.6	*9999
2400	32.2	32.2	62.1	65.0	32.0	32.3	33.0	*9999

TABLE 30. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MARCH 2, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	32.0	32.0	61.8	64.7	32.0	32.3	32.8	*9999
200	32.0	32.0	61.6	64.2	32.0	32.3	32.7	*9999
300	32.0	32.0	61.1	64.2	32.0	32.3	32.6	*9999
400	32.0	32.0	61.2	64.3	32.0	32.3	32.5	*9999
500	32.0	32.0	61.0	66.3	32.0	32.5	32.5	*9999
600	32.0	32.0	60.9	67.0	32.0	32.3	32.6	*9999
700	32.0	32.0	60.9	67.0	32.0	32.3	32.6	*9999
800	32.0	32.0	60.9	68.5	32.0	32.3	32.8	*9999
900	32.0	32.0	61.4	68.0	32.0	32.4	32.6	*9999
1000	32.2	32.3	61.9	68.3	32.0	32.5	32.5	*9999
1100	32.0	32.0	63.1	70.4	32.0	32.5	32.4	*9999
1200	32.0	32.0	63.0	70.5	32.0	32.5	32.4	*9999
1300	32.2	32.7	63.3	70.9	32.0	32.5	32.6	*9999
1400	32.3	32.2	64.1	71.8	32.0	32.5	32.5	*9999
1500	32.2	32.3	64.8	72.1	32.0	32.5	32.6	*9999
1600	32.2	32.3	64.9	72.3	32.0	32.5	32.6	*9999
1700	32.2	32.0	65.1	72.3	32.0	32.5	32.5	*9999
1800	32.0	32.0	65.5	72.5	32.0	32.4	32.7	*9999
1900	32.0	32.3	65.1	72.3	32.0	32.4	32.3	*9999
2000	32.0	32.0	65.5	72.3	32.0	32.4	32.7	*9999
2100	32.0	32.0	65.4	72.0	32.0	32.5	32.6	*9999
2200	32.0	32.0	66.3	72.8	32.0	32.4	32.6	*9999
2300	32.0	32.0	66.5	73.0	32.0	32.5	32.8	*9999
2400	32.0	32.0	66.8	73.4	32.0	32.2	32.0	*9999

TABLE 31. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MARCH 3, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	32.0	32.0	66.8	75.2	32.0	32.0	32.0	*9999
200	32.0	32.0	67.4	75.8	32.0	32.0	32.0	*9999
300	32.0	32.0	68.0	78.6	32.0	32.0	32.0	*9999
400	32.0	32.0	66.6	80.3	32.0	32.0	32.0	*9999
500	32.0	32.0	69.1	82.0	32.0	32.0	32.0	*9999
600	32.2	32.0	69.9	82.0	32.0	32.0	32.0	*9999
700	32.2	32.0	72.0	84.0	32.0	32.0	32.0	*9999
800	32.2	32.0	73.1	85.3	32.0	32.0	32.0	*9999
900	32.2	32.0	74.1	86.5	32.0	32.0	32.0	*9999
1000	32.0	32.0	74.6	86.7	32.0	32.0	32.0	*9999
1100	32.1	32.0	76.0	87.5	32.0	32.0	32.0	*9999
1200	32.2	32.0	77.3	90.0	32.0	32.0	32.0	*9999
1300	32.0	32.0	77.9	90.3	32.0	32.0	32.0	*9999
1400	32.0	32.0	78.6	90.8	32.0	32.0	32.2	*9999
1500	32.0	32.0	79.3	91.8	32.0	32.0	32.4	*9999
1600	32.0	32.0	80.8	93.0	32.0	32.0	32.3	*9999
1700	32.0	32.0	81.3	94.0	32.0	32.0	32.4	*9999
1800	32.0	32.0	81.4	94.1	32.0	32.0	32.2	*9999
1900	32.0	32.0	81.4	94.4	32.0	32.0	32.2	*9999
2000	32.0	32.0	83.1	95.0	32.0	32.0	32.2	*9999
2100	32.0	32.0	83.5	95.0	32.0	32.0	[illegible]	*9999
2200	32.0	32.0	83.9	94.9	32.0	32.0	32.3	*9999
2300	32.0	32.0	84.0	95.0	32.0	32.0	32.2	*9999
2400	32.0	32.0	84.3	95.0	32.0	32.0	32.3	*9999

TABLE 32. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MARCH 4, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	32.0	32.0	84.0	94.6	32.0	32.0	32.0	*9999
200	32.0	32.0	83.6	92.0	32.0	32.0	32.0	*9999
300	32.0	32.0	83.3	89.6	32.0	32.0	32.0	*9999
400	32.0	32.0	81.9	86.8	32.2	32.0	33.0	*9999
500	32.0	32.0	80.5	83.2	32.2	32.0	33.1	*9999
600	32.0	32.0	[illegible]	82.8	32.2	32.0	33.1	*9999
700	32.0	32.0	77.2	83.2	32.1	32.0	33.2	*9999
800	32.0	32.0	75.9	84.2	32.0	32.0	32.8	*9999
900	32.0	32.0	73.1	82.2	32.0	32.0	33.0	*9999
1000	32.0	32.0	72.0	81.7	32.0	32.1	33.0	*9999
1100	32.0	32.0	71.4	[illegible]	32.0	32.4	33.0	*9999
1200	32.5	32.0	71.4	[illegible]	32.0	32.3	32.6	*9999
1300	32.6	32.0	70.2	82.0	32.0	32.5	33.0	*9999
1400	32.3	32.0	69.4	80.6	32.0	32.5	32.7	*9999
1500	32.3	32.0	69.0	80.1	32.0	32.5	33.0	*9999
1600	32.2	32.0	68.8	79.8	32.0	32.4	32.8	*9999
1700	32.2	32.0	68.6	79.0	32.0	32.3	32.6	*9999
1800	32.2	32.0	67.6	79.5	32.0	32.3	32.6	*9999
1900	32.0	32.0	67.2	79.5	32.0	32.2	32.0	*9999
2000	32.0	32.0	67.1	81.2	32.0	32.0	32.0	*9999
2100	32.0	32.0	67.6	82.3	32.0	32.0	32.0	*9999
2200	32.0	32.0	67.9	82.6	32.0	32.0	32.0	*9999
2300	32.0	32.0	68.3	83.0	32.0	32.0	32.0	*9999
2400	32.0	32.0	69.4	83.9	32.0	32.0	32.0	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 035

POOR ORIGINAL

TABLE 33. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION, MARCH 5, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	32.0	70.4	85.0	32.0	32.0	32.0	*9999
200	32.0	32.0	70.6	85.7	32.0	32.0	32.0	*9999
300	32.0	32.0	71.0	86.2	32.0	32.0	32.0	*9999
400	32.0	32.0	71.9	87.1	32.0	32.0	32.0	*9999
500	32.0	32.0	72.4	87.8	32.0	32.0	32.0	*9999
600	32.1	32.0	72.8	88.3	32.0	32.0	32.7	*9999
700	32.0	32.0	72.6	87.6	32.4	32.0	33.0	*9999
800	32.0	32.0	73.1	88.0	32.5	32.2	32.9	*9999
900	32.0	32.0	73.6	88.5	32.5	32.3	32.6	*9999
1000	32.2	32.0	74.0	88.5	32.4	32.4	33.0	*9999
1100	32.3	32.0	73.4	89.2	32.5	32.5	33.0	*9999
1200	32.3	32.2	73.9	89.5	32.5	32.5	33.0	*9999
1300	32.3	32.2	74.4	90.4	32.7	32.5	33.1	*9999
1400	32.5	32.3	74.1	90.2	32.6	32.5	33.1	*9999
1500	32.4	32.9	74.4	92.8	32.0	32.0	32.0	*9999
1600	32.3	33.0	74.5	93.9	32.0	32.0	32.0	*9999
1700	32.3	32.9	75.3	94.2	32.0	32.0	32.0	*9999
1800	32.2	32.3	74.4	94.0	32.0	32.0	32.0	*9999
1900	32.0	32.0	75.6	94.7	32.0	32.0	32.0	*9999
2000	32.0	32.0	76.3	95.8	32.0	32.0	32.0	*9999
2100	32.0	32.0	*9999	96.3	32.0	32.0	32.0	*9999
2200	32.0	32.0	*9999	96.2	32.0	32.0	32.0	*9999
2300	32.0	32.0	*9999	96.3	32.0	32.0	32.0	*9999
2400	32.0	32.0	*9999	97.2	32.0	32.0	32.0	*9999

TABLE 34. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION, MARCH 6, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	32.0	*9999	97.2	32.0	32.0	32.0	*9999
200	32.0	32.0	*9999	97.6	32.0	32.0	32.0	*9999
300	32.0	32.0	*9999	97.3	32.0	32.0	32.0	*9999
400	32.0	32.0	*9999	97.8	32.0	32.0	32.0	*9999
500	32.0	32.0	*9999	97.8	32.2	32.0	32.0	*9999
600	32.0	32.0	*9999	98.2	32.2	32.0	32.0	*9999
700	32.0	32.0	*9999	98.7	32.2	32.0	32.0	*9999
800	32.0	32.0	*9999	99.0	32.2	32.0	32.0	*9999
900	32.0	32.0	*9999	99.8	32.4	32.0	32.0	*9999
1000	32.0	32.0	*9999	99.6	32.2	32.0	32.0	*9999
1100	32.3	32.0	*9999	100.4	32.2	32.0	32.2	*9999
1200	32.5	32.8	*9999	91.5	32.2	32.0	32.3	*9999
1300	32.7	33.2	*9999	100.3	32.5	32.0	33.5	*9999
1400	32.8	33.2	*9999	93.7	32.7	32.0	33.5	*9999
1500	32.8	33.0	*9999	93.8	32.5	32.1	33.5	*9999
1600	32.6	33.0	*9999	92.2	32.5	32.2	33.2	*9999
1700	32.5	32.7	*9999	92.4	32.2	32.2	33.2	*9999
1800	32.3	32.5	*9999	91.1	32.2	32.2	33.2	*9999
1900	32.3	32.3	*9999	90.9	32.0	33.0	33.0	*9999
2000	32.2	32.2	*9999	91.4	32.2	32.0	32.8	*9999
2100	32.1	32.5	*9999	88.9	32.0	32.9	32.7	*9999
2200	32.2	32.0	*9999	88.9	32.0	32.0	33.0	*9999
2300	32.2	32.2	*9999	88.4	32.0	32.0	32.9	*9999
2400	32.2	32.0	*9999	88.4	32.0	32.0	32.9	*9999

TABLE 35. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION, MARCH 7, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.2	32.0	*9999	87.4	32.0	32.0	32.8	*9999
200	32.2	32.0	*9999	87.4	32.2	32.0	33.0	*9999
300	32.2	32.0	*9999	87.4	32.2	32.0	33.0	*9999
400	32.1	32.0	*9999	87.7	32.1	32.0	32.8	*9999
500	32.2	32.0	*9999	87.7	32.0	32.0	33.0	*9999
600	32.0	32.3	*9999	87.4	32.0	32.0	32.8	*9999
700	32.1	32.8	*9999	87.5	32.0	32.0	32.8	*9999
800	32.2	32.0	*9999	87.5	32.0	32.0	33.0	*9999
900	32.1	32.0	*9999	87.9	32.0	32.0	33.2	*9999
1000	32.3	32.0	*9999	88.0	32.0	32.0	33.0	*9999
1100	32.5	32.0	*9999	88.0	32.0	32.0	33.0	*9999
1200	32.4	32.2	*9999	72.2	32.0	32.0	32.5	*9999
1300	32.3	32.3	*9999	72.7	32.0	32.0	32.5	*9999
1400	32.3	32.3	*9999	72.9	32.0	32.0	32.3	*9999
1500	32.3	32.3	*9999	72.8	32.0	32.0	32.3	*9999
1600	32.2	32.0	*9999	68.5	32.0	32.0	32.3	*9999
1700	32.3	32.0	*9999	56.1	32.0	32.3	32.8	*9999
1800	32.2	32.0	*9999	65.9	32.0	32.3	32.8	*9999
1900	32.2	32.0	*9999	66.5	32.0	32.3	32.6	*9999
2000	32.2	32.0	*9999	67.3	32.0	32.3	32.8	*9999
2100	32.0	32.0	*9999	66.3	32.0	32.3	32.7	*9999
2200	32.1	32.0	*9999	68.0	32.0	32.0	32.0	*9999
2300	32.2	32.0	*9999	69.6	32.0	32.0	32.0	*9999
2400	32.0	32.0	*9999	71.5	32.0	32.0	32.0	*9999

TABLE 36. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION, MARCH 8, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.1	32.0	*9999	72.5	32.0	32.0	32.0	*9999
200	32.2	32.0	*9999	74.5	32.0	32.0	32.0	*9999
300	32.2	32.0	*9999	77.0	32.0	32.0	32.2	*9999
400	32.2	32.0	*9999	78.0	32.0	32.0	32.1	*9999
500	32.3	32.3	*9999	78.6	32.0	32.0	32.8	*9999
600	32.2	32.0	*9999	79.0	32.0	32.0	32.5	*9999
700	32.2	32.0	*9999	80.0	32.0	32.0	32.6	*9999
800	32.2	32.0	*9999	81.3	32.0	32.2	32.9	*9999
900	32.2	32.0	*9999	81.9	32.0	32.2	32.8	*9999
1000	32.3	32.2	*9999	82.0	32.0	32.2	32.9	*9999
1100	32.3	32.0	*9999	83.6	32.2	32.3	32.8	*9999
1200	32.3	32.3	*9999	84.6	32.0	32.2	32.9	*9999
1300	32.5	32.7	*9999	84.6	32.0	32.3	32.7	*9999
1400	32.6	32.7	*9999	85.0	32.1	32.3	33.0	*9999
1500	32.6	32.8	*9999	85.8	32.2	32.6	33.2	*9999
1600	32.5	32.3	74.3	86.6	32.3	32.5	33.0	*9999
1700	32.4	32.6	74.4	86.8	32.2	32.6	33.0	*9999
1800	32.3	32.5	74.7	86.7	32.0	32.4	32.7	*9999
1900	32.3	32.3	75.3	88.6	32.0	32.2	32.2	*9999
2000	32.2	32.2	75.7	90.0	32.0	32.0	32.2	*9999
2100	32.2	32.0	75.7	90.3	32.0	32.0	32.0	*9999
2200	32.3	32.2	75.3	89.9	32.0	32.0	32.2	*9999
2300	32.2	32.0	76.3	90.3	32.0	32.0	32.0	*9999
2400	32.2	32.2	76.9	91.3	32.0	32.0	32.1	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 036

POOR ORIGINAL

TABLE 37. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 9, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.2	32.0	77.0	91.7	32.0	32.0	32.0	*9999
200	32.2	32.0	76.8	91.5	32.0	32.0	32.2	*9999
300	32.3	32.0	77.2	91.7	32.0	32.0	32.2	*9999
400	32.2	32.3	77.4	92.0	32.0	32.0	32.3	*9999
500	[illegible]	32.0	77.4	92.6	32.0	32.0	32.2	*9999
600	[illegible]	32.0	77.3	92.5	32.0	32.0	32.3	*9999
700	32.3	32.0	77.5	92.7	32.0	32.0	32.2	*9999
800	32.2	32.0	77.8	93.8	32.0	32.0	32.3	*9999
900	32.2	32.0	78.0	93.8	32.0	32.0	32.3	*9999
1000	32.3	32.0	78.7	93.8	32.0	32.0	32.2	*9999
1100	32.3	32.2	79.0	94.3	32.0	32.0	32.2	*9999
1200	32.3	32.3	79.8	95.5	32.0	32.0	32.3	*9999
1300	32.4	32.9	79.8	95.7	32.0	32.0	32.3	*9999
1400	32.6	[illegible]	79.7	94.6	32.0	32.0	32.3	*9999
1500	32.6	33.3	79.0	95.1	32.0	32.0	32.3	*9999
1600	33.1	[illegible]	78.5	94.0	32.2	32.1	32.3	*9999
1700	32.6	33.0	77.6	93.3	32.1	32.1	32.2	*9999
1800	32.3	36.5	77.8	*9999	32.0	32.0	32.0	*9999
1900	32.2	35.7	77.6	*9999	32.0	32.0	32.0	*9999
2000	32.0	42.4	78.0	*9999	32.0	32.0	32.0	*9999
2100	32.0	43.3	78.6	*9999	32.0	32.0	32.0	*9999
2200	32.0	43.7	79.9	*9999	32.0	32.0	32.0	*9999
2300	32.0	44.6	79.9	*9999	32.0	32.0	32.0	*9999
2400	32.0	44.6	[illegible]	*9999	32.0	32.0	32.0	*9999

TABLE 38. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 10, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	43.8	80.1	*9999	32.0	32.0	32.0	*9999
200	32.0	48.4	79.1	*9999	32.0	32.0	32.0	*9999
300	32.0	49.4	78.8	*9999	32.0	32.0	32.0	*9999
400	32.0	48.4	79.1	*9999	32.0	32.0	32.0	*9999
500	32.0	46.5	79.1	*9999	32.0	32.0	32.0	*9999
600	32.0	44.5	78.4	*9999	32.0	32.0	32.0	*9999
700	32.0	46.1	79.3	*9999	32.0	32.0	32.0	*9999
800	32.0	46.1	79.4	*9999	32.0	32.0	32.0	*9999
900	32.0	35.4	78.9	*9999	32.0	32.0	32.0	*9999
1000	32.2	42.8	78.4	*9999	32.0	32.0	32.0	*9999
1100	32.2	47.1	78.8	*9999	32.0	32.0	32.0	*9999
1200	32.4	46.3	79.0	*9999	32.0	32.0	32.0	*9999
1300	32.4	44.3	78.4	*9999	32.0	32.0	32.0	*9999
1400	32.5	47.4	78.4	*9999	32.0	32.0	32.0	*9999
1500	32.3	46.9	78.6	*9999	32.0	32.0	32.0	*9999
1600	32.3	48.4	78.8	*9999	32.0	32.0	32.0	*9999
1700	32.2	47.4	78.6	*9999	32.0	32.0	32.0	*9999
1800	32.2	47.8	78.3	*9999	32.0	32.0	32.0	*9999
1900	32.0	45.8	78.6	*9999	32.0	32.0	32.0	*9999
2000	32.1	47.4	79.1	*9999	32.0	32.0	32.0	*9999
2100	32.1	43.8	79.3	*9999	32.0	32.0	32.0	*9999
2200	32.2	40.9	79.4	*9999	32.0	32.0	32.8	*9999
2300	32.0	32.8	79.4	*9999	32.0	32.4	32.3	*9999
2400	32.8	32.0	79.3	*9999	32.0	32.7	32.7	*9999

TABLE 39. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 11, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.1	32.0	79.0	*9999	32.0	32.7	32.7	*9999
200	32.1	32.0	78.4	*9999	32.0	32.7	32.5	*9999
300	32.0	32.0	78.4	*9999	32.0	32.7	32.5	*9999
400	32.1	38.9	76.5	*9999	32.0	32.8	32.6	*9999
500	32.0	38.1	77.4	*9999	32.0	32.8	32.0	*9999
600	32.0	32.0	75.8	*9999	32.0	32.5	32.0	*9999
700	32.0	41.6	76.4	*9999	32.0	32.0	32.0	*9999
800	32.0	42.8	77.4	*9999	32.0	32.0	32.0	*9999
900	32.0	41.3	76.6	*9999	32.0	32.0	32.0	*9999
1000	32.2	42.4	77.9	*9999	32.0	32.0	32.0	*9999
1100	32.3	41.1	78.8	*9999	32.0	32.0	32.0	*9999
1200	32.6	43.8	80.1	*9999	32.0	32.0	32.0	*9999
1300	32.8	44.1	79.9	*9999	32.0	32.0	32.0	*9999
1400	32.0	45.2	80.8	*9999	32.0	32.0	32.0	*9999
1500	33.1	44.3	81.8	*9999	32.0	32.0	32.0	*9999
1600	33.1	45.4	82.3	*9999	32.0	32.0	32.0	*9999
1700	32.7	45.3	82.4	*9999	32.0	32.0	32.0	*9999
1800	32.4	45.1	82.9	*9999	32.0	32.0	32.0	*9999
1900	32.3	45.4	83.1	*9999	32.0	32.0	32.0	*9999
2000	32.2	45.4	83.0	*9999	32.0	32.0	32.0	*9999
2100	32.2	[illegible]	83.1	*9999	32.0	32.0	32.0	*9999
2200	32.2	[illegible]	83.1	*9999	32.0	32.0	32.0	*9999
2300	32.2	42.1	82.6	*9999	32.0	32.0	32.0	*9999
2400	32.2	41.5	82.3	*9999	32.0	32.4	32.0	*9999

TABLE 40. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 12, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.2	41.1	82.1	*9999	32.2	32.6	32.2	*9999
200	32.0	40.4	81.3	*9999	32.0	32.5	32.0	*9999
300	32.0	43.9	81.2	*9999	32.0	32.0	32.0	*9999
400	32.0	44.8	81.4	*9999	32.0	32.0	32.0	*9999
500	32.0	43.9	81.6	*9999	32.0	32.0	32.0	*9999
600	32.0	44.3	81.9	*9999	32.0	32.0	32.0	*9999
700	32.0	43.9	82.1	*9999	32.0	32.0	32.0	*9999
800	32.0	44.1	82.3	*9999	32.0	32.0	32.0	*9999
900	32.0	44.4	82.5	*9999	32.0	32.0	32.0	*9999
1000	32.4	44.4	83.1	*9999	32.0	32.0	32.0	*9999
1100	32.5	45.1	83.3	*9999	32.0	32.0	32.0	*9999
1200	32.7	45.1	83.6	*9999	32.2	32.0	32.0	*9999
1300	33.0	45.9	84.3	*9999	32.5	32.0	32.0	*9999
1400	33.2	46.1	84.9	*9999	32.5	32.0	32.0	*9999
1500	33.2	46.4	85.1	*9999	32.5	32.2	32.0	*9999
1600	33.0	46.6	85.3	*9999	32.5	32.2	32.0	*9999
1700	32.8	46.1	85.8	*9999	32.5	32.2	32.0	*9999
1800	32.5	45.5	85.9	*9999	32.3	32.0	32.0	*9999
1900	32.3	45.4	86.1	*9999	32.1	32.0	32.0	*9999
2000	32.2	45.4	86.1	*9999	32.0	32.0	32.0	*9999
2100	32.0	45.3	86.1	*9999	32.0	32.0	32.0	*9999
2200	32.0	45.4	85.6	*9999	32.0	32.0	32.0	*9999
2300	32.0	45.6	85.3	*9999	32.0	32.0	32.0	*9999
2400	32.2	45.7	85.8	*9999	32.0	32.0	32.0	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 037

POOR ORIGINAL

TABLE 41. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MARCH 13, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.2	45.1	86.0	96.8	32.0	32.0	32.0	*9999
200	32.2	45.3	85.6	96.5	32.0	32.0	32.0	*9999
300	2.2	45.6	85.9	96.7	32.0	32.0	32.0	*9999
400	32.2	44.9	86.1	97.3	32.0	32.0	32.0	*9999
500	32.2	44.5	85.0	97.8	32.0	32.0	32.0	*9999
600	32.2	44.5	86.1	97.8	32.0	32.0	32.0	*9999
700	32.2	46.5	86.5	98.0	32.0	32.0	32.0	*9999
800	32.3	46.8	87.3	98.0	32.3	32.0	32.0	*9999
900	32.3	45.1	87.2	104.5	32.2	32.0	32.0	*9999
1000	32.5	45.7	87.1	104.5	32.4	32.0	32.0	*9999
1100	32.7	46.1	87.9	105.2	[illegible]	32.0	32.0	*9999
1200	33.0	47.6	88.4	[illegible]	32.5	32.2	32.0	*9999
1300	33.2	48.6	88.6	106.8	32.6	32.2	32.0	*9999
1400	33.3	49.1	89.1	106.4	32.7	32.2	32.0	*9999
1500	33.4	46.4	89.1	105.8	32.8	32.0	32.0	*9999
1600	33.2	[illegible]	88.1	105.0	32.7	32.0	32.0	*9999
1700	33.0	[illegible]	87.1	103.9	32.5	32.1	32.0	*9999
1800	32.7	[illegible]	85.8	102.0	32.2	32.0	32.0	*9999
1900	32.4	47.8	85.0	101.3	32.2	32.0	32.0	*9999
2000	32.3	43.3	84.1	99.6	32.0	32.0	32.0	*9999
2100	32.2	45.6	82.7	98.7	32.0	32.0	32.0	*9999
2200	32.2	46.1	82.3	96.9	32.0	32.0	32.0	*9999
2300	32.2	45.9	81.9	97.0	32.0	32.0	32.0	*9999
2400	32.0	45.7	81.6	96.4	32.0	32.0	32.0	*9999

TABLE 42. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MARCH 14, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	47.1	81.1	96.4	32.0	[illegible]	[illegible]	*9999
200	32.0	46.9	81.1	96.8	32.0	[illegible]	32.0	*9999
300	32.0	47.4	80.8	96.2	32.0	[illegible]	[illegible]	*9999
400	32.0	48.3	80.9	96.3	32.0	[illegible]	32.0	*9999
500	32.0	47.9	81.3	96.8	32.0	32.0	32.0	*9999
600	32.0	48.6	81.0	96.7	[illegible]	32.0	32.0	*9999
700	32.0	48.8	81.5	[illegible]	32.0	32.0	32.0	[illegible]
800	32.0	49.7	82.1	98.5	32.0	32.0	[illegible]	[illegible]
900	32.0	49.1	83.3	101.0	32.0	32.0	32.0	[illegible]
1000	32.0	49.1	83.0	101.0	32.0	32.0	[illegible]	[illegible]
1100	32.2	50.0	83.5	101.0	32.0	32.0	32.0	[illegible]
1200	32.3	49.8	84.6	102.5	32.0	32.2	32.0	*9999
1300	32.0	47.5	*9999	*9999	32.1	32.4	[illegible]	*9999
1400	32.0	49.6	*9999	*9999	32.0	32.3	32.0	*9999
1500	32.0	44.5	*9999	*9999	32.3	32.3	32.0	*9999
1600	32.0	48.4	*9999	*9999	32.2	32.3	32.0	*9999
1700	32.0	45.6	*9999	*9999	32.0	32.3	32.0	*9999
1800	32.0	[illegible]	*9999	*9999	32.0	32.3	32.0	*9999
1900	32.0	[illegible]	*9999	*9999	32.0	32.0	32.0	*9999
2000	32.0	46.4	*9999	*9999	32.0	32.0	32.0	*9999
2100	32.0	45.2	*9999	*9999	32.0	32.0	32.0	*9999
2200	32.0	47.2	*9999	*9999	32.0	32.0	32.0	*9999
2300	32.0	46.0	*9999	*9999	32.0	32.0	32.0	*9999
2400	32.0	44.6	*9999	*9999	32.0	32.0	32.0	*9999

TABLE 43. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MARCH 15, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	45.0	*9999	*9999	32.0	32.0	32.0	*9999
200	32.0	47.1	*9999	*9999	32.0	32.0	32.0	*9999
300	32.0	47.3	*9999	*9999	32.0	32.0	32.0	*9999
400	32.0	47.5	*9999	*9999	32.0	32.0	32.0	*9999
500	32.0	45.3	*9999	*9999	32.0	32.0	32.0	*9999
600	32.0	47.5	*9999	*9999	32.0	32.0	32.0	*9999
700	32.0	47.3	*9999	*9999	32.0	32.0	32.0	*9999
800	32.0	47.4	*9999	*9999	32.0	32.0	32.0	*9999
900	32.0	49.3	*9999	*9999	32.0	32.0	32.0	*9999
1000	32.0	48.0	*9999	*9999	32.0	32.0	32.0	*9999
1100	32.0	47.2	*9999	*9999	32.2	32.2	32.0	*9999
1200	32.0	47.9	*9999	*9999	32.4	32.4	32.0	*9999
1300	32.1	47.3	*9999	*9999	32.4	32.5	32.1	*9999
1400	32.1	48.3	*9999	*9999	32.5	32.5	32.1	*9999
1500	32.3	49.0	*9999	*9999	32.4	32.5	32.1	*9999
1600	32.1	48.0	*9999	*9999	32.4	32.5	32.0	*9999
1700	32.0	48.4	*9999	*9999	32.3	32.5	32.0	*9999
1800	32.0	48.6	*9999	*9999	32.1	32.4	32.0	*9999
1900	32.0	48.9	*9999	*9999	32.0	32.4	32.0	*9999
2000	32.0	48.3	*9999	*9999	32.0	32.3	32.0	*9999
2100	32.0	47.2	*9999	*9999	32.0	32.0	32.0	*9999
2200	32.0	47.5	*9999	*9999	32.0	32.0	32.0	*9999
2300	32.0	47.4	*9999	*9999	32.0	32.1	32.0	*9999
2400	32.0	47.2	*9999	*9999	32.0	32.1	32.0	*9999

TABLE 44. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MARCH 16, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	46.5	*9999	*9999	32.0	32.0	32.0	*9999
200	32.0	47.0	*9999	*9999	32.0	32.1	32.0	*9999
300	32.0	47.4	*9999	*9999	32.0	32.0	32.0	*9999
400	32.0	47.6	*9999	*9999	32.0	32.0	32.0	*9999
500	32.0	47.1	*9999	*9999	32.0	32.1	32.0	*9999
600	32.0	46.0	*9999	*9999	32.0	32.0	32.0	*9999
700	32.0	47.6	*9999	*9999	32.0	32.0	32.0	*9999
800	32.0	48.3	*9999	*9999	32.0	32.1	32.0	*9999
900	32.0	48.4	*9999	*9999	32.1	32.1	32.0	*9999
1000	32.0	58.3	*9999	*9999	32.2	32.2	32.8	*9999
1100	32.0	32.0	*9999	*9999	33.1	32.5	33.2	*9999
1200	32.1	32.0	*9999	*9999	33.1	32.7	33.0	*9999
1300	32.5	32.0	*9999	*9999	32.9	32.9	33.0	*9999
1400	32.5	32.0	*9999	*9999	32.9	33.0	33.0	*9999
1500	32.5	32.0	*9999	*9999	33.0	33.0	33.0	*9999
1600	32.5	32.0	*9999	*9999	33.0	33.0	33.0	*9999
1700	32.3	32.0	*9999	*9999	32.9	33.0	33.0	*9999
1800	32.0	32.0	*9999	*9999	32.5	32.8	32.9	*9999
1900	32.0	32.0	*9999	*9999	32.3	32.6	32.6	*9999
2000	32.0	32.0	*9999	*9999	32.2	32.6	32.6	*9999
2100	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
2200	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
2300	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
2400	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 038

POOR ORIGINAL

TABLE 45. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 17, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	32.0	*9999	*9999	32.2	32.4	32.3	*9999
200	32.0	32.0	*9999	*9999	32.2	32.5	32.3	*9999
300	32.0	32.0	*9999	*9999	32.2	32.4	32.2	*9999
400	32.0	32.0	*9999	*9999	32.0	32.3	32.2	*9999
500	32.0	32.0	*9999	*9999	32.0	32.3	32.3	*9999
600	32.0	32.0	*9999	*9999	32.0	32.3	32.4	*9999
700	32.0	32.0	*9999	*9999	32.0	32.8	32.0	*9999
800	32.0	32.0	*9999	*9999	32.0	32.9	32.3	*9999
900	32.0	32.0	*9999	*9999	32.0	33.0	32.6	*9999
1000	32.0	32.0	*9999	*9999	32.0	33.0	32.7	*9999
1100	32.0	32.0	*9999	*9999	32.3	33.0	33.2	*9999
1200	32.0	32.0	*9999	*9999	32.2	33.0	33.0	*9999
1300	32.0	32.0	*9999	*9999	32.0	32.5	32.2	*9999
1400	32.0	32.0	*9999	*9999	32.0	32.3	32.2	*9999
1500	32.0	32.0	*9999	*9999	32.0	32.3	32.1	*9999
1600	32.0	33.0	*9999	*9999	32.0	32.1	32.0	*9999
1700	32.0	32.0	*9999	*9999	32.0	32.0	32.0	*9999
1800	32.0	32.0	*9999	*9999	32.0	32.3	32.0	*9999
1900	32.0	32.0	*9999	*9999	32.0	32.4	32.0	*9999
2000	32.0	32.0	*9999	*9999	32.0	32.5	32.0	*9999
2100	32.0	32.0	*9999	*9999	32.0	32.4	32.0	*9999
2200	32.0	32.0	*9999	*9999	32.0	32.4	32.1	*9999
2300	32.0	32.0	*9999	*9999	32.2	32.5	32.1	*9999
2400	32.0	32.0	*9999	*9999	32.0	32.5	32.0	*9999

TABLE 46. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 18, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	32.0	*9999	*9999	32.2	32.5	32.0	*9999
200	32.0	32.0	*9999	*9999	32.0	32.3	32.2	*9999
300	32.0	32.0	*9999	*9999	32.2	32.3	32.2	*9999
400	32.0	32.0	*9999	*9999	32.2	32.3	32.2	*9999
500	32.0	32.0	*9999	*9999	32.2	32.3	32.2	*9999
600	32.0	32.0	*9999	*9999	32.0	32.3	32.2	*9999
700	32.0	32.0	*9999	*9999	32.0	32.3	32.0	*9999
800	32.0	32.0	*9999	*9999	32.3	32.5	32.2	*9999
900	32.1	32.2	*9999	*9999	32.2	32.4	32.2	*9999
1000	32.2	32.0	*9999	*9999	32.4	32.7	32.3	*9999
1100	32.2	32.5	*9999	*9999	32.3	2.5	32.3	*9999
1200	32.1	32.5	*9999	*9999	32.7	32.7	32.5	*9999
1300	32.7	32.0	*9999	*9999	32.7	32.9	32.7	*9999
1400	32.8	38.2	*9999	*9999	33.0	33.0	32.8	*9999
1500	32.7	36.7	*9999	*9999	32.8	33.0	32.8	*9999
1600	32.7	35.0	*9999	*9999	32.7	33.0	32.7	*9999
1700	32.5	34.7	*9999	*9999	32.6	32.8	32.8	*9999
1800	32.0	33.7	*9999	*9999	32.7	32.7	32.8	*9999
1900	32.0	33.2	*9999	*9999	32.7	32.7	32.8	*9999
2000	32.0	32.0	*9999	*9999	32.7	32.7	32.7	*9999
2100	32.0	33.7	*9999	*9999	32.7	32.7	32.7	*9999
2200	32.0	32.0	*9999	*9999	32.7	32.7	32.7	*9999
2300	32.0	32.0	*9999	*9999	32.7	32.7	32.7	*9999
2400	32.0	32.0	*9999	*9999	32.5	32.5	32.7	*9999

TABLE 47. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 19, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	32.0	*9999	*9999	32.6	32.5	32.8	*9999
200	32.0	33.7	*9999	*9999	32.6	32.4	32.6	*9999
300	32.0	32.0	*9999	*9999	32.6	32.4	32.6	*9999
400	32.0	32.0	*9999	*9999	32.4	32.3	32.6	*9999
500	32.0	32.0	*9999	*9999	32.6	32.3	32.7	*9999
600	32.0	38.2	*9999	*9999	32.7	32.7	33.8	*9999
700	32.0	33.3	*9999	*9999	32.7	32.8	33.1	*9999
800	32.0	40.5	*9999	*9999	32.5	33.0	33.7	*9999
900	32.0	39.2	*9999	*9999	32.3	33.0	33.4	*9999
1000	32.0	40.0	*9999	*9999	32.2	33.3	32.9	*9999
1100	32.2	41.0	*9999	*9999	32.2	33.4	33.2	*9999
1200	32.3	42.8	*9999	*9999	32.2	33.3	33.3	*9999
1300	32.8	44.2	*9999	*9999	32.4	33.5	33.5	*9999
1400	32.7	45.8	*9999	*9999	32.4	33.6	32.5	*9999
1500	32.8	47.8	*9999	*9999	32.5	33.4	32.9	*9999
1600	32.8	47.3	*9999	*9999	32.6	33.4	33.2	*9999
1700	32.7	46.8	*9999	*9999	32.5	33.5	33.2	*9999
1800	32.7	46.5	*9999	*9999	32.5	33.3	33.2	*9999
1900	32.3	48.0	*9999	*9999	32.4	33.0	33.0	*9999
2000	32.3	47.0	*9999	*9999	32.5	33.1	33.0	*9999
2100	32.3	44.3	*9999	*9999	32.4	33.0	32.8	*9999
2200	32.3	46.5	*9999	*9999	32.4	33.0	32.5	*9999
2300	32.3	46.0	*9999	*9999	32.3	33.0	32.6	*9999
2400	32.3	43.5	*9999	*9999	32.2	32.9	32.6	*9999

TABLE 48. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 20, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.2	40.4	*9999	*9999	32.2	33.1	33.0	*9999
200	32.0	39.2	*9999	*9999	32.3	33.7	33.2	*9999
300	32.0	38.3	*9999	*9999	32.3	33.0	33.2	*9999
400	32.0	37.5	*9999	*9999	32.0	33.1	32.7	*9999
500	32.0	40.6	*9999	*9999	32.0	33.0	32.7	*9999
600	32.0	39.5	*9999	*9999	32.0	33.0	32.8	*9999
700	32.0	37.3	*9999	*9999	32.0	33.1	32.7	*9999
800	32.0	40.7	*9999	*9999	32.0	33.0	32.8	*9999
900	32.0	32.0	*9999	*9999	32.0	33.0	32.3	*9999
1000	32.0	41.7	*9999	*9999	32.0	32.8	32.3	*9999
1100	32.1	45.3	*9999	*9999	32.0	32.8	32.3	*9999
1200	32.2	38.7	*9999	*9999	32.1	32.7	32.3	*9999
1300	32.2	41.0	*9999	*9999	32.0	32.7	32.5	*9999
1400	32.2	39.0	*9999	*9999	.2	32.7	32.5	*9999
1500	32.3	42.5	*9999	*9999	32.2	32.8	32.4	*9999
1600	32.3	43.7	*9999	*9999	32.0	32.8	32.5	*9999
1700	32.2	42.3	*9999	*9999	32.1	32.8	32.5	*9999
1800	32.2	38.8	*9999	*9999	32.0	32.9	32.4	*9999
1900	32.2	41.3	*9999	*9999	32.0	32.7	32.3	*9999
2000	32.2	44.4	*9999	*9999	32.0	32.7	32.3	*9999
2100	32.0	44.8	*9999	*9999	32.0	32.5	32.2	*9999
2200	32.0	39.0	*9999	*9999	32.0	32.4	32.0	*9999
2300	32.0	43.5	*9999	*9999	32.0	32.3	32.0	*9999
2400	32.0	43.0	*9999	*9999	32.0	32.4	32.0	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 039

