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SUBJECT: Forwards addl info re proposed Tech Spec changes re spent fuel pool during Unit 2 Cycle 9 operation.

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AEP:NRC:1071Q

Donald C. Cook Nuclear Plant Units 1 and 2
License Nos. DPR-58 and DPR-74
Docket Nos. 50-315 and 50-316
ADDITIONAL INFORMATION ON AEP:NRC:1071N;
PROPOSED TECHNICAL SPECIFICATION CHANGES
FOR UNITS 1 AND 2 REGARDING THE SPENT
FUEL POOL DURING UNIT 2 CYCLE 9 OPERATION

Attn: T. E. Murley

October 8, 1991

Dear Dr. Murley:

This letter and its attachments transmit the additional information requested by the Cook Nuclear Plant NRC Project Manager during a teleconference held on Tuesday, October 1, 1991. This additional information concerns our submittal AEP:NRC:1071N dated February 15, 1991. Prior to this teleconference, several questions were transmitted to AEPSC, which were answered during the teleconference. For your convenience, detailed answers to these questions are provided in Attachment 1 to this letter.

During the teleconference we informed the Project Manager of the existence of an internal AEPSC calculation, performed in 1983, that verifies the spent fuel pool temperatures referenced in the safety evaluation we received from the NRC enclosed with Amendment Nos. 32 and 13 to the Facility Operating Licenses for Units 1 and 2, respectively. Those temperatures are given in Section 2.2.1 of the safety evaluation. The AEPSC calculation is provided herein as Attachment 2, as requested by the Project Manager.

This 1983 calculation considered the normal and abnormal spent fuel pool decay heat loads. The normal load was assumed to be half of the abnormal load. Other heat loads are cooled by the component cooling water loop. The calculation considers the effect of load combinations consistent with the status of other operations at the plant on component cooling water temperature, which in turn affects the spent fuel pool cooling capability. Also, it should be noted that this calculation is old, and may not meet all current procedural requirements.

A001
1/1

In addition, in 1983, AEPSC performed an associated analysis of the projected maximum decay heat loads in the spent fuel pool. The heat loads were calculated using the methods specified in NRC Standard Review Plan, ASB 9-2, "Residual Decay Energy for LWRs for Long-Term Cooling," dated July 1981, and in NRC Draft Regulatory Guide and Value/Impact Statement titled "Spent Fuel Heat Generated in an Independent Spent Fuel Storage Installation," dated January 1983.

The larger heat load calculated using these two similar methods was found to be 42E6 Btu/hr, using the methods in ASB 9-2. This is the value used for the spent fuel pool cooling analysis contained in Attachment 2. This value is also consistent with the 41E6 Btu/hr value referenced by the NRC in the above referenced safety evaluation. The decay heat analysis assumed recent refueling of both units and an emergency full core offload, leading to the pool being filled to its useful capacity. Both units were assumed to be on 18-month cycles.

The Project Manager was also informed of the existence of a more recent internal AEPSC calculation, performed in 1989 in preparation for the new spent fuel pool reracking project. This calculation reviewed the spent fuel thermal loads and cooling capabilities. Using the core offloading timing assumptions of Standard Review Plan Section 9.13, the projected decay heat load was found to be 45.3E6 BTU/hr. This value is consistent with the value of 42E6 Btu/hr found in 1983 using different offload timing assumptions. The 1983 calculation includes decay heat from all previously offloaded assemblies with conservative but realistic discharge timing assumptions. The Standard Review Plan method ignores the decay heat of all but the most recent fuel discharges, and compensates for this by assuming these recent fuel discharges occur on a very conservative schedule.

This 1989 calculation also provided a check of current spent fuel pool cooling system capabilities as part of its projection for future spent fuel pool loads. Again, the spent fuel pool temperatures calculated for the various spent fuel pool loads and operating train assumptions were found to be consistent with the current updated FSAR.

Finally, it should be noted that the thermal-hydraulic analyses enclosed in Attachment 2 to this submittal will be superseded by our submittal AEP:NRC:1146 dated July 26, 1991. This submittal requests authorization to increase the spent fuel storage capacity from 2,050 to 3,613 storage locations. The analyses performed by Holtec International demonstrate acceptable pool and fuel assembly temperatures and bound the analyses in Attachment 2 to this submittal. (Holtec analyzed heat loads as high as 52E6 Btu/hr.)

The Holtec analyses contain improvements such as modeling evaporative heat transfer from the spent fuel pool and Lake Michigan temperatures as high as 90°F.

This document has been prepared following Corporate procedures that incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Sincerely,

E. E. Fitzpatrick
Vice President

ldp

Attachments

cc: D. H. Williams, Jr.
A. A. Blind - Bridgman
J. R. Padgett
G. Charnoff
A. B. Davis - Region III
NRC Resident Inspector - Bridgman
NFEM Section Chief

Attachment 1 to AEP:NRC:1071Q

Responses to Questions

[illegible]

<u>Question 1</u>: What is the "Design Basis Evolution" for spent fuel pool cooling?

The original FSAR states the design bases for the spent fuel pit cooling system as follows:

> The spent fuel pit cooling system has two cooling trains. Either of these trains is capable of handling the normal heat load (2/3 core), maintaining the pit temperature at approximately 120°F. Each train is also capable of maintaining pit temperature at approximately 150°F when 1 2/3 cores are present.(1)

On October 16, 1979, AEPSC received Amendment Nos. 32 and 13 to the Facility Operating License for the Units 1 and 2, respectively. Those amendments permitted the modification of the spent fuel pool that increased the storage capacity for fuel irradiated at Cook Nuclear Plant from 500 to 2050 fuel assemblies. (Note: The October 16, 1979 letter incorrectly states 550 fuel assemblies instead of 500.) The NRC safety evaluation enclosed states the following in Section 2.2:

> We calculate that with both pumps operating, the spent fuel pool cooling system can maintain the fuel pool outlet water temperature below 120°F for the normal refueling offload that fills the pool (2,050 assemblies) and below 130°F for the full core offload that fills the pool (2,050 assemblies). With a full core offload that fills the pool (2,050 assemblies) and with only one cooling pump operating, the pool temperature can be maintained below 165°F.(2)

The values quoted above are reflected in the current updated FSAR design bases for the spent fuel pool cooling system. (Note: The original FSAR uses "pit" while the current updated FSAR uses "pool.") Subsection 9.4.1 reads as follows:

> The Spent Fuel Pool Cooling System has two cooling trains capable of handling the normal heat load generated by 1857 spent fuel assemblies, maintaining the pool temperature below 120°F. The system is also capable of maintaining pool temperature below 130°F when one complete core is unloaded and stored in the pool in addition to 1857 spent fuel assemblies already stored.

Subsection 9.4.2 of the FSAR updated through July 1982 states the following:

> During normal operation, with up to 1857 spent fuel assemblies stored in the pool, the cooling system will maintain the pool temperature below 120°F. With only one

cooling train in operation, the pool temperature is expected to remain below 140°F. Under the maximum anticipated heat loading 1857 spent fuel assemblies plus one complete core, and only one cooling train available, the temperature is expected to remain below 165°F.[3]

We interpret our current design bases as allowing credit to be taken for the two trains of the spent fuel pool cooling system. This is consistent with the 150°F pool temperature assumptions used for the COBRA analyses in the various ANF documents that have been transmitted to the NRC.

Since the design bases do not require consideration of the loss of one of the trains of the spent fuel pool cooling system, the restriction on storage of greater than 500 assemblies in the spent fuel pool discussed in our submittal AEP:NRC:0116, dated January 22, 1979, was determined to be no longer applicable.[4]

Question 2: The present submittal, AEP:NRC:1071N, dated February 15, 1991, references ANF Report No. ANF-88-09 and ANF-88-09, Rev. 1. In the summary of results in ANF Report No. 88-09, Rev. 1, it is stated that cooling system performance is covered by References 1 and 2, XN-RF-3, Rev. 0 and XN-RF-3, Rev. 0, Appendix E. Was this forwarded to NRC and, if so, is this the correct citation? If not previously provided, please provide same.

The citation is incorrect. Revision 1 of the subject ANF report demonstrates that the storage of fuel with 50,000 MWD/MTU exposure in up to one-half of the Cook Nuclear Plant spent fuel pool storage locations will not violate thermal limits. Section 1.0 of the report states that "The current analysis for the D. C. Cook spent fuel pool high density storage racks (References 1 and 2) considered the storage of fuel with an average exposure of up to 40,000 MWD/MTU." Section 2.0 of the report contains a list of the assumptions. Assumption 9 states the following:

> The fuel rack inlet temperature for the normal cooling case was assumed to be 150°F to permit comparisons with the original analysis. The bulk temperature following a full core offload is only 130°F, so a 20°F conservatism is applied.

The validity of the 150°F value is not documented in XN-RF-3, Rev. 0, although it is used in that report. It is related, however, to the maximum and nominal heat rates into the spent fuel pool, as determined by the USNRC in the safety evaluation enclosed with Amendments 32 and 13 to the Units 1 and 2 operating licenses, respectively.

That safety evaluation states that a temperature of 130°F can be maintained by the spent fuel pool cooling system with both pumps operating for the full core offload that fills the pool (2,050 assemblies), and, correspondingly, Assumption 9 of ANF-88-09, Rev. 1, states that "The bulk temperature following a full core offload is only 130°F, so a 20°F conservatism is applied."

The validity of the 130°F temperature assumed in the safety evaluation and the validity of the 120°F temperature, also given in the safety evaluation, being maintained by the spent fuel pool cooling system with both pumps operating for the normal refueling offload that fills the pool (2,050 assemblies) were independently found to be reasonable by an AEPSC calculation (Attachment 2) performed in 1983.

Report XN-RF-3 was not previously transmitted to the USNRC, and will not be transmitted since it is an incorrect citation.

[illegible]

Question 3: Table 1.1 in ANF 88-09 specifies three cases. Clarify conditions for these cases, presumably for full core offload, both cooling trains operating.

For Case 1, normal cooling, and Case 3, 90% flow blockage, the pool temperature and the fuel assembly inlet temperatures were taken to be 150°F. This is conservative with respect to a full core offload with two trains of the spent fuel pool cooling system in operation. Per the safety evaluation enclosed with Amendments 32 and 13 and per the current updated FSAR, the temperature will be below 130°F for both Cases 1 and 3. The 20°F margin is discussed on page 6 of ANF Report No. 88-09, Rev. 1, Assumption 9.

For Case 2, loss of forced circulation, the bulk pool temperature and the fuel assembly inlet temperatures were taken to be 212°F, the saturation temperature at atmospheric pressure, as discussed on page 6 of ANF 88-09, Rev. 1, Assumption 8.

[illegible]

<u>Question 4</u>: From the discussion in Section 3.4, "Heatup Rate" of ANF 88-09, and also of Rev. 1, it appears that pool coolant temperature is: (1) 130°F for full core offload, (2) 120°F for normal discharge. Yet, in Rev. 1, total heat input is 5.372E7 Btu/hr while in 88-09 it is 3.493E7 Btu/hr. Presumably the bounding calculation is for a heating rate of at least as great as the greater rate shown above. Explain this apparent discrepancy. Also, for normal and full core offloads, discuss chronological placements of spent fuel elements in the pool which results in the heat generation rate used.

The value of 3.493E7 Btu/hr was the error found in ANF Report 88-09 that resulted in Revision 1. The value of 5.372E7 But/hr is based on a conservative heat load calculation performed by ANF. This latter heat load is the basis for the 5.5 hour heatup time to boiling presented in the current updated FSAR. It is not the basis for the 120°F and 130°F spent fuel pool coolant temperatures presented in the current updated FSAR. These 120°F and 130°F numbers are representative of the capability of the spent fuel pool cooling system.

In their independent calculation, ANF assumed simultaneous full core offload of one unit with the normal refueling offload of the other unit. The decay time for both of these is 6 1/2 days. The heat loads for additional batches of fuel are timed from the refueling intervals backwards in time until the pool is filled. This simultaneous offload assumption is significantly more conservative than either AEPSC internal calculations or the current Standard Review Plan.

NOTES

1. Final Safety Analysis Report, Amendment 75, April 1977, Subsection 9.4.1.

2. Safety Evaluation Report, Amendment 32 to Facility Operating License DPR-58 and Amendment 13 to Facility Operating License DPR-74, Subsection 2.2.1, p. 6.

3. Final Safety Analysis Report, July 1982, Subsection 9.4.2, p. 9.4-3.

4. Letter, AEP:NRC:0116, "Spent Fuel Pit Capacity Expansion," January 22, 1979, Attachment 1, Section 3.5.2, p. 4.

Attachment 2 to AEP:NRC:1071Q

Engineering Evaluation and Calculation to Determine if the Spent Fuel Pit Cooling System Can Transfer the Decay Heat Generated by a Maximum of 2050 Spent Fuel Assemblies Stored in the Spent Fuel Pool

AEPSC Mechanical Engineering Division
Heat Exchangers and Pumps Section
June 10, 1983

AMERICAN ELECTRIC POWER SERVICE CORPORATION
MECHANICAL ENGINEERING DIVISION
HEAT EXCHANGERS & PUMPS SECTION

ENGINEERING EVALUATION AND/OR CALCULATION CONTROL SHEET

SUBJECT: To determine if the spent fuel pit cooling system can transfer the decay heat generated by a maximum of 2050 spent fuel assemblies stored in the spent fuel pool.

E/C IDENTIFICATION NO.: HxP830525 PAGE 1 OF 26 PAGES

SUBJECT FILE NO. : 43.3 ATTACHMENTS: NO. OF PAGES: 25

OTHER : ______

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REVISION NO.: ______		DATE	5/25/83		6/10/83

REMARKS: An independent calculation and verification was performed by the R&D Section.

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INTRODUCTION

The purpose of this study is to determine if the spent fuel pit cooling system of the Cook Plant can adequately transfer the decay heat generated by the fuel assemblies stored in the pool, up to a maximum of 2050.

DESCRIPTION

The spent fuel pit cooling system is designed to remove the decay heat generated by the stored spent fuel assemblies. The system design allows for the need to totally unload a reactor vessel (193 fuel assemblies) for maintenance or inspection at a time when as many as 1857 spent fuel assemblies are already stored in the spent fuel storage pool.

The decay heat generated with 1857 stored assemblies and a partial core unload is approximately *21 x 10^6 BTU/hr. This heat decay value is expected to increase to *42 x 10^6 BTU/hr for a full core unload.

The system design incorporates two separate cooling trains, one each per unit. Each train is capable of removing the decay heat generated by all stored assemblies. The cooling water to the spent fuel heat exchangers is provided by the component cooling water system (for details of the spent fuel pit cooling and clean-up system, see system description DCC-CH109).

The component cooling water system design incorporates two parallel cooling trains, of which one train is used during normal operation the other being a back up. The cooling water to the component cooling water heat exchangers is provided by the essential service water system (for details of the component cooling water system, see system description DCC-HP103 and system description DCC-HP102 for details of the essential service water system).

Note: See Fig. 1 for a skematic diagram of the Component Cooling Water/Spent Fuel Pit Cooling Systems.

Design Data

Spent Fuel Pit Cooling System

Spent Fuel Pit Pump: 2300 GPM @ 125'TDH

Spent Fuel Pit Ht. Ex.:	Shell Side	Tube Side
Fluid	water (CCW)	water (SPFW)
Flow Rate	1.49 x 10^6 lb/hr	1.1 x 10^6 lb/hr
Temp In.	95°F	120°F
Temp Out	105°F	106.9°F
Design Heat Transfer Coefficient	377 Btu/lb-°F-Ft^2	
Heat Load	14.9 x 10^6 Btu/hr	

Component Cooling Water System

Component Cooling Water Pumps: 9000 GPM @ 190'TDH

CCW Heat Exchanger:	Shell Side	Tube Side
Fluid	water (CCW)	water (ESW- Lake Michigan)
Flow Rate	4×10^6 Btu/hr	4.75×10^6 lb/hr
Temp In	114°F	76°F
Temp Out	95°F	92°F
Design Heat Transfer Coefficient	328 Btu/lb-°F-Ft^2	
Heat Load	76×10^6 Btu/hr	

This study was performed by modeling the systems using computer program "HXTEMP" (written by the Heat Exchangers & Pumps Section). A total of nine (9) Cases were examined. The heat loads listed on Table 1 were used to develop the heat load for each of the nine cases shown on Table 2.

Table 2 lists the expected decay heat generated in the spent fuel pool, the mode of Unit operation, the spent fuel pool inlet temperature to the spent fuel heat exchanger, and the component cooling water heat loads (spent fuel heat exchanger, other CCW services, total heat loads on the component cooling water heat exchanger).

CONCLUSIONS

The decay heat of 42×10^6 BTU/hr generated by the stored fuel assemblies (max 2050) can be transferred, within acceptable temperature ranges, to the component cooling water system provided that the heat load on the component cooling water heat exchanger is maintained at approximately 75×10^6 BTU/hr, total. The heat load on the component cooling water heat exchanger can be maintained by limiting the amount of heat transferred from the remainder of the component cooling water system.