TABLE 49. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MARCH 21, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	46.7	*9999	*9999	32.0	32.0	32.0	*9999
200	32.0	44.7	*9999	*9999	32.0	32.0	32.0	*9999
300	32.0	48.7	*9999	*9999	32.0	32.0	32.0	*9999
400	32.0	45.4	*9999	*9999	32.0	32.0	32.0	*9999
500	32.0	47.8	*9999	*9999	32.0	32.0	32.0	*9999
600	32.0	47.5	*9999	*9999	32.0	32.0	32.0	*9999
700	32.0	45.6	*9999	*9999	32.0	32.0	32.0	*9999
800	32.0	44.3	*9999	*9999	32.0	32.0	32.0	*9999
900	32.0	49.4	*9999	*9999	32.0	32.0	32.0	*9999
1000	32.0	53.3	*9999	*9999	32.0	32.0	32.0	*9999
1100	32.0	54.6	*9999	*9999	32.0	32.0	32.0	*9999
1200	32.0	55.5	*9999	*9999	32.0	32.2	32.0	*9999
1300	32.0	57.8	*9999	*9999	32.0	32.3	32.0	*9999
1400	32.0	60.0	*9999	*9999	32.0	32.3	32.0	*9999
1500	32.0	57.6	*9999	*9999	32.0	32.5	32.0	*9999
1600	32.0	59.3	*9999	*9999	32.0	32.5	32.0	*9999
1700	32.3	61.5	*9999	*9999	32.0	32.5	32.0	*9999
1800	32.2	49.5	*9999	*9999	32.0	32.5	32.1	*9999
1900	32.2	40.1	*9999	*9999	32.0	32.8	32.1	*9999
2000	32.1	37.8	*9999	*9999	32.0	32.3	32.0	*9999
2100	32.0	37.1	*9999	*9999	32.0	32.3	32.0	*9999
2200	32.0	36.8	*9999	*9999	32.0	32.5	32.0	*9999
2300	32.0	37.2	*9999	*9999	32.0	32.4	32.0	*9999
2400	32.0	37.4	*9999	*9999	32.0	32.3	32.1	*9999

TABLE 50. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MARCH 22, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.0	36.8	*9999	*9999	32.0	32.2	32.1	*9999
200	32.0	36.7	*9999	*9999	32.0	32.2	32.0	*9999
300	32.0	36.2	*9999	*9999	32.0	32.0	32.0	*9999
400	32.0	37.2	*9999	*9999	32.0	32.0	32.0	*9999
500	32.0	36.2	*9999	*9999	32.0	32.0	32.0	*9999
600	32.0	36.3	*9999	*9999	32.0	32.0	32.0	*9999
700	32.0	36.3	*9999	*9999	32.0	32.0	32.0	*9999
800	32.0	36.3	*9999	*9999	32.0	32.2	32.0	*9999
900	32.0	36.2	*9999	*9999	32.0	32.2	32.2	*9999
1000	32.0	36.6	*9999	*9999	32.0	32.2	32.2	*9999
1100	32.0	36.6	*9999	*9999	32.0	32.3	32.3	*9999
1200	32.2	36.7	*9999	*9999	32.0	32.5	32.4	*9999
1300	32.3	37.2	*9999	*9999	32.0	32.5	32.5	*9999
1400	32.3	36.5	*9999	*9999	32.0	32.5	32.4	*9999
1500	32.5	37.5	*9999	*9999	32.0	32.7	32.5	*9999
1600	32.5	37.5	*9999	*9999	32.0	32.6	32.5	*9999
1700	32.6	38.0	*9999	*9999	32.0	32.7	32.5	*9999
1800	32.6	37.4	*9999	*9999	32.0	32.6	32.5	*9999
1900	32.6	34.7	*9999	*9999	32.0	32.5	32.3	*9999
2000	32.5	33.8	*9999	*9999	32.0	32.4	32.2	*9999
2100	32.3	34.1	*9999	*9999	32.0	32.6	32.3	*9999
2200	32.3	33.9	*9999	*9999	32.0	32.6	32.4	*9999
2300	32.4	34.2	*9999	*9999	32.0	32.7	32.2	*9999
2400	32.3	34.2	*9999	*9999	32.0	32.6	32.3	*9999

TABLE 51. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MARCH 23, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.5	34.4	*9999	*9999	32.0	32.5	32.4	*9999
200	32.4	34.5	*9999	*9999	32.0	32.5	32.5	*9999
300	32.5	34.7	*9999	*9999	32.0	32.8	32.5	*9999
400	32.7	34.5	*9999	*9999	32.2	32.8	32.5	*9999
500	32.0	34.5	*9999	*9999	32.2	32.7	32.6	*9999
600	32.3	37.5	*9999	*9999	32.2	32.7	32.7	*9999
700	32.4	34.8	*9999	*9999	32.5	33.0	33.0	*9999
800	32.6	35.2	*9999	*9999	32.3	33.3	33.0	*9999
900	33.0	35.9	*9999	*9999	32.4	33.3	33.3	*9999
1000	33.2	42.7	*9999	*9999	32.5	33.5	33.5	*9999
1100	33.4	43.2	*9999	*9999	32.5	33.5	33.5	*9999
1200	33.3	38.8	*9999	*9999	32.5	33.5	33.5	*9999
1300	33.7	36.3	*9999	*9999	32.7	33.8	33.7	*9999
1400	33.7	35.6	*9999	*9999	32.7	33.8	33.9	*9999
1500	33.8	36.3	*9999	*9999	32.7	34.0	34.0	*9999
1600	33.4	36.7	*9999	*9999	33.0	34.3	34.0	*9999
1700	33.6	36.2	*9999	*9999	32.9	34.3	34.2	*9999
1800	33.4	35.6	*9999	*9999	32.8	34.2	34.0	*9999
1900	33.3	42.6	*9999	*9999	32.8	34.2	34.3	*9999
2000	33.4	41.2	*9999	*9999	32.7	34.2	34.3	*9999
2100	33.7	36.7	*9999	*9999	32.8	34.1	34.2	*9999
2200	33.7	36.8	*9999	*9999	32.7	34.0	34.0	*9999
2300	33.1	43.0	*9999	*9999	32.9	33.9	33.9	*9999
2400	33.0	34.2	*9999	*9999	32.7	33.7	33.6	*9999

TABLE 52. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MARCH 24, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.8	41.8	*9999	*9999	32.5	33.5	33.3	*9999
200	32.5	33.2	*9999	*9999	32.3	33.5	33.3	*9999
300	32.6	40.9	*9999	*9999	32.2	33.3	33.2	*9999
400	32.4	39.0	*9999	*9999	32.1	33.2	33.2	*9999
500	32.5	32.0	*9999	*9999	32.2	33.3	33.2	*9999
600	32.5	34.2	*9999	*9999	32.2	33.3	33.4	*9999
700	32.3	33.2	*9999	*9999	32.2	33.3	33.5	*9999
800	32.3	32.6	*9999	*9999	32.2	33.3	33.5	*9999
900	32.3	33.2	*9999	*9999	32.2	33.3	33.5	*9999
1000	32.2	33.2	*9999	*9999	32.2	33.5	33.6	*9999
1100	32.2	32.7	*9999	*9999	32.2	33.5	33.6	*9999
1200	32.2	32.2	*9999	*9999	32.0	33.5	33.5	*9999
1300	32.2	32.5	*9999	*9999	32.2	33.4	33.7	*9999
1400	33.0	32.6	*9999	*9999	32.2	33.5	33.7	*9999
1500	32.4	32.7	*9999	*9999	32.3	33.5	33.7	*9999
1600	32.5	37.7	*9999	*9999	32.3	33.5	33.7	*9999
1700	32.3	38.7	*9999	*9999	32.2	33.4	33.7	*9999
1800	32.3	37.1	*9999	*9999	32.2	33.5	33.6	*9999
1900	32.3	37.3	*9999	*9999	32.2	33.5	33.7	*9999
2000	32.5	36.5	*9999	*9999	32.2	33.3	33.5	*9999
2100	32.2	38.1	*9999	*9999	32.0	33.3	33.7	*9999
2200	32.1	37.1	*9999	*9999	32.0	33.3	33.7	*9999
2300	32.1	38.6	*9999	*9999	32.0	33.3	33.7	*9999
2400	32.2	32.6	*9999	*9999	32.0	33.3	33.7	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 040

TABLE 53. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 25, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.2	32.0	*9999	*9999	32.0	33.3	33.6	*9999
200	32.1	32.0	*9999	*9999	32.0	33.2	33.5	*9999
300	32.0	32.0	*9999	*9999	32.0	33.0	33.3	*9999
400	32.0	32.1	*9999	*9999	32.0	33.0	33.2	*9999
500	32.0	32.2	*9999	*9999	32.0	32.9	33.0	*9999
600	32.0	32.2	*9999	*9999	32.0	32.8	32.8	*9999
700	32.0	32.2	*9999	*9999	32.0	32.8	32.8	*9999
800	32.0	32.1	*9999	*9999	32.0	32.7	32.7	*9999
900	32.0	32.0	*9999	*9999	32.0	32.5	32.5	*9999
1000	32.0	32.0	*9999	*9999	32.0	32.5	32.5	*9999
1100	32.0	32.0	*9999	*9999	32.0	32.5	32.5	*9999
1200	32.0	32.0	*9999	*9999	32.0	32.5	32.5	*9999
1300	32.0	32.0	*9999	*9999	32.0	32.6	32.5	*9999
1400	32.0	32.2	*9999	*9999	32.0	32.7	32.7	*9999
1500	32.0	32.0	*9999	*9999	32.0	32.7	32.7	*9999
1600	32.0	32.0	*9999	*9999	32.0	32.8	32.7	*9999
1700	32.0	32.0	*9999	*9999	32.0	32.8	32.7	*9999
1800	32.0	32.0	*9999	*9999	32.0	32.6	32.6	*9999
1900	32.0	32.0	*9999	*9999	32.0	32.6	32.7	*9999
2000	32.0	32.0	*9999	*9999	32.0	32.7	32.8	*9999
2100	32.0	32.3	*9999	*9999	32.0	32.9	33.1	*9999
2200	32.1	32.1	*9999	*9999	32.0	33.0	33.3	*9999
2300	32.3	32.2	*9999	*9999	32.2	33.0	33.5	*9999
2400	32.5	32.0	*9999	*9999	32.2	33.2	33.5	*9999

TABLE 54. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 26, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.6	32.7	*9999	*9999	32.2	33.2	33.5	*9999
200	32.6	32.7	*9999	*9999	32.3	33.2	33.5	*9999
300	32.7	32.8	*9999	*9999	32.2	33.2	33.2	*9999
400	32.5	32.6	*9999	*9999	32.2	33.2	33.2	*9999
500	32.6	32.8	*9999	*9999	32.1	33.2	33.2	*9999
600	32.5	32.8	*9999	*9999	32.0	33.0	33.2	*9999
700	32.5	32.9	*9999	*9999	32.0	33.0	33.0	*9999
800	32.5	32.9	*9999	*9999	32.0	33.0	33.0	*9999
900	32.3	32.7	*9999	*9999	32.0	32.9	33.0	*9999
1000	32.4	32.7	*9999	*9999	32.0	32.8	33.0	*9999
1100	32.5	33.0	*9999	*9999	32.0	33.0	33.0	*9999
1200	32.5	33.1	*9999	*9999	32.0	32.9	33.2	*9999
1300	32.5	33.2	*9999	*9999	32.0	33.0	33.2	*9999
1400	32.5	33.0	*9999	*9999	32.0	33.0	33.2	*9999
1500	32.5	32.8	*9999	*9999	32.2	33.0	33.2	*9999
1600	32.5	32.8	*9999	*9999	32.0	32.9	33.2	*9999
1700	32.5	32.9	*9999	*9999	32.0	33.0	33.3	*9999
1800	32.5	32.7	*9999	*9999	32.0	33.0	33.4	*9999
1900	32.5	32.7	*9999	*9999	32.2	33.0	33.5	*9999
2000	32.5	32.7	*9999	*9999	32.2	33.0	33.3	*9999
2100	32.5	32.7	*9999	*9999	32.2	33.0	33.5	*9999
2200	32.5	32.8	*9999	*9999	32.2	33.0	33.5	*9999
2300	32.7	32.7	*9999	*9999	32.3	33.1	33.5	*9999
2400	32.7	32.7	*9999	*9999	32.4	33.2	33.5	*9999

TABLE 55. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 27, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	32.7	33.5	*9999	*9999	32.4	33.1	33.5	*9999
200	32.5	33.5	*9999	*9999	32.4	33.2	33.6	*9999
300	32.7	33.3	*9999	*9999	32.3	33.0	33.6	*9999
400	32.7	33.3	*9999	*9999	32.3	33.0	33.5	*9999
500	32.5	33.2	*9999	*9999	32.2	32.9	33.3	*9999
600	32.5	33.2	*9999	*9999	32.0	32.7	33.2	*9999
700	32.4	33.2	*9999	*9999	32.0	32.5	33.1	*9999
800	32.2	32.6	*9999	*9999	32.0	32.5	33.0	*9999
900	32.4	32.6	*9999	*9999	32.0	32.6	33.0	*9999
1000	32.3	32.9	*9999	*9999	32.0	32.5	33.2	*9999
1100	32.5	33.2	*9999	*9999	32.2	32.7	33.1	*9999
1200	32.5	33.4	*9999	*9999	32.3	32.7	33.3	*9999
1300	32.7	33.1	*9999	*9999	32.2	32.8	33.4	*9999
1400	32.6	32.7	62.8	73.8	32.2	32.7	33.2	*9999
1500	33.3	33.3	63.1	75.7	32.2	32.8	33.3	*9999
1600	33.0	33.2	63.4	75.9	32.3	33.0	33.5	*9999
1700	33.0	33.7	63.3	76.2	32.4	33.0	33.5	*9999
1800	33.0	33.2	63.4	76.1	32.4	33.0	33.5	*9999
1900	33.0	33.2	63.3	76.0	32.5	33.2	33.7	*9999
2000	33.0	33.0	63.4	76.0	32.5	33.2	34.0	*9999
2100	33.2	33.2	63.8	76.5	32.7	33.2	34.0	*9999
2200	33.2	33.1	63.8	76.7	32.8	33.5	34.3	*9999
2300	33.5	33.5	63.6	76.7	32.9	33.5	34.5	*9999
2400	33.7	33.4	63.4	76.7	33.2	33.7	34.6	*9999

TABLE 56. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 28, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	33.7	33.6	63.4	76.7	33.2	33.8	34.7	*9999
200	34.0	33.9	63.8	77.0	33.3	34.0	34.7	*9999
300	34.2	33.9	64.2	78.0	33.3	34.0	34.8	*9999
400	34.2	34.8	64.2	78.2	33.4	34.0	34.7	*9999
500	34.4	34.5	64.4	78.4	33.4	34.0	34.6	*9999
600	34.2	34.0	64.7	78.7	33.5	34.0	34.3	*9999
700	34.0	34.0	65.2	78.0	33.2	33.8	34.3	*9999
800	33.8	33.8	65.5	79.8	33.2	33.7	34.2	*9999
900	33.6	33.4	66.0	80.0	33.2	33.7	34.2	*9999
1000	33.4	33.3	66.3	80.6	33.0	33.7	34.0	*9999
1100	33.4	33.2	66.6	80.8	33.0	33.5	34.0	*9999
1200	33.6	33.2	67.6	81.8	33.0	33.6	33.8	*9999
1300	33.5	33.3	68.1	82.0	32.8	33.7	33.8	*9999
1400	33.7	33.2	68.5	82.3	33.0	33.8	33.8	*9999
1500	34.0	33.4	69.5	83.5	33.0	33.9	34.0	*9999
1600	34.0	33.7	70.3	85.5	33.2	34.0	34.0	*9999
1700	34.0	34.3	71.3	85.2	33.2	34.1	34.2	*9999
1800	34.1	33.8	72.3	86.8	33.2	34.0	34.2	*9999
1900	34.1	34.8	73.0	88.3	33.3	34.2	34.5	*9999
2000	34.1	34.8	73.7	89.0	33.3	34.3	34.6	*9999
2100	34.1	34.7	74.3	89.8	33.5	34.3	34.6	*9999
2200	34.3	34.9	74.3	89.2	33.5	34.3	34.7	*9999
2300	34.3	35.0	74.0	90.1	33.5	34.3	34.7	*9999
2400	34.3	35.0	74.0	70.4	33.6	34.3	34.8	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

TABLE 57. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 29, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	34.5	35.4	73.8	90.0	33.7	34.4	34.8	*9999
200	34.5	35.3	73.5	89.7	33.6	34.3	34.8	*9999
300	34.3	35.5	73.3	89.7	33.7	34.6	34.8	*9999
400	34.6	35.7	73.3	89.8	33.5	34.6	34.7	*9999
500	34.5	35.7	73.0	89.9	33.5	34.5	34.7	*9999
600	34.7	35.7	72.5	89.8	33.5	34.5	34.7	*9999
700	34.7	35.8	72.2	89.3	33.7	34.5	34.9	*9999
800	34.2	35.8	72.0	89.2	34.0	34.6	35.0	*9999
900	34.4	35.9	72.6	89.0	33.9	34.5	35.0	*9999
1000	33.8	35.1	72.7	90.5	33.8	34.5	35.0	*9999
1100	34.3	35.2	72.3	89.3	33.8	34.3	35.0	*9999
1200	34.2	35.2	71.5	88.5	33.8	34.4	35.0	*9999
1300	34.6	35.0	71.9	88.7	33.8	34.3	35.0	*9999
1400	34.2	35.0	73.2	86.5	33.7	34.3	35.0	*9999
1500	34.9	35.0	74.2	88.5	34.0	34.3	35.2	*9999
1600	34.5	35.0	74.7	89.8	34.0	34.5	35.3	*9999
1700	34.5	35.0	74.6	88.2	34.0	34.5	35.3	*9999
1800	34.3	34.9	75.3	89.8	34.0	34.5	35.4	*9999
1900	34.0	35.0	75.5	89.7	34.2	34.3	35.5	*9999
2000	34.8	35.1	76.7	90.3	33.8	34.5	35.5	*9999
2100	35.3	35.5	76.6	90.6	33.7	34.7	35.3	*9999
2200	35.3	35.6	76.2	90.3	33.7	34.5	35.5	*9999
2300	35.7	35.8	75.0	90.7	33.8	34.8	35.7	*9999
2400	35.8	36.5	75.7	90.3	34.0	35.0	35.9	*9999

TABLE 58. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 30, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	36.0	37.0	75.3	90.4	34.1	35.1	36.1	*9999
200	36.2	36.8	75.3	90.0	34.2	35.2	36.4	*9999
300	36.3	36.7	75.2	90.4	34.3	35.3	36.4	*9999
400	36.3	37.0	75.3	90.7	34.2	35.3	36.4	*9999
500	36.4	37.2	75.5	91.0	34.3	35.3	36.4	*9999
600	36.5	37.3	75.8	91.2	34.5	35.4	36.7	*9999
700	36.7	37.3	75.9	91.9	34.4	35.5	36.7	*9999
800	36.6	37.5	75.3	91.9	34.5	35.4	36.7	*9999
900	35.6	38.5	76.3	92.5	34.7	35.5	36.8	*9999
1000	37.0	39.0	75.3	92.2	34.8	35.7	36.8	*9999
1100	37.3	38.8	76.7	92.8	35.0	35.8	37.0	*9999
1200	37.6	39.7	77.3	93.5	35.2	35.8	37.2	*9999
1300	37.7	39.5	76.5	91.0	35.5	35.7	37.3	*9999
1400	38.2	40.0	76.3	92.1	35.4	35.7	37.3	*9999
1500	38.4	40.2	75.4	92.2	35.5	35.8	37.3	*9999
1600	38.3	41.7	75.0	92.0	35.4	35.8	37.2	*9999
1700	38.3	41.7	74.3	91.1	35.4	35.8	37.2	*9999
1800	38.3	41.8	73.0	90.5	35.5	35.7	37.3	*9999
1900	38.3	41.9	72.4	89.9	35.5	35.9	37.4	*9999
2000	38.4	41.8	72.0	90.0	35.7	36.0	37.7	*9999
2100	38.5	41.8	71.9	89.2	35.7	36.0	38.0	*9999
2200	38.6	42.0	71.5	89.8	35.8	36.2	38.0	*9999
2300	38.6	42.0	71.3	89.0	35.8	36.2	38.2	*9999
2400	38.7	42.2	70.9	89.2	35.9	36.3	38.2	*9999

TABLE 59. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MARCH 31, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	38.7	42.2	71.0	89.3	35.6	36.3	38.0	*9999
200	38.5	42.3	71.3	89.7	35.8	35.4	38.1	*9999
300	38.5	42.4	71.4	89.7	35.7	36.5	38.0	*9999
400	35.6	42.3	71.3	89.7	35.7	36.7	37.8	*9999
500	38.5	42.3	71.5	89.8	35.5	36.5	37.8	*9999
600	38.3	42.2	71.5	89.8	35.4	36.5	37.8	*9999
700	38.2	42.1	71.6	89.8	35.4	36.6	37.8	*9999
800	38.2	42.0	71.7	89.7	35.2	36.7	37.4	*9999
900	38.0	41.8	71.8	90.2	35.3	36.7	37.2	*9999
1000	38.0	41.8	71.7	90.2	35.2	36.6	37.0	*9999
1100	38.0	41.9	72.0	90.2	35.2	36.5	37.0	*9999
1200	38.0	41.7	72.0	90.6	35.2	36.5	37.2	*9999
1300	37.9	41.7	72.0	90.0	35.0	36.5	37.2	*9999
1400	38.0	41.8	72.2	90.3	35.0	36.6	37.4	*9999
1500	37.8	41.7	72.0	91.8	35.0	36.6	37.6	*9999
1600	37.8	41.7	72.0	91.9	35.0	36.5	37.6	*9999
1700	37.8	41.6	72.0	90.4	35.0	36.5	37.6	*9999
1800	37.8	41.5	71.7	90.6	35.0	36.6	37.7	*9999
1900	37.8	41.3	71.8	90.4	35.0	36.5	37.8	*9999
2000	37.8	41.3	71.8	91.8	35.0	36.5	37.9	*9999
2100	37.8	41.2	72.0	90.3	35.0	35.5	37.9	*9999
2200	37.8	41.0	71.8	90.5	35.0	36.6	38.0	*9999
2300	37.7	41.0	71.8	90.8	35.2	36.7	37.7	*9999
2400	37.7	40.8	71.6	89.0	35.2	36.6	37.6	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

TABLE 60. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 1, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	37.5	40.8	71.5	81.7	37.0	36.6	37.7	*9999
200	37.6	40.8	71.3	81.7	36.9	36.5	37.7	*9999
300	37.5	40.7	71.0	80.4	37.0	36.5	37.8	*9999
400	37.3	40.5	71.0	82.2	36.8	36.6	37.7	*9999
500	37.3	40.5	70.0	82.1	36.8	36.5	37.5	*9999
600	37.2	40.5	68.7	82.3	36.8	36.6	37.3	*9999
700	37.2	40.3	67.0	82.3	36.8	36.6	37.2	*9999
800	37.1	40.2	66.4	82.5	36.8	36.7	37.2	*9999
900	37.0	40.0	67.0	83.0	36.7	36.6	37.0	*9999
1000	37.0	40.0	67.5	82.5	36.5	36.6	37.0	*9999
1100	36.5	39.9	67.8	82.8	36.5	36.4	37.1	*9999
1200	36.6	39.8	67.6	82.7	36.4	36.5	37.0	*9999
1300	36.5	40.0	67.6	82.7	36.3	36.5	37.0	*9999
1400	36.3	40.2	68.3	82.0	36.4	36.0	37.1	*9999
1500	36.3	40.0	68.8	82.1	36.3	35.7	37.0	*9999
1600	36.2	40.0	69.0	82.4	36.5	35.5	37.1	*9999
1700	36.3	39.8	68.7	82.4	36.3	35.5	36.7	*9999
1800	36.2	39.7	68.3	82.1	36.3	34.7	36.5	*9999
1900	36.2	39.3	69.3	82.1	36.3	35.2	36.5	*9999
2000	36.3	39.2	68.5	82.0	36.3	35.3	36.5	*9999
2100	36.2	39.2	68.8	82.8	36.2	35.2	36.5	*9999
2200	35.8	39.0	69.2	82.4	36.3	35.2	35.8	*9999
2300	36.2	39.0	69.2	81.8	36.3	35.3	36.7	*9999
2400	36.2	38.8	69.7	81.9	36.3	35.0	36.5	*9999

TABLE 61. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 2, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	36.2	36.1	70.0	82.4	36.3	35.0	36.3	*9999
200	36.0	36.0	70.2	82.8	36.2	35.0	36.3	*9999
300	36.0	35.9	70.0	82.9	36.1	35.0	36.2	*9999
400	36.0	35.6	70.2	82.8	36.2	34.9	36.0	*9999
500	35.9	35.4	70.2	82.6	36.0	34.8	36.0	*9999
600	35.6	35.2	70.8	82.8	36.0	34.8	35.8	*9999
700	35.6	35.2	70.8	82.6	35.9	34.5	35.8	*9999
800	35.[illegible]	35.2	70.8	83.0	35.8	36.5	35.7	*9999
900	35.5	35.1	70.8	83.1	35.7	34.7	35.8	*9999
1000	35.6	34.9	70.4	82.9	35.7	34.7	35.7	*9999
1100	35.7	34.9	70.2	82.8	35.7	34.7	35.5	*9999
1200	35.5	34.9	70.2	82.5	35.7	34.7	35.5	*9999
1300	35.3	35.0	70.0	92.8	35.5	34.8	35.2	*9999
1400	35.2	35.1	70.0	82.8	35.7	34.8	35.2	*9999
1500	35.3	35.3	70.0	82.8	35.5	34.9	35.0	*9999
1600	35.2	35.4	69.9	82.6	35.5	34.8	35.0	*9999
1700	35.3	35.4	70.0	82.1	35.5	34.8	34.9	*9999
1800	35.4	35.6	70.0	82.4	35.5	34.9	35.0	*9999
1900	35.5	35.9	69.9	83.1	35.7	35.0	35.2	*9999
2000	35.5	35.6	69.8	82.9	35.7	35.0	35.6	*9999
2100	35.5	35.6	70.2	82.9	35.8	35.2	35.5	*9999
2200	35.5	35.6	70.5	83.1	35.8	35.2	35.5	*9999
2300	35.5	35.4	70.[illegible]	83.3	35.8	35.2	35.5	*9999
2400	35.5	35.4	70.5	82.9	35.8	35.2	35.6	*9999

TABLE 62. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 3, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	35.5	35.4	70.2	82.7	35.8	35.0	35.5	*9999
200	35.3	35.3	70.2	82.8	35.7	34.9	35.3	*9999
300	35.3	35.3	70.2	82.9	35.7	34.8	35.3	*9999
400	35.2	35.2	70.4	82.8	35.5	34.7	35.1	*9999
500	35.2	35.0	70.4	82.6	35.5	34.6	35.0	*9999
600	35.0	34.6	70.3	82.5	35.4	34.5	34.8	*9999
700	35.0	35.0	70.3	82.6	36.[illegible]	34.5	35.0	*9999
800	35.0	35.1	70.2	83.1	35.[illegible]	34.4	34.8	*9999
900	34.9	35.0	70.4	83.8	35.3	34.4	35.0	*9999
1000	35.0	35.2	70.7	84.4	35.3	34.2	34.8	*9999
1100	35.2	35.4	71.3	84.8	35.5	34.5	35.0	*9999
1200	35.4	35.6	72.0	84.9	35.5	34.7	35.1	*9999
1300	35.5	35.9	72.5	84.9	35.5	34.8	35.2	*9999
1400	35.7	35.1	72.8	85.8	36.2	34.8	35.2	*9999
1500	35.7	36.1	73.2	87.4	35.6	35.0	35.7	*9999
1600	35.7	36.2	73.0	87.5	35.7	*9999	35.8	*9999
1700	35.8	36.2	73.2	87.9	35.8	*9999	35.8	*9999
1800	36.0	36.3	73.0	87.8	*9999	*9999	36.5	*9999
1900	36.0	36.1	73.0	86.5	36.2	*9999	36.3	*9999
2000	36.1	36.2	73.2	87.7	36.3	*9999	36.7	*9999
2100	36.3	36.4	73.0	87.9	36.5	*9999	37.0	*9999
2200	36.5	36.6	73.0	86.3	36.5	*9999	37.0	*9999
2300	36.7	36.6	72.8	84.4	36.8	*9999	37.2	*9999
2400	36.7	36.8	72.7	82.8	36.7	*9999	36.8	*9999

TABLE 63. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 4, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	36.8	36.9	72.5	81.3	36.7	*9999	36.7	*9999
200	36.7	37.0	72.3	82.9	36.5	*9999	36.8	*9999
300	36.6	36.9	72.1	83.4	36.4	*9999	36.7	*9999
400	36.6	37.0	71.3	84.6	36.3	*9999	36.5	*9999
500	36.5	36.9	70.6	83.6	36.3	*9999	36.5	*9999
600	36.5	36.9	70.1	83.3	36.3	*9999	36.5	*9999
700	36.5	36.8	70.7	83.2	36.2	*9999	36.6	*9999
800	36.5	36.9	70.8	83.9	36.2	*9999	36.7	*9999
900	36.5	36.8	71.4	84.4	36.0	*9999	36.1	*9999
1000	36.5	36.9	71.2	84.6	36.1	*9999	36.0	*9999
1100	36.3	37.0	71.3	84.6	37.0	*9999	36.2	*9999
1200	36.6	37.1	71.5	84.9	36.2	*9999	36.7	*9999
1300	36.6	37.2	72.2	85.0	36.2	*9999	36.7	*9999
1400	36.7	37.0	72.7	85.2	36.4	*9999	35.5	*9999
1500	36.7	37.1	72.7	85.7	37.0	*9999	35.3	*9999
1600	36.5	37.1	72.8	86.3	37.6	*9999	35.5	*9999
1700	36.5	37.0	72.8	85.6	*9999	*9999	37.5	*9999
1800	36.5	37.2	72.8	85.4	*9999	*9999	36.5	*9999
1900	36.6	37.2	72.2	85.4	*9999	*9999	35.5	*9999
2000	36.2	37.1	72.4	85.6	*9999	*9999	35.0	*9999
2100	37.4	37.4	73.5	86.0	*9999	*9999	*9999	*9999
2200	36.4	37.2	73.3	85.7	*9999	*9999	*9999	*9999
2300	36.0	37.2	73.4	86.8	*9999	*9999	*9999	*9999
2400	35.3	37.3	73.7	86.7	*9999	*9999	*9999	*9999

*9999 OR 999. -- INSTRUMENT MALFUNCTION

1079 043

TABLE 64. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, APRIL 5, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	35.4	37.3	73.6	86.8	*9999	*9999	*9999	*9999
200	35.9	37.4	73.7	86.2	*9999	*9999	*9999	*9999
300	36.0	37.3	73.4	86.0	38.5	*9999	*9999	*9999
400	36.2	37.3	73.5	86.4	38.4	*9999	*9999	*9999
500	36.0	37.3	73.4	85.6	39.4	*9999	*9999	*9999
600	35.9	37.4	73.3	85.5	39.4	*9999	*9999	*9999
700	36.3	37.0	72.8	85.3	39.3	*9999	*9999	*9999
800	36.7	37.2	72.7	85.0	38.5	*9999	*9999	*9999
900	36.9	37.3	72.3	85.0	38.7	*9999	*9999	*9999
1000	37.0	37.4	72.5	84.8	39.2	*9999	*9999	*9999
1100	37.2	37.7	71.9	86.0	38.3	*9999	*9999	*9999
1200	37.5	38.0	71.7	84.7	38.8	*9999	*9999	*9999
1300	37.7	38.3	72.0	85.8	38.7	*9999	*9999	*9999
1400	37.8	38.5	71.5	86.0	39.0	*9999	*9999	*9999
1500	38.0	38.7	70.7	84.8	*9999	*9999	*9999	*9999
1600	37.7	38.3	69.2	81.4	39.0	*9999	*9999	*9999
1700	37.7	38.0	67.0	79.5	39.5	*9999	*9999	*9999
1800	37.6	37.7	63.5	78.2	39.0	*9999	*9999	*9999
1900	37.3	37.3	61.1	76.8	39.5	*9999	*9999	*9999
2000	37.2	37.2	60.5	74.9	39.8	*9999	*9999	*9999
2100	37.2	37.0	59.8	74.0	39.7	*9999	*9999	*9999
2200	37.0	36.8	59.7	73.8	39.5	*9999	*9999	*9999
2300	37.0	36.5	59.5	73.4	39.3	*9999	*9999	*9999
2400	36.6	36.5	59.7	73.5	39.2	*9999	*9999	*9999

TABLE 65. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, APRIL 6, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	36.3	36.2	59.4	72.7	39.3	*9999	*9999	*9999
200	36.2	36.0	59.7	71.0	39.1	*9999	*9999	*9999
300	36.2	35.7	60.2	73.2	38.6	*9999	*9999	*9999
400	34.7	35.3	60.4	74.3	38.6	*9999	*9999	*9999
500	35.4	35.0	[illegible]	74.8	38.1	*9999	*9999	*9999
600	35.3	34.7	61.2	74.2	37.8	*9999	*9999	*9999
700	35.0	34.3	60.9	73.7	37.6	*9999	*9999	*9999
800	34.6	34.0	61.7	76.3	37.6	*9999	*9999	*9999
900	34.2	33.6	62.2	76.7	37.4	*9999	*9999	*9999
1000	34.5	34.0	63.0	77.1	37.4	*9999	*9999	*9999
1100	35.0	34.5	65.3	79.2	37.9	*9999	*9999	*9999
1200	35.0	34.3	65.2	79.2	37.9	*9999	*9999	*9999
1300	35.1	34.9	66.0	80.0	37.9	*9999	*9999	*9999
1400	35.1	35.0	67.6	80.5	38.0	*9999	*9999	*9999
1500	35.4	35.0	68.2	81.6	38.1	*9999	37.0	*9999
1600	35.5	35.0	69.0	82.4	38.0	*9999	37.5	*9999
1700	35.5	33.5	69.5	82.0	38.0	35.6	38.0	*9999
1800	35.5	34.2	69.5	83.5	38.3	35.6	38.2	*9999
1900	35.5	35.0	69.6	83.0	38.3	35.9	37.9	*9999
2000	35.6	34.7	69.8	83.5	38.4	36.1	38.8	*9999
2100	35.7	34.6	70.0	83.0	38.7	36.3	38.5	*9999
2200	35.7	34.9	70.2	83.0	38.8	36.4	38.5	*9999
2300	36.0	35.0	70.5	83.0	38.9	36.6	39.1	*9999
2400	36.1	35.0	70.5	83.0	38.9	36.6	39.4	*9999

TABLE 66. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, APRIL 7, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	36.2	35.2	70.5	83.4	38.9	36.8	37.9	*9999
200	36.3	35.4	70.5	83.5	38.9	36.9	37.6	*9999
300	36.4	35.3	70.6	83.6	38.9	37.0	38.0	*9999
400	36.5	35.5	70.6	81.6	38.9	36.9	38.1	*9999
500	36.4	35.5	70.5	76.9	38.7	36.6	37.9	*9999
600	36.2	35.5	70.4	76.5	38.6	36.6	37.6	*9999
700	36.1	35.4	70.6	75.0	38.4	36.5	37.4	*9999
800	36.1	35.1	70.1	76.1	38.4	36.4	36.9	*9999
900	36.0	35.4	68.9	74.1	38.4	36.4	37.5	*9999
1000	36.0	35.5	66.7	74.5	38.4	36.4	37.6	*9999
1100	36.3	35.6	66.2	72.0	38.5	36.6	38.3	*9999
1200	36.5	36.0	65.9	73.0	38.6	36.6	38.5	*9999
1300	36.5	36.3	66.1	72.0	38.5	36.6	38.9	*9999
1400	36.7	36.6	65.5	73.3	38.8	36.8	38.5	*9999
1500	37.0	37.0	65.7	72.2	38.9	37.0	38.5	*9999
1600	37.0	37.2	65.2	73.0	38.9	37.1	38.3	*9999
1700	37.2	37.2	65.5	71.8	38.9	37.2	38.4	*9999
1800	37.2	37.1	65.9	73.7	38.9	37.1	38.5	*9999
1900	37.2	37.2	66.0	73.3	38.9	37.2	38.4	*9999
2000	37.4	37.2	65.4	73.4	38.9	37.2	38.5	*9999
2100	37.4	37.3	65.3	71.5	38.9	37.5	39.1	*9999
2200	37.5	37.4	64.9	72.5	38.9	37.6	39.5	*9999
2300	37.5	37.4	65.0	71.3	38.9	37.9	39.3	*9999
2400	37.5	37.3	64.8	70.5	39.4	37.9	39.4	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

TABLE 67. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, APRIL 8, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	37.6	37.4	65.0	71.9	39.4	37.9	37.3	*9999
200	37.6	37.5	65.0	71.7	38.7	38.1	37.6	*9999
300	37.6	37.5	65.7	72.5	38.8	37.9	37.7	*9999
400	37.5	37.5	65.7	72.6	38.4	37.8	38.0	*9999
500	37.5	37.4	66.3	73.2	38.4	37.8	37.5	*9999
600	37.3	37.5	66.5	73.5	38.4	37.7	37.7	*9999
700	37.3	37.5	66.8	73.5	38.2	37.6	37.9	*9999
800	37.5	37.5	66.8	75.0	38.1	37.6	37.9	*9999
900	37.5	37.4	67.2	75.7	38.0	37.6	37.4	*9999
1000	37.5	37.5	67.3	79.9	38.0	37.6	37.8	*9999
1100	37.5	37.5	67.7	79.5	37.9	37.6	37.8	*9999
1200	37.7	37.8	67.5	79.7	38.0	37.6	38.5	*9999
1300	37.9	38.1	68.0	81.0	38.2	37.8	38.1	*9999
1400	38.0	38.4	68.9	83.0	38.3	38.0	38.0	*9999
1500	*9999	38.5	69.5	83.2	*9999	39.4	38.0	*9999
1600	*9999	38.3	70.0	84.2	*9999	39.6	38.0	*9999
1700	*9999	38.4	70.2	84.4	37.9	39.5	39.6	*9999
1800	*9999	38.4	70.5	83.1	38.4	38.3	38.9	*9999
1900	*9999	38.4	70.7	83.3	38.4	38.4	38.9	*9999
2000	*9999	38.5	71.5	83.5	39.4	38.6	38.0	*9999
2100	*9999	38.5	71.6	84.9	38.7	38.7	37.9	*9999
2200	*9999	38.5	71.5	84.4	38.8	38.8	38.0	*9999
2300	*9999	38.5	[illegible]	84.5	38.9	39.0	38.1	*9999
2400	*9999	38.6	71.5	84.2	38.7	39.0	38.3	*9999