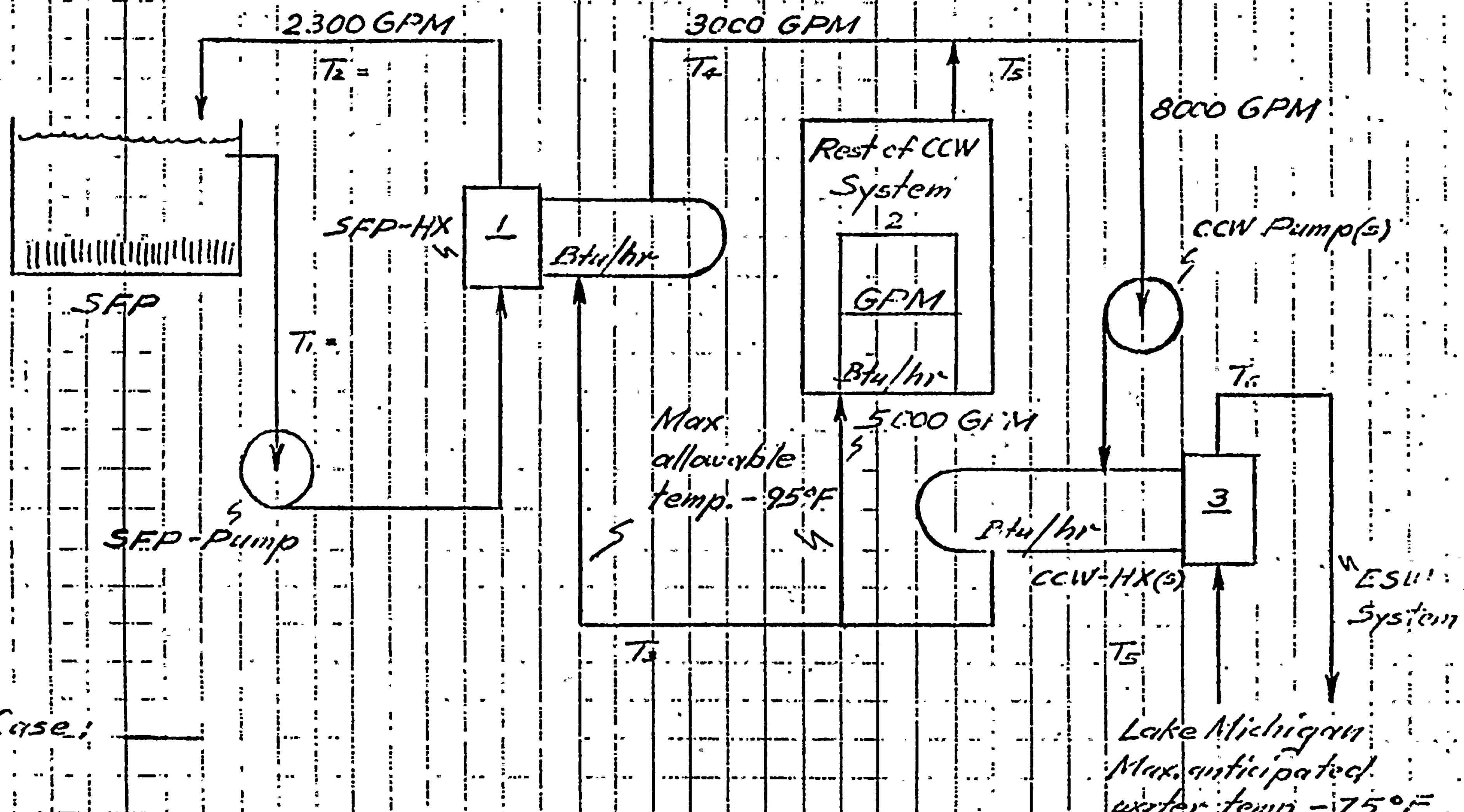
Note → INDEPENDENT CHECK

An independent check was performed by the R&D Section. Their review consisted of generating their own computer program, "EXCHANG ," to verify the temperatures generated by HXTEMP.** A comparison of the outlet temperatures obtained from both computer programs are listed in Table 3. As shown on Table 3, the calculated temperatures are within 1° or 2°F of each other.

*These values have been received from the Fuel Management Section, NED.

**NOTE: HXTEMP description and write-up can be found in Heat Exchangers and Pumps Section General File number 45.0.

Spent Fuel Pit - Decay Heat Removal (FIG 1)



Case: ____

4/20/82

TABLE 1

COMPONENT COOLING WATER SYSTEM

Case: ________

Services			CCW Flow gpm-each	Base Unit	Heat Load Btu/hr-each Design Values	Other Unit
Main Train 2 per unit (parallel)						
RHR HX	2		5000		41,500,000	
CC Pump HXs	2		40		87,000	
SI Pump HXs	2		20		50,000	
RHR Pump HX	2		5		12,500	
CS Pump HX	2		10		25,000	
Aux. Train 1 per unit (in parallel with main trains)						
BA Evap	1	(Unit 1)	1450		18,100,000	
Waste Evap	1	(Unit 2)	1000		10,000,000	
Waste Gas Comp	2		25		50,000	
Sample Coolers	12		140 (total)		200,000	
Recip Chg Pump	1		90		437,500	
Letdown HX	1		1000		15,000,000	
Seal Wtr HX	1		200		2,500,000	
Pen. Cooling	1		300		1,500,000	
RCP Motor	4		105		503,000	
RCP Th Bar	4		35		1,000,000	
Reactor Supports	4		10		300,000	
Hydrogen Analyzer	1		12		30,000	
Excess Letdown HX	1		230		4,600,000	
				________ Base Unit	Totals	________ Other Unit excl. SFP
SFP HX	1		3000		15,000,000	
				Total SFP	________	

Converted BA Evap.

Base Unit Mode

CCW HXs - SFP HX ____
CCW Pps - SFP Pp ____
Excl. SFP CCW Heat Load ________
SFP Heat Load ________

Other Unit Mode

CCW HXs ____ SFP HX ____
CCW Pps ____ SFP Pp ____
CCW Heat Load ________ excl. SFP
SFP Heat Load ________

TABLE 2

D.C. COOK NUCLEAR UNITS

SPENT FUEL PIT DECAY HEAT REMOVAL STUDY

	BASE UNIT						OTHER UNIT				
				CCW Heat Loads					CCW Heat Loads		
Case	S.F.P. Decay Heat Btu/Hr	Unit Mode	S.F.P.* Outlet Temp °F	S.F.P. Btu/Hr	Others Btu/Hr	Total Btu/Hr	Unit Mode	S.F.P.* Outlet Temp. °F	S.F.P. Btu/Hr	Others Btu/Hr	Total Btu/Hr
I	15.0	5	120.0	15.0	61.0	76.0	-	-	-	-	[illegible]
II a	30.0	1	113.0	15.0	39.6	54.6	1	111.0	15.0	31.5	46.5
b	30.0	1	141.0	30.0	39.6	69.6	1	-	0.0	31.5	31.5
III a	42.0	6	117.7	21.0	10.2	31.2	1	125.1	21.0	39.6	50.6
b	42.0	6	158.0	42.0	18.3	60.3	1	-	0.0	31.5	31.5
c	42.0	6	-	0.0	10.2	10.2	1	161.7	42.0	33.0	75.0
IV a	42.0	6	117.7	21.0	10.2	31.2	5	120.1	21.0	54.0	75.0
b	42.0	6	158.0	42.0	18.3	60.3	5	-	0.0	64.7	64.7
c	42.0	6	-	0.0	10.2	10.2	5	161.7	42.0	33.0	75[illegible]

Case I - Original Design Conditions.

* Spent fuel pool water temp. entering the S.F.P. Heat Exchanger.

All Heat Load Values in Million Btu/Hr.

21,000,000 Btu/Hr - Assumed to be max. heat load with 1857 spent fuel assemblies + partial core unload.

42,000,000 Btu/Hr - Assumed to be max. heat load with 1857 spent fuel assemblies + full core unload.

TABLE 3

D.C. COOK NUCLEAR UNITS

SPENT FUEL PIT DECAY HEAT REMOVAL STUDY

			BASE UNIT						OTHER UNIT					
			CCW HX			SFP HX			CCW HX			SFP HX		
			Q	U	T	Q	U	T	Q	U	T	Q	U	T
Case II	A	1)	39.6	324.4	89.4	15.0	326.9	113.2	31.5	317.1	87.3	15.0	362.1	111.1
		2)	39.6	333.5	88.7	15.0	337.9	113.9	31.5	332.5	86.7	15.0	336.2	111.9
(3)	B	1)	39.6	325.1	93.4	30.0	373.3	141.4	-	-	-	-	-	-
		2)	39.6	335.3	92.4	30.0	351.4	142.0	-	-	-	-	-	-
Case III	A	1)	10.2	316.5	84.0	22.0	364.0	119.5	39.6	324.8	91.5	22.0	366.3	126
		2)	10.2	330.6	83.1	22.0	338.7	120.0	39.6	334.4	90.4	22.0	344.5	127
(3)	B	1)	18.3	324.8	91.7	44.0	377.2	161.7	-	-	-	-	-	-
		2)	18.3	334.5	90.6	44.0	358.7	162.8	-	-	-	-	-	-
(3)	C	1)	-	-	-	-	-	-	39.6	325.7	96.9	44.0	378.5	166.5
		2)	-	-	-	-	-	-	39.6	337.0	95.8	44.0	362.1	167
Case IV	A	1)	10.2	316.5	84.0	22.0	364.0	119.5	72.8	326.0	99.1	22.0	372.3	134.2
		2)	10.2	330.6	83.1	22.0	338.7	120.0	72.8	338.3	98.5	22.0	356.5	134
(3)	B	1)	18.3	324.8	91.7	44.0	377.2	161.6	-	-	-	-	-	-
		2)	18.3	334.5	90.6	44.0	358.7	162.8	-	-	-	-	-	-

Notes:

1) Temperatures calculated by HE & P program, HXTEMP.

2) Temperatures calculated by R & D program, EXCHANG.

3) Case IIB, IIIB and IVB spent fuel heat load assumed to be on base unit only. Case IIIC SFP heat load assumed on other Unit.

4) Q - Heat Load Million Btu/Hr.
U - Heat Transfer coefficient $\frac{Btu}{lb\text{-}^{o}F\text{-}ft^{2}}$
T - Temp ^{o}F

5) Total component cooling water heat exchanger heat load is the sum of $Q_{ccw} + Q_{sfp}$.

TABLE 1

COMPONENT COOLING WATER SYSTEM

Case: I

Services			CCW Flow gpm-each	Base Unit	Heat Load Btu/hr-each Design Values	Other Unit
Main Train 2 per unit (parallel)						
RHR HX	2		5000		41,500,000	
CC Pump HXs	2		40		87,000	
SI Pump HXs	2		20		50,000	
RHR Pump HX	2		5		12,500	
CS Pump HX	2		10		25,000	
Aux. Train 1 per unit (in parallel with main trains)						
BA Evap	1	(Unit 1)	1450		18,100,000	
Waste Evap	1	(Unit 2)	1000		10,000,000	
Waste Gas Comp	2		25		50,000	
Sample Coolers	12		140 (total)		200,000	
Recip Chg Pump	1		90		437,500	
Letdown HX	1		1000		15,000,000	
Seal Wtr HX	1		200		2,500,000	
Pen. Cooling	1		300		1,500,000	
RCP Motor	4		105		503,000	
RCP Th Bar	4		35		1,000,000	
Reactor Supports	4		10		300,000	
Hydrogen Analyzer	1		12		30,000	
Excess Letdown HX	1		230		4,600,000	
				61,000,000 Base Unit	Totals	______ Other Unit excl. SFP
SFP HX	1		3000		15,000,000	
				Total SFP	15,000,000	

NOTE: THIS CASE IS THE DESIGN CASE USED TO VERIFY THE PROGRAM.