TABLE 68. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION, APRIL 9, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	38.6	71.1	84.0	38.0	39.8	37.7	*9999
200	*9999	38.6	71.1	83.9	38.6	38.7	37.8	*9999
300	*9999	38.5	71.0	84.1	38.5	38.6	37.9	*9999
400	*9999	38.5	70.9	83.9	38.4	38.6	37.5	*9999
500	*9999	38.5	70.7	83.7	38.4	38.6	37.8	*9999
600	*9999	38.5	70.5	84.1	38.2	38.4	37.7	*9999
700	*9999	38.5	70.5	84.0	38.4	38.3	37.7	*9999
800	*9999	38.5	70.5	85.2	38.3	38.2	37.7	*9999
900	*9999	38.5	70.5	85.2	37.9	38.1	37.9	*9999
1000	*9999	38.4	70.6	85.3	37.9	38.1	38.0	*9999
1100	*9999	38.5	71.3	85.6	38.1	38.1	37.9	*9999
1200	*9999	38.5	71.5	86.0	38.0	38.1	38.0	*9999
1300	*9999	38.5	71.6	85.5	38.0	38.1	37.9	*9999
1400	*9999	38.5	72.0	86.3	38.0	38.1	37.7	*9999
1500	*9999	38.5	72.1	86.5	38.0	37.9	37.8	*9999
1600	*9999	38.4	72.4	86.6	36.2	37.8	37.7	*9999
1700	*9999	38.4	72.4	86.9	38.0	37.7	37.7	*9999
1800	*9999	38.1	72.2	86.0	38.0	37.7	37.6	*9999
1900	*9999	38.0	72.5	86.0	38.1	37.7	38.0	*9999
2000	*9999	38.0	72.5	85.8	38.1	37.8	38.5	*9999
2100	*9999	38.0	72.5	85.6	37.9	37.6	38.7	*9999
2200	*9999	38.0	72.5	85.5	38.0	37.7	38.5	*9999
2300	*9999	38.0	72.7	85.5	37.9	37.9	38.3	*9999
2400	*9999	37.6	72.5	84.5	37.9	37.6	38.5	*9999

TABLE 69. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION, APRIL 10, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	37.6	72.5	82.5	37.7	37.6	37.8	*9999
200	*9999	37.5	72.4	81.5	37.7	37.6	37.8	*9999
300	*9999	37.5	71.9	82.0	37.5	37.6	37.4	*9999
400	*9999	37.4	72.0	83.4	37.4	37.6	37.7	*9999
500	*9999	37.3	71.5	84.0	37.5	37.4	37.4	*9999
600	*9999	37.2	70.4	82.6	37.4	37.2	37.4	*9999
700	*9999	37.1	70.0	82.4	37.4	37.1	36.9	*9999
800	*9999	37.0	70.0	83.6	37.4	37.1	36.9	*9999
900	*9999	37.0	70.6	84.6	37.4	37.1	36.9	*9999
1000	*9999	37.2	71.0	84.1	[illegible]	37.2	37.2	*9999
1100	*9999	37.4	71.0	84.0	37.4	37.3	37.2	*9999
1200	*9999	37.5	70.6	84.4	37.3	37.3	37.4	*9999
1300	*9999	37.8	70.5	84.5	37.4	37.4	37.9	*9999
1400	*9999	38.0	71.6	85.0	37.4	37.6	38.3	*9999
1500	*9999	38.1	72.0	85.3	37.5	37.6	38.4	*9999
1600	*9999	38.5	71.6	85.4	37.8	37.7	38.4	*9999
1700	*9999	38.5	71.9	85.0	37.9	38.0	38.4	*9999
1800	*9999	38.6	71.5	85.0	37.9	38.1	38.8	*9999
1900	*9999	38.5	71.6	85.0	37.9	38.1	38.7	*9999
2000	*9999	38.5	71.6	84.9	38.0	38.2	38.4	*9999
2100	*9999	38.6	71.5	84.9	38.0	38.4	38.3	*9999
2200	*9999	38.7	71.4	84.5	38.0	38.5	38.5	*9999
2300	*9999	38.6	71.7	84.0	38.4	38.6	38.5	*9999
2400	*9999	38.9	71.5	83.0	38.4	38.6	38.4	*9999

TABLE 70. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION, APRIL 11, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	39.0	71.2	82.5	38.4	38.6	38.5	*9999
200	*9999	39.0	71.0	83.9	38.4	38.6	38.4	*9999
300	*9999	39.0	71.0	84.1	37.4	39.7	37.6	*9999
400	*9999	38.5	70.5	84.5	*9999	39.6	36.5	*9999
500	*9999	38.0	70.5	84.1	*9999	39.7	37.3	*9999
600	*9999	38.0	70.0	83.5	*9999	39.5	37.5	*9999
700	*9999	37.5	70.0	83.0	36.9	39.1	38.0	*9999
800	*9999	37.9	69.7	83.2	37.9	38.6	38.4	*9999
900	*9999	38.3	70.0	83.0	37.9	38.3	38.8	*9999
1000	*9999	38.5	70.0	83.5	37.9	38.1	38.5	*9999
1100	*9999	38.8	69.6	83.1	37.9	38.1	38.5	*9999
1200	*9999	39.0	69.5	82.5	37.9	38.1	38.3	*9999
1300	*9999	39.0	70.1	82.6	37.9	38.1	37.9	*9999
1400	*9999	38.5	70.5	84.5	38.6	38.3	38.0	*9999
1500	*9999	38.7	71.0	84.9	38.3	38.3	38.5	*9999
1600	*9999	38.8	71.0	85.5	*9999	39.0	38.2	*9999
1700	*9999	39.0	70.6	84.5	*9999	39.3	38.2	*9999
1800	*9999	39.1	71.0	84.6	*9999	39.1	37.1	*9999
1900	*9999	38.6	72.0	85.3	*9999	39.0	36.0	*9999
2000	*9999	38.5	72.0	86.5	*9999	39.1	36.5	*9999
2100	*9999	38.3	71.0	86.5	37.2	39.1	36.0	*9999
2200	*9999	39.0	69.3	84.0	38.5	39.0	35.9	*9999
2300	*9999	39.0	69.0	82.0	39.5	39.0	35.9	*9999
2400	*9999	38.7	70.0	81.0	39.5	39.3	35.5	*9999

TABLE 71. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION, APRIL 12, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	38.7	71.1	84.0	39.9	38.7	36.0	*9999
200	*9999	38.6	72.0	84.9	40.0	38.5	35.9	*9999
300	*9999	38.7	72.5	86.0	39.8	38.7	35.6	*9999
400	*9999	39.0	72.5	86.1	40.0	39.0	35.8	*9999
500	*9999	39.0	72.6	86.5	40.0	39.1	36.3	*9999
600	*9999	39.4	74.1	87.5	40.2	39.3	36.3	*9999
700	*9999	39.0	75.0	88.0	41.0	39.0	38.0	*9999
800	*9999	39.0	75.5	88.8	41.0	38.5	38.3	*9999
900	*9999	39.3	75.7	88.6	41.1	38.5	38.5	*9999
1000	*9999	39.5	76.1	89.1	41.1	38.9	38.8	*9999
1100	*9999	39.9	76.9	89.9	41.5	39.1	39.1	*9999
1200	39.0	40.2	77.0	89.6	41.5	39.4	39.1	*9999
1300	39.5	41.1	76.6	90.1	41.6	39.9	39.5	*9999
1400	39.9	41.5	77.5	90.6	42.0	40.0	39.9	*9999
1500	40.4	42.0	77.0	90.4	42.3	40.5	40.5	*9999
1600	40.5	42.5	77.0	90.3	42.4	40.5	40.5	*9999
1700	41.0	42.5	77.0	90.6	42.5	40.9	40.6	*9999
1800	41.4	42.5	77.0	90.4	42.5	41.0	40.5	*9999
1900	41.5	42.7	77.4	90.2	42.5	41.0	41.0	*9999
2000	41.5	42.5	77.1	90.0	42.5	41.5	41.5	*9999
2100	42.0	43.0	77.1	90.9	43.0	41.6	41.4	*9999
2200	42.0	43.0	76.9	90.6	43.0	41.9	41.5	*9999
2300	42.1	43.2	76.4	90.0	43.2	42.0	41.6	*9999
2400	42.5	43.5	76.0	90.2	43.3	42.0	41.5	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 045

TABLE 72. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 13, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	42.5	43.5	75.7	90.0	43.5	42.2	41.5	*9999
200	42.5	43.5	76.1	87.9	43.4	42.2	41.5	*9999
300	42.6	43.6	76.4	87.5	43.2	42.1	41.2	*9999
400	42.5	43.6	76.1	88.7	43.2	42.0	41.0	*9999
500	42.5	43.6	76.0	89.1	43.1	41.9	41.1	*9999
600	42.1	43.5	75.9	89.9	42.9	41.5	41.1	*9999
700	42.5	43.5	75.3	90.1	43.0	41.5	41.1	*9999
800	42.2	43.6	74.9	89.5	43.0	41.4	40.7	*9999
900	42.2	43.7	75.3	89.5	43.0	41.2	40.9	*9999
1000	42.4	43.6	75.5	89.7	43.0	41.5	40.7	*9999
1100	42.5	44.0	76.0	90.1	43.1	41.5	41.2	*9999
1200	42.7	44.3	76.0	90.5	43.3	41.6	41.0	*9999
1300	43.0	44.5	75.6	90.2	43.5	42.0	41.0	*9999
1400	43.1	44.6	75.5	90.5	43.5	42.0	41.5	*9999
1500	43.5	44.9	75.6	90.5	43.7	42.0	41.5	*9999
1600	43.4	44.9	75.6	90.7	43.6	42.2	41.6	*9999
1700	43.5	44.8	75.5	90.7	43.6	42.3	41.7	*9999
1800	43.5	44.8	75.5	90.9	43.6	42.5	42.0	*9999
1900	43.6	44.7	75.5	91.6	43.9	42.5	42.2	*9999
2000	43.6	44.7	75.6	91.7	44.0	42.6	42.5	*9999
2100	44.0	44.7	76.3	92.3	44.0	42.9	42.5	*9999
2200	43.6	44.7	76.5	90.5	44.0	42.9	42.9	*9999
2300	43.6	44.7	76.5	88.4	44.1	43.0	42.6	*9999
2400	44.0	44.9	76.7	86.7	44.1	43.1	42.9	*9999

TABLE 73. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 14, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	44.0	44.8	76.6	86.4	44.2	43.0	43.0	*9999
200	43.6	44.7	76.6	86.0	44.0	43.0	43.0	*9999
300	43.6	45.0	76.0	85.6	44.0	43.0	43.0	*9999
400	43.6	45.0	75.0	85.0	44.0	42.9	42.7	*9999
500	43.5	45.0	74.5	84.0	44.0	42.6	42.6	*9999
600	43.2	44.7	74.0	83.5	44.0	42.5	42.9	*9999
700	43.2	44.5	73.9	83.0	43.8	42.5	42.4	*9999
800	43.4	44.5	73.6	82.6	43.8	42.5	42.5	*9999
900	43.4	44.5	72.9	82.4	43.9	42.5	42.2	*9999
1000	43.5	44.5	72.6	83.6	44.0	42.5	42.7	*9999
1100	43.6	44.7	72.6	83.9	44.0	42.6	42.6	*9999
1200	44.0	45.2	72.6	83.5	44.0	42.5	42.5	*9999
1300	44.2	45.5	72.5	83.5	44.4	43.0	42.6	*9999
1400	44.6	46.0	72.2	83.4	44.5	43.2	43.0	*9999
1500	44.9	46.2	72.5	83.9	44.5	43.5	43.0	*9999
1600	45.1	46.5	72.5	83.7	44.6	43.6	43.2	*9999
1700	45.1	46.5	72.1	83.5	44.7	43.6	43.5	*9999
1800	45.1	46.5	72.1	83.9	44.5	43.9	43.9	*9999
1900	45.0	46.5	72.0	83.5	44.5	44.0	44.0	*9999
2000	45.4	46.5	72.3	83.6	45.0	44.1	44.2	*9999
2100	45.2	46.4	72.6	83.7	44.7	44.4	44.0	*9999
2200	45.5	46.5	72.5	84.0	45.0	44.5	44.5	*9999
2300	45.5	46.5	72.5	83.6	45.0	44.5	44.5	*9999
2400	45.5	46.5	72.4	83.5	45.1	44.5	44.3	*9999

TABLE 74. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 15, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	45.5	46.5	72.2	83.6	45.1	44.5	44.1	*9999
200	45.5	46.5	72.1	85.0	45.1	44.5	44.0	*9999
300	45.5	46.5	72.0	84.4	45.0	44.4	44.3	*9999
400	45.2	46.5	71.7	84.1	44.9	44.1	43.8	*9999
500	45.2	46.4	71.4	83.7	44.7	44.0	43.5	*9999
600	45.0	46.3	71.2	83.0	44.5	43.7	43.3	*9999
700	44.9	46.0	71.5	83.0	44.5	43.5	43.2	*9999
800	44.9	46.0	71.0	83.0	44.5	43.5	43.0	*9999
900	44.8	46.0	71.4	83.2	44.4	43.5	43.0	*9999
1000	45.0	46.1	71.5	83.5	44.5	43.5	43.2	*9999
1100	45.2	46.5	72.0	83.6	44.7	43.8	43.2	*9999
1200	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1300	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1400	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1500	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1600	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1700	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1800	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1900	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
2000	45.0	47.9	75.4	90.6	45.7	45.3	45.4	*9999
2100	45.0	48.0	75.8	91.4	45.9	45.5	45.7	*9999
2200	45.0	48.0	76.0	91.8	46.0	45.7	46.1	*9999
2300	45.2	48.3	76.2	92.0	46.0	45.9	46.1	*9999
2400	45.4	48.2	76.4	92.3	46.5	46.0	46.3	*9999

TABLE 75. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 16, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	45.5	48.5	76.5	92.5	45.8	45.9	46.3	*9999
200	45.4	48.5	76.5	92.5	46.0	46.0	46.0	*9999
300	45.5	48.5	76.7	93.0	46.0	45.9	46.4	*9999
400	45.7	48.5	76.5	93.0	46.0	45.5	46.4	*9999
500	45.4	48.5	76.5	92.9	45.9	45.6	46.3	*9999
600	45.3	48.5	76.5	93.4	45.5	45.5	46.0	*9999
700	45.2	48.4	76.6	92.9	45.0	45.3	45.9	*9999
800	45.0	48.4	76.9	93.5	45.7	45.1	45.6	*9999
900	45.0	48.5	77.2	93.5	45.9	45.4	45.6	*9999
1000	45.2	48.5	77.7	94.0	45.9	45.2	45.7	*9999
1100	45.5	48.6	78.7	94.5	45.7	45.4	46.0	*9999
1200	45.5	48.9	78.6	95.0	46.0	45.4	46.0	*9999
1300	45.9	49.0	79.5	95.6	46.0	45.5	46.1	*9999
1400	45.7	48.5	80.0	95.9	45.1	45.6	46.5	*9999
1500	46.3	48.8	80.2	95.6	46.2	45.8	46.4	*9999
1600	46.5	49.0	80.4	95.8	46.5	45.0	46.5	*9999
1700	46.5	48.8	80.5	95.4	46.3	46.0	46.6	*9999
1800	46.3	49.7	80.4	95.5	46.5	46.0	46.7	*9999
1900	46.4	48.8	80.3	95.7	46.5	46.1	46.9	*9999
2000	46.5	48.7	80.1	95.3	46.5	46.2	47.1	*9999
2100	46.5	48.7	79.9	95.4	46.4	46.5	47.4	*9999
2200	46.6	48.9	79.9	95.1	46.6	46.6	47.4	*9999
2300	47.0	49.0	79.6	94.6	46.9	46.9	47.5	*9999
2400	47.1	49.0	79.0	94.5	47.0	47.0	47.5	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

HAZLETON ENVIRONMENTAL SCIENCES

POOR ORIGINAL

1079 046

TABLE 76. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, APRIL 17, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	47.4	49.2	79.0	93.7	47.0	47.0	48.0	*9999
200	47.5	49.5	78.8	94.4	47.1	47.0	47.8	*9999
300	47.7	49.6	78.9	94.3	47.2	47.2	47.7	*9999
400	47.5	49.8	78.5	94.1	47.2	47.2	47.5	*9999
500	47.4	49.7	78.4	93.8	47.1	47.0	47.5	*9999
600	47.3	49.5	77.7	93.3	47.0	47.0	47.4	*9999
700	47.4	49.5	78.0	93.0	47.0	46.8	47.4	*9999
800	47.1	49.4	77.9	93.5	46.9	46.8	47.3	*9999
900	47.3	49.4	78.5	93.5	46.9	46.8	47.3	*9999
1000	47.5	49.6	78.6	94.4	46.9	46.7	47.2	*9999
1100	47.5	49.7	78.7	94.6	46.5	46.6	47.2	*9999
1200	47.7	49.0	79.2	95.4	46.5	46.7	47.1	*9999
1300	48.0	49.3	79.7	95.9	46.5	46.7	47.3	*9999
1400	48.0	49.5	80.0	95.7	47.0	47.0	47.2	*9999
1500	48.2	49.6	80.1	95.4	47.0	47.0	47.5	*9999
1600	48.5	49.9	80.4	94.6	46.9	47.1	47.4	*9999
1700	48.5	49.9	80.3	94.5	47.0	47.5	47.9	*9999
1800	48.6	50.0	80.1	94.0	47.1	47.4	48.4	*9999
1900	48.5	49.9	80.0	93.8	47.3	47.6	49.0	*9999
2000	48.7	49.9	79.7	94.6	47.4	48.0	48.5	*9999
2100	49.0	49.9	79.0	95.5	47.0	48.0	48.5	*9999
2200	49.3	50.0	78.8	95.5	47.0	48.3	48.7	*9999
2300	49.2	50.0	78.8	95.6	47.5	48.4	49.1	*9999
2400	49.7	50.5	78.7	96.0	47.6	48.7	49.2	*9999

TABLE 77. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, APRIL 18, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	49.0	48.2	79.0	95.6	48.0	49.0	49.5	*9999
200	49.0	48.3	79.0	96.0	48.0	49.0	49.6	*9999
300	49.0	48.5	78.8	96.0	48.0	48.8	50.0	*9999
400	49.0	48.3	78.8	95.9	48.0	48.9	49.4	*9999
500	48.8	48.4	78.7	95.6	47.6	48.5	49.1	*9999
600	48.3	48.1	78.4	95.5	47.5	48.3	49.1	*9999
700	48.0	47.9	78.4	95.5	47.7	47.7	48.9	*9999
800	48.0	47.8	78.3	95.6	47.6	47.8	48.4	*9999
900	47.5	47.5	78.0	95.5	47.5	47.5	48.9	*9999
1000	47.7	47.5	78.0	95.0	47.5	47.5	49.1	*9999
1100	48.0	47.9	77.9	95.0	47.5	47.6	48.5	*9999
1200	48.4	48.1	78.0	95.3	47.5	47.7	48.5	*9999
1300	48.4	48.4	78.4	95.7	47.5	47.9	48.5	*9999
1400	48.6	48.6	78.6	96.0	47.5	48.0	48.5	*9999
1500	49.0	49.1	78.9	95.6	47.5	48.3	48.9	*9999
1600	49.0	49.2	79.2	96.0	47.6	48.5	49.0	*9999
1700	49.3	49.3	79.2	96.4	47.8	48.5	49.2	*9999
1800	49.5	49.5	79.6	96.0	48.0	48.8	49.9	*9999
1900	49.6	49.5	80.2	96.0	48.3	49.1	50.1	*9999
2000	50.0	49.5	80.0	96.0	48.6	49.6	50.6	*9999
2100	50.0	49.5	80.0	96.3	48.7	49.6	50.5	*9999
2200	50.1	49.7	79.9	96.4	48.8	49.9	50.6	*9999
2300	50.4	49.8	79.4	95.0	48.9	50.0	50.6	*9999
2400	50.5	49.8	78.8	92.5	48.9	50.0	50.7	*9999

TABLE 78. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, APRIL 19, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	49.7	49.6	78.2	92.0	48.1	50.0	50.7	*9999
200	49.4	49.5	78.0	93.2	48.0	49.7	50.4	*9999
300	49.2	49.4	77.7	93.5	48.0	49.5	50.0	*9999
400	48.8	49.2	77.0	93.6	48.5	49.4	49.5	*9999
500	48.9	49.0	77.0	93.0	48.5	49.0	49.5	*9999
600	48.6	48.8	76.7	93.0	48.4	48.7	49.2	*9999
700	48.2	48.7	77.3	93.7	46.5	48.6	49.0	*9999
800	48.2	48.6	78.0	93.1	48.4	48.6	49.0	*9999
900	47.9	48.3	78.1	93.0	48.1	48.4	49.0	*9999
1000	48.0	48.3	78.5	92.4	48.0	48.4	49.0	*9999
1100	47.9	48.2	78.9	92.6	48.1	48.2	48.8	*9999
1200	47.8	48.7	79.5	93.5	48.0	48.3	48.8	*9999
1300	47.7	48.7	80.0	93.6	48.0	48.3	48.9	*9999
1400	47.8	48.7	80.1	94.4	48.6	48.6	49.0	*9999
1500	47.8	49.2	80.0	93.5	48.6	48.7	49.2	*9999
1600	47.8	49.2	80.0	93.0	48.5	48.6	49.4	*9999
1700	47.7	49.2	80.5	93.7	48.5	49.2	49.2	*9999
1800	47.8	48.6	80.9	93.4	48.5	49.3	49.5	*9999
1900	47.0	48.2	81.2	93.4	48.0	49.5	49.4	*9999
2000	47.5	48.1	81.0	93.0	47.7	49.6	49.0	*9999
2100	47.9	47.8	80.5	90.0	48.5	48.9	49.0	*9999
2200	47.4	47.8	80.5	88.0	48.6	48.8	49.1	*9999
2300	47.7	48.6	80.6	89.0	48.6	48.6	48.9	*9999
2400	47.7	48.2	80.5	90.5	48.5	48.5	49.0	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

TABLE 79. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, APRIL 20, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	47.7	48.2	80.6	90.6	48.1	48.4	49.0	*9999
200	47.7	48.2	79.5	93.1	48.3	48.5	49.1	*9999
300	47.6	48.1	78.5	91.8	48.2	48.5	49.0	*9999
400	47.5	48.2	78.9	92.2	48.1	48.4	49.0	*9999
500	47.6	48.2	79.4	92.3	48.3	48.3	48.8	*9999
600	47.5	48.1	80.0	92.7	48.3	48.3	49.0	*9999
700	47.5	48.1	80.4	93.3	48.2	48.3	49.0	*9999
800	47.6	48.2	80.2	93.3	48.1	48.3	48.8	*9999
900	47.6	48.4	80.5	93.9	48.2	48.3	48.9	*9999
1000	47.9	48.7	81.0	93.6	48.0	48.5	48.1	*9999
1100	48.2	48.7	81.6	94.1	48.4	48.7	48.5	*9999
1200	49.0	48.7	82.6	95.0	49.0	49.0	48.6	*9999
1300	48.6	48.7	82.5	95.5	48.5	48.5	48.2	*9999
1400	48.7	49.0	83.2	95.4	48.4	48.6	48.2	*9999
1500	*9999	48.4	83.0	95.0	48.4	49.8	46.0	*9999
1600	*9999	49.0	83.9	96.5	*9999	50.5	44.5	*9999
1700	*9999	48.7	84.8	95.9	*9999	50.0	46.3	*9999
1800	*9999	49.1	85.0	95.8	*9999	50.4	46.8	*9999
1900	*9999	48.9	85.0	95.4	*9999	50.6	46.5	*9999
2000	*9999	49.6	85.0	95.0	*9999	51.0	47.0	*9999
2100	*9999	48.9	85.6	96.0	*9999	51.0	47.4	*9999
2200	*9999	49.0	85.5	96.6	*9999	51.4	47.4	*9999
2300	*9999	49.0	85.6	94.8	*9999	51.3	47.3	*9999
2400	*9999	49.0	86.3	92.4	*9999	50.9	47.5	*9999

1079 047

TABLE 80. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 21, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	49.0	85.3	92.0	*9999	50.5	48.2	*9999
200	*9999	49.5	84.5	92.1	*9999	50.4	48.2	*9999
300	*9999	49.5	84.0	91.5	*9999	50.0	48.9	*9999
400	*9999	49.4	83.0	90.6	*9999	49.6	49.0	*9999
500	*9999	49.5	81.5	89.5	*9999	49.5	48.9	*9999
600	*9999	49.5	80.7	88.9	*9999	49.5	49.0	*9999
700	*9999	49.5	81.0	88.6	*9999	49.4	48.9	*9999
800	*9999	49.4	80.7	89.9	*9999	49.2	48.6	*9999
900	*9999	49.0	80.5	89.3	*9999	49.1	49.5	*9999
1000	49.2	49.2	80.5	89.0	*9999	49.0	49.1	*9999
1100	49.3	49.0	80.3	89.0	*9999	49.0	49.0	*9999
1200	49.4	49.0	80.2	89.0	*9999	49.1	49.1	*9999
1300	49.4	49.1	81.0	89.5	*9999	49.1	49.0	*9999
1400	49.5	49.5	81.2	89.6	*9999	49.2	49.1	*9999
1500	49.6	49.8	81.6	89.7	*9999	49.5	49.0	*9999
1600	50.0	50.0	81.5	90.0	*9999	49.5	49.5	*9999
1700	50.0	50.0	82.0	90.5	*9999	49.5	49.5	*9999
1800	50.1	50.1	83.0	91.5	*9999	49.6	49.6	*9999
1900	50.1	50.0	82.7	90.6	*9999	49.7	49.6	*9999
2000	50.1	50.0	82.5	91.0	*9999	49.8	49.7	*9999
2100	50.0	50.0	82.5	93.0	*9999	50.0	50.2	*9999
2200	49.9	49.9	82.4	92.6	*9999	50.1	50.1	*9999
2300	49.0	50.0	82.2	92.4	*9999	50.5	50.3	*9999
2400	*9999	50.0	82.0	92.3	*9999	50.8	50.5	*9999

TABLE 81. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 22, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	50.2	81.6	90.7	*9999	51.0	50.9	*9999
200	*9999	50.3	82.5	90.0	*9999	51.3	50.5	*9999
300	*9999	50.4	82.5	90.3	*9999	51.4	50.4	*9999
400	*9999	50.3	82.4	90.0	*9999	51.0	50.4	*9999
500	*9999	50.4	82.1	89.8	*9999	51.0	50.0	*9999
600	*9999	50.3	81.5	89.4	*9999	50.9	49.8	*9999
700	*9999	50.0	81.0	88.5	*9999	50.9	50.0	*9999
800	50.5	50.5	81.2	88.8	*9999	50.0	50.0	*9999
900	50.5	50.3	81.5	89.1	*9999	50.0	50.0	*9999
1000	50.7	50.6	82.0	89.5	*9999	50.0	50.5	*9999
1100	51.0	51.0	82.7	90.3	*9999	50.4	50.4	*9999
1200	51.4	51.4	82.7	90.5	*9999	50.5	50.9	*9999
1300	51.6	51.6	83.0	90.7	*9999	50.7	50.7	*9999
1400	52.1	52.0	83.3	94.0	*9999	51.0	50.9	*9999
1500	52.3	52.2	83.6	94.0	*9999	51.0	51.1	*9999
1600	52.6	52.5	83.5	94.9	*9999	51.3	51.5	*9999
1700	52.6	52.5	83.4	94.5	*9999	51.4	51.8	*9999
1800	52.6	52.6	83.4	94.5	*9999	51.5	52.1	*9999
1900	52.6	52.7	84.5	95.0	*9999	52.0	52.1	*9999
2000	53.0	52.7	84.9	95.3	*9999	52.0	52.8	*9999
2100	53.0	52.8	84.9	94.7	*9999	52.3	53.0	*9999
2200	52.5	53.0	84.5	93.0	*9999	52.6	53.0	*9999
2300	52.0	53.0	84.4	92.8	*9999	52.8	53.4	*9999
2400	52.1	53.0	84.3	92.5	*9999	52.9	53.5	*9999

TABLE 82. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 23, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	53.8	53.3	84.0	92.6	*9999	52.8	53.5	*9999
200	53.7	53.3	84.0	92.5	*9999	52.7	53.4	*9999
300	53.5	53.3	82.7	92.6	*9999	52.5	53.4	*9999
400	53.4	53.3	82.5	93.5	*9999	52.5	53.3	*9999
500	52.8	53.2	82.3	93.5	*9999	52.2	53.0	*9999
600	52.5	53.0	82.1	94.0	*9999	52.0	52.8	*9999
700	53.5	53.0	81.9	95.5	*9999	52.0	52.5	*9999
800	53.5	53.0	82.1	96.2	*9999	52.0	52.5	*9999
900	53.4	53.0	82.5	96.1	*9999	52.0	52.5	*9999
1000	53.4	53.3	83.5	96.3	*9999	52.0	52.6	*9999
1100	53.5	53.6	84.2	97.7	*9999	52.1	52.8	*9999
1200	53.8	53.6	84.9	98.3	*9999	52.1	52.8	*9999
1300	54.0	54.0	85.7	99.0	*9999	52.3	53.0	*9999
1400	54.0	54.0	85.7	99.1	*9999	52.5	53.5	*9999
1500	54.1	54.2	86.5	99.6	*9999	52.5	53.4	*9999
1600	54.1	54.3	86.5	100.0	*9999	52.7	53.6	*9999
1700	54.3	54.5	86.6	100.0	*9999	52.8	53.6	*9999
1800	54.5	54.6	86.9	100.0	*9999	53.0	54.1	*9999
1900	54.6	54.5	87.5	100.0	*9999	53.3	54.3	*9999
2000	54.9	54.8	87.0	100.1	*9999	53.5	54.5	*9999
2100	54.9	54.9	87.3	100.4	*9999	53.9	54.5	*9999
2200	54.8	54.9	87.1	100.5	*9999	54.0	55.4	*9999
2300	54.6	55.0	86.9	100.1	*9999	54.0	56.0	*9999
2400	54.3	55.2	87.4	100.4	*9999	54.3	56.1	*9999

TABLE 83. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 24, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	53.9	55.2	87.1	100.1	*9999	54.4	56.0	*9999
200	54.0	55.3	87.1	100.3	*9999	54.3	56.0	*9999
300	54.6	55.5	87.3	100.1	*9999	54.0	56.5	*9999
400	54.5	55.3	87.0	100.1	*9999	54.0	56.2	*9999
500	54.2	55.4	86.6	99.9	*9999	54.0	56.2	*9999
600	52.9	55.2	86.5	99.5	*9999	54.4	56.6	*9999
700	*9999	55.7	86.6	99.5	*9999	54.6	56.5	*9999
800	*9999	55.5	86.7	99.6	*9999	54.0	57.1	*9999
900	*9999	55.5	87.0	99.8	*9999	53.7	57.4	*9999
1000	*9999	55.5	87.0	99.9	*9999	53.5	57.4	*9999
1100	*9999	55.5	87.0	99.5	*9999	53.5	57.0	*9999
1200	*9999	55.3	86.2	99.2	*9999	53.4	56.7	*9999
1300	*9999	55.5	86.6	99.3	*9999	53.5	56.5	*9999
1400	*9999	55.8	86.6	99.5	*9999	53.5	56.5	*9999
1500	*9999	55.6	86.8	99.6	*9999	53.5	56.0	*9999
1600	*9999	55.9	87.2	99.0	*9999	53.5	55.9	*9999
1700	*9999	56.2	87.0	98.5	*9999	53.6	55.5	*9999
1800	*9999	56.1	87.1	98.4	*9999	54.4	56.1	*9999
1900	*9999	55.8	87.3	98.4	*9999	55.0	55.4	*9999
2000	*9999	55.8	87.5	98.4	*9999	55.2	55.2	*9999
2100	*9999	55.1	87.2	98.1	*9999	55.1	55.1	*9999
2200	*9999	55.3	86.8	97.5	*9999	55.1	55.5	*9999
2300	*9999	55.5	86.6	97.6	*9999	55.1	55.0	*9999
2400	*9999	55.5	87.0	98.0	*9999	56.3	54.5	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

HAZLETON ENVIRONMENTAL SCIENCES

POOR ORIGINAL

1079 048

TABLE 84. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 25, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	55.0	87.0	98.0	*9999	55.6	54.8	*9999
200	*9999	54.8	87.2	98.0	*9999	55.5	55.2	*9999
300	*9999	54.9	87.2	98.1	*9999	55.0	56.0	*9999
400	*9999	55.0	87.1	98.1	*9999	55.2	55.2	*9999
500	*9999	55.0	87.3	98.2	*9999	55.4	55.1	*9999
600	*9999	55.0	87.5	98.5	*9999	55.3	55.1	*9999
700	*9999	55.5	87.6	98.5	*9999	55.1	55.2	*9999
800	*9999	55.3	87.6	98.6	*9999	55.2	54.8	*9999
900	*9999	55.7	87.6	98.6	*9999	54.9	54.1	*9999
1000	*9999	55.8	87.5	99.0	*9999	54.5	54.1	*9999
1100	*9999	56.3	88.2	99.4	*9999	54.5	54.6	*9999
1200	*9999	56.5	88.7	99.6	*9999	54.6	54.6	*9999
1300	*9999	56.6	88.4	99.6	*9999	54.6	55.2	*9999
1400	*9999	56.2	88.0	100.0	*9999	54.5	54.8	*9999
1500	*9999	56.2	88.3	100.0	*9999	54.6	54.9	*9999
1600	*9999	56.3	88.6	100.0	*9999	54.6	54.9	*9999
1700	*9999	56.3	88.6	100.0	*9999	54.9	54.9	*9999
1800	*9999	56.1	88.5	99.9	*9999	55.2	55.0	*9999
1900	*9999	56.3	89.1	99.1	*9999	55.2	55.5	*9999
2000	*9999	56.5	88.1	99.1	*9999	55.7	55.4	*9999
2100	*9999	55.6	86.5	97.5	*9999	55.6	55.2	*9999
2200	*9999	56.0	84.5	96.9	*9999	56.0	54.9	*9999
2300	*9999	55.9	83.5	95.8	*9999	55.9	54.9	*9999
2400	*9999	56.0	82.9	95.0	*9999	55.0	55.3	*9999

TABLE 85. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 26, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	56.2	82.6	94.6	*9999	54.8	55.5	*9999
200	*9999	55.5	81.8	94.0	*9999	54.5	55.1	*9999
300	*9999	56.0	81.6	94.0	*9999	54.5	55.3	*9999
400	*9999	55.5	81.2	93.5	*9999	54.5	55.4	*9999
500	*9999	55.5	81.0	93.5	*9999	54.3	55.0	*9999
600	*9999	55.3	80.6	93.4	*9999	54.1	55.0	*9999
700	*9999	54.6	80.2	93.2	*9999	54.0	54.8	*9999
800	*9999	54.6	80.1	93.0	*9999	54.0	54.5	*9999
900	*9999	55.0	80.7	93.5	*9999	54.0	54.7	*9999
1000	*9999	55.0	80.0	93.7	*9999	54.0	54.9	*9999
1100	*9999	55.2	79.5	94.2	*9999	54.0	54.9	*9999
1200	*9999	55.0	79.6	94.5	*9999	54.1	55.0	*9999
1300	*9999	55.6	80.5	94.5	*9999	54.1	54.9	*9999
1400	*9999	55.6	79.6	95.0	*9999	54.1	55.0	*9999
1500	*9999	55.6	80.0	95.0	*9999	54.2	55.0	*9999
1600	*9999	55.6	80.5	95.1	*9999	54.3	55.4	*9999
1700	*9999	55.5	80.3	95.0	*9999	54.3	55.5	*9999
1800	*9999	55.5	80.6	94.8	*9999	54.3	55.6	*9999
1900	*9999	55.5	80.6	94.9	*9999	54.5	55.9	*9999
2000	*9999	55.5	80.5	93.0	*9999	54.5	55.9	*9999
2100	*9999	55.3	80.4	90.7	*9999	54.6	55.9	*9999
2200	*9999	55.2	80.5	87.5	*9999	54.9	56.0	*9999
2300	*9999	55.3	80.5	86.5	*9999	54.8	55.9	*9999
2400	*9999	55.4	80.5	86.5	*9999	54.7	55.9	*9999

TABLE 86. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 27, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	55.4	80.0	86.0	*9999	54.6	55.5	*9999
200	*9999	55.3	79.5	86.1	*9999	54.5	55.5	*9999
300	*9999	55.2	78.1	87.0	*9999	54.5	55.5	*9999
400	*9999	55.2	77.8	87.4	*9999	54.5	55.4	*9999
500	*9999	54.9	78.3	87.5	*9999	54.3	55.1	*9999
600	*9999	55.0	77.3	87.5	*9999	54.3	54.9	*9999
700	*9999	54.7	77.5	87.0	*9999	54.0	54.9	*9999
800	*9999	54.6	77.4	87.0	*9999	54.0	54.9	*9999
900	*9999	54.6	76.8	86.5	*9999	53.9	54.6	*9999
1000	*9999	54.5	76.7	86.1	*9999	53.9	54.5	*9999
1100	*9999	54.4	76.4	85.9	*9999	53.5	54.5	*9999
1200	*9999	54.5	75.1	87.5	*9999	53.5	54.5	*9999
1300	*9999	54.5	74.5	86.5	*9999	53.4	54.4	*9999
1400	*9999	54.4	74.0	84.0	*9999	53.4	54.1	*9999
1500	*9999	54.2	73.0	81.0	*9999	54.0	54.0	*9999
1600	*9999	53.4	72.0	77.4	*9999	53.5	53.5	*9999
1700	*9999	53.0	72.1	76.6	*9999	53.0	53.4	*9999
1800	*9999	53.0	71.8	74.5	*9999	52.5	53.4	*9999
1900	*9999	53.0	71.5	73.0	*9999	52.5	53.3	*9999
2000	*9999	52.5	70.5	72.4	*9999	52.5	53.0	*9999
2100	*9999	52.5	69.4	71.0	*9999	52.9	52.9	*9999
2200	*9999	52.5	69.0	70.5	*9999	52.6	52.5	*9999
2300	*9999	52.3	68.5	70.3	*9999	52.5	52.5	*9999
2400	*9999	52.0	68.0	70.0	*9999	52.0	52.5	*9999