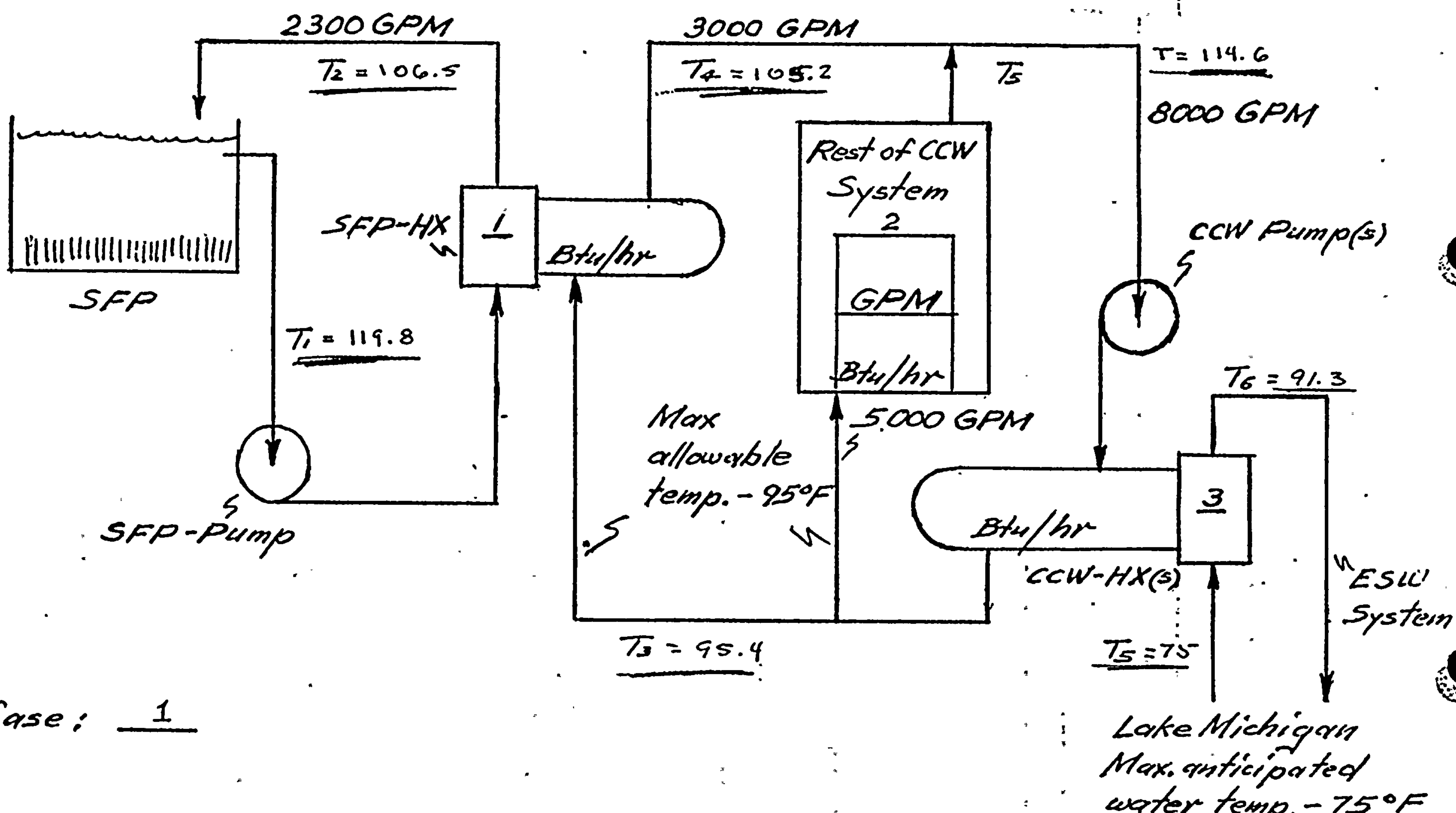
Base Unit Mode 5

CCW HXs 1 SFP HX 1
CCW Pps 1 SFP Pp 1
Excl. SFP CCW Heat Load 61,000,000
SFP Heat Load 15,000,000

Other Unit Mode

CCW HXs – SFP HX –
CCW Pps – SFP Pp ____
CCW Heat Load – excl. SFP
SFP Heat Load –

Spent Fuel Pit - Decay Heat Removal



Case: 1

4/20/82

TABLE 1

COMPONENT COOLING WATER SYSTEM

Case: II a.

Services			CCW Flow gpm-each	Base Unit	Heat Load Btu/hr-each Design Values	Other Unit
Main Train 2 per unit (parallel)						
RHR HX	2		5000	—	41,500,000	—
CC Pump HXs	2		40	—	87,000	—
SI Pump HXs	2		20	—	50,000	—
RHR Pump HX	2		5	—	12,500	—
CS Pump HX	2		10	—	25,000	—
Aux. Train 1 per unit (in parallel with main trains)						
BA Evap	1	(Unit 1)	1450	✓	18,100,000	—
Waste Evap	1	(Unit 2)	1000	—	10,000,000	✓
Waste Gas Comp	2		25	✓	50,000	✓
Sample Coolers	12		140 (total)	✓	200,000	✓
Recip Chg Pump	1		90	✓	437,500	✓
Letdown HX	1		1000	✓	15,000,000	✓
Seal Wtr HX	1		200	✓	2,500,000	✓
Pen. Cooling	1		300	✓	1,500,000	✓
RCP Motor	4		105	✓	503,000	✓
RCP Th Bar	4		35	✓	1,000,000	✓
Reactor Supports	4		10	✓	300,000	✓
Hydrogen Analyzer	1		12	—	30,000	—
Excess Letdown HX	1		230	—	4,600,000	—
				39,590,500 Base Unit	Totals	31,490,500 excl. SFP Other Unit
SFP HX	1		3000		15,000,000	
				Total SFP	30,000,000	

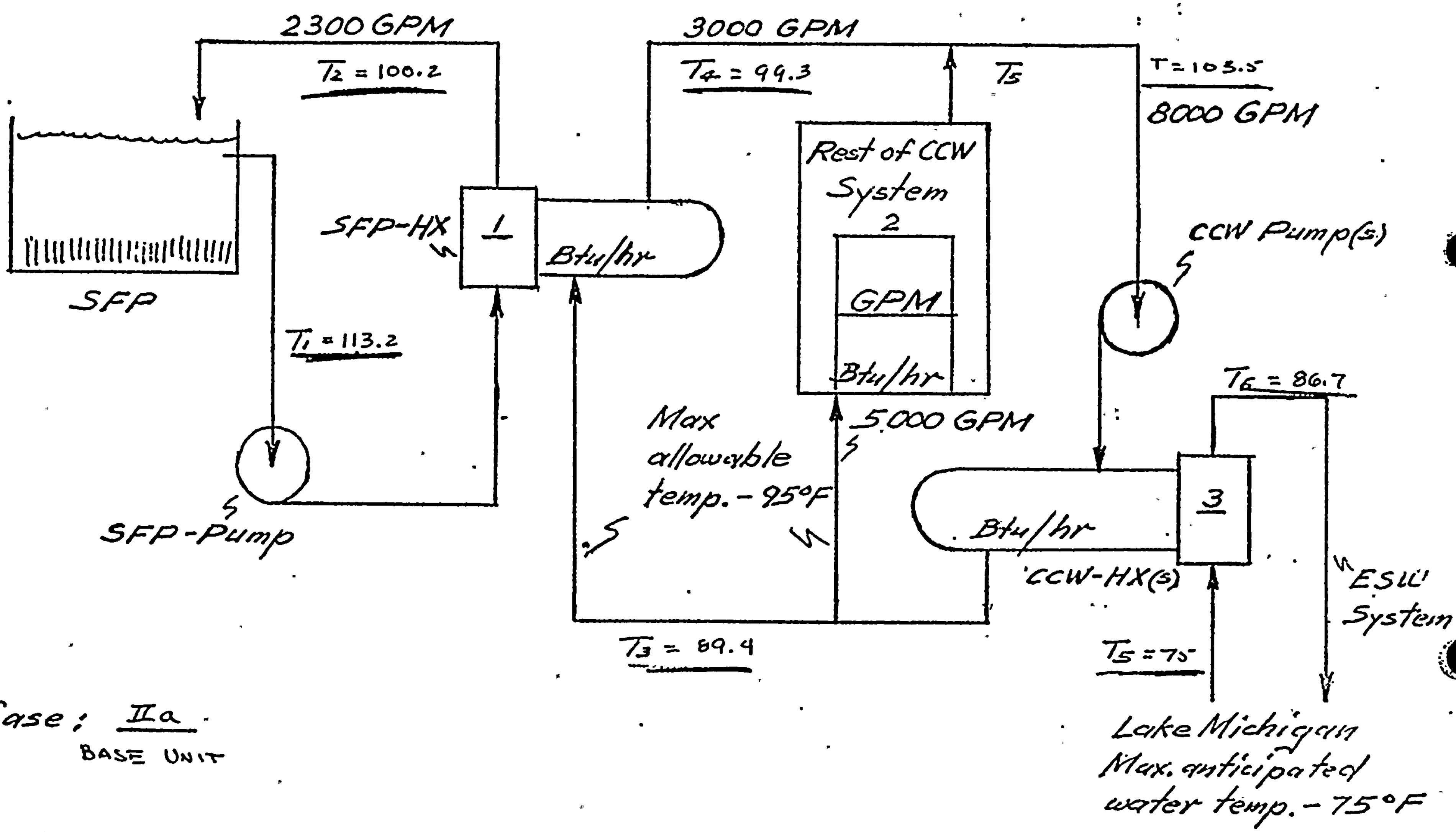
Base Unit Mode 1

CCW HXs 1 SFP HX 1
CCW Pps 1 SFP Pp 1
Excl. SFP CCW Heat Load 39,600,000
SFP Heat Load 15,000,000

Other Unit Mode 1

CCW HXs 1 SFP HX 1
CCW Pps 1 SFP Pp 1
CCW Heat Load 31,500,000 excl. SFP
SFP Heat Load 15,000,000

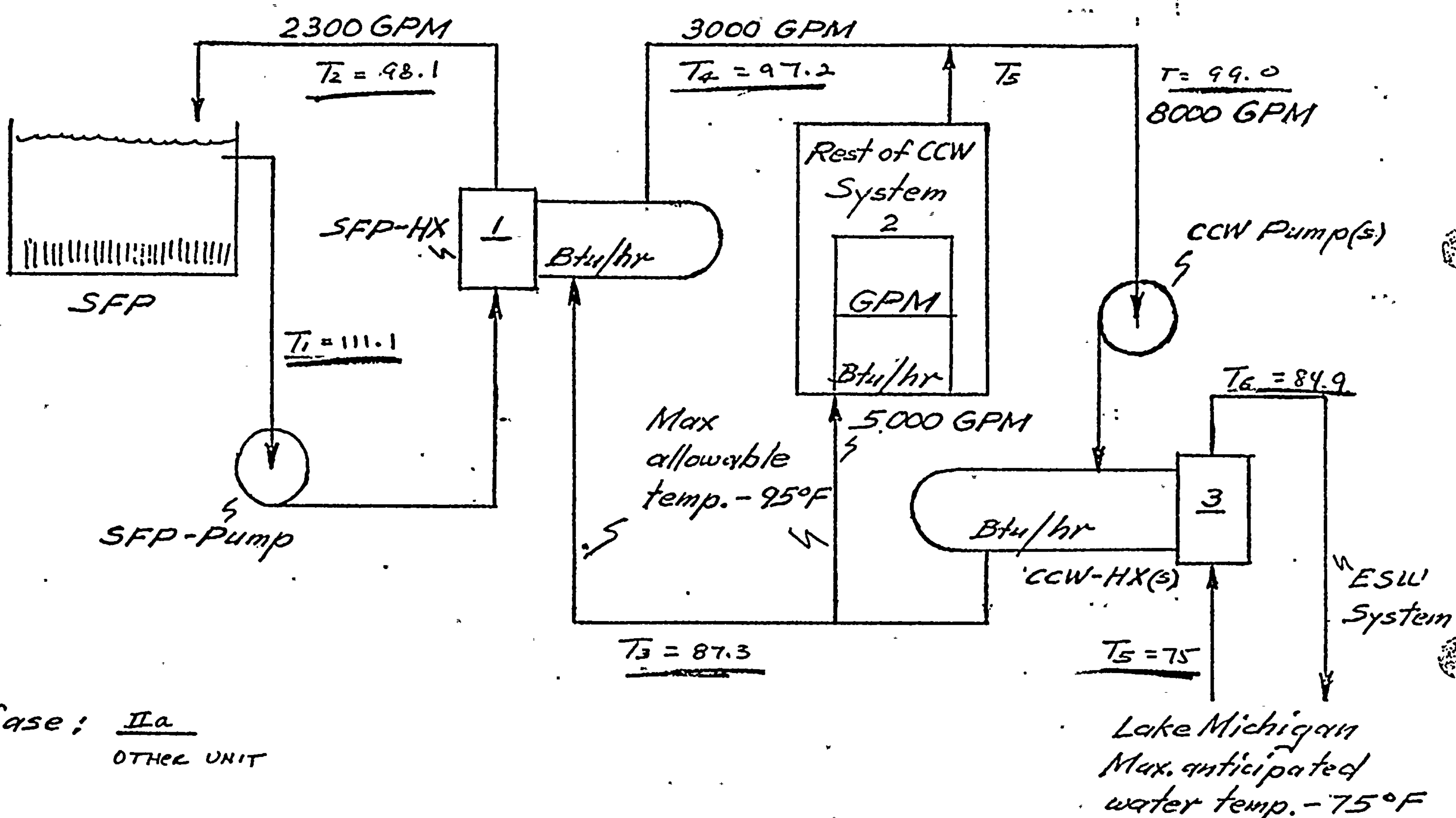
<u>Spent Fuel Pit - Decay Heat Removal</u>



Case: <u>IIa</u>
BASE UNIT

4/20/82

Spent Fuel Pit - Decay Heat Removal



Case: IIa
OTHER UNIT

4/20/82

TABLE 1

COMPONENT COOLING WATER SYSTEM

Case: IIb

Services		CCW Flow gpm-each	Base Unit	Heat Load Btu/hr-each Design Values	Other Unit
Main Train 2 per unit (parallel)					
RHR HX	2	5000	—	41,500,000	—
CC Pump HXs	2	40	—	87,000	—
SI Pump HXs	2	20	—	50,000	—
RHR Pump HX	2	5	—	12,500	—
CS Pump HX	2	10	—	25,000	—
Aux. Train 1 per unit (in parallel with main trains)					
BA Evap	1 (Unit 1)	1450	✓	18,100,000	—
Waste Evap	1 (Unit 2)	1000	—	10,000,000	✓
Waste Gas Comp	2	25	✓	50,000	✓
Sample Coolers	12	140 (total)	✓	200,000	✓
Recip Chg Pump	1	90	✓	437,500	✓
Letdown HX	1	1000	✓	15,000,000	✓
Seal Wtr HX	1	200	✓	2,500,000	✓
Pen. Cooling	1	300	✓	1,500,000	✓
RCP Motor	4	105	✓	503,000	✓
RCP Th Bar	4	35	✓	1,000,000	✓
Reactor Supports	4	10	✓	300,000	✓
Hydrogen Analyzer	1	12	—	30,000	—
Excess Letdown HX	1	230	—	4,600,000	—
			39,590,500 Base Unit	Totals	31,490,500 excl. SFP Other Unit
SFP HX	1	3000		15,000,000	
			Total SFP	30,000,000	

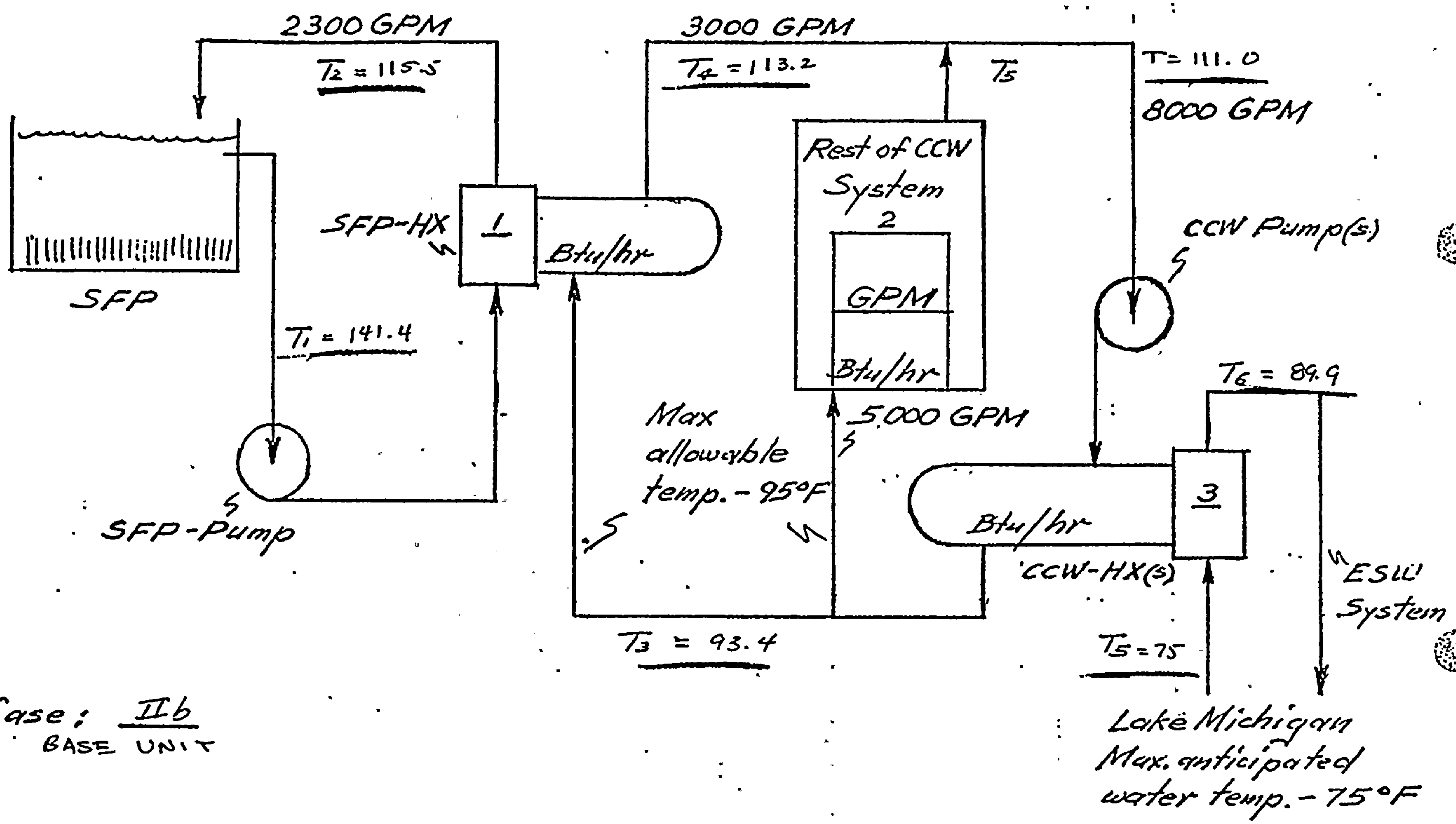
Base Unit Mode 1

- CCW HXs 1 - SFP HX 1
- CCW Pps 1 - SFP Pp 1
- Excl. SFP CCW Heat Load 39,600,000
- SFP Heat Load 30,000,000