TABLE 87. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, APRIL 28, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	52.0	67.9	69.7	*9999	51.9	52.0	*9999
200	*9999	51.7	67.6	69.2	*9999	51.5	52.0	*9999
300	*9999	55.7	68.3	87.0	*9999	51.5	52.0	*9999
400	*9999	53.5	68.0	91.6	*9999	51.4	52.0	*9999
500	*9999	52.3	67.0	89.7	*9999	51.2	51.8	*9999
600	*9999	52.0	66.0	88.5	*9999	51.0	51.8	*9999
700	*9999	51.6	65.5	87.5	*9999	51.0	51.7	*9999
800	*9999	51.4	65.3	87.0	*9999	51.0	51.6	*9999
900	*9999	51.4	65.0	86.5	*9999	51.0	51.9	*9999
1000	*9999	51.4	68.6	87.0	*9999	51.1	51.9	*9999
1100	*9999	52.0	74.5	92.6	*9999	51.1	51.9	*9999
1200	*9999	52.6	73.6	94.5	*9999	51.5	51.9	*9999
1300	*9999	53.2	74.5	92.5	*9999	51.5	52.1	*9999
1400	*9999	53.5	74.0	93.0	*9999	51.5	52.4	*9999
1500	*9999	53.8	73.5	93.2	*9999	51.5	52.3	*9999
1600	*9999	53.6	74.2	93.0	*9999	51.5	52.3	*9999
1700	*9999	53.8	73.6	93.0	*9999	51.6	52.3	*9999
1800	*9999	54.0	75.4	93.5	*9999	52.0	52.5	*9999
1900	*9999	54.5	76.2	95.0	*9999	52.0	52.5	*9999
2000	*9999	54.6	76.5	95.4	*9999	52.3	53.2	*9999
2100	*9999	54.7	75.4	95.0	*9999	52.4	53.3	*9999
2200	*9999	54.5	75.3	95.0	*9999	52.5	53.1	*9999
2300	*9999	54.5	75.2	95.0	*9999	52.6	53.1	*9999
2400	*9999	54.8	75.0	94.9	*9999	52.5	53.0	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 049

TABLE 88. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, APRIL 29, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	54.9	74.6	94.5	*9999	52.5	52.8	*9999
200	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
300	*9999	54.5	75.1	94.9	*9999	52.4	52.6	*9999
400	*9999	55.0	75.3	92.1	*9999	52.3	52.4	*9999
500	*9999	55.0	75.4	91.4	*9999	52.4	52.4	*9999
600	*9999	55.2	75.2	91.4	*9999	52.3	52.4	*9999
700	*9999	55.4	75.3	91.0	*9999	52.3	52.1	*9999
800	*9999	55.2	75.0	92.6	*9999	52.1	52.0	*9999
900	*9999	54.5	74.9	93.9	*9999	52.0	51.9	*9999
1000	*9999	55.0	74.5	94.0	*9999	51.7	51.5	*9999
1100	*9999	54.8	73.9	94.4	*9999	51.6	51.6	*9999
1200	*9999	54.3	73.5	94.0	*9999	51.5	51.5	*9999
1300	*9999	53.7	73.6	93.7	*9999	51.5	51.5	*9999
1400	*9999	53.4	74.0	93.4	*9999	51.5	51.5	*9999
1500	*9999	52.7	75.0	94.0	*9999	51.5	51.5	*9999
1600	*9999	53.1	75.5	95.0	*9999	51.4	51.5	*9999
1700	*9999	54.1	76.5	96.1	*9999	51.2	51.3	*9999
1800	*9999	53.5	76.3	93.4	*9999	51.9	51.5	*9999
1900	*9999	52.0	76.0	68.3	*9999	51.5	51.3	*9999
2000	*9999	51.2	75.5	67.6	*9999	51.0	51.0	*9999
2100	*9999	50.9	75.0	66.9	*9999	50.9	51.0	*9999
2200	*9999	50.5	74.3	65.5	*9999	50.8	51.0	*9999
2300	*9999	50.2	73.2	69.0	*9999	50.7	50.8	*9999
2400	*9999	50.0	73.0	72.2	*9999	50.6	51.0	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

TABLE 89. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, APRIL 30, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	50.0	67.0	68.6	*9999	50.6	50.8	*9999
200	*9999	50.0	66.2	65.3	*9999	50.6	50.9	*9999
300	*9999	49.5	66.1	65.4	*9999	50.5	50.5	*9999
400	*9999	49.5	67.5	66.0	*9999	50.4	50.5	*9999
500	*9999	49.3	68.1	67.6	*9999	50.1	50.3	*9999
600	*9999	49.1	66.0	66.9	*9999	50.0	50.1	*9999
700	*9999	49.0	64.5	65.0	*9999	50.0	50.0	*9999
800	*9999	48.8	64.5	64.8	*9999	49.7	49.9	*9999
900	*9999	48.5	64.5	66.5	*9999	49.4	49.4	*9999
1000	*9999	48.5	65.5	67.7	*9999	49.3	49.3	*9999
1100	*9999	48.7	66.5	70.0	*9999	49.5	49.5	*9999
1200	*9999	48.7	65.5	69.0	*9999	49.4	49.5	*9999
1300	*9999	49.0	65.3	68.5	*9999	49.4	49.4	*9999
1400	*9999	49.0	66.5	70.6	*9999	49.4	49.2	*9999
1500	*9999	49.0	66.8	73.4	*9999	49.3	49.4	*9999
1600	*9999	49.0	67.5	76.2	*9999	49.4	49.2	*9999
1700	*9999	48.9	67.5	78.0	*9999	49.4	49.0	*9999
1800	*9999	48.8	67.5	79.5	*9999	49.5	49.1	*9999
1900	*9999	48.9	68.0	80.0	*9999	49.6	49.1	*9999
2000	*9999	48.7	69.9	82.4	*9999	49.8	49.3	*9999
2100	*9999	48.8	70.5	83.0	*9999	49.9	49.3	*9999
2200	*9999	48.9	71.3	83.5	*9999	49.8	49.2	*9999
2300	*9999	48.9	72.0	84.0	*9999	49.8	49.2	*9999
2400	*9999	48.7	72.0	84.0	*9999	49.8	49.1	*9999

HAZLETON ENVIRONMENTAL SCIENCES

POOR ORIGINAL

TABLE 90. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 1, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	48.9	72.9	85.0	*9999	50.0	50.3	*9999
200	*9999	48.9	72.9	85.0	*9999	50.0	50.3	*9999
300	*9999	49.0	73.0	85.2	*9999	50.0	51.0	*9999
400	*9999	49.0	73.5	85.3	*9999	50.0	51.2	*9999
500	*9999	49.0	73.3	85.3	*9999	50.0	51.3	*9999
600	*9999	49.0	73.5	85.2	*9999	50.0	51.0	*9999
700	*9999	49.1	73.5	84.9	*9999	50.0	51.5	*9999
800	*9999	48.9	73.5	85.2	*9999	49.5	50.0	*9999
900	*9999	49.0	73.5	86.0	*9999	49.5	50.9	*9999
1000	*9999	49.1	74.0	86.1	*9999	49.5	50.4	*9999
1100	*9999	49.4	74.9	86.5	*9999	49.5	50.3	*9999
1200	*9999	49.4	75.0	87.1	*9999	49.6	50.3	*9999
1300	*9999	49.6	75.5	87.6	*9999	49.6	50.4	*9999
1400	*9999	49.7	75.5	87.9	*9999	49.7	50.2	*9999
1500	*9999	49.9	75.5	88.2	*9999	49.9	50.0	*9999
1600	*9999	49.9	75.3	88.0	*9999	49.9	50.0	*9999
1700	*9999	49.5	75.2	87.9	*9999	49.9	50.0	*9999
1800	*9999	49.7	76.0	88.5	*9999	50.0	50.0	*9999
1900	*9999	49.9	76.5	88.6	*9999	50.1	50.4	*9999
2000	*9999	49.8	76.5	89.0	*9999	50.2	50.5	*9999
2100	*9999	49.5	76.5	89.4	*9999	50.5	51.0	*9999
2200	*9999	49.6	76.5	89.5	*9999	50.5	51.4	*9999
2300	*9999	49.6	76.6	89.9	*9999	50.5	51.0	*9999
2400	*9999	49.8	76.9	90.5	*9999	50.5	51.6	*9999

TABLE 91. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 2, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	50.0	76.7	90.5	*9999	50.5	51.8	*9999
200	*9999	50.0	77.0	90.5	*9999	50.5	51.6	*9999
300	*9999	50.0	76.7	90.6	*9999	50.5	51.6	*9999
400	*9999	50.0	77.2	91.0	*9999	50.5	51.5	*9999
500	*9999	50.0	77.2	91.0	*9999	50.3	51.2	*9999
600	*9999	50.0	77.5	91.1	*9999	50.1	51.0	*9999
700	*9999	50.0	77.1	91.2	*9999	50.0	50.7	*9999
800	*9999	50.0	78.0	91.6	*9999	50.0	50.9	*9999
900	*9999	50.0	78.5	92.0	*9999	50.0	50.4	*9999
1000	*9999	50.0	78.5	92.3	*9999	50.0	50.7	*9999
1100	*9999	50.0	79.1	92.0	*9999	50.0	51.2	*9999
1200	*9999	50.0	79.0	90.5	*9999	49.9	51.9	*9999
1300	*9999	50.0	79.6	90.6	*9999	49.9	51.6	*9999
1400	*9999	50.0	79.6	91.0	*9999	49.9	51.3	*9999
1500	*9999	50.1	80.3	91.9	*9999	50.0	51.1	*9999
1600	*9999	50.0	80.5	92.0	*9999	50.0	51.4	*9999
1700	*9999	49.5	80.0	92.3	*9999	51.0	51.1	*9999
1800	*9999	49.5	80.0	92.1	*9999	51.5	50.5	*9999
1900	*9999	49.5	80.2	92.2	*9999	51.6	51.8	*9999
2000	*9999	49.2	80.0	92.0	*9999	52.0	52.0	*9999
2100	*9999	49.2	80.0	92.0	*9999	52.2	52.0	*9999
2200	*9999	49.2	80.0	91.9	*9999	52.2	52.0	*9999
2300	*9999	48.8	79.9	91.6	*9999	52.1	51.7	*9999
2400	*9999	48.8	79.4	91.4	*9999	52.0	51.7	*9999

TABLE 92. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 3, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	49.0	79.2	91.5	*9999	51.7	51.3	*9999
200	*9999	49.1	79.6	91.3	*9999	51.0	51.6	*9999
300	*9999	49.5	78.5	91.6	*9999	51.5	52.3	*9999
400	*9999	49.8	77.6	90.5	*9999	51.4	52.1	*9999
500	*9999	49.9	77.0	90.7	*9999	50.4	51.8	*9999
600	*9999	49.8	77.5	91.5	*9999	50.1	51.6	*9999
700	*9999	49.7	76.4	92.0	*9999	50.1	51.3	*9999
800	*9999	49.5	76.5	92.1	*9999	50.0	51.3	*9999
900	*9999	49.6	76.1	92.0	*9999	50.0	51.3	*9999
1000	*9999	49.5	76.5	92.1	*9999	50.0	51.0	*9999
1100	*9999	49.5	77.0	92.6	*9999	50.0	50.9	*9999
1200	*9999	49.8	77.5	93.6	*9999	50.2	50.9	*9999
1300	*9999	50.5	77.9	93.8	*9999	50.4	50.7	*9999
1400	*9999	50.7	78.6	94.8	*9999	50.5	50.7	*9999
1500	*9999	51.0	79.1	93.4	*9999	50.5	50.7	*9999
1600	*9999	51.2	79.7	93.0	*9999	50.6	50.4	*9999
1700	*9999	51.5	80.0	93.3	*9999	51.0	50.4	*9999
1800	*9999	51.6	80.2	93.4	*9999	51.0	50.7	*9999
1900	*9999	51.6	80.1	93.7	*9999	51.1	50.8	*9999
2000	*9999	51.6	80.1	93.9	*9999	51.3	50.9	*9999
2100	*9999	51.6	80.2	93.8	*9999	51.5	50.9	*9999
2200	*9999	51.6	80.0	93.5	*9999	51.5	50.8	*9999
2300	*9999	51.7	79.8	93.0	*9999	51.6	50.9	*9999
2400	*9999	51.7	79.5	93.8	*9999	51.8	50.8	*9999

TABLE 93. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 4, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	51.7	79.3	93.8	*9999	51.8	50.8	*9999
200	*9999	51.8	79.0	93.5	*9999	51.8	50.7	*9999
300	*9999	51.8	79.0	93.8	*9999	51.7	50.6	*9999
400	*9999	51.7	78.9	93.3	*9999	51.6	50.7	*9999
500	*9999	51.7	78.8	93.3	*9999	51.5	50.6	*9999
600	*9999	51.5	79.0	93.3	*9999	51.2	50.5	*9999
700	*9999	51.5	78.6	93.3	*9999	51.0	50.6	*9999
800	*9999	51.4	78.5	93.3	*9999	51.0	50.6	*9999
900	*9999	51.2	78.5	93.8	*9999	50.9	50.6	*9999
1000	*9999	51.4	79.3	93.8	*9999	50.7	50.7	*9999
1100	*9999	51.4	79.3	93.9	*9999	50.8	50.5	*9999
1200	*9999	50.9	80.5	94.1	51.0	51.0	50.9	*9999
1300	*9999	51.0	81.3	94.5	51.0	51.1	50.9	*9999
1400	*9999	51.3	82.0	95.5	51.0	51.2	50.9	*9999
1500	*9999	51.5	82.5	96.0	51.0	51.4	51.0	*9999
1600	*9999	51.7	82.4	96.5	51.3	51.5	51.0	*9999
1700	*9999	51.9	82.4	96.4	51.5	51.6	51.0	*9999
1800	*9999	51.9	83.0	96.6	51.5	51.7	51.2	*9999
1900	*9999	52.0	82.9	96.5	51.5	52.0	51.5	*9999
2000	*9999	51.6	82.5	95.5	51.5	52.0	51.7	*9999
2100	*9999	51.5	82.4	94.5	51.7	52.3	51.9	*9999
2200	*9999	51.7	82.0	91.6	51.7	52.4	52.5	*9999
2300	*9999	51.7	82.0	90.0	51.7	52.5	53.5	*9999
2400	*9999	51.7	82.0	88.5	51.6	52.6	*9999	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 051

TABLE 94. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 5, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	51.9	81.8	88.6	51.9	52.5	*9999	*9999
200	*9999	51.9	80.9	87.8	51.9	52.6	*9999	*9999
300	*9999	51.9	79.6	87.1	52.0	52.5	*9999	*9999
400	*9999	51.7	78.6	86.3	51.9	52.5	*9999	*9999
500	*9999	51.6	78.0	85.2	51.8	52.3	*9999	*9999
600	*9999	51.5	77.8	86.4	51.6	52.0	*9999	*9999
700	*9999	51.5	77.6	86.4	51.5	52.0	*9999	*9999
800	*9999	51.5	77.4	87.1	51.5	51.7	*9999	*9999
900	*9999	51.5	77.1	88.1	51.5	51.7	*9999	*9999
1000	*9999	51.5	77.4	88.5	51.5	51.8	*9999	*9999
1100	*9999	52.0	77.6	88.9	51.5	52.0	*9999	*9999
1200	*9999	52.2	78.0	89.0	51.5	52.0	*9999	*9999
1300	*9999	52.6	78.1	89.5	51.5	52.1	*9999	*9999
1400	*9999	53.0	78.5	91.0	51.5	52.3	*9999	*9999
1500	*9999	53.5	79.0	91.0	51.5	52.5	*9999	*9999
1600	*9999	53.2	78.6	91.0	51.6	52.5	*9999	*9999
1700	*9999	53.3	78.8	91.4	51.5	52.6	*9999	*9999
1800	*9999	53.3	79.1	91.6	51.6	52.7	*9999	*9999
1900	*9999	53.4	79.5	91.9	51.5	53.0	*9999	*9999
2000	*9999	53.4	80.4	92.8	51.8	53.2	*9999	*9999
2100	*9999	53.3	80.5	93.4	51.7	53.3	*9999	*9999
2200	*9999	53.5	81.0	93.6	52.0	53.5	*9999	*9999
2300	*9999	53.5	81.2	93.9	51.9	53.5	*9999	*9999
2400	*9999	53.5	81.5	94.4	52.0	53.5	*9999	*9999

TABLE 95. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 6, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	53.5	81.5	94.3	51.9	53.5	*9999	*9999
200	*9999	53.5	81.5	92.5	51.9	53.5	*9999	*9999
300	*9999	53.6	81.9	92.0	51.9	53.5	*9999	*9999
400	*9999	53.6	81.9	92.1	51.9	53.3	*9999	*9999
500	*9999	53.5	82.0	92.1	52.0	53.2	*9999	*9999
600	*9999	53.5	82.0	92.4	52.0	53.0	*9999	*9999
700	*9999	53.5	81.5	92.5	52.0	53.0	*9999	*9999
800	*9999	53.3	81.5	92.3	52.0	53.0	*9999	*9999
900	*9999	53.5	81.8	93.5	52.0	52.7	*9999	*9999
1000	*9999	53.5	82.0	94.0	52.0	53.0	*9999	*9999
1100	*9999	53.6	82.2	94.6	52.0	53.0	*9999	*9999
1200	*9999	54.0	82.8	[illegible]	52.0	53.2	*9999	*9999
1300	*9999	54.4	83.4	96.3	51.8	53.5	*9999	*9999
1400	*9999	54.9	83.2	96.2	51.9	53.5	*9999	*9999
1500	*9999	55.1	83.1	97.3	51.8	53.7	*9999	*9999
1600	*9999	55.3	83.3	97.0	51.9	54.0	*9999	*9999
1700	*9999	55.5	82.9	97.0	51.9	54.3	*9999	*9999
1800	*9999	55.5	83.2	96.9	52.0	54.5	*9999	*9999
1900	*9999	55.6	82.5	96.7	52.0	54.5	*9999	*9999
2000	*9999	55.5	82.6	96.6	52.0	54.6	*9999	*9999
2100	*9999	55.5	82.3	96.5	52.0	54.6	*9999	*9999
2200	*9999	55.6	82.3	96.5	52.0	54.8	*9999	*9999
2300	*9999	55.6	82.3	96.5	52.0	55.0	*9999	*9999
2400	*9999	55.6	82.4	96.3	52.0	55.0	*9999	*9999

TABLE 96. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 7, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	55.8	82.5	96.5	52.0	55.3	*9999	*9999
200	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
300	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
400	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
500	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
600	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
700	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
800	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
900	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1000	*9999	56.0	81.6	94.0	*9999	55.0	*9999	*9999
1100	*9999	56.1	82.5	96.5	*9999	54.9	*9999	*9999
1200	52.5	56.5	82.4	97.0	*9999	55.1	*9999	*9999
1300	56.1	56.7	82.7	97.5	*9999	55.3	*9999	*9999
1400	*9999	57.2	83.0	98.5	*9999	55.5	*9999	*9999
1500	*9999	57.5	82.3	98.3	*9999	55.7	*9999	*9999
1600	55.4	58.0	82.7	98.5	*9999	56.0	*9999	*9999
1700	*9999	58.3	83.5	99.3	*9999	56.1	*9999	*9999
1800	*9999	58.5	83.5	99.6	*9999	56.5	*9999	*9999
1900	*9999	58.5	84.0	100.0	*9999	56.6	*9999	*9999
2000	*9999	58.5	84.0	100.0	*9999	56.8	*9999	*9999
2100	*9999	58.5	83.8	100.0	*9999	57.0	*9999	*9999
2200	*9999	58.5	84.1	100.5	*9999	57.0	*9999	*9999
2300	*9999	58.5	84.4	99.4	*9999	57.5	*9999	*9999
2400	*9999	58.7	84.5	100.2	*9999	57.6	*9999	*9999

TABLE 97. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 8, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	59.0	84.5	100.5	*9999	57.6	*9999	*9999
200	*9999	59.1	84.7	100.7	*9999	57.9	*9999	*9999
300	*9999	59.3	85.0	100.6	*9999	57.8	*9999	*9999
400	*9999	59.5	84.7	100.7	*9999	57.7	*9999	*9999
500	*9999	59.5	84.8	99.0	*9999	57.7	*9999	*9999
600	*9999	59.5	84.9	99.0	*9999	57.7	*9999	*9999
700	*9999	59.5	84.9	98.9	*9999	57.7	*9999	*9999
800	*9999	59.6	85.0	98.7	*9999	57.6	*9999	*9999
900	*9999	59.6	84.8	99.0	*9999	57.6	*9999	*9999
1000	58.6	59.9	84.5	99.0	*9999	57.5	*9999	*9999
1100	57.7	60.2	84.3	98.5	*9999	57.8	*9999	*9999
1200	*9999	60.6	85.0	92.5	*9999	58.0	*9999	*9999
1300	58.8	61.0	84.7	85.6	*9999	58.0	*9999	*9999
1400	*9999	61.3	83.2	85.0	*9999	58.6	*9999	*9999
1500	*9999	61.5	82.5	84.6	*9999	59.0	*9999	*9999
1600	*9999	62.0	81.0	84.4	*9999	58.9	*9999	*9999
1700	*9999	61.5	80.1	84.3	*9999	59.4	*9999	*9999
1800	*9999	61.5	[illegible]	84.6	*9999	59.6	*9999	*9999
1900	*9999	61.5	78.2	84.5	*9999	59.9	*9999	*9999
2000	*9999	61.6	77.9	84.9	*9999	60.0	*9999	*9999
2100	*9999	61.5	77.5	84.7	*9999	60.2	*9999	*9999
2200	*9999	61.8	76.9	83.6	*9999	60.3	*9999	*9999
2300	*9999	61.0	76.5	83.4	*9999	60.5	*9999	*9999
2400	*9999	61.2	75.3	84.5	*9999	60.6	*9999	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

TABLE 98. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 9, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	61.1	74.7	84.6	*9999	60.2	*9999	*9999
200	*9999	61.3	74.9	91.2	*9999	60.3	*9999	*9999
300	*9999	61.3	75.0	93.6	*9999	60.5	*9999	*9999
400	*9999	61.3	76.1	95.0	*9999	60.4	*9999	*9999
500	*9999	61.3	77.6	96.4	*9999	60.6	*9999	*9999
600	*9999	61.2	78.9	97.5	*9999	60.0	*9999	*9999
700	*9999	61.2	80.7	99.0	*9999	59.6	*9999	*9999
800	*9999	61.2	82.4	100.3	*9999	60.2	*9999	*9999
900	61.2	61.3	83.0	*9999	*9999	60.1	*9999	*9999
1000	*9999	61.3	83.9	*9999	*9999	60.3	*9999	*9999
1100	*9999	61.4	85.0	*9999	*9999	60.5	*9999	*9999
1200	*9999	61.9	85.7	*9999	*9999	60.6	*9999	*9999
1300	*9999	62.3	86.9	*9999	*9999	60.7	*9999	*9999
1400	62.1	62.7	88.0	*9999	*9999	61.2	*9999	*9999
1500	*9999	62.6	87.5	*9999	*9999	60.6	*9999	*9999
1600	62.8	62.7	87.0	*9999	*9999	61.0	*9999	*9999
1700	*9999	62.8	86.2	*9999	*9999	61.0	*9999	*9999
1800	*9999	62.9	86.0	*9999	*9999	61.3	*9999	*9999
1900	*9999	63.2	85.9	*9999	*9999	61.5	*9999	*9999
2000	*9999	63.3	85.5	*9999	*9999	61.5	*9999	*9999
2100	*9999	63.1	85.2	*9999	*9999	61.6	*9999	*9999
2200	*9999	63.2	85.2	*9999	*9999	61.6	*9999	*9999
2300	*9999	63.2	85.0	*9999	*9999	61.9	*9999	*9999
2400	*9999	63.3	85.2	*9999	*9999	62.0	*9999	*9999

TABLE 99. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 10, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	63.4	85.5	*9999	*9999	62.0	*9999	*9999
200	*9999	63.8	85.5	*9999	*9999	62.0	*9999	*9999
300	*9999	63.7	85.7	*9999	*9999	62.0	*9999	*9999
400	*9999	63.7	86.2	*9999	*9999	62.0	*9999	*9999
500	*9999	63.5	86.5	*9999	*9999	61.8	*9999	*9999
600	*9999	63.4	86.5	*9999	*9999	61.6	*9999	*9999
700	*9999	63.3	86.4	*9999	*9999	61.2	*9999	*9999
800	*9999	63.3	86.1	*9999	*9999	61.0	*9999	*9999
900	*9999	63.3	86.5	*9999	*9999	60.6	*9999	*9999
1000	*9999	63.3	87.4	*9999	*9999	60.7	*9999	9999
1100	*9999	63.3	87.0	*9999	*9999	61.0	*9999	*9999
1200	*9999	63.4	87.5	*9999	*9999	61.2	*9999	*9999
1300	*9999	63.9	88.5	*9999	*9999	61.3	*9999	*9999
1400	*9999	63.8	88.5	*9999	*9999	61.3	*9999	*9999
1500	*9999	64.3	88.0	*9999	*9999	61.5	*9999	*9999
1600	*9999	64.2	87.4	*9999	*9999	61.6	*9999	*9999
1700	*9999	64.5	87.0	*9999	*9999	61.6	*9999	*9999
1800	*9999	64.8	87.0	*9999	*9999	61.8	*9999	*9999
1900	*9999	64.8	87.0	*9999	*9999	62.0	*9999	*9999
2000	*9999	64.8	87.0	*9999	*9999	62.3	*9999	*9999
2100	*9999	64.8	87.0	105.3	*9999	62.3	*9999	*9999
2200	*9999	64.9	87.3	105.0	*9999	62.9	*9999	*9999
2300	*9999	65.0	87.4	102.6	*9999	63.1	*9999	*9999
2400	*9999	64.2	87.7	100.3	59.7	64.0	63.0	*9999

TABLE 100. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 11, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	63.4	87.1	98.5	59.4	63.8	62.9	*9999
200	*9999	64.6	87.0	95.0	59.2	63.5	62.3	*9999
300	*9999	64.0	86.9	92.6	59.5	63.2	62.4	*9999
400	*9999	63.3	85.3	92.1	59.3	63.0	62.1	*9999
500	*9999	63.1	83.7	87.9	60.5	64.0	61.9	*9999
600	*9999	63.4	81.5	86.0	60.7	63.5	61.9	*9999
700	*9999	63.8	79.1	83.9	60.9	63.2	61.9	*9999
800	*9999	63.5	77.6	81.5	61.3	63.0	62.0	*9999
900	*9999	63.3	76.2	81.1	61.9	62.9	62.3	*9999
1000	63.1	63.1	74.8	79.3	62.3	62.5	62.4	*9999
1100	*9999	63.1	74.7	78.4	62.8	62.5	62.2	*9999
1200	*9999	63.5	74.3	79.5	62.9	62.9	62.5	*9999
1300	62.1	63.2	73.6	79.0	62.9	62.7	62.6	*9999
1400	*9999	63.0	73.3	78.0	62.6	62.5	63.5	*9999
1500	62.2	63.0	72.4	81.4	62.6	62.4	63.4	*9999
1600	*9999	63.0	72.0	82.1	62.8	62.1	63.4	*9999
1700	*9999	62.7	71.1	81.6	62.7	62.0	63.3	*9999
1800	*9999	62.6	71.0	81.3	63.0	61.8	63.3	*9999
1900	*9999	62.5	70.9	[illegible]	63.0	61.6	63.2	*9999
2000	*9999	62.3	72.1	81.7	63.0	61.5	63.1	*9999
2100	*9999	62.0	72.3	82.9	63.0	61.5	63.0	*9999
2200	*9999	61.9	72.1	80.0	63.0	61.3	63.1	*9999
2300	*9999	61.5	71.8	77.0	62.8	61.2	63.1	*9999
2400	*9999	61.3	71.9	76.6	62.9	61.1	63.0	*9999

TABLE 101. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 12, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	61.1	72.3	76.9	62.9	61.1	63.0	*9999
200	*9999	60.9	72.5	77.5	62.5	60.9	62.9	*9999
300	*9999	62.5	71.7	93.0	62.4	61.0	62.8	*9999
400	*9999	61.5	70.0	92.3	62.5	60.7	62.7	*9999
500	*9999	61.0	69.0	89.9	62.9	60.5	62.5	*9999
600	*9999	61.0	67.7	88.5	63.0	60.3	62.4	*9999
700	*9999	60.4	67.1	87.5	63.0	60.1	62.3	*9999
800	*9999	59.8	66.6	87.0	63.0	60.0	62.3	*9999
900	*9999	59.9	66.5	86.5	63.0	60.0	62.0	*9999
1000	*9999	59.5	70.4	87.0	63.1	60.0	61.3	*9999
1100	*9999	60.0	72.5	95.7	63.0	60.0	61.8	*9999
1200	*9999	60.3	73.1	92.7	63.1	60.1	61.9	*9999
1300	*9999	60.5	72.9	93.2	63.1	60.1	61.9	*9999
1400	*9999	60.7	73.5	93.5	63.2	60.2	61.9	*9999
1500	*9999	61.2	[illegible]	93.9	63.1	60.2	61.9	*9999
1600	*9999	61.5	[illegible]	93.7	63.0	60.5	62.0	*9999
1700	*9999	61.9	74.0	94.4	63.0	60.4	62.0	*9999
1800	*9999	61.9	75.2	95.0	63.1	60.5	62.0	*9999
1900	*9999	62.0	75.5	96.9	63.1	60.5	62.0	*9999
2000	*9999	62.0	75.6	96.6	63.1	60.6	62.6	*9999
2100	*9999	61.2	75.5	78.6	63.0	61.0	62.9	*9999
2200	*9999	60.7	76.2	79.9	62.9	61.1	63.1	*9999
2300	*9999	60.6	77.6	78.2	62.7	61.4	63.0	*9999
2400	*9999	60.6	78.9	77.2	62.8	61.5	63.1	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 053

POOR ORIGINAL

TABLE 102. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 13, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	59.7	79.0	78.5	62.7	61.6	63.4	*9999
200	*9999	60.9	72.5	72.9	62.6	61.6	63.0	*9999
300	*9999	60.9	72.5	71.5	62.6	61.6	62.6	*9999
400	*9999	61.0	71.9	70.5	62.6	61.6	62.1	*9999
500	*9999	60.9	71.6	70.3	62.6	61.3	62.0	*9999
600	*9999	61.0	72.0	70.5	62.6	61.1	62.0	*9999
700	*9999	61.0	69.9	69.5	62.6	60.9	61.9	*9999
800	*9999	60.9	69.2	68.0	62.6	60.6	61.5	*9999
900	*9999	60.7	68.6	67.5	62.5	60.5	61.4	*9999
1000	*9999	60.9	69.1	68.5	62.6	60.5	61.3	*9999
1100	*9999	60.9	69.5	70.3	62.6	60.5	61.3	*9999
1200	*9999	61.1	69.4	72.5	62.5	60.5	61.1	*9999
1300	*9999	61.4	69.4	75.5	62.5	60.5	61.0	*9999
1400	*9999	61.5	69.4	75.7	62.5	60.5	60.9	*9999
1500	*9999	61.5	69.8	73.6	62.4	60.5	60.6	*9999
1600	*9999	61.5	71.0	74.0	62.4	60.5	60.6	*9999
1700	*9999	61.6	70.3	75.0	62.4	60.5	60.5	*9999
1800	*9999	60.9	71.6	76.0	62.3	60.3	60.4	*9999
1900	*9999	61.3	71.6	76.5	62.5	60.5	60.4	*9999
2000	*9999	61.5	70.7	76.0	62.4	60.5	60.5	*9999
2100	*9999	61.0	70.6	76.1	62.4	60.6	60.6	*9999
2200	*9999	60.9	70.4	76.5	62.3	60.7	60.6	*9999
2300	*9999	61.0	71.1	76.4	62.4	60.9	60.6	*9999
2400	*9999	61.0	71.5	77.1	62.4	61.0	60.6	*9999

TABLE 103. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 14, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	61.0	71.2	77.0	62.4	61.0	60.5	*9999
200	*9999	61.0	71.0	76.9	62.3	61.0	60.6	*9999
300	*9999	61.0	71.3	77.0	62.3	61.0	60.6	*9999
400	*9999	61.0	71.2	78.0	62.5	60.7	60.6	*9999
500	*9999	61.0	71.2	77.1	62.3	60.7	60.6	*9999
600	*9999	61.0	71.5	77.6	62.4	60.6	60.8	*9999
700	*9999	60.8	71.2	77.6	62.4	60.4	60.6	*9999
800	*9999	60.6	71.0	77.5	61.9	60.5	61.0	*9999
900	*9999	60.5	72.0	79.5	62.3	60.3	61.3	*9999
1000	*9999	60.5	72.1	80.0	62.1	60.0	61.2	*9999
1100	*9999	60.5	72.4	80.5	62.3	60.1	61.4	*9999
1200	*9999	60.4	72.4	81.4	61.3	60.1	61.3	*9999
1300	*9999	60.5	72.3	84.0	62.5	60.1	61.5	*9999
1400	*9999	60.9	74.5	87.6	62.4	60.3	62.2	*9999
1500	*9999	60.9	75.5	89.6	62.5	60.2	62.1	*9999
1600	*9999	60.8	74.6	89.5	61.5	60.4	62.9	*9999
1700	*9999	59.9	74.7	89.6	61.4	60.7	62.1	*9999
1800	*9999	60.0	76.0	90.3	61.9	60.4	62.3	*9999
1900	*9999	60.5	77.5	91.2	62.4	60.4	62.3	*9999
2000	*9999	60.7	78.6	93.0	62.5	60.5	62.4	*9999
2100	*9999	60.5	78.5	94.5	62.3	60.5	61.9	*9999
2200	*9999	60.5	78.5	95.4	62.4	60.5	61.9	*9999
2300	*9999	60.5	78.6	95.5	62.4	60.5	61.6	*9999
2400	*9999	60.5	79.0	95.5	62.5	60.5	61.5	*9999

TABLE 104. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 15, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	60.4	79.5	95.6	62.5	60.4	61.5	*9999
200	*9999	60.4	79.3	96.2	62.5	60.2	61.1	*9999
300	*9999	60.3	80.0	97.0	62.5	60.0	61.0	*9999
400	*9999	59.8	79.9	96.9	62.2	59.9	60.6	*9999
500	*9999	59.7	79.5	96.4	62.4	59.7	60.7	*9999
600	*9999	59.6	79.3	96.3	62.3	59.5	60.4	*9999
700	*9999	59.5	79.1	95.7	62.4	59.4	60.1	*9999
800	*9999	59.1	79.1	95.6	62.2	59.2	60.0	*9999
900	*9999	59.2	79.2	96.7	62.3	59.2	59.6	*9999
1000	*9999	59.2	79.9	98.0	62.3	59.2	59.7	*9999
1100	*9999	59.2	80.1	93.5	62.3	59.3	59.8	*9999
1200	*9999	59.5	80.5	90.0	62.4	59.5	60.0	*9999
1300	*9999	59.9	81.3	86.9	62.4	59.5	60.4	*9999
1400	*9999	60.0	81.7	87.2	62.3	59.7	60.3	*9999
1500	*9999	60.2	82.4	88.0	62.3	59.9	60.3	*9999
1600	*9999	60.5	81.0	88.0	62.3	59.9	60.5	*9999
1700	*9999	60.6	78.9	89.6	62.3	60.0	60.5	*9999
1800	*9999	61.0	77.2	90.5	62.3	60.1	60.6	*9999
1900	*9999	61.0	77.0	90.4	62.2	60.2	60.6	*9999
2000	*9999	60.5	77.8	91.6	62.2	60.5	60.6	*9999
2100	*9999	60.5	77.5	91.4	62.1	60.6	61.0	*9999
2200	*9999	60.6	77.7	93.0	62.1	60.9	60.9	*9999
2300	*9999	60.8	77.7	93.7	62.2	61.0	61.0	*9999
2400	*9999	60.7	78.0	94.4	62.1	61.1	60.8	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

TABLE 105. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 16, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	61.0	78.7	95.6	62.1	61.4	60.9	*9999
200	*9999	61.2	78.5	96.2	62.0	61.5	60.6	*9999
300	*9999	61.2	78.9	96.5	62.0	61.4	60.6	*9999
400	*9999	61.0	79.3	97.0	62.2	61.4	60.6	*9999
500	*9999	61.0	79.5	97.5	62.1	61.2	60.3	*9999
600	*9999	61.0	79.9	98.2	62.2	61.0	60.3	*9999
700	*9999	61.0	80.0	98.5	62.2	60.6	60.0	*9999
800	*9999	60.9	80.5	98.6	62.2	60.5	60.0	*9999
900	*9999	61.0	80.7	99.0	62.2	60.5	59.6	*9999
1000	*9999	61.1	82.0	99.6	62.1	60.5	59.4	*9999
1100	*9999	61.5	82.6	100.5	62.3	60.5	59.5	*9999
1200	*9999	61.6	84.0	101.2	62.4	60.5	59.6	*9999
1300	*9999	61.7	84.1	102.0	62.4	60.5	59.5	*9999
1400	*9999	61.5	84.7	102.5	62.4	60.5	60.2	*9999
1500	*9999	62.0	84.5	103.5	62.5	60.7	60.6	*9999
1600	*9999	62.1	84.8	103.4	62.4	60.9	60.7	*9999
1700	*9999	62.3	85.0	107.0	62.4	61.0	60.7	*9999
1800	*9999	62.2	84.8	105.6	62.4	61.0	61.0	*9999
1900	*9999	62.2	84.5	105.5	62.4	61.1	61.1	*9999
2000	*9999	62.1	84.3	102.7	62.4	61.2	61.5	*9999
2100	*9999	62.0	84.4	101.5	62.4	61.5	61.7	*9999
2200	*9999	62.1	84.5	101.5	62.3	61.6	61.7	*9999
2300	*9999	62.2	84.3	99.5	62.4	61.7	61.7	*9999
2400	*9999	62.3	83.7	97.1	62.3	62.1	62.0	*9999