Other Unit Mode 1

- CCW HXs — SFP HX —
- CCW Pps — SFP Pp —
- CCW Heat Load 31,500,000 excl. SFP
- SFP Heat Load —

Spent Fuel Pit - Decay Heat Removal



Case: IIb
BASE UNIT

RJ 4/20/82

TABLE 1

COMPONENT COOLING WATER SYSTEM

Case: IIIa

Services		CCW Flow gpm-each		Base Unit	Heat Load Btu/hr-each Design Values	Other Unit
Main Train 2 per unit (parallel)						
RHR HX	2	5000		—	41,500,000	—
CC Pump HXs	2	40		—	87,000	—
SI Pump HXs	2	20		—	50,000	—
RHR Pump HX	2	5		—	12,500	—
CS Pump HX	2	10		—	25,000	—
Aux. Train 1 per unit (in parallel with main trains)						
BA Evap	1 (Unit 1)	1450		—	18,100,000	✓
Waste Evap	1 (Unit 2)	1000		✓	10,000,000	—
Waste Gas Comp	2	25		—	50,000	✓
Sample Coolers	12	140	(total)	✓	200,000	✓
Recip Chg Pump	1	90		—	437,500	✓
Letdown HX	1	1000		—	15,000,000	✓
Seal Wtr HX	1	200		—	2,500,000	✓
Pen. Cooling	1	300		—	1,500,000	✓
RCP Motor	4	105		—	503,000	✓
RCP Th Bar	4	35		—	1,000,000	✓
Reactor Supports	4	10		—	300,000	✓
Hydrogen Analyzer	1	12		—	30,000	—
Excess Letdown HX	1	230		—	4,600,000	—
				10,200,000 Base Unit	Totals	39,590,500 Other Unit excl. SFP
SFP HX	1	3000			15,000,000	
				Total SFP	44,000,000	

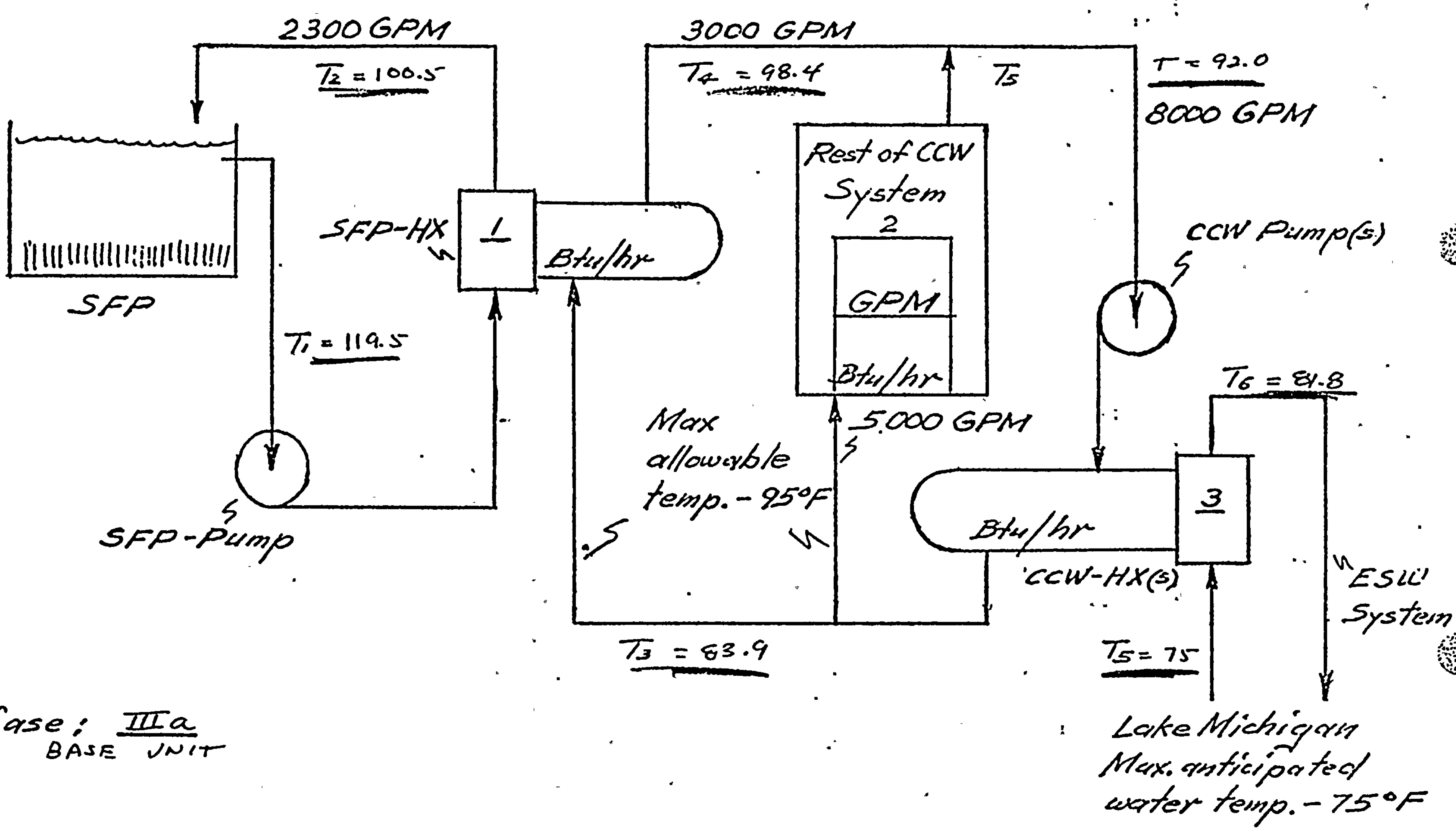
Base Unit Mode 6 COMPLETE CORE REMOVAL

CCW HXs 1 SFP HX 1
CCW Pps 1 SFP Pp 1
Excl. SFP CCW Heat Load 10,200,000
SFP Heat Load 22,000,000

Other Unit Mode 1

CCW HXs 1 SFP HX 1
CCW Pps 1 SFP Pp 1
CCW Heat Load 39,600,000 excl. SFP
SFP Heat Load 22,000,000

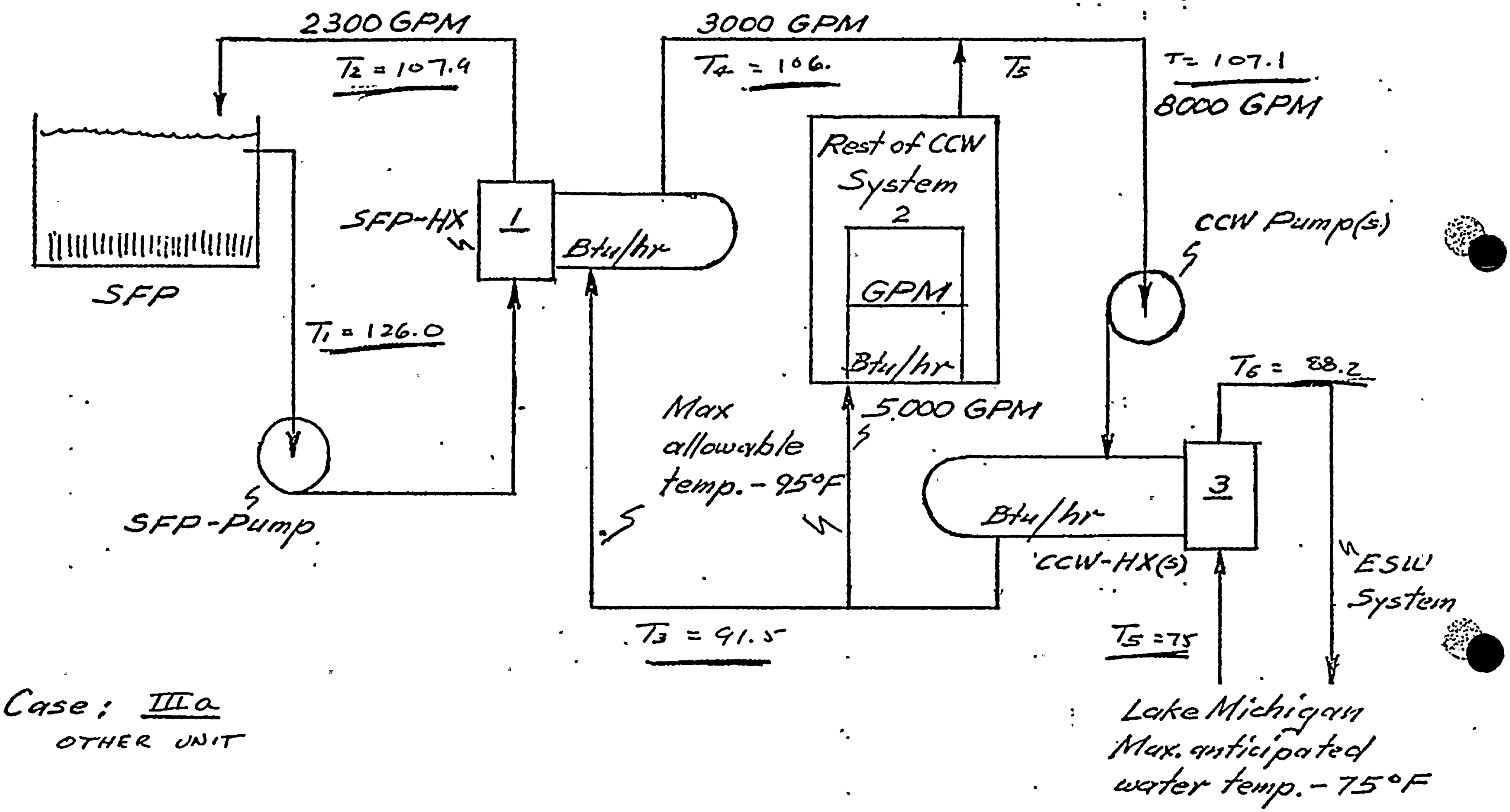
Spent Fuel Pit - Decay Heat Removal



Case: IIIa
BASE UNIT

4/20/82

Spent Fuel Pit - Decay Heat Removal



4/20/82

TABLE 1

COMPONENT COOLING WATER SYSTEM

Case: III b.

Services			CCW Flow gpm-each		Base Unit	Heat Load Btu/hr-each Design Values	Other Unit
Main Train 2 per unit (parallel)							
RHR HX	2		5000		—	41,500,000	—
CC Pump HXs	2		40		—	87,000	—
SI Pump HXs	2		20		—	50,000	—
RHR Pump HX	2		5		—	12,500	—
CS Pump HX	2		10		—	25,000	—
Aux. Train 1 per unit (in parallel with main trains)							
BA Evap	1	(Unit 1)	1450		✓	18,100,000	—
Waste Evap.	1	(Unit 2)	1000		—	10,000,000	✓
Waste Gas Comp	2		25		—	50,000	✓
Sample Coolers	12		140	(total)	✓	200,000	✓
Recip Chg Pump	1		90		—	437,500	✓
Letdown HX	1		1000		—	15,000,000	✓
Seal Wtr HX	1		200		—	2,500,000	✓
Pen. Cooling	1		300		—	1,500,000	✓
RCP Motor	4		105		—	503,000	✓
RCP Th Bar	4		35		—	1,000,000	✓
Reactor Supports	4		10		—	300,000	✓
Hydrogen Analyzer	1		12		—	30,000	✓
Excess Letdown HX	1		230		—	4,600,000	—
					18,300,000 Base Unit	Totals	31,490,500 excl. SFP Other Unit
SFP HX	1		3000			15,000,000	
					Total SFP	44,000,000	

Base Unit Mode 6 Complete Core Removal

CCW HXs 1/1 SFP HX 1

CCW Pps 1/1 SFP Pp 1

Excl. SFP CCW Heat Load 18,300,000

SFP Heat Load 44,000,000

Other Unit Mode 1

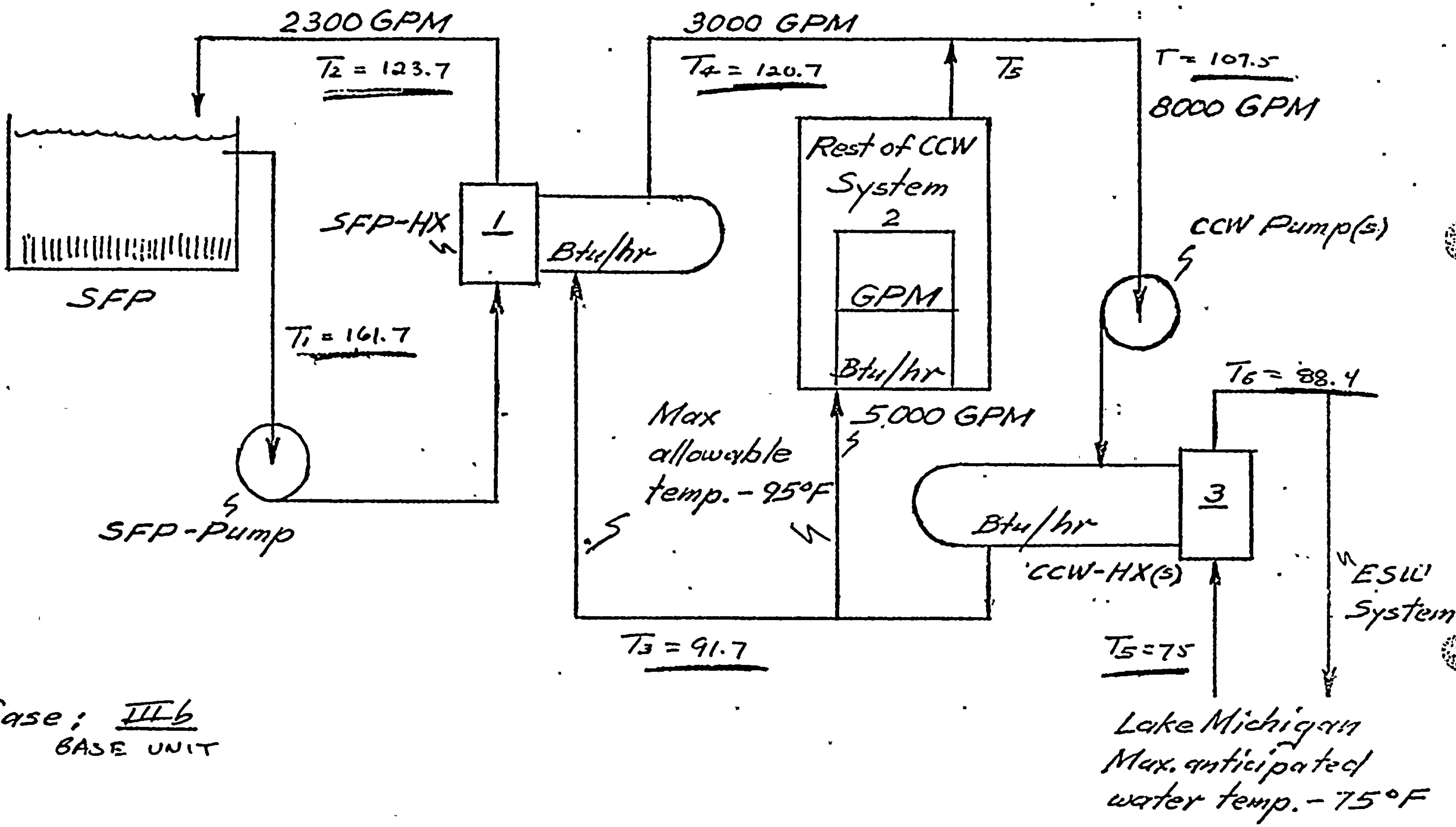
CCW HXs 1 SFP HX —

CCW Pps 1 SFP Pp —

CCW Heat Load 31,500,000 excl. SFP

SFP Heat Load —

Spent Fuel Pit - Decay Heat Removal



Case: III b
BASE UNIT

4/20/82

TABLE 1

COMPONENT COOLING WATER SYSTEM

Case: IIIC.

Services		CCW Flow gpm-each		Base Unit	Heat Load Btu/hr-each Design Values	Other Unit
Main Train 2 per unit (parallel)						
RHR HX	2	5000			41,500,000	
CC Pump HXs	2	40			87,000	
SI Pump HXs	2	20			50,000	
RHR Pump HX	2	5			12,500	
CS Pump HX	2	10			25,000	
Aux. Train 1 per unit (in parallel with main trains)						
BA Evap	1 (Unit 1)	1450			18,100,000	
Waste Evap	1 (Unit 2)	1000			10,000,000	
Waste Gas Comp	2	25			50,000	
Sample Coolers	12	140	(total)		200,000	
Recip Chg Pump	1	90			437,500	
Letdown HX	1	1000			15,000,000	
Seal Wtr HX	1	200			2,500,000	
Pen. Cooling	1	300			1,500,000	
RCP Motor	4	105			503,000	
RCP Th Bar	4	35			1,000,000	
Reactor Supports	4	10			300,000	
Hydrogen Analyzer	1	12			30,000	
Excess Letdown HX	1	230			4,600,000	
				10,200,000 Base Unit	Totals	39,590,500 Other Unit excl. SFP
SFP HX	1	3000			15,000,000	
				Total SFP	44,000,000	