1079 054

TABLE 106. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 17, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	*9999	62.4	83.1	96.7	62.3	62.1	62.1	*9999
200	*9999	62.5	82.0	95.7	62.2	62.1	61.9	*9999
300	*9999	62.5	82.2	95.5	62.3	62.5	61.6	*9999
400	*9999	62.5	81.4	95.1	62.3	62.9	61.4	*9999
500	*9999	62.3	80.3	95.5	62.2	62.9	61.1	*9999
600	*9999	62.2	79.9	94.3	62.1	62.9	61.9	*9999
700	*9999	62.0	79.5	94.2	62.7	62.9	61.9	*9999
800	*9999	61.9	79.2	93.6	62.7	62.7	61.6	*9999
900	*9999	61.7	79.1	93.5	62.7	62.5	61.8	*9999
1000	*9999	61.7	79.1	93.4	62.8	62.4	62.0	*9999
1100	*9999	62.0	79.5	93.5	62.7	62.4	62.1	*9999
1200	*9999	62.1	79.8	94.0	62.7	62.4	62.3	*9999
1300	*9999	62.3	80.5	95.5	62.6	62.5	62.5	*9999
1400	*9999	62.5	81.0	96.3	62.7	62.8	62.6	*9999
1500	*9999	63.0	81.2	97.0	62.9	62.9	62.8	*9999
1600	*9999	63.0	81.3	95.1	[illegible]	63.0	62.7	*9999
1700	*9999	63.0	81.5	97.0	63.0	[illegible]	62.7	*9999
1800	*9999	63.0	82.3	98.1	63.0	63.0	63.0	*9999
1900	*9999	63.0	82.9	99.0	63.0	63.1	63.0	*9999
2000	*9999	63.0	83.0	99.1	63.0	63.1	63.2	*9999
2100	*9999	62.9	83.2	99.3	63.0	63.2	63.4	*9999
2200	*9999	63.0	84.0	99.7	63.0	63.5	63.6	*9999
2300	*9999	63.0	84.2	100.0	63.0	63.7	63.9	*9999
2400	*9999	63.2	84.5	100.6	63.1	64.2	64.0	*9999

TABLE 107. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 18, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	*9999	[illegible]	[illegible]	[illegible]	63.1	64.2	[illegible]	*9999
200	*9999	63.5	83.6	99.9	63.0	64.0	63.6	*9999
300	*9999	63.6	83.7	100.3	63.1	63.9	63.5	*9999
400	*9999	63.7	84.0	100.3	63.1	64.0	63.4	*9999
500	*9999	63.7	83.7	100.5	63.1	64.0	63.2	*9999
600	*9999	63.6	84.0	100.5	63.0	64.0	63.1	*9999
700	*9999	63.5	84.0	100.5	63.1	63.9	63.1	*9999
800	*9999	63.5	84.4	100.6	63.1	63.0	63.0	*9999
900	*9999	63.6	84.2	101.0	63.1	63.6	63.1	*9999
1000	*9999	63.7	84.7	102.4	63.1	63.8	63.3	*9999
1100	*9999	64.0	85.6	102.5	63.1	64.0	63.3	*9999
1200	*9999	64.2	86.6	104.5	63.1	64.1	63.4	*9999
1300	*9999	64.5	87.2	105.5	63.1	64.4	63.5	*9999
1400	*9999	64.8	87.1	106.1	63.2	64.5	63.5	*9999
1500	*9999	65.0	87.0	106.5	63.2	64.5	63.5	*9999
1600	*9999	65.0	87.2	105.8	63.2	64.7	63.5	*9999
1700	65.1	65.1	87.0	106.5	63.2	64.8	63.4	*9999
1800	65.5	65.2	88.0	106.5	63.2	64.9	63.6	*9999
1900	65.5	65.3	87.5	106.1	63.1	65.2	63.8	*9999
2000	65.7	65.3	87.7	105.4	63.1	*9999	63.9	*9999
2100	65.7	65.3	86.0	106.0	63.2	65.4	64.0	*9999
2200	66.0	65.3	86.0	105.5	63.2	65.5	64.0	*9999
2300	66.1	65.4	85.9	106.0	63.2	65.9	64.2	*9999
2400	66.5	65.5	85.9	106.2	63.2	66.0	64.5	*9999

TABLE 108. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 19, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	66.5	65.8	85.9	106.4	63.2	66.1	64.3	*9999
200	65.4	65.9	85.5	106.1	63.2	65.9	64.3	*9999
300	66.5	66.0	85.5	106.0	63.2	66.0	64.4	*9999
400	66.7	66.0	85.4	105.9	63.3	65.8	64.3	*9999
500	65.6	65.5	85.3	105.5	63.1	64.1	64.0	*9999
600	*9999	65.5	85.0	105.5	63.1	63.9	64.0	*9999
700	65.0	65.5	85.2	105.2	63.3	65.0	64.1	*9999
800	65.0	65.5	84.5	104.9	63.2	64.0	64.1	*9999
900	65.0	65.5	84.0	104.4	63.3	64.5	64.1	*9999
1000	65.0	65.5	84.0	103.7	63.4	64.4	64.1	*9999
1100	65.4	65.6	84.0	103.6	63.3	65.1	64.4	*9999
1200	65.7	66.0	84.2	103.8	63.4	65.4	64.5	*9999
1300	65.0	66.4	84.7	104.3	63.4	65.5	64.5	*9999
1400	65.4	66.5	85.2	104.7	63.5	65.6	64.5	*9999
1500	65.5	66.7	85.2	*9999	63.5	65.7	64.5	*9999
1600	65.9	67.0	85.2	*9999	63.5	66.0	64.5	*9999
1700	65.0	67.3	85.5	*9999	63.5	65.8	64.3	*9999
1800	65.1	67.2	85.4	*9999	63.5	66.0	64.3	*9999
1900	65.1	67.3	85.5	*9999	63.5	66.3	64.4	*9999
2000	65.1	67.3	85.2	*9999	63.5	65.5	64.5	*9999
2100	65.4	67.0	85.0	*9999	63.5	66.2	64.9	*9999
2200	65.1	67.0	84.9	*9999	63.5	66.5	65.4	*9999
2300	64.5	67.0	84.5	*9999	63.5	67.0	65.6	*9999
2400	65.2	67.0	84.5	*9999	63.5	66.9	65.6	*9999

TABLE 109. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 20, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	65.0	67.0	84.5	*9999	63.5	67.0	65.5	*9999
200	65.5	67.2	84.4	*9999	63.5	67.1	65.5	*9999
300	65.5	67.2	84.1	*9999	63.5	66.5	65.5	*9999
400	65.1	67.2	83.9	*9999	63.4	66.8	65.5	*9999
500	65.2	67.0	83.4	*9999	63.4	66.5	65.5	*9999
600	65.0	67.0	82.0	*9999	63.4	66.5	65.2	*9999
700	64.8	67.0	81.5	*9999	63.4	66.5	65.1	*9999
800	65.0	67.0	81.5	*9999	63.5	66.4	65.1	*9999
900	65.3	67.0	81.4	*9999	63.5	65.9	65.0	*9999
1000	64.5	67.0	80.0	9999	63.5	66.0	65.0	*9999
1100	64.6	67.1	80.5	*9999	63.5	66.1	65.0	*9999
1200	64.9	67.4	81.2	*9999	63.5	65.4	65.0	*9999
1300	65.4	67.5	82.0	*9999	63.5	65.5	65.0	*9999
1400	65.6	67.5	83.0	*9999	63.5	66.6	65.0	*9999
1500	65.8	68.0	82.6	*9999	63.9	66.7	65.2	*9999
1600	65.3	68.0	83.0	*9999	64.0	66.8	65.1	*9999
1700	65.4	68.1	83.5	*9999	64.0	66.8	65.0	*9999
1800	65.3	68.0	83.0	*9999	64.1	66.9	65.2	*9999
1900	65.3	68.0	83.1	*9999	64.0	67.0	65.3	*9999
2000	65.3	67.8	82.6	*9999	64.0	67.0	65.4	*9999
2100	65.3	67.5	82.3	*9999	64.0	67.1	65.5	*9999
2200	65.2	67.5	82.0	*9999	64.0	67.1	65.6	*9999
2300	65.3	67.5	82.2	*9999	64.0	67.2	65.6	*9999
2400	65.3	67.3	81.8	*9999	64.0	67.3	65.7	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 055

TABLE 110. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 21, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	65.0	67.3	81.5	*9999	64.0	67.3	65.6	*9999
200	65.0	67.2	81.0	*9999	64.0	67.2	65.5	*9999
300	64.9	67.1	81.0	*9999	64.1	67.0	65.4	*9999
400	64.8	67.0	80.7	*9999	64.2	66.9	65.0	*9999
500	64.5	67.0	80.5	*9999	64.2	66.5	64.9	*9999
600	64.1	66.7	80.0	*9999	64.2	66.3	64.7	*9999
700	63.7	66.5	79.3	*9999	64.2	66.0	64.3	*9999
800	63.7	66.2	79.6	*9999	64.2	65.7	63.9	*9999
900	63.3	66.0	80.0	*9999	64.3	65.4	63.2	*9999
1000	63.0	66.0	80.2	*9999	64.3	65.1	63.3	*9999
1100	63.0	66.0	80.6	*9999	[illegible]	65.0	63.0	*9999
1200	63.0	66.0	81.5	*9999	64.4	65.0	63.3	*9999
1300	63.0	66.0	82.4	*9999	64.5	65.0	63.6	*9999
1400	62.9	66.0	83.0	*9999	64.5	65.0	63.9	*9999
1500	63.3	66.3	83.0	*9999	64.5	65.0	63.6	*9999
1600	63.4	66.4	83.1	*9999	64.5	65.1	63.7	*9999
1700	63.8	66.5	83.4	*9999	64.5	65.3	63.5	*9999
1800	63.9	66.5	83.8	*9999	64.5	65.5	63.7	*9999
1900	64.2	66.4	83.6	*9999	64.5	65.5	64.0	*9999
2000	64.3	66.3	83.5	*9999	64.5	65.8	64.5	*9999
2100	64.3	66.2	83.0	*9999	64.4	66.0	64.5	*9999
2200	64.8	66.0	82.5	*9999	64.4	66.2	64.5	*9999
2300	65.8	66.0	82.4	*9999	64.4	66.3	64.6	*9999
2400	65.8	66.1	81.9	*9999	64.4	66.5	64.7	*9999

TABLE 111. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 22, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	65.9	66.1	81.1	*9999	64.4	66.5	64.9	*9999
200	65.8	66.1	80.5	*9999	64.5	66.5	64.7	*9999
300	65.8	66.0	80.6	*9999	64.5	66.4	64.7	*9999
400	65.5	66.0	80.2	*9999	64.5	66.2	65.4	*9999
500	65.6	66.0	80.0	*9999	64.5	66.1	64.4	*9999
600	65.3	65.9	80.0	*9999	64.5	65.7	64.0	*9999
700	65.1	65.7	79.5	*9999	64.5	65.5	64.0	*9999
800	64.8	65.5	79.5	*9999	64.5	65.3	63.6	*9999
900	64.6	65.5	79.6	*9999	64.5	65.0	63.3	*9999
1000	64.6	65.4	79.7	*9999	64.5	65.0	62.7	*9999
1100	64.6	65.3	81.2	*9999	64.5	64.8	63.5	*9999
1200	65.0	65.5	82.2	*9999	64.5	64.8	62.7	*9999
1300	64.6	65.7	83.0	*9999	64.5	64.7	62.7	*9999
1400	65.0	66.0	84.0	*9999	64.8	65.0	62.9	*9999
1500	65.0	66.1	[illegible]	*9999	64.8	65.0	63.0	*9999
1600	65.4	66.1	[illegible]	*9999	64.8	65.2	63.7	*9999
1700	65.2	66.2	[illegible]	*9999	64.7	65.2	63.8	*9999
1800	65.5	65.9	84.0	*9999	64.7	65.3	63.9	*9999
1900	65.4	65.9	84.2	*9999	64.7	65.4	64.0	*9999
2000	65.3	65.9	84.4	*9999	64.7	65.4	63.4	*9999
2100	65.3	65.8	84.4	*9999	64.7	65.5	63.4	*9999
2200	65.3	65.5	84.2	*9999	64.7	65.5	64.5	*9999
2300	66.0	65.6	83.9	*9999	64.6	66.0	64.9	*9999
2400	66.0	65.9	83.9	*9999	64.7	66.1	64.9	*9999

TABLE 112. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 23, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	65.9	65.8	84.1	*9999	64.7	66.1	64.9	*9999
200	66.0	66.0	83.5	*9999	64.6	66.0	64.9	*9999
300	65.8	66.0	83.6	*9999	64.5	66.0	64.6	*9999
400	65.4	65.8	83.4	*9999	64.6	65.8	64.7	*9999
500	65.1	65.6	83.3	*9999	64.6	65.5	64.7	*9999
600	64.5	65.5	82.5	*9999	64.6	65.5	64.7	*9999
700	64.3	65.2	82.3	*9999	64.6	65.2	64.5	*9999
800	64.0	65.0	82.3	*9999	64.5	65.0	64.5	*9999
900	63.5	64.7	81.5	*9999	64.7	64.8	64.2	*9999
1000	63.6	64.7	82.0	*9999	64.7	64.7	64.0	*9999
1100	63.3	64.5	81.8	*9999	64.6	64.5	64.1	*9999
1200	63.3	64.5	81.7	*9999	64.0	64.5	64.0	*9999
1300	63.2	64.6	81.6	*9999	63.8	64.5	64.1	*9999
1400	63.0	64.7	82.0	*9999	63.8	64.3	64.0	*9999
1500	62.8	64.5	81.9	*9999	63.8	64.2	63.7	*9999
1600	63.0	64.2	81.4	*9999	63.8	64.0	63.7	*9999
1700	62.6	63.8	80.4	*9999	63.8	63.8	63.9	*9999
1800	62.6	63.5	80.2	*9999	63.8	63.9	63.5	*9999
1900	62.5	63.5	80.0	*9999	63.4	63.7	63.4	*9999
2000	62.5	63.2	80.0	*9999	63.4	63.5	63.4	*9999
2100	62.1	63.0	79.5	*9999	63.0	63.5	63.5	*9999
2200	62.0	62.9	79.6	*9999	62.5	63.5	63.5	*9999
2300	62.0	62.5	79.2	*9999	62.5	63.5	63.5	*9999
2400	62.0	62.4	79.0	*9999	62.5	63.4	63.6	*9999

TABLE 113. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, MAY 24, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	[illegible]	62.2	[illegible]	*9999	62.2	63.1	63.6	*9999
200	62.0	62.0	78.7	*9999	62.2	63.0	63.5	*9999
300	61.6	61.5	78.8	*9999	62.3	62.7	63.5	*9999
400	61.2	61.5	78.2	*9999	61.1	62.5	63.0	*9999
500	61.2	61.2	78.5	*9999	61.2	62.3	62.9	*9999
600	61.2	61.7	78.6	*9999	61.2	62.0	62.9	*9999
700	61.5	61.4	78.1	*9999	61.2	61.6	62.9	*9999
800	61.7	61.2	78.3	*9999	61.2	61.5	62.9	*9999
900	61.8	61.0	78.1	*9999	61.2	61.5	62.8	*9999
1000	61.6	61.0	79.0	*9999	61.1	61.5	62.6	*9999
1100	61.1	61.0	80.0	*9999	61.0	61.5	62.4	*9999
1200	61.2	61.1	80.2	*9999	61.0	61.5	62.4	*9999
1300	60.8	61.2	80.6	*9999	61.0	61.5	62.2	*9999
1400	60.5	61.2	80.5	*9999	61.0	60.7	61.7	*9999
1500	60.6	61.3	80.6	*9999	61.0	60.7	61.0	*9999
1600	60.5	61.3	80.0	*9999	60.9	60.6	60.5	*9999
1700	60.4	61.3	79.9	*9999	61.0	60.9	60.5	*9999
1800	60.1	61.5	80.4	*9999	60.9	61.0	60.6	*9999
1900	60.0	61.3	75.2	*9999	60.9	60.9	60.6	*9999
2000	60.0	61.2	73.6	*9999	60.9	61.0	60.6	*9999
2100	60.0	61.0	72.7	*9999	60.9	61.0	60.8	*9999
2200	60.1	61.2	71.6	*9999	61.0	61.3	61.0	*9999
2300	60.1	61.3	70.2	*9999	61.1	61.5	61.0	*9999
2400	60.5	61.4	68.7	*9999	61.0	61.6	61.0	*9999

*9999 OR 9.99 -- INSTRUMENT MALFUNCTION

1079 056

TABLE 114. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 25, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	60.1	61.3	67.5	*9999	61.0	61.9	60.8	*9999
200	60.0	61.5	67.4	*9999	61.1	61.8	61.0	*9999
300	60.6	61.7	65.8	*9999	61.1	61.6	60.7	*9999
400	60.0	61.5	66.0	*9999	61.1	61.6	60.6	*9999
500	59.7	61.3	65.5	*9999	61.1	61.3	60.5	*9999
600	59.5	61.1	64.0	*9999	61.2	61.2	60.1	*9999
700	59.2	61.0	63.5	*9999	61.1	61.0	60.5	*9999
800	59.0	61.0	64.3	*9999	61.3	60.9	60.5	*9999
900	59.0	60.9	64.5	*9999	61.2	60.7	60.3	*9999
1000	58.7	60.9	64.0	*9999	61.0	60.6	60.1	*9999
1100	58.8	60.7	63.7	*9999	61.0	60.5	60.2	*9999
1200	58.9	60.9	63.6	*9999	61.0	60.5	59.8	*9999
1300	58.9	61.0	63.5	*9999	60.8	60.5	59.7	*9999
1400	59.0	61.4	63.3	*9999	60.6	60.5	59.5	*9999
1500	59.0	61.5	64.0	*9999	60.7	60.6	59.5	*9999
1600	59.3	61.7	68.2	*9999	60.7	60.7	59.5	*9999
1700	59.4	61.8	68.5	*9999	60.7	60.7	59.5	*9999
1800	59.6	62.0	68.6	*9999	60.6	60.8	59.1	*9999
1900	59.4	62.0	68.5	*9999	60.6	60.8	59.4	*9999
2000	60.0	61.8	68.4	*9999	60.6	61.0	59.4	*9999
2100	60.0	61.6	68.0	*9999	60.6	61.1	59.4	*9999
2200	60.3	61.7	68.0	*9999	60.7	61.5	59.3	*9999
2300	60.6	61.7	68.1	*9999	60.6	61.6	59.0	*9999
2400	60.6	62.0	69.0	*9999	60.9	62.0	59.5	*9999

TABLE 115. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 26, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	61.0	62.7	69.1	*9999	61.0	62.1	59.6	*9999
200	61.3	62.5	69.3	*9999	61.0	62.2	59.8	*9999
300	61.3	62.5	69.3	*9999	61.0	62.4	59.5	*9999
400	61.0	62.5	69.0	*9999	61.0	62.3	59.5	*9999
500	60.9	62.5	68.9	*9999	61.0	62.0	59.4	*9999
600	60.5	62.5	68.7	*9999	61.0	61.9	59.4	*9999
700	60.5	62.5	68.8	*9999	61.0	61.6	59.2	*9999
800	60.0	62.3	69.3	*9999	61.0	61.5	59.0	*9999
900	59.5	62.1	69.5	*9999	61.0	61.4	59.4	*9999
1000	59.3	61.9	70.0	*9999	61.0	61.1	59.0	*9999
1100	58.9	61.5	71.2	*9999	60.9	61.0	59.0	*9999
1200	58.8	61.7	72.5	*9999	60.9	61.0	58.8	*9999
1300	58.5	61.5	73.0	*9999	60.9	60.9	59.0	*9999
1400	58.6	61.5	68.2	*9999	60.9	60.9	58.9	*9999
1500	58.6	61.3	67.9	*9999	60.8	60.7	59.0	*9999
1600	58.8	61.2	68.5	*9999	60.8	60.7	59.0	*9999
1700	58.6	61.0	68.7	*9999	60.8	60.6	59.0	*9999
1800	59.0	61.1	68.9	*9999	60.9	60.8	59.5	*9999
1900	58.5	61.0	68.6	*9999	60.7	60.6	59.7	*9999
2000	58.6	60.9	67.4	*9999	60.6	60.6	59.7	*9999
2100	58.5	60.5	67.5	*9999	60.6	60.5	59.5	*9999
2200	58.4	60.5	67.5	*9999	60.5	60.4	59.5	*9999
2300	58.2	60.4	67.5	*9999	60.5	60.4	59.5	*9999
2400	58.0	60.2	68.0	*9999	60.5	60.2	59.5	*9999

TABLE 116. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 27, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	58.0	60.7	67.3	*9999	60.4	60.0	59.6	*9999
200	57.5	59.8	66.5	*9999	60.4	60.0	59.4	*9999
300	57.5	59.8	67.0	*9999	60.3	59.9	59.5	*9999
400	57.3	59.5	67.0	*9999	60.4	59.9	59.5	*9999
500	57.4	59.5	67.0	*9999	60.4	59.9	59.3	*9999
600	57.0	59.4	65.6	*9999	60.4	59.7	59.3	*9999
700	57.2	59.1	66.3	*9999	60.2	59.6	59.5	*9999
800	57.3	59.1	66.5	*9999	60.1	59.5	59.1	*9999
900	57.3	59.1	66.5	*9999	60.1	59.5	59.1	*9999
1000	57.5	59.3	67.1	*9999	60.2	59.6	59.0	*9999
1100	57.6	59.5	67.7	*9999	60.3	59.8	59.1	*9999
1200	57.6	60.0	68.0	*9999	60.5	60.0	59.1	*9999
1300	58.1	60.3	69.0	*9999	60.5	60.1	59.0	*9999
1400	58.4	60.6	69.5	*9999	60.5	60.3	59.0	*9999
1500	58.9	61.0	69.8	*9999	60.6	60.5	59.5	*9999
1600	59.0	61.4	70.5	*9999	60.6	60.6	59.9	*9999
1700	59.2	61.5	71.3	*9999	60.6	60.7	60.0	*9999
1800	59.8	61.8	70.5	*9999	60.6	60.8	60.1	*9999
1900	59.8	61.8	70.3	*9999	60.5	61.1	60.0	*9999
2000	60.0	61.5	70.5	*9999	60.6	61.4	61.0	*9999
2100	60.5	61.6	71.0	*9999	60.8	61.6	61.5	*9999
2200	61.0	62.0	71.2	*9999	60.9	62.0	61.7	*9999
2300	61.6	62.1	71.0	*9999	61.0	62.5	62.0	*9999
2400	61.6	62.5	71.0	*9999	61.0	62.5	62.1	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

TABLE 117. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 28, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	61.8	62.6	71.0	*9999	61.4	62.9	62.4	*9999
200	61.5	62.9	71.0	*9999	61.4	63.0	62.4	*9999
300	62.0	63.0	71.5	*9999	61.4	63.0	62.4	*9999
400	62.0	63.2	72.0	*9999	61.3	62.9	62.6	*9999
500	61.9	63.2	72.6	*9999	61.3	62.7	62.1	*9999
600	61.6	63.2	73.2	*9999	61.3	62.4	62.0	*9999
700	61.5	63.1	73.5	*9999	61.5	62.4	62.0	*9999
800	61.5	63.1	73.7	*9999	61.9	62.1	62.0	*9999
900	61.2	63.1	74.3	*9999	61.9	62.0	61.8	*9999
1000	61.5	63.3	75.0	*9999	61.9	62.0	61.6	*9999
1100	61.1	63.5	76.0	*9999	61.9	62.3	61.5	*9999
1200	61.0	63.5	75.5	*9999	62.3	62.2	61.5	*9999
1300	61.2	[illegible]	77.0	*9999	62.9	62.3	61.5	*9999
1400	61.4	64.4	78.0	*9999	62.9	62.5	61.5	*9999
1500	61.5	64.5	78.6	*9999	62.9	62.7	61.6	*9999
1600	61.6	64.9	79.7	*9999	62.9	62.7	61.9	*9999
1700	62.0	65.0	80.9	*9999	62.9	62.9	61.8	*9999
1800	62.1	65.1	81.5	*9999	62.9	63.1	62.0	*9999
1900	62.1	65.2	81.7	*9999	62.9	63.1	62.1	*9999
2000	62.5	65.1	81.7	*9999	62.9	63.5	62.3	*9999
2100	62.5	65.0	82.0	*9999	63.3	63.5	62.5	*9999
2200	62.6	65.0	81.6	*9999	63.3	63.6	62.6	*9999
2300	62.9	65.1	81.6	*9999	63.6	64.0	62.5	*9999
2400	63.0	65.2	81.5	*9999	63.6	64.1	62.6	*9999

1079 057

TABLE 118. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 29, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	3	C	D
100	63.1	65.3	80.7	*9999	64.6	64.4	62.9	*9999
200	63.1	65.5	80.2	*9999	64.5	64.3	62.9	*9999
300	63.1	65.5	80.0	*9999	64.6	64.3	62.9	*9999
400	63.1	65.5	79.7	*9999	64.6	64.3	62.7	*9999
500	62.9	65.6	79.9	*9999	64.6	64.2	62.8	*9999
600	62.6	65.5	79.7	*9999	64.6	63.9	62.5	*9999
700	62.4	65.4	79.6	*9999	64.5	63.6	62.5	*9999
800	[illegible]	65.4	77.3	*9999	64.6	63.6	62.2	*9999
900	61.9	65.4	80.0	*9999	64.1	63.5	62.0	*9999
1000	61.6	65.3	80.9	*9999	64.1	63.5	62.2	*9999
1100	61.5	65.3	82.0	*9999	64.1	63.2	62.1	*9999
1200	61.3	65.1	82.1	*9999	64.3	63.1	62.0	*9999
1300	61.4	65.0	83.0	*9999	64.3	63.2	61.6	*9999
1400	61.4	65.2	84.0	*9999	64.3	63.2	61.9	*9999
1500	61.6	65.5	84.6	*9999	64.5	63.4	61.9	*9999
1600	62.5	65.7	84.6	*9999	64.5	63.5	62.0	*9999
1700	62.0	66.0	85.3	*9999	64.5	63.6	62.3	*9999
1800	62.3	66.3	85.0	*9999	64.5	64.0	62.8	*9999
1900	62.5	66.4	85.2	*9999	64.5	64.0	63.5	*9999
2000	62.5	66.4	85.5	*9999	65.0	64.0	63.0	*9999
2100	62.5	66.4	85.4	*9999	65.0	64.4	63.3	*9999
2200	62.6	66.4	85.4	*9999	65.0	64.5	63.5	*9999
2300	63.3	66.4	85.4	*9999	65.0	64.6	63.9	*9999
2400	63.4	66.5	85.5	*9999	65.0	64.9	64.0	*9999

TABLE 119. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 30, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	63.8	66.6	85.5	*9999	65.6	65.0	64.3	*9999
200	63.9	66.7	85.0	*9999	65.6	65.2	64.4	*9999
300	64.0	66.9	84.1	*9999	65.6	65.3	64.4	*9999
400	63.8	66.9	83.9	*9999	65.5	65.4	64.5	*9999
500	63.5	67.0	84.0	*9999	65.6	65.3	64.5	*9999
600	63.4	67.0	83.6	*9999	65.6	65.1	64.5	*9999
700	63.1	66.8	83.6	*9999	65.6	65.0	64.4	*9999
800	63.0	66.7	83.6	*9999	65.7	65.0	64.3	*9999
900	62.8	66.7	83.7	*9999	65.7	64.9	64.2	*9999
1000	63.0	66.0	84.0	*9999	65.7	64.6	64.2	*9999
1100	63.0	67.0	85.5	*9999	65.7	64.7	64.0	*9999
1200	63.4	67.4	86.5	*9999	65.7	65.0	64.2	*9999
1300	63.6	67.6	87.5	*9999	65.8	65.0	64.2	*9999
1400	64.0	68.0	88.3	*9999	65.9	65.2	64.4	*9999
1500	64.0	68.4	89.0	*9999	65.9	65.5	64.6	*9999
1600	64.3	68.5	89.3	*9999	65.9	65.5	64.5	*9999
1700	64.5	68.6	89.0	*9999	66.0	65.8	64.8	*9999
1800	64.5	69.0	89.4	*9999	66.0	65.9	64.9	*9999
1900	64.6	69.0	89.5	*9999	66.0	66.0	65.0	*9999
2000	64.9	69.0	89.7	*9999	66.0	66.1	65.3	*9999
2100	64.9	69.6	89.1	*9999	65.7	66.6	65.1	*9999
2200	65.0	68.8	88.5	*9999	66.0	66.5	65.4	*9999
2300	65.5	68.8	88.0	*9999	66.0	67.0	65.9	*9999
2400	65.6	69.0	87.7	*9999	66.0	67.5	66.0	*9999

TABLE 120. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, MAY 31, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	65.0	69.5	87.5	*9999	66.5	67.6	66.0	*9999
200	65.6	69.5	87.5	*9999	67.4	67.8	66.0	*9999
300	65.5	69.5	87.6	*9999	66.0	68.2	66.3	*9999
400	*9999	70.0	87.5	*9999	66.0	68.3	66.1	*9999
500	*9999	70.0	87.3	*9999	66.0	68.4	65.7	*9999
600	*9999	70.0	85.5	*9999	66.1	68.3	65.7	*9999
700	*9999	70.0	86.4	*9999	66.5	67.8	65.7	*9999
800	*9999	69.7	85.7	*9999	67.0	67.5	66.1	*9999
900	*9999	69.5	85.5	*9999	67.2	67.0	65.9	*9999
1000	68.2	69.5	86.0	*9999	67.4	66.9	65.9	*9999
1100	68.0	69.4	85.4	*9999	67.5	66.8	66.2	*9999
1200	66.0	69.4	86.6	*9999	67.5	66.9	66.0	*9999
1300	67.8	69.6	87.1	*9999	67.5	67.0	66.3	*9999
1400	68.0	69.5	87.3	*9999	67.5	67.0	65.3	*9999
1500	68.2	69.7	87.6	*9999	67.6	67.0	66.4	*9999
1600	68.4	69.9	88.2	*9999	67.7	67.4	66.4	*9999
1700	68.8	70.0	88.6	*9999	67.8	67.5	66.7	*9999
1800	68.9	70.0	88.3	*9999	67.8	67.5	66.7	*9999
1900	68.8	70.0	87.9	*9999	67.7	67.5	66.7	*9999
2000	68.8	69.9	87.5	*9999	67.7	67.6	66.7	*9999
2100	68.6	69.9	87.0	*9999	67.7	67.6	66.9	*9999
2200	68.6	69.7	86.7	*9999	67.6	67.6	66.8	*9999
2300	68.7	69.7	86.2	*9999	67.6	67.6	66.8	*9999
2400	68.5	69.5	85.5	*9999	67.6	67.5	66.9	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

POOR ORIGINAL

1079 058

TABLE 121. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 1. 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	68.3	69.6	85.2	*9999	67.7	67.6	67.0	*9999
200	68.3	69.4	84.9	*9999	67.9	67.9	67.2	*9999
300	66.6	69.3	84.2	*9999	67.8	67.7	67.3	*9999
400	68.3	69.3	83.5	*9999	67.0	67.5	67.3	*9999
500	68.3	69.5	83.1	*9999	67.0	67.5	66.9	*9999
600	68.3	69.5	82.9	*9999	67.7	67.3	66.8	*9999
700	67.4	69.0	82.5	*9999	67.7	67.3	66.8	*9999
800	67.3	68.9	82.2	*9999	67.6	67.6	66.8	*9999
900	67.4	68.5	82.5	*9999	67.5	67.6	66.7	*9999
1000	67.3	68.7	83.0	*9999	67.5	67.5	67.7	*9999
1100	67.2	69.0	83.5	*9999	67.5	67.6	67.7	*9999
1200	67.3	69.1	84.1	*9999	67.6	67.6	68.0	*9999
1300	67.4	69.5	85.0	*9999	67.6	67.6	68.0	*9999
1400	67.6	69.5	85.4	*9999	67.6	67.8	68.3	*9999
1500	67.6	69.0	85.5	*9999	67.5	67.7	68.4	*9999
1600	68.0	69.1	85.0	*9999	67.5	68.0	68.5	*9999
1700	68.0	69.3	86.2	*9999	67.6	68.0	68.6	*9999
1800	68.5	69.5	86.5	*9999	67.6	68.3	68.9	*9999
1900	68.5	69.5	85.5	*9999	67.7	68.2	69.0	*9999
2000	68.5	69.5	86.4	*9999	67.7	68.5	69.2	*9999
2100	68.5	69.5	86.4	*9999	67.7	68.4	69.1	*9999
2200	68.5	69.2	85.2	*9999	67.6	68.5	69.1	*9999
2300	68.9	69.3	85.3	*9999	67.6	68.6	69.4	*9999
2400	69.0	69.4	85.1	*9999	67.5	68.9	69.4	*9999

TABLE 122. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 2. 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	69.5	69.4	85.9	*9999	67.7	69.1	69.6	*9999
200	69.5	69.4	85.7	*9999	67.7	69.1	69.5	*9999
300	69.5	69.5	85.4	*9999	67.8	69.2	69.8	*9999
400	69.5	69.4	85.0	*9999	67.9	69.2	69.9	*9999
500	69.7	69.4	85.1	*9999	67.8	69.1	69.6	*9999
600	69.5	69.4	85.0	*9999	67.8	69.0	69.7	*9999
700	69.5	69.3	85.0	*9999	67.7	68.9	69.8	*9999
800	69.5	69.3	85.0	*9999	67.9	68.8	69.9	*9999
900	69.4	69.3	85.0	*9999	68.0	68.9	69.5	*9999
1000	69.4	69.5	84.6	*9999	68.0	68.6	69.4	*9999
1100	69.5	69.8	85.6	*9999	68.0	68.6	69.2	*9999
1200	69.3	70.2	86.4	*9999	68.1	68.7	69.2	*9999
1300	69.5	70.5	87.3	*9999	68.1	69.0	69.2	*9999
1400	70.0	71.0	88.4	*9999	68.1	69.0	69.1	*9999
1500	70.0	71.2	88.5	*9999	68.1	69.1	69.4	*9999
1600	70.4	71.3	88.0	*9999	68.1	69.1	69.4	*9999
1700	70.3	71.3	88.0	*9999	68.2	69.3	69.4	*9999
1800	70.4	71.3	87.7	*9999	68.2	69.0	69.5	*9999
1900	70.5	71.3	87.9	*9999	68.2	69.0	69.7	*9999
2000	70.3	71.3	87.4	*9999	68.2	69.1	70.0	*9999
2100	70.3	71.0	87.4	*9999	68.2	69.1	69.4	*9999
2200	70.3	70.5	87.4	*9999	68.2	69.2	70.4	*9999
2300	70.3	70.5	87.2	*9999	68.2	69.4	70.4	*9999
2400	70.8	70.5	87.0	*9999	68.2	69.9	69.0	*9999

TABLE 123. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 3. 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	71.1	70.5	85.5	*9999	68.5	70.1	69.0	*9999
200	71.5	70.3	86.4	*9999	68.5	70.4	69.0	*9999
300	71.6	71.0	85.0	*9999	68.5	70.2	69.1	*9999
400	71.2	71.1	85.6	*9999	68.5	70.1	69.6	*9999
500	70.9	71.0	85.0	*9999	68.6	70.1	69.6	*9999
600	70.8	71.1	85.9	*9999	68.6	70.0	69.5	*9999
700	70.5	71.1	85.5	*9999	68.7	70.0	69.6	*9999
800	70.4	71.0	84.9	*9999	68.7	69.7	69.6	*9999
900	70.3	71.0	85.0	*9999	68.8	69.5	69.6	*9999
1000	70.0	71.1	85.2	*9999	68.8	69.4	69.6	*9999
1100	70.5	71.5	85.3	*9999	68.9	69.6	69.9	*9999
1200	70.3	71.9	86.4	*9999	69.0	69.7	70.0	*9999
1300	70.5	72.4	87.4	*9999	69.5	69.9	70.1	*9999
1400	70.5	72.5	88.0	*9999	69.5	69.8	70.3	*9999
1500	71.4	72.7	88.5	*9999	69.5	70.0	70.4	*9999
1600	70.6	73.0	89.5	*9999	69.5	70.0	70.5	*9999
1700	70.9	73.0	88.8	*9999	69.5	70.0	70.6	*9999
1800	71.0	73.0	89.3	*9999	69.5	70.1	70.6	*9999
1900	71.1	73.0	89.9	*9999	69.5	70.0	70.6	*9999
2000	70.9	72.5	88.7	*9999	69.5	70.0	70.2	*9999
2100	70.5	72.2	88.8	*9999	69.5	70.0	70.1	*9999
2200	70.6	72.1	88.8	*9999	69.5	70.0	70.4	*9999
2300	70.5	71.9	88.5	*9999	69.4	70.1	70.4	*9999
2400	70.9	71.7	88.0	*9999	69.4	70.4	71.0	*9999

TABLE 124. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 4. 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	71.0	71.8	87.5	*9999	69.9	70.6	70.6	*9999
200	71.3	72.1	87.4	*9999	69.9	71.0	71.1	*9999
300	71.5	72.2	87.0	*9999	69.9	71.0	71.5	*9999
400	71.6	72.5	86.5	*9999	69.9	71.0	70.5	*9999
500	71.5	72.5	85.5	*9999	69.9	71.2	70.5	*9999
600	71.3	72.5	86.1	*9999	69.9	70.8	70.2	*9999
700	71.1	72.5	86.2	*9999	70.0	70.7	71.1	*9999
800	70.9	72.3	86.1	*9999	70.0	70.5	69.6	*9999
900	70.9	72.4	85.2	*9999	69.9	70.4	69.6	*9999
1000	70.6	72.1	86.7	*9999	69.9	70.2	69.3	*9999
1100	71.0	72.2	87.0	*9999	69.7	70.3	70.5	*9999
1200	70.6	72.5	87.2	*9999	69.9	70.2	68.5	*9999
1300	70.6	72.9	88.0	*9999	69.9	70.2	68.5	*9999
1400	70.6	72.9	87.7	*9999	69.9	70.5	68.5	*9999
1500	70.5	72.3	87.6	*9999	69.9	70.3	68.6	*9999
1600	70.4	72.5	87.1	*9999	69.9	70.1	68.8	*9999
1700	70.8	72.5	88.0	*9999	69.9	70.1	68.6	*9999
1800	70.5	72.5	88.3	*9999	70.0	70.0	68.7	*9999
1900	70.3	72.5	88.5	*9999	70.0	70.0	70.8	*9999
2000	70.3	72.5	88.0	*9999	70.0	69.9	69.1	*9999
2100	70.2	72.3	88.2	*9999	70.0	70.2	69.4	*9999
2200	70.1	72.1	88.5	*9999	70.0	70.0	69.3	*9999
2300	70.2	72.0	89.0	*9999	70.0	70.1	69.6	*9999
2400	70.4	72.0	89.0	*9999	70.0	70.4	69.7	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 059

POOR ORIGINAL

TABLE 125. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, JUNE 5, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	70.4	72.0	88.6	*9999	70.5	70.7	69.7	*9999
200	70.4	72.1	88.2	*9999	70.5	70.6	69.7	*9999
300	71.1	72.1	88.5	*9999	70.6	71.0	69.7	*9999
400	70.4	72.3	88.4	*9999	70.5	70.7	69.3	*9999
500	70.5	72.2	88.2	*9999	70.6	70.6	70.0	*9999
600	70.6	72.2	88.1	*9999	70.6	70.9	70.0	*9999
700	70.2	72.2	88.0	*9999	70.6	70.6	70.0	*9999
800	70.0	72.0	88.4	*9999	70.6	70.5	70.0	*9999
900	70.0	72.1	88.3	*9999	70.6	70.2	69.6	*9999
1000	70.0	72.3	88.5	*9999	70.6	70.4	69.6	*9999
1100	70.0	72.3	89.0	*9999	70.7	70.5	69.5	*9999
1200	70.0	72.5	89.4	*9999	70.3	70.5	69.6	*9999
1300	70.3	72.5	89.4	*9999	70.9	70.5	69.6	*9999
1400	70.1	72.9	89.7	*9999	71.0	70.6	69.6	*9999
1500	70.0	72.7	89.5	*9999	70.8	70.4	69.5	*9999
1600	70.0	73.0	90.0	*9999	70.5	70.5	69.5	*9999
1700	70.8	73.3	90.3	*9999	70.6	70.6	69.6	*9999
1800	70.8	73.4	90.0	*9999	70.5	70.8	69.7	*9999
1900	70.8	73.5	90.0	*9999	70.6	70.9	69.8	*9999
2000	70.4	73.3	89.8	*9999	70.6	70.8	69.8	*9999
2100	70.2	73.0	89.7	*9999	70.5	70.9	69.9	*9999
2200	70.1	72.7	89.5	*9999	70.6	70.6	70.0	*9999
2300	70.0	72.5	89.0	*9999	70.5	70.6	70.1	*9999
2400	70.0	72.5	88.6	*9999	70.5	70.6	70.1	*9999

TABLE 126. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, JUNE 6, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	70.0	72.2	88.3	*9999	70.5	70.6	70.2	*9999
200	69.8	72.2	88.0	*9999	70.5	70.6	70.2	*9999
300	69.7	72.2	87.5	*9999	70.5	70.6	70.1	*9999
400	69.7	72.0	87.2	*9999	70.5	70.5	70.1	*9999
500	69.6	71.9	85.5	*9999	70.5	70.6	70.0	*9999
600	69.6	71.9	86.0	*9999	70.5	70.5	70.0	*9999
700	69.4	71.5	85.6	*9999	70.5	70.4	69.8	*9999
800	69.4	71.5	85.5	*9999	70.5	70.0	69.8	*9999
900	69.0	71.5	85.5	*9999	70.5	70.0	69.7	*9999
1000	69.2	71.7	85.9	*9999	70.5	69.9	69.7	*9999
1100	69.2	72.0	87.1	*9999	70.5	69.9	69.8	*9999
1200	69.4	72.1	88.2	*9999	70.5	70.0	69.6	*9999
1300	69.4	72.5	89.4	*9999	70.5	70.0	69.6	*9999
1400	69.4	72.3	90.4	*9999	70.5	70.0	69.6	*9999
1500	69.5	72.0	91.0	*9999	70.5	70.2	69.6	*9999
1600	69.8	72.2	91.2	*9999	70.5	70.5	69.6	*9999
1700	70.0	72.3	91.6	*9999	70.5	70.3	69.8	*9999
1800	70.3	72.4	92.0	*9999	70.5	70.3	69.7	*9999
1900	70.0	72.3	92.0	*9999	70.5	70.3	69.6	*9999
2000	69.9	72.0	92.5	*9999	70.5	70.4	69.6	*9999
2100	70.1	71.7	91.8	*9999	70.6	70.4	69.7	*9999
2200	69.9	71.5	91.7	*9999	70.8	70.6	69.9	*9999
2300	70.5	71.4	91.5	*9999	70.8	70.5	70.2	*9999
2400	70.7	71.5	90.7	*9999	70.8	70.6	70.3	*9999

TABLE 127. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, JUNE 7, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	71.1	71.0	91.0	*9999	71.0	70.9	70.8	*9999
200	70.8	71.2	90.5	*9999	71.4	71.3	70.8	*9999
300	71.1	71.5	90.5	*9999	71.5	71.5	71.1	*9999
400	71.5	71.1	90.0	*9999	71.5	72.0	71.1	*9999
500	71.5	71.2	89.8	*9999	71.5	72.0	71.1	*9999
600	71.5	71.5	89.6	*9999	71.6	72.0	71.1	*9999
700	71.5	71.5	90.0	*9999	71.5	72.1	71.0	*9999
800	71.5	71.5	90.3	*9999	71.6	71.9	70.7	*9999
900	71.5	71.6	90.1	*9999	71.6	72.0	70.5	*9999
1000	71.3	71.3	89.9	*9999	71.5	71.8	71.2	*9999
1100	71.2	72.0	91.0	*9999	71.6	71.8	71.2	*9999
1200	71.2	72.0	91.1	*9999	71.5	71.7	71.1	*9999
1300	71.1	72.1	91.0	*9999	71.6	71.6	70.0	*9999
1400	71.6	72.4	91.5	*9999	71.6	71.6	70.0	*9999
1500	71.6	72.6	92.2	*9999	71.7	72.0	70.6	*9999
1600	72.0	72.5	92.3	*9999	71.7	72.0	70.7	*9999
1700	72.0	72.7	92.3	*9999	71.7	72.1	71.0	*9999
1800	72.0	72.8	92.3	*9999	71.9	72.1	71.6	*9999
1900	72.0	72.6	92.6	*9999	71.9	72.1	71.2	*9999
2000	72.0	72.5	92.6	*9999	71.8	72.2	71.2	*9999
2100	72.0	72.5	92.5	*9999	71.8	72.2	71.1	*9999
2200	72.0	72.3	92.6	*9999	72.0	72.1	71.3	*9999
2300	72.0	72.3	92.5	*9999	72.1	72.1	71.7	*9999
2400	72.0	72.3	92.6	*9999	72.2	72.2	71.5	*9999

TABLE 128. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, JUNE 8, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	72.3	72.3	92.5	*9999	72.3	72.6	71.9	*9999
200	72.2	72.3	92.0	*9999	72.2	72.6	72.2	*9999
300	72.2	72.3	92.2	*9999	72.1	73.0	72.3	*9999
400	72.7	72.5	92.0	*9999	72.1	73.0	72.8	*9999
500	72.6	72.5	92.0	*9999	72.2	73.0	73.2	*9999
600	72.9	72.6	91.9	*9999	72.2	73.0	73.2	*9999
700	72.5	72.8	91.8	*9999	72.5	72.5	73.2	*9999
800	72.3	73.0	91.5	*9999	72.7	72.2	73.2	*9999
900	72.4	73.0	91.6	*9999	72.6	71.9	73.2	*9999
1000	72.3	73.0	90.8	*9999	72.6	71.7	73.7	*9999
1100	72.9	73.0	91.1	*9999	72.6	72.6	73.6	*9999
1200	72.5	73.0	91.9	*9999	72.5	73.5	73.2	*9999
1300	72.8	73.0	91.7	*9999	72.5	73.0	73.2	*9999
1400	72.9	73.0	91.7	*9999	72.7	73.0	73.2	*9999
1500	73.0	73.0	[illegible]	*9999	72.7	72.8	73.6	*9999
1600	73.5	73.0	[illegible]	*9999	72.6	73.2	73.5	*9999
1700	73.0	72.5	86.0	*9999	72.0	73.5	73.5	*9999
1800	73.0	73.5	84.7	*9999	72.5	73.5	73.5	*9999
1900	73.0	73.5	83.6	*9999	72.5	73.5	73.6	*9999
2000	73.0	73.0	83.0	*9999	72.5	73.5	73.5	*9999
2100	73.0	72.5	82.3	*9999	72.5	73.0	73.6	*9999
2200	72.9	72.3	82.2	*9999	72.5	73.1	73.6	*9999
2300	72.9	72.4	83.4	*9999	72.5	73.1	73.5	*9999
2400	72.9	72.5	83.5	*9999	72.5	73.2	73.2	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 060

POOR ORIGINAL

TABLE 129. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, JUNE 9, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	72.6	71.7	83.4	*9999	72.5	73.3	73.1	*9999
200	72.9	72.1	84.5	*9999	72.5	73.3	73.3	*9999
300	72.9	72.0	85.7	*9999	72.5	73.5	73.3	*9999
400	73.0	72.0	85.5	*9999	72.5	73.6	73.2	*9999
500	73.0	72.0	87.0	*9999	72.5	73.7	73.1	*9999
600	72.5	72.0	85.8	*9999	72.5	74.0	73.0	*9999
700	71.2	72.0	86.2	*9999	72.2	73.8	72.9	*9999
800	71.6	72.0	86.0	*9999	72.5	74.0	72.9	*9999
900	72.4	72.0	85.4	*9999	72.5	73.6	73.4	*9999
1000	72.5	72.2	85.0	*9999	72.5	73.6	73.3	*9999
1100	72.6	72.1	84.5	*9999	72.7	73.5	72.8	*9999
1200	72.5	72.4	84.4	*9999	72.1	73.5	73.6	*9999
1300	*9999	71.9	84.8	*9999	*9999	74.0	72.9	*9999
1400	72.2	71.5	84.5	*9999	72.5	73.5	73.5	*9999
1500	72.5	72.7	85.0	*9999	72.5	73.4	73.4	*9999
1600	72.5	73.5	85.3	*9999	72.6	73.5	74.5	*9999
1700	*9999	72.7	85.1	*9999	71.1	74.0	74.5	*9999
1800	72.0	72.1	85.4	*9999	72.6	73.5	74.5	*9999
1900	72.4	72.5	85.3	*9999	72.5	73.6	74.5	*9999
2000	72.3	73.3	86.1	*9999	72.7	73.3	74.5	*9999
2100	72.0	72.3	86.0	*9999	72.5	73.0	74.2	*9999
2200	*9999	72.5	86.5	*9999	71.0	74.0	73.7	*9999
2300	*9999	72.4	87.0	*9999	71.5	74.0	73.5	*9999
2400	*9999	72.4	87.3	*9999	72.5	73.5	73.6	*9999

TABLE 130. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, JUNE 10, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	*9999	72.4	87.5	*9999	72.5	73.5	73.6	*9999
200	*9999	72.3	87.5	*9999	71.2	73.9	73.9	*9999
300	*9999	72.4	87.0	*9999	70.9	74.4	73.6	*9999
400	*9999	72.4	87.4	*9999	70.7	74.5	73.6	*9999
500	*9999	72.4	87.0	*9999	70.5	74.6	73.2	*9999
600	*9999	72.4	85.9	*9999	70.5	74.5	73.5	*9999
700	*9999	72.0	85.2	*9999	71.0	74.7	73.5	*9999
800	72.6	71.8	83.0	*9999	72.0	74.6	73.6	*9999
900	72.5	71.7	81.5	*9999	72.5	73.6	73.6	*9999
1000	72.3	71.5	81.0	*9999	72.8	73.0	73.3	*9999
1100	72.0	71.4	80.0	*9999	72.3	72.7	73.0	*9999
1200	72.0	71.0	79.5	*9999	72.7	72.5	72.7	*9999
1300	71.9	71.0	79.0	*9999	72.8	72.4	72.5	*9999
1400	71.4	70.9	78.7	*9999	72.3	72.1	72.4	*9999
1500	71.3	70.8	77.8	*9999	72.7	72.2	72.4	*9999
1600	71.5	70.5	78.0	*9999	72.3	71.9	72.5	*9999
1700	71.3	70.5	77.8	*9999	72.3	71.9	72.4	*9999
1800	71.5	70.3	78.0	*9999	72.3	71.8	72.1	*9999
1900	71.0	70.2	79.0	*9999	72.3	71.6	72.0	*9999
2000	71.9	70.0	78.7	*9999	72.3	71.4	71.6	*9999
2100	71.8	69.7	79.5	*9999	72.3	71.0	71.5	*9999
2200	71.8	69.5	80.2	*9999	72.3	70.6	71.1	*9999
2300	71.1	68.8	80.9	*9999	72.3	70.3	71.2	*9999
2400	70.8	68.4	81.3	*9999	72.3	70.0	71.1	*9999

TABLE 131. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, JUNE 11, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	70.4	67.7	81.5	*9999	72.3	70.0	71.3	*9999
200	70.0	67.5	81.5	*9999	72.3	69.5	71.0	*9999
300	69.9	67.2	81.9	*9999	72.3	69.5	71.0	*9999
400	70.0	67.0	81.7	*9999	72.3	69.6	71.0	*9999
500	70.2	66.8	82.4	*9999	72.4	69.7	71.0	*9999
600	69.4	66.5	82.0	*9999	72.4	69.4	71.0	*9999
700	69.4	66.5	81.6	*9999	72.3	69.2	71.0	*9999
800	69.3	66.2	80.7	*9999	72.3	69	70.8	*9999
900	69.2	66.2	80.0	*9999	72.3	69.0	70.6	*9999
1000	69.1	66.2	79.4	*9999	72.3	69.1	70.6	*9999
1100	69.4	66.5	79.5	*9999	72.3	69.3	70.5	*9999
1200	69.9	66.5	79.3	*9999	72.3	69.6	70.6	*9999
1300	69.6	67.0	82.2	*9999	72.3	69.5	70.7	*9999
1400	70.4	67.5	83.0	*9999	72.3	69.6	70.7	*9999
1500	70.0	67.5	83.0	*9999	72.3	69.6	70.6	*9999
1600	70.0	68.0	83.3	*9999	72.3	69.6	70.6	*9999
1700	70.5	68.1	85.0	*9999	72.3	69.9	71.0	*9999
1800	70.6	68.2	84.9	*9999	72.3	70.1	70.6	*9999
1900	70.6	68.2	84.5	*9999	72.3	70.0	70.8	*9999
2000	70.4	68.0	84.0	*9999	72.3	70.0	71.0	*9999
2100	70.6	68.0	83.2	*9999	72.6	70.4	71.2	*9999
2200	70.4	67.3	82.5	*9999	72.5	70.5	71.5	*9999
2300	70.9	68.0	81.9	*9999	72.6	70.5	71.6	*9999
2400	70.9	68.0	81.0	*9999	72.6	71.0	71.6	*9999

TABLE 132. DAILY WATER TEMPERATURE (F) DATA, QUAD-CITIES STATION, JUNE 12, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	70.9	68.0	80.2	*9999	72.5	70.7	72.0	*9999
200	70.1	68.1	79.9	*9999	72.5	71.5	72.4	*9999
300	70.5	68.5	79.4	*9999	72.5	71.4	72.5	*9999
400	70.4	68.5	79.0	*9999	72.4	72.0	72.5	*9999
500	70.5	68.7	79.1	*9999	72.3	71.9	72.5	*9999
600	70.6	68.9	78.5	*9999	72.5	71.6	72.6	*9999
700	70.8	69.2	78.3	*9999	72.4	71.8	72.5	*9999
800	70.9	69.3	77.9	*9999	72.6	71.9	72.8	*9999
900	71.0	69.5	78.0	*9999	72.3	71.5	72.6	*9999
1000	71.0	69.5	78.0	*9999	72.7	71.5	72.5	*9999
1100	71.0	69.5	78.0	*9999	72.7	71.5	72.5	*9999
1200	71.1	70.0	78.5	*9999	72.7	71.9	72.5	*9999
1300	71.1	70.2	79.0	*9999	72.6	71.9	72.7	*9999
1400	71.1	70.5	79.1	*9999	72.7	71.9	72.7	*9999
1500	71.6	71.0	79.5	*9999	[illegible]	72.1	72.8	*9999
1600	71.6	71.4	80.0	*9999	73.0	72.5	72.8	*9999
1700	71.5	71.5	80.5	*9999	73.0	72.5	72.6	*9999
1800	71.5	71.5	80.5	*9999	73.0	72.6	72.6	*9999
1900	71.4	71.4	81.0	*9999	73.0	72.5	72.6	*9999
2000	71.1	71.5	80.9	*9999	73.0	72.4	73.2	*9999
2100	*9999	71.5	80.2	*9999	73.0	72.3	73.0	*9999
2200	*9999	71.5	80.0	*9999	*9999	72.2	72.7	*9999
2300	*9999	71.5	80.0	*9999	*9999	72.9	72.9	*9999
2400	*9999	71.4	80.1	*9999	*9999	72.9	72.9	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 061

POOR ORIGINAL

TABLE 133. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 13, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	71.0	80.1	*9999	*9999	72.5	73.1	*9999
200	*9999	70.3	79.4	*9999	*9999	72.6	73.4	*9999
300	*9999	70.6	79.3	*9999	*9999	73.0	72.8	*9999
400	*9999	70.5	79.1	*9999	*9999	73.0	73.0	*9999
500	*9999	70.5	77.6	*9999	72.5	73.5	73.4	*9999
600	*9999	70.6	76.6	*9999	72.5	72.5	73.5	*9999
700	71.9	70.9	75.2	*9999	73.0	72.5	73.5	*9999
800	72.0	70.8	76.6	*9999	73.0	72.3	73.5	*9999
900	72.3	71.0	76.7	*9999	73.1	72.1	73.5	*9999
1000	71.9	71.3	77.5	*9999	72.9	72.3	73.0	*9999
1100	72.3	71.5	77.7	*9999	72.9	72.4	72.6	*9999
1200	72.9	71.5	78.3	*9999	72.6	72.4	73.1	*9999
1300	72.8	71.5	78.6	*9999	72.4	72.4	72.9	*9999
1400	71.6	71.6	79.7	*9999	72.7	72.3	72.5	*9999
1500	72.4	71.9	79.1	*9999	72.0	72.5	72.7	*9999
1600	73.0	72.0	80.0	*9999	72.2	72.5	72.6	*9999
1700	73.0	72.0	80.2	*9999	72.1	72.5	72.8	*9999
1800	72.6	72.0	80.7	*9999	72.1	72.4	72.6	*9999
1900	72.5	71.9	80.5	*9999	72.1	72.4	72.5	*9999
2000	72.6	71.5	81.4	*9999	72.2	72.4	72.5	*9999
2100	72.3	71.5	80.3	*9999	72.1	72.2	72.6	*9999
2200	72.1	71.2	81.1	*9999	72.1	72.0	72.6	*9999
2300	72.1	70.9	80.3	*9999	72.1	72.1	72.9	*9999
2400	72.0	71.0	80.5	*9999	72.1	72.2	73.0	*9999

TABLE 134. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 14, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	71.6	71.0	80.1	*9999	72.0	72.1	73.2	*9999
200	71.2	71.2	79.7	*9999	71.9	72.6	73.3	*9999
300	70.7	71.4	79.5	*9999	71.6	72.6	73.3	*9999
400	70.1	71.2	79.0	*9999	71.7	73.1	73.3	*9999
500	69.8	71.3	79.5	*9999	71.6	73.4	73.5	*9999
600	70.0	71.5	78.3	*9999	71.6	73.2	73.4	*9999
700	71.6	71.6	77.7	*9999	72.0	73.1	73.4	*9999
800	73.3	71.7	77.0	*9999	72.1	73.3	73.4	*9999
900	73.5	72.0	77.2	*9999	72.1	73.0	73.4	*9999
1000	74.0	72.1	77.6	*9999	72.0	73.1	73.0	*9999
1100	74.0	72.3	[illegible]	*9999	72.0	73.1	73.0	*9999
1200	73.3	72.5	79.0	*9999	72.1	73.4	73.0	*9999
1300	73.9	73.0	80.0	*9999	72.0	73.0	73.0	*9999
1400	73.8	73.0	81.5	*9999	72.4	73.3	73.1	*9999
1500	74.0	73.5	81.0	*9999	72.3	73.2	73.0	*9999
1600	74.0	73.5	82.5	*9999	72.4	73.5	73.0	*9999
1700	74.0	73.5	83.1	*9999	72.4	73.5	72.9	*9999
1800	74.1	73.5	83.5	*9999	72.4	73.4	72.9	*9999
1900	74.0	73.6	83.4	*9999	72.4	73.5	72.8	*9999
2000	74.1	73.2	83.9	*9999	72.4	73.5	72.3	*9999
2100	74.0	73.3	82.3	*9999	72.5	73.3	72.7	*9999
2200	74.5	73.0	81.8	*9999	72.5	73.3	72.9	*9999
2300	74.0	72.5	81.5	*9999	72.5	73.5	73.0	*9999
2400	74.0	72.5	80.7	*9999	72.5	73.1	73.0	*9999

TABLE 135. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 15, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	74.1	72.5	80.4	*9999	72.5	73.0	73.1	*9999
200	74.2	72.5	79.9	*9999	72.5	73.3	73.2	*9999
300	74.4	72.5	79.2	*9999	72.5	73.5	73.4	*9999
400	74.4	72.5	77.5	*9999	72.5	73.5	73.5	*9999
500	74.6	72.5	77.6	*9999	72.5	73.5	73.6	*9999
600	74.5	72.5	76.3	*9999	72.5	73.6	73.6	*9999
700	74.5	72.4	76.4	*9999	72.5	73.5	73.5	*9999
800	74.5	72.3	75.4	*9999	72.5	73.5	73.4	*9999
900	74.4	72.5	80.5	*9999	72.5	73.6	73.4	*9999
1000	74.9	73.0	82.0	*9999	72.6	74.0	73.5	*9999
1100	75.1	73.5	83.9	*9999	72.9	74.3	73.7	*9999
1200	75.5	73.9	84.6	*9999	73.0	74.4	73.7	*9999
1300	75.4	74.[illegible]	85.0	*9999	73.0	74.5	73.7	*9999
1400	75.5	74.[illegible]	86.6	*9999	73.0	74.6	73.6	*9999
1500	76.0	74.9	88.0	*9999	72.9	75.0	73.6	*9999
1600	76.0	75.2	88.4	*9999	73.0	74.8	73.5	*9999
1700	76.1	75.2	87.5	*9999	73.0	75.1	73.6	*9999
1800	76.3	75.5	87.5	*9999	73.0	75.0	73.9	*9999
1900	76.4	75.2	87.6	*9999	73.0	75.0	73.9	*9999
2000	76.4	75.0	88.3	*9999	73.0	75.0	73.9	*9999
2100	75.9	74.3	89.2	*9999	73.0	75.0	73.9	*9999
2200	75.1	74.5	89.7	*9999	73.1	74.7	73.9	*9999
2300	75.1	74.4	89.3	*9999	73.1	75.0	74.0	*9999
2400	75.7	74.2	89.0	*9999	73.1	74.6	74.1	*9999

TABLE 136. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 16, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	76.0	74.0	88.5	*9999	73.1	75.0	75.5	*9999
200	76.6	74.1	89.0	*9999	73.2	75.0	75.5	*9999
300	76.1	74.0	88.9	*9999	73.3	75.5	75.5	*9999
400	76.8	74.1	88.5	*9999	73.4	75.8	75.5	*9999
500	76.6	74.5	88.5	*9999	73.5	75.7	75.3	*9999
600	77.0	74.5	88.1	*9999	73.4	75.7	75.5	*9999
700	76.5	74.5	88.1	*9999	73.4	75.7	75.2	*9999
800	76.5	75.0	89.0	*9999	73.4	76.0	75.3	*9999
900	76.7	75.1	88.3	*9999	73.4	75.6	75.1	*9999
1000	76.7	75.4	88.9	*9999	73.3	76.0	75.0	*9999
1100	77.0	75.7	89.1	*9999	73.3	76.0	75.0	*9999
1200	77.3	76.2	89.9	*9999	73.4	76.0	74.9	*9999
1300	77.5	75.5	90.1	*9999	73.4	76.1	74.9	*9999
1400	77.5	76.5	90.2	*9999	73.4	76.1	74.8	*9999
1500	77.6	76.6	90.2	*9999	73.4	75.0	74.9	*9999
1600	77.9	77.0	90.5	*9999	73.4	76.3	74.9	*9999
1700	77.8	77.1	90.6	*9999	73.4	76.0	74.9	*9999
1800	77.5	77.0	91.0	*9999	73.3	75.1	74.3	*9999
1900	77.5	75.7	91.1	*9999	73.3	76.0	74.8	*9999
2000	77.5	75.4	91.5	*9999	73.3	75.7	74.3	*9999
2100	77.5	75.2	92.0	*9999	73.4	75.8	75.0	*9999
2200	77.1	75.3	91.7	*9999	73.4	75.9	75.0	*9999
2300	77.5	75.8	92.0	*9999	73.5	75.7	75.1	*9999
2400	77.0	75.5	91.3	*9999	73.5	75.7	75.1	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 062

 POOR ORIGINAL

TABLE 137. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 17, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	77.2	75.5	91.5	*9999	73.5	75.7	75.1	*9999
200	77.4	75.5	91.5	*9999	73.5	75.0	75.3	*9999
300	77.4	75.5	91.2	*9999	73.5	75.1	75.5	*9999
400	77.5	75.4	90.6	*9999	73.5	76.0	75.5	*9999
500	77.5	75.3	90.2	*9999	73.5	75.4	75.5	*9999
600	77.5	75.4	90.0	*9999	73.5	76.4	75.7	*9999
700	77.7	75.5	89.4	*9999	73.5	76.5	75.7	*9999
800	77.7	75.5	88.6	*9999	73.5	76.5	75.6	*9999
900	77.7	75.5	87.9	*9999	73.5	76.5	75.6	*9999
1000	77.6	75.5	87.5	*9999	73.5	76.5	75.6	*9999
1100	78.0	76.1	88.0	*9999	73.5	76.5	75.5	*9999
1200	77.9	76.5	88.0	*9999	73.5	75.5	75.6	*9999
1300	78.1	76.8	88.3	*9999	73.5	76.6	75.6	*9999
1400	78.4	77.0	89.0	*9999	73.6	76.8	75.6	*9999
1500	78.5	77.1	89.4	*9999	73.6	76.7	75.5	*9999
1600	78.5	77.0	89.5	*9999	73.5	76.6	75.5	*9999
1700	78.5	77.1	89.7	*9999	73.7	75.5	75.4	*9999
1800	78.2	77.5	89.8	*9999	73.7	76.5	75.3	*9999
1900	78.2	77.0	89.3	*9999	73.7	76.1	75.2	*9999
2000	77.9	75.7	89.4	*9999	73.7	76.0	75.0	*9999
2100	77.1	75.4	88.4	*9999	73.7	76.0	75.0	*9999
2200	76.9	75.0	88.5	*9999	73.7	75.7	74.9	*9999
2300	76.6	75.5	88.0	*9999	73.7	75.5	75.0	*9999
2400	77.1	75.5	87.1	*9999	73.8	75.5	75.0	*9999

TABLE 138. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 18, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	76.5	75.2	86.5	*9999	73.8	75.5	75.1	*9999
200	76.5	75.0	86.2	*9999	73.9	75.5	75.2	*9999
300	75.6	75.0	85.5	*9999	73.9	75.5	75.4	*9999
400	76.8	75.0	85.0	*9999	73.9	[illegible]	75.4	*9999
500	77.0	74.5	85.0	*9999	73.9	[illegible]	75.5	*9999
600	77.0	74.5	85.0	*9999	73.7	75.5	75.5	*9999
700	77.0	74.4	84.8	*9999	73.9	75.5	75.4	*9999
800	76.5	74.5	84.5	*9999	73.8	75.5	75.5	*9999
900	*9999	74.5	84.4	*9999	*9999	75.5	75.5	*9999
1000	*9999	74.0	84.5	*9999	*9999	76.3	75.0	*9999
1100	*9999	74.0	84.5	*9999	*9999	75.5	74.5	*9999
1200	*9999	73.5	84.3	*9999	74.0	74.9	74.4	*9999
1300	*9999	74.0	85.1	*9999	74.0	74.6	74.2	*9999
1400	75.3	74.0	85.9	*9999	74.0	74.4	74.0	*9999
1500	75.6	73.8	85.2	*9999	73.8	73.9	73.9	*9999
1600	75.5	73.4	85.2	*9999	73.9	73.9	73.5	*9999
1700	75.3	73.2	85.3	*9999	73.9	73.7	73.5	*9999
1800	74.3	73.0	86.1	*9999	73.9	73.5	73.4	*9999
1900	74.4	72.9	86.0	*9999	73.7	73.3	73.3	*9999
2000	74.1	72.5	85.5	*9999	74.0	73.1	73.2	*9999
2100	74.2	72.3	86.5	*9999	74.0	72.7	73.0	*9999
2200	74.0	72.0	85.5	*9999	74.0	72.7	73.0	*9999
2300	73.7	71.5	86.1	*9999	74.0	72.6	72.7	*9999
2400	73.1	71.4	85.8	*9999	73.9	72.5	72.6	*9999

TABLE 139. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 19, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	73.1	71.0	85.8	*9999	73.9	72.5	72.8	*9999
200	73.1	70.9	85.5	*9999	73.9	72.3	72.6	*9999
300	72.6	70.5	85.5	*9999	74.0	72.4	72.8	*9999
400	73.0	70.4	85.6	*9999	74.0	72.3	72.6	*9999
500	72.7	70.4	85.5	*9999	74.0	72.2	73.9	*9999
600	72.8	70.2	85.0	*9999	74.0	72.3	73.0	*9999
700	72.5	70.0	84.9	*9999	74.0	72.3	72.5	*9999
800	72.7	69.9	85.0	*9999	74.0	72.0	72.4	*9999
900	72.5	69.5	84.5	*9999	73.5	71.5	71.8	*9999
1000	72.1	[illegible]	84.7	*9999	73.5	71.6	71.7	*9999
1100	72.3	70.2	85.4	*9999	73.5	72.0	72.0	*9999
1200	73.0	70.5	85.5	*9999	73.3	72.3	72.3	*9999
1300	73.0	71.2	87.4	*9999	73.3	72.5	72.3	*9999
1400	73.4	71.9	88.4	*9999	73.9	72.6	72.5	*9999
1500	73.6	72.2	88.5	*9999	73.8	72.9	72.4	*9999
1600	73.6	72.5	89.3	*9999	73.7	73.1	72.3	*9999
1700	74.5	72.9	90.0	*9999	73.8	73.1	72.3	*9999
1800	74.4	72.8	90.6	*9999	73.9	73.4	72.3	*9999
1900	74.3	73.1	91.1	*9999	73.8	73.4	72.3	*9999
2000	74.5	73.0	91.6	*9999	73.8	73.4	72.4	*9999
2100	74.5	72.9	92.1	*9999	73.8	73.5	72.5	*9999
2200	74.2	72.5	92.1	*9999	73.8	73.5	72.5	*9999
2300	74.4	72.7	92.1	*9999	73.9	73.4	72.7	*9999
2400	74.5	72.4	92.2	*9999	73.9	73.1	72.9	*9999

TABLE 140. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 20, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	74.6	72.4	91.6	*9999	73.7	73.5	73.5	*9999
200	74.2	72.4	91.3	*9999	73.9	74.1	73.6	*9999
300	74.0	72.4	91.3	*9999	74.0	74.2	74.6	*9999
400	74.0	72.4	91.3	*9999	74.0	74.2	74.6	*9999
500	74.6	72.5	90.6	*9999	74.1	74.5	74.6	*9999
600	73.6	72.5	90.8	*9999	74.1	74.5	74.9	*9999
700	74.4	72.9	90.6	*9999	74.3	74.7	74.9	*9999
800	74.1	73.0	90.3	*9999	73.4	74.6	75.0	*9999
900	74.1	73.3	90.7	*9999	74.5	74.6	74.6	*9999
1000	74.0	73.3	90.3	*9999	74.5	74.6	74.6	*9999
1100	74.2	74.1	91.2	*9999	74.6	74.4	74.6	*9999
1200	74.0	74.1	91.7	*9999	74.6	74.3	74.8	*9999
1300	74.1	74.1	91.8	*9999	74.5	74.1	74.8	*9999
1400	74.4	74.4	91.1	*9999	74.7	74.2	74.6	*9999
1500	74.6	74.3	90.7	*9999	74.7	74.3	74.6	*9999
1600	74.4	74.2	90.0	*9999	74.5	74.2	74.5	*9999
1700	74.4	74.4	90.0	*9999	74.5	74.0	74.4	*9999
1800	74.1	74.3	89.6	*9999	74.5	73.7	74.3	*9999
1900	73.5	74.0	89.6	*9999	74.6	73.7	74.1	*9999
2000	73.2	73.5	89.7	*9999	74.5	73.4	74.0	*9999
2100	73.2	73.3	90.0	*9999	74.5	73.2	73.9	*9999
2200	72.9	72.9	90.4	*9999	74.5	73.0	74.0	*9999
2300	73.0	72.7	91.0	*9999	74.7	73.2	74.0	*9999
2400	73.0	72.5	91.2	*9999	74.6	73.3	74.6	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 063

POOR ORIGINAL

TABLE 141. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, JUNE 21, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	73.4	72.3	91.1	*9999	74.6	73.2	74.6	*9999
200	73.3	72.1	91.0	*9999	74.5	73.5	74.9	*9999
300	73.3	72.2	91.0	*9999	74.6	73.3	74.9	*9999
400	73.3	72.2	90.7	*9999	74.5	73.6	74.8	*9999
500	73.2	72.1	90.5	*9999	74.5	73.5	74.8	*9999
600	73.0	72.2	89.8	*9999	74.5	73.4	74.5	*9999
700	73.1	72.1	89.5	*9999	74.5	73.2	74.5	*9999
800	72.9	72.1	89.6	*9999	74.5	73.2	74.5	*9999
900	73.0	72.5	89.6	*9999	74.5	73.3	74.4	*9999
1000	73.3	72.7	89.6	*9999	74.5	73.3	74.4	*9999
1100	[illegible]	73.0	89.9	*9999	74.6	73.0	74.1	*9999
1200	73.2	73.3	90.0	*9999	74.5	73.3	74.1	*9999
1300	73.3	73.5	90.4	*9999	74.6	73.5	74.1	*9999
1400	73.5	74.0	90.3	*9999	74.5	73.5	74.3	*9999
1500	74.5	74.5	90.4	*9999	74.7	73.5	74.3	*9999
1600	73.9	74.0	90.5	*9999	74.7	73.6	74.4	*9999
1700	74.0	74.5	90.7	*9999	74.7	73.7	74.5	*9999
1800	74.0	74.5	90.5	*9999	74.8	73.8	74.5	*9999
1900	73.8	74.5	90.9	*9999	74.9	73.6	74.7	*9999
2000	73.7	74.3	91.3	*9999	75.0	73.7	74.9	*9999
2100	74.0	74.0	92.4	*9999	75.0	73.5	75.0	*9999
2200	73.9	74.0	92.4	*9999	75.2	73.8	75.3	*9999
2300	73.9	73.8	92.6	*9999	75.2	73.8	75.4	*9999
2400	73.9	73.5	92.5	*9999	75.2	74.0	75.7	*9999

TABLE 142. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, JUNE 22, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	73.8	73.6	92.6	*9999	*9999	74.0	76.0	*9999
200	74.0	73.5	92.3	*9999	*9999	74.2	75.0	*9999
300	74.1	73.5	91.7	*9999	*9999	74.2	76.0	*9999
400	74.9	73.7	91.6	*9999	*9999	74.5	76.0	*9999
500	74.9	73.7	91.5	*9999	*9999	74.7	76.0	*9999
600	74.5	73.7	91.0	*9999	*9999	74.5	75.9	*9999
700	74.5	73.7	90.4	*9999	*9999	74.6	75.6	*9999
800	74.4	73.8	90.1	*9999	*9999	74.4	75.6	*9999
900	74.2	74.0	90.0	*9999	*9999	74.5	75.5	*9999
1000	74.3	74.3	89.8	*9999	*9999	74.4	75.3	*9999
1100	74.6	74.6	90.0	*9999	*9999	74.5	75.2	*9999
1200	74.5	74.8	90.4	*9999	*9999	74.5	75.1	*9999
1300	74.5	75.0	90.5	*9999	*9999	74.5	75.1	75.2
1400	74.5	75.5	91.1	*9999	*9999	74.5	75.0	75.1
1500	74.6	75.5	91.4	*9999	*9999	74.5	75.0	75.0
1600	75.0	75.5	91.6	*9999	*9999	74.6	74.9	75.3
1700	75.0	76.0	91.6	*9999	*9999	74.5	75.0	75.0
1800	75.0	76.0	91.5	*9999	*9999	74.6	74.9	75.2
1900	75.1	75.3	87.5	*9999	*9999	74.4	74.6	75.1
2000	74.8	75.5	87.4	*9999	*9999	74.3	74.5	74.7
2100	74.5	75.1	87.2	*9999	*9999	74.2	74.5	75.3
2200	74.5	74.9	86.5	*9999	*9999	74.2	74.6	74.7
2300	74.4	74.5	85.0	*9999	*9999	74.0	75.0	74.8
2400	74.3	74.3	84.3	*9999	*9999	74.0	75.2	75.0

TABLE 143. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, JUNE 23, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	74.4	74.1	84.0	*9999	*9999	74.2	75.5	75.3
200	74.3	74.0	84.1	*9999	*9999	74.1	75.6	75.5
300	74.3	73.8	83.6	*9999	*9999	74.3	75.5	75.4
400	74.5	73.7	83.6	*9999	*9999	74.5	75.0	75.6
500	74.4	73.5	83.1	*9999	*9999	74.5	75.0	*9999
600	74.4	73.7	82.5	*9999	*9999	74.4	75.6	*9999
700	74.4	73.6	79.6	*9999	*9999	74.4	75.0	75.4
800	74.2	73.5	78.7	*9999	*9999	74.1	74.6	75.0
900	74.0	73.5	78.6	*9999	*9999	74.0	74.6	74.8
1000	74.1	74.0	78.9	*9999	*9999	73.9	74.5	74.6
1100	74.0	74.0	79.0	*9999	*9999	73.7	75.0	74.5
1200	73.6	74.1	79.0	*9999	*9999	73.5	75.3	74.5
1300	73.6	74.1	78.8	*9999	*9999	73.5	74.5	74.5
1400	73.1	74.0	79.0	*9999	*9999	73.4	74.4	74.1
1500	73.0	73.8	79.5	*9999	*9999	73.0	75.0	74.0
1600	73.0	73.5	81.0	*9999	*9999	73.0	75.0	73.5
1700	72.5	73.3	80.6	*9999	*9999	72.5	74.6	73.5
1800	72.1	72.9	80.9	*9999	*9999	72.7	74.9	72.6
1900	71.6	72.3	81.0	*9999	*9999	72.0	74.7	72.5
2000	71.4	71.7	81.6	*9999	*9999	71.9	74.9	72.3
2100	71.2	71.5	82.6	*9999	*9999	71.7	75.5	72.3
2200	70.6	71.7	83.2	*9999	*9999	71.5	74.9	72.2
2300	70.6	71.7	83.0	*9999	*9999	71.5	74.8	72.2
2400	70.9	71.5	83.2	*9999	*9999	71.5	75.1	72.2

TABLE 144. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, JUNE 24, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	70.5	71.5	82.2	*9999	*9999	71.4	74.8	72.5
200	70.6	71.5	82.5	*9999	*9999	71.4	74.9	72.5
300	71.0	71.4	82.6	*9999	*9999	71.6	74.6	72.5
400	70.9	71.3	82.2	*9999	*9999	71.5	74.8	72.5
500	70.5	71.1	81.8	*9999	*9999	71.3	74.9	72.5
600	70.6	71.0	81.0	*9999	*9999	71.2	74.3	72.4
700	70.3	70.9	80.3	*9999	*9999	71.0	74.3	72.4
800	70.5	70.7	80.0	*9999	*9999	70.7	74.0	72.3
900	70.5	70.7	80.6	*9999	*9999	70.6	73.7	72.3
1000	70.5	70.9	80.6	*9999	*9999	70.6	73.8	72.0
1100	70.5	71.0	81.2	*9999	*9999	70.5	73.3	72.3
1200	70.5	71.5	82.0	*9999	*9999	70.7	73.2	72.1
1300	70.5	71.6	82.6	*9999	*9999	70.8	73.2	72.4
1400	70.6	71.5	83.6	*9999	*9999	71.0	73.2	72.5
1500	71.0	72.0	84.0	*9999	*9999	71.0	72.7	72.5
1600	71.1	72.1	84.8	*9999	*9999	71.0	72.9	72.8
1700	71.1	72.4	85.0	*9999	*9999	71.3	73.0	72.8
1800	71.5	72.5	85.5	*9999	*9999	71.5	73.1	72.8
1900	71.6	72.4	86.1	*9999	*9999	71.3	73.0	72.9
2000	71.5	72.4	86.1	*9999	*9999	71.5	73.4	72.9
2100	71.6	72.0	85.5	*9999	*9999	71.3	73.6	72.6
2200	71.6	72.0	86.8	*9999	*9999	71.5	73.8	73.3
2300	71.6	71.8	86.7	*9999	*9999	71.5	73.9	73.5
2400	71.6	71.8	86.5	*9999	*9999	71.7	74.3	73.7

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 064

TABLE 145. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 25, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	72.0	71.5	85.3	*9999	*9999	71.6	74.4	74.0
200	72.0	71.5	85.9	*9999	*9999	72.0	74.6	74.4
300	72.4	71.6	85.6	*9999	*9999	72.0	75.0	74.9
400	72.4	71.5	85.5	*9999	*9999	72.1	75.0	75.0
500	72.5	71.5	85.0	*9999	*9999	72.2	75.0	75.6
600	72.1	71.4	84.1	*9999	*9999	72.0	75.4	75.5
700	72.1	71.4	83.3	*9999	*9999	71.7	75.4	75.1
800	72.0	71.3	83.2	*9999	*9999	72.0	75.0	74.9
900	72.0	71.5	83.7	*9999	*9999	71.7	74.6	74.5
1000	71.9	71.7	84.5	*9999	*9999	71.5	74.4	74.2
1100	71.9	72.0	85.0	*9999	*9999	71.6	74.2	74.6
1200	71.9	72.5	85.5	*9999	*9999	71.6	74.1	74.0
1300	72.1	72.7	86.0	*9999	*9999	71.7	74.0	74.2
1400	72.2	73.0	85.5	*9999	*9999	71.6	74.1	74.1
1500	72.2	73.2	86.9	*9999	*9999	71.6	74.0	74.0
1600	72.3	73.3	87.5	*9999	*9999	71.8	74.0	74.0
1700	72.5	73.4	88.0	*9999	*9999	71.5	74.0	75.0
1800	72.5	73.2	88.3	*9999	*9999	71.5	73.7	74.8
1900	72.4	73.0	88.3	*9999	*9999	71.3	74.0	73.8
2000	72.1	72.5	88.6	*9999	*9999	71.0	74.0	73.7
2100	72.1	72.3	89.0	*9999	*9999	71.2	74.0	73.1
2200	72.0	72.0	88.6	*9999	*9999	71.2	74.1	73.3
2300	72.0	71.3	88.6	*9999	*9999	71.3	74.0	73.5
2400	72.4	71.8	88.5	*9999	*9999	71.8	74.0	73.6

TABLE 146. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 26, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	72.5	71.7	88.0	*9999	*9999	71.7	74.4	74.0
200	72.7	71.7	88.4	*9999	*9999	72.0	74.5	72.7
300	73.1	72.0	88.0	*9999	*9999	72.1	74.5	72.0
400	73.1	72.0	88.3	*9999	*9999	72.3	74.5	72.1
500	73.0	71.1	88.0	*9999	*9999	72.2	74.3	72.1
600	73.0	71.4	87.0	*9999	*9999	72.2	74.1	72.0
700	72.9	72.3	87.0	*9999	*9999	71.9	74.0	*9999
800	72.6	72.3	85.5	*9999	*9999	72.0	73.8	*9999
900	72.4	72.3	87.0	*9999	*9999	71.5	*9999	*9999
1000	72.4	72.4	88.0	*9999	*9999	71.5	*9999	*9999
1100	72.5	72.5	88.5	*9999	*9999	71.5	*9999	*9999
1200	72.5	72.5	88.7	*9999	*9999	71.4	*9999	*9999
1300	72.4	72.8	88.5	*9999	*9999	71.5	*9999	*9999
1400	72.5	73.1	89.0	*9999	*9999	71.6	*9999	*9999
1500	72.9	73.4	89.3	*9999	*9999	72.0	*9999	*9999
1600	73.0	73.5	89.7	*9999	*9999	72.0	*9999	*9999
1700	73.1	73.3	90.2	*9999	*9999	72.2	*9999	*9999
1800	73.1	73.8	90.5	*9999	*9999	72.3	*9999	*9999
1900	73.4	73.9	90.5	*9999	*9999	72.3	*9999	*9999
2000	73.5	73.5	90.6	*9999	*9999	72.2	*9999	*9999
2100	73.3	73.4	90.8	*9999	*9999	72.3	*9999	*9999
2200	73.5	73.1	91.0	*9999	*9999	72.3	*9999	*9999
2300	73.9	73.1	91.0	*9999	*9999	72.5	*9999	72.6
2400	73.7	73.3	90.6	*9999	*9999	72.6	*9999	*9999

TABLE 147. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 27, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	73.8	73.2	90.8	*9999	*9999	72.7	*9999	*9999
200	73.9	73.3	90.6	*9999	*9999	72.7	*9999	*9999
300	73.9	73.1	90.2	*9999	*9999	72.7	*9999	*9999
400	73.9	73.3	89.3	*9999	*9999	72.7	*9999	*9999
500	73.7	73.3	89.4	*9999	*9999	72.5	*9999	*9999
600	73.6	73.3	89.8	*9999	*9999	72.4	*9999	*9999
700	73.5	73.2	89.6	*9999	*9999	72.3	*9999	*9999
800	73.3	73.0	89.8	*9999	*9999	72.1	*9999	*9999
900	73.0	73.0	90.1	*9999	*9999	72.0	*9999	*9999
1000	72.9	72.9	90.5	*9999	*9999	72.0	*9999	*9999
1100	73.0	73.0	90.5	*9999	*9999	72.0	*9999	*9999
1200	73.0	73.0	90.8	*9999	*9999	71.8	*9999	*9999
1300	73.2	73.1	91.3	*9999	*9999	71.9	*9999	*9999
1400	73.1	73.4	91.4	*9999	*9999	72.0	*9999	*9999
1500	73.2	73.5	91.8	*9999	*9999	72.0	72.1	*9999
1600	73.9	73.5	91.5	105.5	*9999	72.0	72.4	74.3
1700	73.6	73.2	92.2	106.7	*9999	72.1	72.3	74.3
1800	73.6	73.4	92.6	107.4	*9999	72.2	72.2	74.5
1900	73.6	73.4	92.6	106.5	*9999	72.2	72.5	74.9
2000	73.7	73.5	92.5	104.5	*9999	72.2	72.4	*9999
2100	74.0	73.1	92.5	104.0	*9999	72.2	72.4	*9999
2200	74.0	73.0	92.5	102.0	*9999	72.3	72.3	*9999
2300	74.0	73.0	92.5	101.9	*9999	72.5	72.1	73.5
2400	74.0	72.9	92.4	102.5	*9999	72.6	72.1	*9999

TABLE 148. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JUNE 28, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	DOWNSTREAM SENSORS A	B	C	D
100	74.1	73.0	91.5	104.0	*9999	72.7	*9999	73.0
200	74.0	72.9	92.0	102.5	*9999	73.0	*9999	74.5
300	74.0	73.0	91.6	103.0	*9999	73.0	*9999	*9999
400	73.7	73.0	91.5	104.0	*9999	73.3	*9999	*9999
500	73.2	73.0	91.6	103.1	*9999	73.4	*9999	73.7
600	73.0	73.3	91.4	102.5	*9999	73.5	*9999	74.0
700	72.7	73.0	91.3	101.1	*9999	73.3	*9999	73.3
800	73.0	73.2	91.0	100.6	*9999	73.0	*9999	74.3
900	73.1	73.5	91.3	100.5	*9999	73.0	*9999	73.5
1000	73.0	73.5	91.5	101.4	*9999	72.9	*9999	73.0
1100	73.0	73.5	92.0	101.9	*9999	72.9	*9999	72.2
1200	73.1	73.7	92.0	103.2	*9999	72.9	*9999	72.2
1300	73.5	74.2	92.3	103.7	*9999	73.1	*9999	72.0
1400	73.5	74.5	92.0	105.2	*9999	73.3	*9999	72.1
1500	74.0	74.7	92.5	109.5	*9999	73.5	*9999	72.5
1600	74.1	75.1	92.3	105.0	*9999	73.7	*9999	73.0
1700	74.3	75.3	92.8	106.0	*9999	73.6	*9999	73.2
1800	74.5	75.3	93.0	104.7	*9999	73.6	*9999	72.6
1900	74.5	75.3	93.4	100.5	*9999	73.9	*9999	72.5
2000	74.5	75.1	93.0	101.6	*9999	74.0	*9999	73.0
2100	74.5	75.0	92.3	101.9	*9999	73.7	*9999	72.3
2200	74.1	74.8	92.5	102.4	*9999	73.6	*9999	72.6
2300	74.5	74.8	92.3	101.1	*9999	74.0	*9999	72.8
2400	74.3	74.5	91.5	100.4	*9999	74.0	*9999	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 065

TABLE 149. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, JUNE 29, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	74.2	74.5	90.6	100.4	*9999	74.1	*9999	73.1
200	74.5	74.5	91.3	100.2	*9999	74.5	*9999	73.0
300	74.9	74.3	91.0	101.6	*9999	74.5	*9999	73.3
400	74.9	74.9	91.0	102.0	*9999	74.4	*9999	73.3
500	75.0	75.0	90.7	102.6	*9999	74.4	*9999	73.3
600	75.0	75.0	90.0	102.6	*9999	74.1	*9999	73.0
700	74.7	74.9	90.0	101.9	*9999	74.3	*9999	72.8
800	74.6	74.9	90.1	102.2	*9999	74.0	*9999	72.5
900	74.3	74.8	90.1	101.2	*9999	74.0	*9999	*9999
1000	[illegible]	74.7	89.4	101.0	*9999	73.7	*9999	72.4
1100	[illegible]	74.5	89.3	101.6	*9999	73.5	*9999	73.1
1200	*9999	74.4	88.7	99.8	*9999	74.6	*9999	*9999
1300	73.7	74.1	88.5	98.9	*9999	73.2	*9999	72.6
1400	73.5	74.1	88.0	99.4	*9999	73.5	*9999	73.5
1500	73.5	74.1	89.2	100.1	*9999	73.2	*9999	72.7
1600	73.5	74.5	89.4	99.6	*9999	73.4	*9999	72.3
1700	73.7	74.5	89.3	99.4	*9999	73.1	*9999	*9999
1800	73.6	74.4	89.0	99.0	*9999	73.3	74.6	*9999
1900	74.0	74.4	88.5	99.0	*9999	73.2	*9999	73.0
2000	73.7	74.2	88.4	98.2	*9999	73.0	*9999	73.0
2100	73.5	74.0	88.9	*9999	*9999	73.0	*9999	*9999
2200	73.4	73.9	88.5	98.1	*9999	72.9	*9999	72.5
2300	73.2	73.3	88.5	98.0	*9999	72.9	*9999	72.5
2400	72.9	73.5	88.5	97.5	*9999	72.9	*9999	72.5

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

TABLE 150. DAILY WATER TEMPERATURE (F) DATA,
QUAD-CITIES STATION, JUNE 30, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	72.8	73.4	88.0	97.5	*9999	72.7	*9999	72.8
200	73.0	73.1	88.2	97.5	*9999	72.7	*9999	72.6
300	72.9	73.0	88.3	97.5	*9999	72.9	*9999	72.6
400	72.7	73.0	[illegible]	95.5	*9999	72.6	*9999	72.5
500	72.5	72.9	88.1	95.0	*9999	72.6	*9999	72.4
600	72.6	73.0	88.0	94.5	*9999	72.6	*9999	72.3
700	72.0	72.5	88.0	93.5	*9999	72.7	*9999	72.0
800	72.8	72.8	88.2	94.6	*9999	72.5	*9999	72.4
900	72.6	73.0	88.0	99.0	*9999	72.4	*9999	72.7
1000	72.6	73.2	88.7	99.5	*9999	72.5	*9999	72.5
1100	73.0	73.5	89.1	100.0	*9999	72.4	*9999	72.6
1200	72.7	73.6	89.5	99.5	*9999	72.5	*9999	72.5
1300	73.0	74.0	89.5	101.0	*9999	72.8	*9999	73.1
1400	73.0	74.3	89.5	100.1	*9999	72.6	*9999	72.6
1500	73.1	74.5	90.0	100.6	*9999	72.9	*9999	72.5
1600	73.3	74.5	89.9	101.4	*9999	73.0	*9999	72.6
1700	73.6	74.7	89.9	101.0	*9999	73.0	*9999	72.6
1800	73.5	74.7	90.0	101.3	*9999	73.1	*9999	*9999
1900	73.5	74.5	90.0	101.1	*9999	73.0	*9999	72.7
2000	73.5	74.4	90.0	101.3	*9999	73.3	*9999	73.4
2100	73.5	74.3	90.2	102.6	*9999	73.1	*9999	73.1
2200	73.5	74.0	90.3	100.5	*9999	73.4	*9999	72.9
2300	73.6	73.3	90.0	100.1	*9999	73.4	*9999	73.2
2400	73.9	73.9	90.0	99.5	*9999	73.5	*9999	73.9

POOR ORIGINAL

1079 066

TABLE 151. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 1. 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	74.0	73.9	89.7	100.0	*9999	73.6	*9999	73.6
200	74.1	74.0	89.6	104.4	*9999	73.6	*9999	73.8
300	74.5	74.1	89.5	98.5	*9999	74.0	*9999	74.3
400	74.6	74.5	89.3	97.6	*9999	74.0	*9999	74.7
500	74.5	74.5	89.0	97.6	*9999	74.0	*9999	74.5
600	74.6	74.4	88.3	97.5	*9999	74.3	*9999	73.9
700	74.6	74.2	87.5	96.7	*9999	74.4	*9999	74.6
800	74.5	74.0	87.2	96.2	*9999	74.4	*9999	*9999
900	74.5	74.2	87.4	97.4	*9999	74.2	*9999	74.9
1000	74.6	74.3	87.7	97.5	*9999	74.3	*9999	74.6
1100	74.7	74.6	88.4	99.0	*9999	74.2	*9999	74.1
1200	74.9	74.7	88.7	99.9	*9999	74.3	*9999	73.9
1300	75.1	75.3	88.6	101.[illegible]	*9999	74.4	*9999	74.2
1400	75.2	75.5	88.7	[illegible]	*9999	74.6	*9999	74.2
1500	75.3	75.7	89.0	103.7	*9999	74.8	*9999	74.0
1600	75.5	75.8	89.4	105.0	*9999	74.8	*9999	74.1
1700	75.5	75.9	89.6	105.2	*9999	74.8	*9999	74.3
1800	75.7	75.8	90.0	104.5	*9999	74.7	*9999	74.0
1900	75.6	75.7	90.0	104.6	*9999	74.7	*9999	*9999
2000	75.5	75.4	90.1	105.0	*9999	74.6	*9999	74.5
2100	75.3	75.2	90.3	104.9	*9999	74.5	*9999	74.0
2200	75.4	75.1	90.4	104.6	*9999	74.6	*9999	74.4
2300	75.5	74.8	90.5	104.5	*9999	74.6	*9999	74.5
2400	75.5	74.8	90.0	104.0	*9999	74.9	*9999	74.6

TABLE 152. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 2. 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	75.5	74.8	90.0	105.4	*9999	75.0	*9999	74.7
200	75.4	74.8	90.0	105.2	*9999	75.2	*9999	74.7
300	75.4	74.3	90.0	105.7	*9999	75.2	*9999	75.0
400	76.0	74.8	89.4	105.1	*9999	75.5	*9999	75.4
500	76.0	74.8	88.8	104.4	*9999	75.5	*9999	76.4
600	76.5	75.0	88.3	103.9	*9999	75.5	*9999	75.9
700	76.4	75.2	88.0	103.8	*9999	75.5	*9999	75.7
800	76.3	75.3	87.9	104.0	*9999	75.5	*9999	75.1
900	76.4	75.5	88.0	105.3	*9999	75.5	*9999	76.5
1000	76.4	75.6	88.1	103.9	*9999	75.5	*9999	76.3
1100	76.5	75.9	88.4	105.2	*9999	75.7	*9999	76.5
1200	76.6	75.4	89.0	105.6	*9999	75.7	78.4	76.8
1300	76.9	76.5	89.4	106.6	*9999	76.0	78.4	76.8
1400	77.0	77.0	89.9	108.2	*9999	76.0	78.5	76.9
1500	77.2	77.2	90.0	109.0	*9999	76.3	78.4	76.9
1600	77.4	77.6	91.1	110.4	*9999	76.4	78.5	76.6
1700	77.4	77.7	91.5	112.0	*9999	76.4	78.9	76.5
1800	77.2	77.8	92.0	111.3	*9999	76.3	78.4	[illegible]
1900	77.0	77.5	92.5	111.6	*9999	76.3	78.5	76.6
2000	77.0	77.4	92.5	111.2	*9999	76.0	*9999	[illegible]
2100	76.6	77.0	92.6	110.6	*9999	75.8	78.0	76.5
2200	76.5	76.6	92.8	111.0	*9999	75.9	77.6	76.5
2300	76.5	76.5	92.5	110.5	*9999	75.8	77.6	76.4
2400	76.3	76.2	92.4	109.8	*9999	75.6	*9999	76.4

TABLE 153. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 3. 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	76.2	76.0	91.8	109.4	*9999	76.0	*9999	76.6
200	76.4	76.0	91.3	109.0	*9999	75.7	*9999	77.0
300	76.5	75.7	91.3	108.3	*9999	76.0	*9999	77.3
400	76.6	75.8	91.1	107.9	*9999	76.4	*9999	77.3
500	76.6	75.9	90.7	107.5	*9999	76.3	*9999	77.3
600	76.8	76.0	90.0	107.2	*9999	76.5	*9999	77.6
700	77.0	76.0	90.0	107.0	*9999	[illegible]	*9999	78.0
800	77.0	76.0	89.7	106.9	*9999	76.4	*9999	78.0
900	76.8	76.4	89.5	106.7	*9999	[illegible]	*9999	77.5
1000	76.6	76.3	89.6	107.0	*9999	76.0	*9999	77.4
1100	76.1	76.6	88.8	106.8	*9999	75.9	*9999	*9999
1200	*9999	77.0	89.0	107.4	*9999	76.5	*9999	*9999
1300	*9999	76.[illegible]	89.7	108.0	*9999	76.7	*9999	*9999
1400	*9999	76.[illegible]	90.2	107.5	*9999	76.0	*9999	*9999
1500	*9999	76.5	91.1	109.8	*9999	75.0	*9999	*9999
1600	*9999	76.5	91.5	110.5	*9999	75.0	*9999	*9999
1700	*9999	76.6	92.2	110.6	*9999	74.8	*9999	*9999
1800	*9999	76.5	93.3	111.5	*9999	74.6	*9999	*9999
1900	*9999	76.3	93.5	111.2	*9999	74.8	*9999	*9999
2000	*9999	76.0	93.7	111.1	*9999	74.5	*9999	*9999
2100	*9999	76.0	94.2	111.3	*9999	74.5	*9999	*9999
2200	*9999	76.3	93.0	111.0	*9999	74.5	*9999	*9999
2300	*9999	76.2	93.0	110.7	*9999	74.9	*9999	*9999
2400	*9999	76.0	93.0	109.6	*9999	74.9	*9999	*9999

TABLE 154. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 4. 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	75.5	92.6	109.4	*9999	75.0	*9999	*9999
200	*9999	75.5	92.2	108.9	*9999	74.9	*9999	*9999
300	*9999	75.3	92.5	107.8	*9999	74.9	*9999	*9999
400	*9999	75.2	92.5	107.0	*9999	74.9	*9999	*9999
500	*9999	75.0	92.5	106.9	*9999	74.6	*9999	*9999
600	*9999	75.0	92.3	106.1	*9999	74.9	*9999	*9999
700	*9999	75.0	91.5	105.1	*9999	75.1	*9999	*9999
800	*9999	75.0	90.5	104.7	*9999	75.1	*9999	*9999
900	*9999	75.0	89.2	103.5	*9999	74.9	*9999	*9999
1000	*9999	74.9	88.5	102.0	*9999	74.9	*9999	*9999
1100	*9999	75.2	88.2	101.5	*9999	74.9	*9999	*9999
1200	*9999	75.6	87.7	101.3	*9999	75.1	*9999	*9999
1300	*9999	75.9	87.9	101.2	*9999	75.0	*9999	*9999
1400	*9999	76.2	87.5	101.4	*9999	74.9	*9999	*9999
1500	*9999	76.6	87.4	101.7	*9999	75.2	*9999	*9999
1600	*9999	76.7	87.0	101.7	*9999	75.3	*9999	*9999
1700	*9999	76.8	86.6	101.8	*9999	75.1	*9999	*9999
1800	*9999	76.7	86.7	101.7	*9999	75.1	*9999	*9999
1900	*9999	76.5	86.6	101.8	*9999	74.9	*9999	*9999
2000	*9999	76.3	87.0	101.8	*9999	74.7	*9999	*9999
[illegible]	*9999	76.3	87.5	101.9	*9999	74.8	*9999	*9999
[illegible]	*9999	76.0	87.3	102.0	*9999	74.4	*9999	*9999
2300	*9999	75.5	87.1	102.1	*9999	74.4	*9999	*9999
2400	*9999	75.2	87.0	101.9	*9999	74.4	*9999	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 067

TABLE 155. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 5, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	75.0	86.5	101.9	*9999	74.1	*9999	*9999
200	*9999	74.9	86.5	102.0	*9999	74.1	*9999	*9999
300	*9999	74.5	86.0	101.4	*9999	74.3	*9999	*9999
400	*9999	74.5	86.0	101.1	*9999	74.3	*9999	*9999
500	*9999	74.3	85.6	101.2	*9999	74.4	*9999	*9999
600	*9999	74.1	85.1	102.4	*9999	74.4	*9999	*9999
700	*9999	74.1	85.2	102.9	*9999	74.4	*9999	*9999
800	*9999	74.1	85.5	103.1	*9999	74.5	*9999	*9999
900	*9999	74.4	85.5	103.9	*9999	74.4	*9999	*9999
1000	*9999	74.5	85.0	104.4	*9999	74.3	*9999	*9999
1100	*9999	75.0	85.3	104.0	*9999	74.4	*9999	*9999
1200	74.6	75.0	85.7	104.1	*9999	74.3	*9999	*9999
1300	74.7	74.5	86.3	104.0	*9999	74.5	*9999	*9999
1400	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1500	75.6	74.5	87.0	104.5	*9999	74.6	*9999	*9999
1600	75.5	74.5	87.6	104.2	*9999	74.6	*9999	*9999
1700	75.6	74.1	88.0	104.5	*9999	74.7	*9999	*9999
1800	75.6	74.2	88.3	104.6	*9999	74.9	*9999	*9999
1900	75.9	74.0	88.8	105.0	*9999	74.7	*9999	*9999
2000	75.7	73.8	89.2	104.9	*9999	74.7	*9999	*9999
2100	75.9	73.7	89.6	104.9	*9999	74.7	*9999	*9999
2200	75.7	73.5	89.3	104.8	*9999	74.7	*9999	*9999
2300	75.6	73.4	89.5	104.4	*9999	74.6	*9999	*9999
2400	75.8	73.2	89.2	103.9	*9999	74.7	*9999	*9999

TABLE 156. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 6, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	75.9	73.0	88.8	103.3	*9999	74.7	*9999	*9999
200	76.0	73.0	88.5	102.7	*9999	74.8	*9999	*9999
300	76.0	72.9	87.9	102.5	*9999	75.0	*9999	*9999
400	76.2	73.0	87.8	102.2	*9999	75.2	*9999	*9999
500	76.1	73.0	87.7	101.8	*9999	75.2	*9999	*9999
600	76.2	73.0	87.3	101.6	*9999	75.3	*9999	*9999
700	76.2	73.0	87.1	101.3	*9999	75.2	*9999	*9999
800	76.0	73.0	87.0	101.4	*9999	75.0	*9999	*9999
900	76.4	73.5	87.3	102.0	*9999	75.1	*9999	*9999
1000	76.2	73.5	87.7	102.4	*9999	75.0	*9999	*9999
1100	76.2	73.8	87.8	102.8	*9999	75.2	*9999	*9999
1200	76.4	74.0	87.0	[illegible]	*9999	75.1	*9999	*9999
1300	76.4	74.2	88.4	104.1	*9999	75.1	*9999	*9999
1400	76.5	74.3	88.7	104.6	*9999	75.0	*9999	*9999
1500	76.5	74.3	89.2	104.8	*9999	75.2	*9999	*9999
1600	76.4	74.2	89.3	105.1	*9999	75.1	*9999	*9999
1700	76.5	74.2	89.6	105.5	*9999	75.0	*9999	*9999
1800	76.5	74.0	90.0	105.6	*9999	75.0	*9999	*9999
1900	76.5	74.0	90.0	105.5	*9999	74.8	*9999	*9999
2000	76.4	73.9	90.0	105.5	*9999	75.0	*9999	*9999
2100	76.4	73.7	90.2	105.4	*9999	75.1	*9999	*9999
2200	76.5	73.7	90.6	105.6	*9999	75.1	*9999	*9999
2300	76.5	73.5	90.4	105.4	*9999	75.2	*9999	*9999
2400	76.5	73.4	90.1	105.1	*9999	75.0	*9999	*9999

TABLE 157. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 7, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	76.5	73.3	90.0	104.7	*9999	75.2	*9999	
200	76.5	73.3	90.0	104.5	*9999	75.2	*9999	*9999
300	76.5	73.3	90.0	104.5	*9999	75.2	*9999	*9999
400	76.5	73.2	89.6	104.1	*9999	75.3	*9999	*9999
500	76.5	73.1	89.0	103.5	*9999	75.3	*9999	*9999
600	76.5	73.2	88.9	103.3	*9999	75.2	*9999	*9999
700	76.5	73.2	88.9	103.0	*9999	75.3	*9999	*9999
800	76.5	73.3	88.7	103.1	*9999	75.3	*9999	*9999
900	76.5	73.4	88.7	103.5	*9999	75.2	*9999	*9999
1000	76.5	73.5	88.9	103.5	*9999	75.2	*9999	*9999
1100	76.5	73.5	89.0	103.8	*9999	75.1	*9999	*9999
1200	76.5	73.8	89.5	104.5	*9999	75.2	*9999	*9999
1300	76.5	73.9	89.7	105.1	*9999	75.2	*9999	*9999
1400	76.6	74.4	90.1	105.9	*9999	75.4	*9999	*9999
1500	76.8	74.5	90.2	106.3	*9999	75.3	*9999	*9999
1600	76.9	74.8	90.3	106.9	*9999	75.5	*9999	*9999
1700	76.8	74.7	90.5	106.6	*9999	75.5	*9999	*9999
1800	76.8	74.7	90.6	106.6	*9999	75.6	*9999	*9999
1900	76.7	74.6	90.5	106.5	*9999	75.4	*9999	*9999
2000	76.7	74.5	90.6	106.3	*9999	75.3	*9999	*9999
2100	76.7	74.4	90.9	106.3	*9999	75.3	*9999	*9999
2200	76.6	74.1	90.9	106.2	*9999	75.4	*9999	*9999
2300	76.6	74.0	91.0	106.2	*9999	75.3	*9999	*9999
2400	76.6	73.9	91.0	106.0	*9999	75.3	*9999	*9999

TABLE 158. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 8, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	76.5	73.8	90.6	105.7	*9999	75.6	*9999	*9999
200	76.6	73.7	90.5	105.3	*9999	75.7	*9999	*9999
300	76.6	73.7	90.0	105.2	*9999	75.7	*9999	*9999
400	76.7	73.7	90.0	103.6	*9999	75.7	*9999	*9999
500	76.6	73.7	89.6	99.6	*9999	75.7	*9999	*9999
600	76.6	73.7	89.5	99.4	*9999	75.7	*9999	*9999
700	76.7	73.9	89.0	99.0	*9999	76.0	*9999	*9999
800	76.6	74.0	89.1	99.5	*9999	75.8	*9999	*9999
900	77.0	74.1	89.0	101.9	*9999	75.7	*9999	*9999
1000	76.6	74.3	88.7	103.0	*9999	75.8	*9999	*9999
1100	76.6	74.6	89.2	104.0	*9999	75.7	*9999	*9999
1200	76.6	74.8	89.8	[illegible]	*9999	75.7	*9999	*9999
1300	76.6	75.0	90.0	105.8	*9999	75.8	*9999	*9999
1400	76.7	75.1	91.0	107.0	*9999	75.9	*9999	*9999
1500	76.7	75.5	91.2	108.1	*9999	76.0	*9999	*9999
1600	76.6	75.5	91.5	108.6	*9999	76.0	*9999	*9999
1700	76.6	75.5	92.0	109.0	*9999	76.1	*9999	*9999
1800	76.6	75.4	92.1	109.0	*9999	75.1	*9999	*9999
1900	76.7	75.4	92.5	108.9	*9999	75.8	*9999	*9999
2000	76.6	75.2	92.7	109.0	*9999	75.8	*9999	*9999
2100	76.5	75.0	92.9	109.1	*9999	75.7	*9999	*9999
2200	76.6	74.9	93.0	108.9	*9999	75.8	*9999	*9999
2300	76.6	74.9	93.0	108.6	*9999	75.9	*9999	*9999
2400	76.6	74.8	93.0	108.4	*9999	76.0	*9999	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

POOR ORIGINAL

TABLE 159. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 9, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	76.7	74.7	92.7	108.0	*9999	76.1	*9999	*9999
200	76.9	74.7	92.7	108.0	*9999	76.1	*9999	*9999
300	77.0	74.6	92.6	107.8	*9999	75.2	*9999	*9999
400	76.6	74.6	92.5	107.6	*9999	76.5	*9999	*9999
500	76.6	74.6	92.3	107.7	*9999	76.9	*9999	*9999
600	76.7	74.8	91.8	107.5	*9999	76.7	*9999	*9999
700	76.6	74.8	91.5	107.3	*9999	77.2	*9999	*9999
800	76.5	74.7	91.7	107.5	*9999	77.6	*9999	*9999
900	76.6	75.4	91.8	107.6	*9999	76.7	*9999	*9999
1000	76.7	75.5	92.3	108.0	*9999	76.7	*9999	*9999
1100	76.9	75.7	92.7	109.0	*9999	76.3	*9999	*9999
1200	76.9	75.9	93.2	109.6	*9999	76.3	*9999	*9999
1300	76.9	76.1	93.4	110.1	*9999	76.3	[illegible]	*9999
1400	77.0	76.4	93.6	110.7	*9999	76.7	*9999	*9999
1500	77.0	76.6	94.0	111.5	*9999	76.8	*9999	*9999
1600	77.0	76.8	93.7	112.2	*9999	76.8	*9999	*9999
1700	77.0	76.9	94.4	112.1	*9999	75.9	*9999	*9999
1800	77.2	77.0	94.5	112.1	*9999	76.9	*9999	*9999
1900	77.4	77.0	94.5	111.5	*9999	76.8	*9999	*9999
2000	77.0	77.2	94.6	111.5	*9999	76.6	*9999	*9999
2100	77.0	77.1	94.7	111.5	*9999	76.7	*9999	*9999
2200	77.5	76.9	94.9	111.3	*9999	76.[illegible]	*9999	*9999
2300	77.1	76.7	94.7	111.0	*9999	76.8	*9999	*9999
2400	77.2	76.6	94.8	110.8	*9999	76.8	*9999	*9999

TABLE 160. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 10, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	77.1	76.6	94.5	110.4	*9999	77.1	*9999	*9999
200	77.0	76.4	94.3	110.4	*9999	76.9	*9999	*9999
300	77.1	76.6	94.2	110.3	*9999	77.3	*9999	*9999
400	77.0	76.5	93.7	110.0	*9999	77.2	*9999	*9999
500	[illegible]	76.7	93.9	109.8	*9999	77.5	*9999	*9999
600	76.9	76.5	93.4	109.5	*9999	77.2	*9999	*9999
700	76.9	76.7	93.0	109.5	*9999	77.4	*9999	*9999
800	77.1	76.9	92.2	109.6	*9999	77.3	*9999	*9999
900	77.0	77.0	93.2	109.[illegible]	*9999	77.2	*9999	*9999
1000	77.0	77.1	93.5	110.4	*9999	77.2	*9999	*9999
1100	77.0	77.2	94.0	110.[illegible]	*9999	77.2	*9999	*9999
1200	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1300	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1400	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1500	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1600	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1700	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1800	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
1900	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
2000	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
2100	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
2200	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
2300	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
2400	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999

TABLE 161. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 11, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
200	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
300	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
400	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
500	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
600	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
700	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
800	*9999	*9999	*9999	*9999	*9999	*9999	*9999	*9999
900	77.0	77.8	94.4	109.6	*9999	77.5	*9999	*9999
1000	77.0	77.9	95.0	110.2	*9999	77.5	*9999	*9999
1100	77.1	78.2	95.3	110.5	*9999	77.5	*9999	*9999
1200	77.1	78.3	95.6	111.0	*9999	77.6	*9999	*9999
1300	77.3	78.4	95.6	111.5	*9999	77.7	*9999	*9999
1400	77.3	78.4	94.4	110.8	*9999	77.5	*9999	*9999
1500	*9999	*9999	94.6	110.5	*9999	*9999	*9999	*9999
1600	*9999	78.1	94.7	110.6	*9999	77.7	*9999	*9999
1700	*9999	78.2	95.0	110.2	*9999	77.8	*9999	*9999
1800	*9999	78.3	95.5	110.5	*9999	77.8	*9999	*9999
1900	*9999	78.1	95.6	110.9	*9999	77.7	*9999	*9999
2000	*9999	78.0	95.5	110.9	*9999	77.8	*9999	*9999
2100	*9999	78.1	95.7	111.5	*9999	78.1	*9999	*9999
2200	*9999	78.1	95.8	111.5	*9999	78.1	*9999	*9999
2300	*9999	77.9	95.5	111.2	*9999	78.1	*9999	*9999
2400	*9999	77.8	95.4	111.0	*9999	78.3	*9999	*9999

TABLE 162. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 12, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	77.8	94.4	110.7	*9999	78.2	*9999	*9999
200	*9999	78.0	94.8	110.7	*9999	78.6	*9999	*9999
300	*9999	78.4	94.8	110.5	*9999	78.7	*9999	*9999
400	*9999	78.4	94.7	110.3	*9999	78.7	*9999	*9999
500	*9999	78.8	94.5	110.2	*9999	78.4	*9999	*9999
600	*9999	78.4	94.3	110.1	*9999	78.6	*9999	*9999
700	*9999	78.1	94.3	110.1	*9999	78.5	*9999	*9999
800	*9999	77.9	93.8	110.2	*9999	78.6	*9999	*9999
900	*9999	78.0	94.2	110.3	*9999	78.4	*9999	*9999
1000	*9999	78.3	94.8	110.8	*9999	78.5	*9999	*9999
1100	78.3	78.5	95.3	111.8	*9999	78.7	*9999	*9999
1200	*9999	78.5	95.6	112.7	*9999	78.2	*9999	*9999
1300	79.0	78.2	94.8	110.0	*9999	78.2	*9999	*9999
1400	78.6	78.4	95.4	110.5	*9999	78.3	79.0	*9999
1500	*9999	78.5	95.5	112.5	*9999	78.5	79.5	*9999
1600	*9999	78.6	95.5	112.5	*9999	78.5	79.0	*9999
1700	*9999	78.7	95.6	112.4	*9999	78.6	78.0	*9999
1800	*9999	78.7	95.6	112.0	*9999	78.7	*9999	*9999
1900	*9999	78.6	95.5	111.7	*9999	78.5	79.1	*9999
2000	*9999	78.6	95.6	111.7	*9999	78.6	79.0	*9999
2100	*9999	78.4	95.6	111.9	*9999	78.5	78.5	*9999
2200	*9999	78.3	95.7	112.0	*9999	78.6	78.4	*9999
2300	*9999	78.3	95.5	111.9	*9999	78.7	77.8	*9999
2400	*9999	78.2	95.4	111.8	*9999	78.8	79.9	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 069

TABLE 163. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 13, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	78.1	95.1	110.9	*9999	79.0	79.6	*9999
200	*9999	78.3	95.0	110.9	*9999	78.8	79.2	*9999
300	*9999	78.3	95.0	110.5	*9999	79.3	79.0	*9999
400	*9999	78.3	94.5	110.4	*9999	79.2	79.4	*9999
500	*9999	78.4	94.5	110.3	*9999	79.3	79.5	*9999
600	*9999	78.4	94.3	110.1	*9999	79.0	79.0	*9999
700	*9999	78.5	94.0	110.3	*9999	79.0	78.5	*9999
800	*9999	78.5	94.0	110.0	*9999	79.0	78.6	*9999
900	*9999	[illegible]	94.2	110.3	*9999	78.8	79.2	*9999
1000	*9999	78.6	94.4	110.4	*9999	78.9	79.0	*9999
1100	*9999	78.6	94.6	110.9	*9999	78.9	79.1	*9999
1200	79.2	78.7	95.2	111.3	*9999	78.8	79.0	*9999
1300	*9999	79.4	92.6	110.0	*9999	79.9	*9999	*9999
1400	80.0	79.6	94.0	112.4	*9999	79.6	*9999	*9999
1500	79.5	79.5	93.4	110.0	*9999	79.5	*9999	*9999
1600	80.4	79.3	93.0	109.5	*9999	78.9	*9999	*9999
1700	79.9	78.3	93.0	108.7	*9999	78.1	*9999	*9999
1800	79.9	78.0	93.3	108.8	*9999	77.9	*9999	*9999
1900	79.9	78.0	93.7	109.3	*9999	77.8	*9999	*9999
2000	80.0	77.7	93.7	109.3	*9999	77.9	*9999	*9999
2100	79.9	77.6	94.3	109.3	*9999	77.7	*9999	*9999
2200	79.3	77.5	94.3	109.1	*9999	77.6	*9999	*9999
2300	*9999	78.2	91.6	108.5	*9999	78.7	*9999	*9999
2400	*9999	78.3	93.6	109.3	*9999	78.8	*9999	*9999

TABLE 164. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 14, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	79.1	78.5	92.3	108.0	*9999	78.7	*9999	*9999
200	79.5	77.5	93.2	108.2	*9999	78.3	*9999	*9999
300	78.6	78.0	92.0	105.4	*9999	77.3	*9999	*9999
400	78.5	78.0	92.5	105.5	*9999	78.2	*9999	*9999
500	78.8	78.0	92.5	106.0	*9999	78.3	*9999	*9999
600	78.9	78.4	91.9	106.7	*9999	78.0	*9999	*9999
700	*9999	78.0	91.7	106.4	*9999	77.7	*9999	*9999
800	*9999	78.0	91.4	106.5	*9999	77.7	*9999	*9999
900	*9999	78.0	91.6	106.5	*9999	77.7	*9999	*9999
1000	77.2	78.0	92.1	108.0	*9999	77.3	*9999	*9999
1100	76.7	77.5	92.2	110.9	*9999	76.9	*9999	*9999
1200	77.3	77.3	93.0	108.1	*9999	76.8	*9999	*9999
1300	77.3	77.4	93.4	109.8	*9999	77.0	*9999	*9999
1400	77.4	77.3	93.4	109.8	*9999	76.8	*9999	*9999
1500	77.6	77.5	93.9	*9999	*9999	76.8	*9999	*9999
1600	77.4	77.6	94.1	114.0	*9999	77.0	*9999	*9999
1700	77.6	77.7	94.8	110.4	*9999	77.2	*9999	*9999
1800	77.7	77.8	95.5	110.6	*9999	77.1	*9999	*9999
1900	77.7	77.8	95.5	111.3	*9999	77.3	*9999	*9999
2000	77.7	77.5	96.0	112.3	*9999	77.5	*9999	*9999
2100	77.7	77.5	96.1	112.0	*9999	77.6	*9999	*9999
2200	77.7	77.7	96.4	110.5	*9999	77.7	*9999	*9999
2300	77.8	77.6	96.4	112.0	*9999	77.8	*9999	*9999
2400	78.2	77.8	96.5	111.1	*9999	77.7	*9999	*9999

TABLE 165. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 15, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	77.9	77.5	95.5	110.6	*9999	77.6	*9999	*9999
200	78.2	77.5	95.7	110.1	*9999	77.7	*9999	*9999
300	78.2	77.6	95.1	111.4	*9999	77.8	*9999	*9999
400	78.2	77.6	95.0	110.6	*9999	77.8	*9999	*9999
500	78.3	77.7	93.7	111.0	*9999	78.0	*9999	*9999
600	78.4	77.9	94.9	110.0	*9999	78.1	*9999	*9999
700	79.0	78.0	94.5	109.2	*9999	78.0	*9999	*9999
800	76.3	77.7	94.0	111.0	*9999	78.1	*9999	*9999
900	78.2	77.5	93.7	113.6	*9999	78.1	*9999	*9999
1000	78.2	77.5	93.7	109.0	*9999	78.0	*9999	*9999
1100	78.2	77.9	94.0	109.4	*9999	78.3	*9999	*9999
1200	78.3	78.0	94.3	110.0	*9999	78.3	*9999	*9999
1300	78.3	78.4	94.9	110.6	*9999	78.5	*9999	*9999
1400	78.5	78.6	95.1	111.4	*9999	78.6	*9999	*9999
1500	78.6	78.9	95.2	113.0	*9999	78.8	*9999	*9999
1600	76.7	79.1	95.4	114.5	*9999	78.8	*9999	*9999
1700	78.7	79.2	95.8	114.2	*9999	78.8	*9999	*9999
1800	79.0	79.2	96.0	113.5	*9999	78.9	*9999	*9999
1900	78.7	79.3	96.1	113.1	*9999	78.8	*9999	*9999
2000	78.7	79.2	95.1	115.0	*9999	78.8	*9999	*9999
2100	78.6	78.9	96.2	113.7	*9999	78.7	*9999	*9999
2200	78.5	78.8	96.5	112.8	*9999	78.7	*9999	*9999
2300	78.5	78.7	96.5	114.8	*9999	78.6	*9999	*9999
2400	78.6	78.4	96.3	114.5	*9999	78.6	*9999	*9999

TABLE 166. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 16, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	78.6	78.5	95.5	112.7	*9999	79.6	*9999	*9999
200	78.6	78.4	95.0	115.0	*9999	78.7	*9999	*9999
300	78.6	78.3	94.6	111.2	*9999	78.8	*9999	*9999
400	78.7	79.2	94.0	109.7	*9999	78.7	*9999	*9999
500	78.6	79.2	93.5	109.5	*9999	78.9	*9999	*9999
600	78.6	78.3	93.2	109.2	*9999	78.9	*9999	*9999
700	78.7	78.2	92.9	108.8	*9999	79.0	*9999	*9999
800	78.7	78.2	92.9	109.3	*9999	79.2	*9999	*9999
900	78.7	78.3	92.7	108.7	*9999	79.1	*9999	*9999
1000	78.7	78.5	93.1	109.2	*9999	79.3	*9999	*9999
1100	78.7	78.8	93.3	109.5	*9999	79.3	*9999	*9999
1200	78.8	79.2	93.6	110.0	*9999	79.3	*9999	*9999
1300	78.5	79.3	93.6	110.2	*9999	78.9	79.1	*9999
1400	78.5	79.5	94.0	110.6	*9999	79.2	79.1	*9999
1500	78.6	79.5	94.0	111.0	*9999	79.2	79.0	*9999
1600	78.6	79.5	94.0	111.3	*9999	79.0	78.5	*9999
1700	78.5	79.6	94.0	111.5	*9999	79.0	79.2	*9999
1800	78.5	79.5	94.0	111.3	*9999	79.0	79.0	*9999
1900	78.6	79.4	93.9	111.1	*9999	78.9	79.0	*9999
2000	78.5	79.0	93.7	111.5	*9999	78.8	78.4	*9999
2100	78.4	79.0	93.5	112.4	*9999	78.8	78.2	*9999
2200	78.3	78.6	93.5	111.6	*9999	78.6	78.5	*9999
2300	78.2	78.5	93.0	110.5	*9999	78.5	78.9	*9999
2400	78.2	78.2	92.7	109.4	*9999	78.4	78.9	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

POOR ORIGINAL

TABLE 167. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 17. 1979

TIME	UPSTREAM	INTAKE	COOLING [illegible]	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	78.3	79.0	91.8	108.5	*9999	78.5	79.4	*9999
200	78.0	78.3	91.8	108.0	*9999	78.5	79.6	*9999
300	78.1	78.0	91.6	107.5	*9999	78.6	79.5	*9999
400	78.5	77.9	91.2	107.2	*9999	78.6	79.6	*9999
500	78.4	77.8	90.9	106.8	*9999	78.8	79.9	*9999
600	78.2	78.0	90.5	106.5	*9999	78.9	79.9	*9999
700	78.0	78.0	90.3	106.3	*9999	79.0	79.5	*9999
800	78.0	78.1	89.8	106.2	*9999	79.1	79.5	*9999
900	77.8	78.3	90.0	106.5	*9999	79.0	79.4	*9999
1000	77.8	78.3	90.4	106.6	*9999	79.1	79.3	*9999
1100	77.8	78.6	90.8	107.2	*9999	79.0	79.2	*9999
1200	77.8	78.9	91.1	107.6	*9999	78.9	79.2	*9999
1300	78.2	78.9	91.0	107.7	78.5	79.0	79.4	*9999
1400	78.1	78.8	91.1	107.8	78.5	78.8	79.5	*9999
1500	78.2	79.3	91.3	108.1	78.5	78.6	79.5	*9999
1600	78.2	79.5	91.2	109.0	78.5	78.6	79.6	*9999
1700	78.2	78.6	91.5	108.5	78.5	78.5	79.5	*9999
1800	78.3	78.5	91.7	108.6	78.5	78.5	79.5	*9999
1900	78.1	78.4	92.2	108.9	78.6	78.4	79.3	*9999
2000	78.2	78.2	92.2	108.7	78.5	78.3	79.2	*9999
2100	78.0	78.0	92.0	109.0	78.6	78.3	78.9	*9999
2200	78.2	77.8	92.0	107.8	78.7	78.2	78.6	*9999
2300	78.0	77.5	91.9	107.7	78.6	78.1	78.6	*9999
2400	78.1	77.5	91.7	107.3	78.6	78.0	78.8	*9999

TABLE 168. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 18. 1979

TIME	UPSTREAM	INTAKE	COOLING [illegible]	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	77.9	77.3	91.3	107.0	78.6	79.0	78.9	*9999
200	77.9	77.2	91.5	107.0	78.6	78.3	79.0	*9999
300	78.0	77.1	91.1	106.7	78.5	79.1	79.0	*9999
400	78.0	77.0	91.0	106.3	78.5	78.5	79.2	*9999
500	78.0	77.0	90.5	105.9	78.5	78.4	79.2	*9999
600	77.9	77.0	90.5	105.6	78.4	78.5	79.1	*9999
700	78.2	77.0	90.3	105.5	78.4	78.4	79.2	*9999
800	77.9	77.0	90.3	105.5	78.5	78.5	79.1	*9999
900	77.9	77.2	90.3	106.0	78.5	78.5	79.1	*9999
1000	78.0	77.5	90.6	108.5	78.5	78.5	79.2	*9999
1100	77.9	77.9	91.3	108.4	78.5	78.5	79.3	*9999
1200	78.0	78.0	91.5	107.9	78.6	78.6	79.3	*9999
1300	78.8	78.3	91.4	108.0	78.6	78.7	79.2	*9999
1400	78.2	78.6	91.6	108.2	78.6	78.8	79.3	*9999
1500	79.0	78.9	91.5	108.8	78.5	78.8	79.3	*9999
1600	78.8	79.1	91.6	109.5	78.6	78.9	79.2	*9999
1700	78.5	79.0	91.8	109.2	78.6	78.8	79.5	*9999
1800	78.4	79.0	92.2	109.4	78.5	78.9	79.5	*9999
1900	78.2	78.8	92.0	109.2	78.6	78.7	79.5	*9999
2000	78.2	78.5	92.2	109.0	78.5	78.6	79.5	*9999
2100	78.2	78.4	92.1	108.8	78.6	78.6	79.5	*9999
2200	78.1	78.1	92.2	108.5	78.7	78.5	79.3	*9999
2300	78.0	77.9	92.1	108.1	78.7	78.3	79.5	*9999
2400	78.1	77.8	92.2	107.9	78.8	78.3	79.4	*9999

TABLE 169. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 19. 1979

TIME	UPSTREAM	INTAKE	COOLING [illegible]	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	78.2	77.6	92.1	107.5	78.8	78.8	79.8	*9999
200	78.2	77.5	92.1	107.5	78.3	78.4	79.9	*9999
300	78.2	77.6	92.0	107.4	78.8	78.7	80.0	*9999
400	78.3	77.5	91.5	107.2	78.7	78.9	80.1	*9999
500	78.5	77.6	91.6	106.7	78.8	79.0	80.2	*9999
600	78.5	77.7	91.3	106.6	78.8	79.0	80.1	*9999
700	78.4	77.7	91.0	106.5	78.8	79.0	80.3	*9999
800	78.6	78.0	91.4	106.6	78.9	79.1	80.4	*9999
900	78.6	78.3	91.3	108.4	78.9	79.4	80.3	*9999
1000	78.6	78.6	91.7	108.5	79.0	79.5	80.2	*9999
1100	78.6	79.0	91.8	110.2	79.0	79.5	80.2	*9999
1200	78.6	79.2	92.0	109.0	79.0	79.6	80.2	*9999
1300	78.6	79.5	92.0	109.0	79.0	79.7	80.2	*9999
1400	78.6	79.8	92.0	110.0	79.0	79.6	80.1	*9999
1500	78.7	80.0	92.4	111.5	79.0	79.5	79.9	*9999
1600	79.0	80.0	92.9	114.5	79.0	79.7	79.9	*9999
1700	78.8	80.0	93.2	116.5	79.0	79.5	80.0	*9999
1800	78.8	79.8	93.0	110.9	78.9	79.5	79.8	*9999
1900	78.7	79.8	93.0	110.5	78.9	79.4	79.8	*9999
2000	78.5	79.5	93.1	110.5	78.8	79.0	79.6	*9999
2100	78.8	79.4	93.2	110.8	78.9	79.0	79.4	*9999
2200	78.6	78.8	93.0	110.0	78.8	78.9	79.1	*9999
2300	78.5	78.6	93.0	109.5	78.8	78.8	79.0	*9999
2400	78.5	78.4	92.8	109.0	78.8	78.7	78.5	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

TABLE 170. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 20. 1979

TIME	UPSTREAM	INTAKE	[illegible]	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	78.3	79.0	92.0	108.5	78.7	78.6	78.7	*9999
200	78.1	78.0	92.2	108.4	78.8	78.5	79.0	*9999
300	78.1	77.8	92.0	108.0	78.8	78.8	79.0	*9999
400	78.1	77.7	91.5	107.4	78.7	78.7	78.9	*9999
500	78.0	77.5	91.2	106.9	78.7	78.7	78.7	*9999
600	78.2	77.7	91.0	106.6	78.8	78.8	79.2	*9999
700	78.1	77.6	91.0	107.0	78.7	78.8	79.1	*9999
800	78.1	77.7	90.5	106.6	78.7	78.8	79.0	*9999
900	78.3	78.0	90.0	108.0	78.8	79.0	79.0	*9999
1000	78.2	78.2	91.3	107.6	78.8	79.1	79.1	*9999
1100	78.4	78.6	92.0	108.4	78.8	79.4	79.1	*9999
1200	78.4	79.0	92.4	109.2	78.8	79.3	79.2	*9999
1300	78.5	79.5	92.6	109.9	78.9	79.5	79.2	*9999
1400	78.5	79.8	93.0	110.5	78.9	79.6	79.2	*9999
1500	78.8	80.1	93.3	111.1	78.9	79.7	79.3	*9999
1600	78.5	80.4	93.5	111.9	78.9	80.0	79.4	*9999
1700	78.5	80.5	93.9	111.9	78.8	79.9	79.5	*9999
1800	78.6	80.4	93.9	111.8	78.8	79.6	79.6	*9999
1900	78.8	80.2	94.4	111.9	78.8	79.6	79.6	*9999
2000	78.5	80.0	94.1	111.7	78.8	79.2	79.7	*9999
2100	78.4	79.5	94.1	112.2	78.8	79.0	79.7	*9999
2200	78.4	79.4	94.3	111.1	78.9	79.0	79.6	*9999
2300	78.2	79.0	94.0	110.5	78.8	79.0	79.5	*9999
2400	78.2	78.9	94.0	110.6	78.8	79.0	79.6	*9999

1079 071

TABLE 171. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 21, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	78.2	79.5	93.3	109.0	78.7	79.7	79.5	*9999
200	78.1	78.5	93.4	103.6	79.7	78.8	79.6	*9999
300	79.0	78.3	93.0	98.0	79.7	79.6	79.6	*9999
400	78.3	78.3	93.0	94.3	78.6	78.7	79.6	*9999
500	78.2	78.2	92.6	93.5	78.8	78.8	79.7	*9999
600	78.2	78.2	92.0	92.6	78.7	78.7	79.7	*9999
700	79.1	78.0	90.0	90.7	79.9	79.9	79.9	*9999
800	78.1	78.1	88.1	91.4	78.9	78.9	79.8	*9999
900	78.5	78.4	87.4	92.7	78.9	79.1	79.9	*9999
1000	78.4	78.6	87.5	93.4	78.9	79.5	79.9	*9999
1100	78.4	79.0	87.8	93.3	78.9	79.5	79.9	*9999
1200	78.6	79.5	87.9	95.0	79.9	79.5	80.0	*9999
1300	78.5	79.8	88.3	96.1	78.9	79.7	80.2	*9999
1400	79.1	80.2	89.1	97.6	78.9	80.0	80.3	*9999
1500	78.6	80.5	89.4	98.6	78.9	80.0	80.4	*9999
1600	78.6	80.6	89.8	99.4	79.0	80.1	80.5	*9999
1700	79.0	80.6	90.2	99.9	79.0	80.1	80.5	*9999
1800	78.5	80.6	90.2	99.9	79.0	80.0	80.6	*9999
1900	78.5	80.5	90.4	101.6	79.0	79.9	80.6	*9999
2000	78.5	80.2	90.7	102.0	79.0	79.6	80.6	*9999
2100	78.3	80.0	91.0	101.7	79.0	79.4	80.6	*9999
2200	78.4	79.8	91.0	101.5	79.0	79.4	80.6	*9999
2300	78.6	79.2	91.1	101.5	79.0	79.3	80.4	*9999
2400	78.3	79.3	91.3	101.7	79.0	79.1	80.5	*9999

TABLE 172. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 22, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	78.1	79.0	91.2	102.0	79.0	79.0	80.5	*9999
200	78.1	78.8	91.2	101.4	79.0	79.0	80.5	*9999
300	78.1	78.7	91.0	101.3	79.0	79.0	80.4	*9999
400	78.2	78.6	90.7	98.6	79.0	79.0	80.4	*9999
500	78.2	78.5	90.7	98.0	78.9	78.9	80.3	*9999
600	78.6	78.5	90.7	97.7	78.9	78.9	80.4	*9999
700	78.2	78.5	90.0	98.3	78.9	79.1	80.5	*9999
800	78.2	78.6	89.9	99.0	79.0	79.4	80.5	*9999
900	78.6	78.7	89.6	99.8	79.0	79.4	80.5	*9999
1000	78.2	79.0	89.6	100.1	79.1	79.4	80.6	*9999
1100	78.5	79.0	89.8	100.9	79.1	79.3	80.6	*9999
1200	78.5	79.4	90.4	101.7	79.2	79.5	81.0	*9999
1300	78.9	79.8	90.7	103.8	79.2	79.7	80.9	*9999
1400	79.0	80.1	91.5	105.0	79.4	80.0	81.0	*9999
1500	78.6	80.6	91.8	105.8	79.4	80.2	81.0	*9999
1600	79.0	80.5	92.0	107.2	79.4	80.2	81.0	*9999
1700	78.9	80.6	92.4	106.8	79.5	80.2	81.0	*9999
1800	78.9	80.5	92.5	107.1	79.6	80.0	81.2	*9999
1900	78.7	80.5	93.3	108.0	79.4	79.8	81.3	*9999
2000	78.5	80.2	93.4	108.0	79.2	79.8	81.0	*9999
2100	79.4	80.0	93.7	107.8	79.2	79.5	80.8	*9999
2200	79.5	79.5	93.6	107.5	79.1	79.2	80.6	*9999
2300	79.5	79.5	94.0	107.6	79.1	79.1	80.5	*9999
2400	79.1	79.1	93.6	107.5	79.1	79.1	80.5	*9999

TABLE 173. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 23, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	79.1	78.9	93.5	107.0	79.1	79.0	80.5	*9999
200	79.1	78.8	93.3	107.0	79.1	78.9	80.3	*9999
300	79.0	78.5	93.3	107.7	79.0	78.9	80.2	*9999
400	79.0	78.5	93.7	107.2	79.0	78.7	80.0	*9999
500	78.9	78.3	93.5	107.2	79.0	78.7	80.0	*9999
600	79.1	78.2	93.2	107.2	79.1	78.5	80.1	*9999
700	79.0	78.0	93.0	107.6	79.0	78.3	80.1	*9999
800	79.0	78.0	92.5	107.5	79.0	78.6	80.3	*9999
900	79.0	78.5	92.5	107.9	79.0	79.7	80.1	*9999
1000	79.3	78.3	93.2	108.5	79.1	78.7	80.2	*9999
1100	79.2	78.5	93.9	108.8	79.1	78.8	80.0	*9999
1200	79.5	78.8	94.4	109.8	79.2	79.0	80.1	*9999
1300	79.5	79.2	94.6	109.5	79.3	79.4	80.2	*9999
1400	78.6	79.6	94.3	108.5	79.7	79.6	80.1	*9999
1500	78.8	80.0	94.6	109.2	80.4	79.8	80.0	*9999
1600	79.0	80.2	94.9	109.5	80.4	80.0	80.0	*9999
1700	79.0	80.5	95.0	109,9	80.5	80.0	80.3	*9999
1800	79.0	80.5	95.0	110.5	80.5	80.1	80.3	*9999
1900	79.0	80.6	95.4	110.6	80.5	80.3	80.5	*9999
2000	79.2	80.5	95.5	110.2	80.5	80.1	80.5	*9999
2100	79.0	80.4	95.6	110.0	80.6	80.1	80.4	*9999
2200	79.1	80.0	96.0	109.8	80.6	80.0	80.4	*9999
2300	79.0	80.0	95.7	109.1	80.5	79.9	80.0	*9999
2400	78.9	79.9	95.3	108.7	80.6	79.5	79.9	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

TABLE 174. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 24, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	78.9	79.5	95.0	107.9	80.6	79.7	79.8	*9999
200	78.8	79.5	94.9	107.5	80.6	79.5	79.9	*9999
300	78.8	79.4	94.6	107.3	80.6	79.3	79.7	*9999
400	78.8	79.2	94.5	107.4	80.5	79.4	79.5	*9999
500	78.8	79.2	94.6	107.5	80.6	79.2	79.1	*9999
600	78.7	79.0	94.2	107.4	80.6	79.3	78.9	*9999
700	79.0	78.9	94.3	107.6	80.5	79.4	78.4	*9999
800	78.8	78.9	94.0	107.0	80.5	79.1	78.5	*9999
900	78.9	79.0	94.5	105.3	80.5	79.5	78.4	*9999
1000	78.5	79.0	95.3	104.6	80.1	79.4	78.0	*9999
1100	78.6	79.1	96.6	99.9	79.7	79.0	77.7	*9999
1200	79.3	79.0	97.0	95.3	80.3	79.0	78.5	*9999
1300	79.6	79.8	97.0	94.5	80.5	79.2	78.5	*9999
1400	79.9	80.1	96.7	94.0	79.8	80.0	78.8	*9999
1500	80.0	80.5	96.4	94.3	79.0	79.9	79.6	*9999
1600	80.0	80.5	96.2	94.7	78.5	80.0	79.3	*9999
1700	79.1	81.5	93.7	94.0	78.8	80.2	78.7	*9999
1800	80.0	81.2	92.3	94.0	78.1	79.7	79.1	*9999
1900	80.0	81.9	92.0	93.0	78.4	80.4	79.5	*9999
2000	80.0	80.7	92.0	93.0	78.5	80.2	79.1	*9999
2100	80.0	80.6	91.4	92.6	78.7	80.1	79.0	*9999
2200	80.0	80.5	90.5	92.2	78.9	79.9	78.5	*9999
2300	79.5	80.5	90.0	91.5	79.7	79.4	78.0	*9999
2400	79.5	80.2	89.5	88.8	79.0	79.5	77.4	*9999

1079 072

TABLE 175. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 25, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	79.5	80.4	89.3	86.4	79.0	79.4	*9999	*9999
200	79.4	80.3	89.2	85.0	79.0	79.4	*9999	*9999
300	79.4	80.1	89.2	84.2	79.0	79.2	*9999	*9999
400	79.2	80.0	89.2	85.3	79.0	79.1	*9999	*9999
500	79.2	79.9	89.0	87.4	79.0	79.1	*9999	*9999
600	79.1	79.8	89.0	89.2	79.1	79.2	*9999	*9999
700	[illegible]	79.6	89.0	89.6	79.5	79.0	*9999	*9999
800	[illegible]	79.6	89.4	89.8	80.3	78.8	*9999	*9999
900	[illegible]	79.4	87.9	90.5	80.7	78.9	*9999	*9999
1000	79.4	79.0	88.5	94.0	80.6	78.9	*9999	*9999
1100	79.5	79.0	87.7	100.6	80.6	78.9	*9999	*9999
1200	79.4	79.0	87.6	101.0	80.6	78.8	*9999	*9999
1300	79.5	79.5	88.4	107.8	80.9	79.1	*9999	*9999
1400	79.5	79.7	88.8	105.7	80.9	79.1	*9999	*9999
1500	79.5	79.5	90.7	108.4	80.9	78.9	*9999	*9999
1600	79.5	79.7	92.6	107.3	80.9	79.1	*9999	*9999
1700	79.5	79.7	93.3	108.2	80.5	79.2	*9999	*9999
1800	79.5	79.5	94.0	108.6	80.9	79.4	*9999	*9999
1900	79.5	79.6	94.6	109.1	80.9	79.1	*9999	*9999
2000	79.5	79.6	95.0	108.9	80.8	79.1	*9999	*9999
2100	79.5	79.5	95.4	109.2	80.9	79.0	*9999	*9999
2200	79.6	79.7	95.9	109.6	80.7	78.8	*9999	*9999
2300	79.5	79.5	95.8	109.0	80.5	78.7	*9999	*9999
2400	79.5	79.5	96.0	108.8	80.6	78.9	*9999	*9999

TABLE 176. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 26, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	79.5	79.4	95.5	109.4	80.5	78.7	*9999	*9999
200	79.5	79.3	95.6	108.5	80.5	78.9	*9999	*9999
300	79.5	79.0	95.6	108.6	80.3	78.9	*9999	*9999
400	79.4	78.8	95.4	108.3	80.2	78.9	*9999	*9999
500	79.4	78.7	95.3	108.4	80.2	79.0	*9999	*9999
600	79.0	78.6	95.2	108.0	80.1	79.0	*9999	*9999
700	78.8	78.5	94.8	106.7	80.1	78.9	*9999	*9999
800	79.0	78.5	94.4	106.5	80.4	78.8	*9999	*9999
900	79.4	78.5	94.0	109.3	79.9	78.7	*9999	*9999
1000	79.4	78.3	94.0	109.0	79.8	78.4	*9999	*9999
1100	79.3	78.4	94.0	107.6	79.7	78.4	*9999	*9999
1200	79.4	78.5	93.9	106.6	79.8	78.6	*9999	*9999
1300	79.2	78.9	94.2	117.5	79.8	78.9	*9999	*9999
1400	79.5	79.0	94.5	110.7	79.3	78.9	*9999	*9999
1500	79.5	79.3	95.0	112.6	79.8	78.9	*9999	*9999
1600	79.6	79.5	95.2	110.7	79.9	79.4	*9999	*9999
1700	79.6	79.7	95.5	110.0	79.8	79.6	*9999	*9999
1800	79.8	80.1	95.7	110.9	79.9	79.6	*9999	*9999
1900	79.8	80.4	96.0	109.8	79.9	79.6	*9999	*9999
2000	79.6	80.5	96.0	110.0	79.8	79.8	*9999	*9999
2100	79.6	80.2	96.0	110.0	79.8	79.6	*9999	*9999
2200	79.6	80.0	95.9	109.3	79.9	79.6	*9999	*9999
2300	79.6	80.0	96.1	110.4	79.9	79.3	*9999	*9999
2400	79.5	80.0	96.0	108.0	79.8	79.4	*9999	*9999

TABLE 177. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 27, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	79.6	80.0	95.5	107.4	79.9	79.4	*9999	*9999
200	79.5	80.2	95.5	106.7	79.8	79.3	*9999	*9999
300	79.5	80.3	95.5	106.0	79.8	79.4	*9999	*9999
400	79.4	80.3	95.2	105.5	79.5	79.5	*9999	*9999
500	79.4	80.2	94.5	104.7	79.5	79.4	*9999	*9999
600	79.6	80.0	94.2	104.3	79.4	79.7	*9999	*9999
700	79.2	80.1	94.0	105.7	79.3	80.0	*9999	*9999
800	79.2	80.0	93.7	105.0	79.4	80.1	*9999	*9999
900	79.3	80.0	93.3	105.3	79.5	79.6	*9999	*9999
1000	79.5	79.7	93.8	108.8	79.7	79.4	*9999	*9999
1100	79.4	79.6	94.2	106.3	79.7	79.7	*9999	*9999
1200	79.5	79.9	95.0	108.3	79.7	79.9	*9999	*9999
1300	79.6	80.1	95.1	110.8	79.7	79.9	*9999	*9999
1400	79.6	79.9	95.1	*9999	79.3	79.8	*9999	*9999
1500	79.8	80.0	95.1	*9999	80.0	80.4	*9999	*9999
1600	79.9	80.2	95.0	*9999	80.0	80.5	*9999	*9999
1700	80.0	80.4	95.4	*9999	80.0	80.6	*9999	*9999
1800	79.9	80.5	96.0	*9999	79.9	80.5	*9999	*9999
1900	*9999	80.4	93.7	*9999	78.3	80.6	*9999	*9999
2000	*9999	80.5	95.6	*9999	77.4	80.7	*9999	*9999
2100	*9999	80.0	94.0	*9999	77.6	80.8	*9999	*9999
2200	*9999	80.0	95.2	*9999	77.1	80.9	*9999	*9999
2300	*9999	79.9	95.0	*9999	*9999	80.9	*9999	*9999
2400	*9999	79.8	93.0	*9999	76.6	80.4	*9999	*9999

TABLE 178. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 28, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	79.5	91.8	*9999	77.0	80.5	*9999	*9999
200	*9999	79.4	91.0	*9999	76.8	80.7	*9999	*9999
300	*9999	79.2	91.5	*9999	77.2	80.0	*9999	*9999
400	*9999	79.3	90.5	*9999	78.0	79.8	*9999	*9999
500	*9999	79.3	91.6	*9999	77.9	79.9	*9999	*9999
600	*9999	79.1	93.4	*9999	78.5	79.8	*9999	*9999
700	*9999	79.1	93.7	*9999	78.6	79.5	*9999	*9999
800	*9999	79.0	92.8	*9999	78.7	79.5	*9999	*9999
900	*9999	79.0	92.3	*9999	78.9	79.3	*9999	*9999
1000	*9999	79.0	92.3	*9999	78.8	79.3	*9999	*9999
1100	*9999	79.3	93.1	*9999	78.8	79.7	*9999	*9999
1200	*9999	79.5	93.9	*9999	78.8	79.7	*9999	*9999
1300	*9999	80.1	94.5	*9999	78.8	80.0	*9999	*9999
1400	*9999	80.5	94.7	*9999	78.8	80.2	*9999	*9999
1500	*9999	80.7	94.7	*9999	78.9	80.1	*9999	*9999
1600	*9999	81.0	94.9	*9999	79.0	80.2	*9999	*9999
1700	*9999	81.2	95.1	*9999	78.9	80.6	*9999	*9999
1800	*9999	81.5	95.6	*9999	79.0	81.0	*9999	*9999
1900	*9999	81.4	95.8	*9999	79.0	80.5	*9999	*9999
2000	*9999	81.0	96.1	*9999	79.0	80.5	*9999	*9999
2100	*9999	80.9	96.0	*9999	79.0	80.3	*9999	*9999
2200	*9999	80.7	96.3	*9999	79.1	80.1	*9999	*9999
2300	*9999	80.5	95.1	*9999	79.0	80.0	*9999	*9999
2400	*9999	80.1	96.0	*9999	78.9	80.0	*9999	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

1079 073

TABLE 179. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 29, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	80.0	95.7	*9999	79.1	79.5	*9999	*9999
200	*9999	79.8	95.7	*9999	79.0	79.5	*9999	*9999
300	*9999	79.7	95.5	*9999	79.0	79.5	*9999	*9999
400	*9999	79.6	95.4	*9999	79.0	79.6	*9999	*9999
500	*9999	79.5	95.0	*9999	79.0	79.6	*9999	*9999
600	*9999	79.5	95.0	*9999	78.9	79.6	*9999	*9999
700	*9999	79.5	93.2	*9999	79.0	79.5	*9999	*9999
800	*9999	79.4	92.7	*9999	78.9	79.5	*9999	*9999
900	*9999	79.3	92.3	*9999	79.0	79.5	*9999	*9999
1000	*9999	79.4	92.1	*9999	78.9	79.8	*9999	*9999
1100	*9999	79.5	92.0	*9999	78.9	79.6	*9999	*9999
1200	*9999	80.0	92.2	*9999	79.1	80.0	*9999	*9999
1300	*9999	80.1	92.4	*9999	79.1	80.1	*9999	*9999
1400	*9999	80.5	93.1	*9999	79.1	80.2	*9999	*9999
1500	*9999	80.6	93.7	*9999	79.1	80.5	*9999	*9999
1600	*9999	81.0	94.6	*9999	79.2	80.5	*9999	*9999
1700	*9999	81.1	95.0	*9999	79.2	80.5	*9999	*9999
1800	*9999	81.3	95.6	*9999	79.3	80.7	*9999	*9999
1900	*9999	81.1	96.2	*9999	79.3	80.5	*9999	*9999
2000	*9999	80.9	96.2	*9999	79.1	80.5	*9999	*9999
2100	*9999	81.2	96.7	*9999	79.1	80.6	*9999	*9999
2200	*9999	81.0	96.5	*9999	78.9	80.5	*9999	*9999
2300	*9999	80.4	94.5	*9999	78.0	80.0	*9999	*9999
2400	*9999	80.6	95.2	*9999	77.2	80.3	*9999	*9999

TABLE 180. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 30, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	*9999	80.1	95.6	*9999	77.4	79.5	*9999	*9999
200	*9999	80.0	95.6	*9999	78.1	79.3	*9999	*9999
300	*9999	79.8	95.0	*9999	78.1	79.0	*9999	*9999
400	*9999	79.5	95.5	*9999	78.1	78.6	*9999	*9999
500	*9999	79.4	95.4	*9999	78.1	78.6	*9999	*9999
600	*9999	79.5	95.0	*9999	79.1	79.7	*9999	*9999
700	*9999	79.5	92.8	*9999	77.1	79.1	*9999	*9999
800	*9999	79.4	92.9	*9999	77.0	79.3	*9999	*9999
900	*9999	79.1	93.1	*9999	77.2	79.2	*9999	*9999
1000	*9999	79.0	93.5	*9999	79.6	78.6	*9999	*9999
1100	*9999	79.1	93.9	*9999	78.7	79.0	*9999	*9999
1200	78.1	78.8	94.4	111.6	79.8	79.5	81.5	*9999
1300	78.1	79.0	94.9	109.0	78.7	79.5	81.3	*9999
1400	78.2	79.3	95.1	109.6	78.7	79.8	82.0	*9999
1500	78.2	79.7	95.2	110.0	79.3	80.0	82.1	*9999
1600	78.5	80.0	95.3	110.5	78.8	80.3	82.4	*9999
1700	78.4	80.1	95.8	110.8	78.7	80.4	82.4	*9999
1800	78.0	80.3	96.1	111.2	78.7	80.2	82.6	*9999
1900	78.4	80.3	96.4	111.3	78.8	80.3	82.5	*9999
2000	78.4	80.2	96.6	111.5	79.3	80.5	82.5	*9999
2100	78.3	80.1	96.9	111.5	78.8	80.5	82.6	*9999
2200	78.3	80.0	97.0	111.5	78.8	80.5	82.5	*9999
230C	78.0	80.0	97.0	111.4	78.7	80.6	82.3	*9999
2400	78.0	79.6	97.1	111.3	78.6	80.5	82.1	*9999

TABLE 181. DAILY WATER TEMPERATURE (F) DATA.
QUAD-CITIES STATION. JULY 31, 1979

TIME	UPSTREAM	INTAKE	COOLING CANAL COLD END	DISCHARGE	----DOWNSTREAM SENSORS--- A	B	C	D
100	78.3	79.3	97.2	110.7	78.5	80.6	81.9	*9999
200	78.5	79.0	96.5	110.5	78.6	80.6	81.9	*9999
300	78.8	78.8	96.0	110.0	78.7	80.6	82.1	*9999
400	78.7	78.7	95.5	109.0	78.7	80.4	81.8	*9999
500	79.1	78.5	95.0	108.4	78.7	80.4	81.7	*9999
600	79.5	78.5	94.7	107.7	78.7	80.2	81.7	*9999
700	79.5	78.4	94.2	107.4	78.8	80.0	81.7	*9999
800	79.5	78.2	93.6	105.5	78.7	80.0	81.4	*9999
900	79.5	78.0	93.4	105.6	78.9	80.5	81.4	*9999
1000	79.6	78.3	93.4	106.5	78.9	80.6	81.4	*9999
1100	79.6	78.6	94.0	107.3	78.9	80.6	81.5	*9999
1200	79.6	79.0	93.9	108.0	78.9	80.8	81.5	*9999
1300	79.6	79.5	94.1	108.9	79.0	81.4	81.4	*9999
1400	81.0	79.8	94.3	107.6	79.0	81.5	81.3	*9999
1500	81.9	80.0	93.9	103.2	79.0	81.6	81.0	*9999
1600	81.4	80.2	94.5	99.0	78.9	81.7	81.3	*9999
1700	81.3	80.5	95.0	98.0	78.9	81.7	81.0	*9999
1800	81.2	80.5	94.7	97.5	78.9	81.6	81.5	*9999
1900	81.0	80.4	95.3	100.1	79.0	81.5	81.6	*9999
2000	81.0	80.3	94.9	106.8	79.0	81.4	81.6	*9999
2100	80.7	80.0	94.5	108.7	79.0	81.0	81.2	*9999
2200	80.1	79.3	92.8	107.5	78.6	80.5	80.4	*9999
2300	80.0	79.2	93.6	107.2	78.6	80.5	80.0	*9999
2400	79.9	78.8	92.1	106.0	78.6	80.0	80.0	*9999

*9999 OR 9999 -- INSTRUMENT MALFUNCTION

POOR ORIGINAL

1079 074