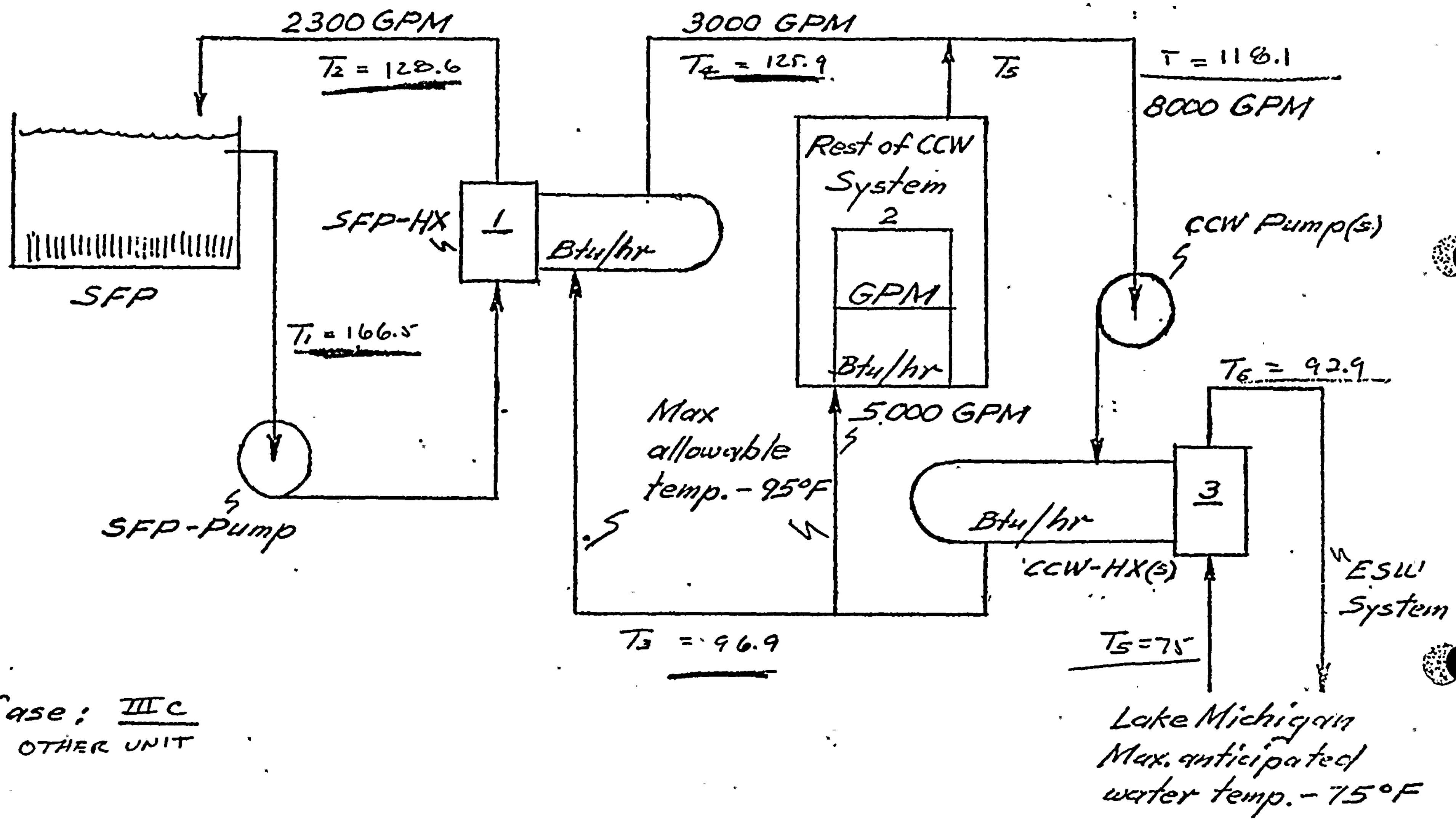
Base Unit Mode 6 COMPLETE CORE REMOVAL

CCW HXs 1 SFP HX —
CCW Pps 1 SFP Pp —
Excl. SFP CCW Heat Load 10,200,000
SFP Heat Load —

Other Unit Mode 1

CCW HXs 1 SFP HX 1
CCW Pps 1 SFP Pp 1
CCW Heat Load 39,600,000 excl. SFP
SFP Heat Load 44,000,000

Spent Fuel Pit - Decay Heat Removal



Case: IIIc
OTHER UNIT

4/20/82

TABLE 1

COMPONENT COOLING WATER SYSTEM

Case: IV a

Services		CCW Flow gpm-each	Base Unit	Heat Load Btu/hr-each Design Values	Other Unit
Main Train 2 per unit (parallel)					
RHR HX	2	5000	—	41,500,000	✓
CC Pump HXs	2	40	—	87,000	—
SI Pump HXs	2	20	—	50,000	—
RHR Pump HX	2	5	—	12,500	✓
CS Pump HX	2	10	—	25,000	—
Aux. Train 1 per unit (in parallel with main trains)					
BA Evap.	1 (Unit 1)	1450	—	18,100,000	✓
Waste Evap	1 (Unit 2)	1000	✓	10,000,000	—
Waste Gas Comp	2	25	—	50,000	✓
Sample Coolers	12	140 (total)	✓	200,000	✓
Recip Chg Pump	1	90	—	437,500	✓
Letdown HX	1	1000	—	15,000,000	—
Seal Wtr HX	1	200	—	2,500,000	—
Pen. Cooling	1	300	—	1,500,000	—
RCP Motor	4	105	—	503,000	—
RCP Th Bar	4	35	—	1,000,000	—
Reactor Supports	4	10	—	300,000	—
Hydrogen Analyzer	1	12	—	30,000	—
Excess Letdown HX	1	230	—	4,600,000	—
			10,200,000 Base Unit	Totals	72,787,500 excl. SFP Other Unit
SFP HX	1	3000		15,000,000	
			Total SFP	44,000,000	

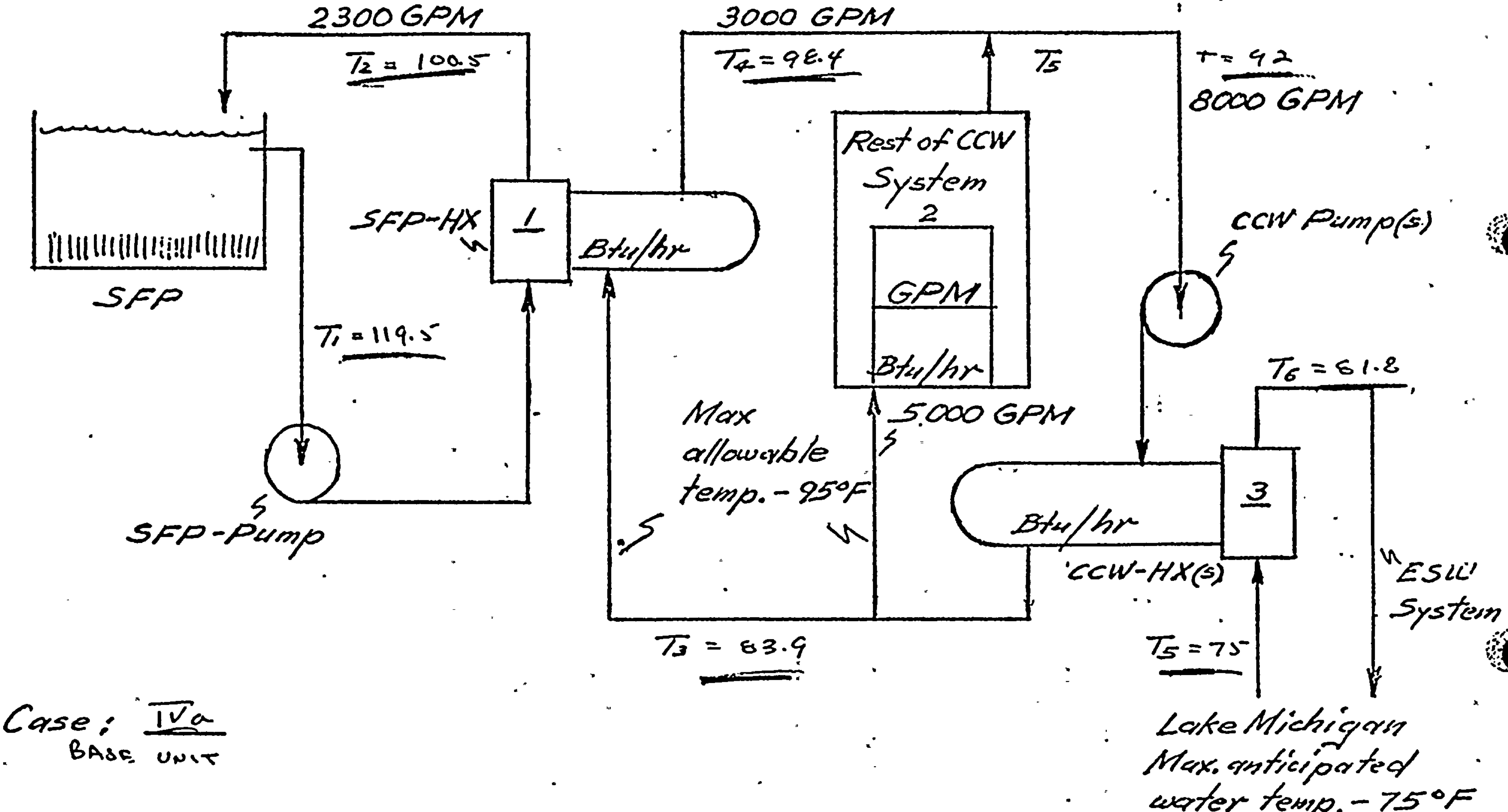
Base Unit Mode 6 COMPLETE CORE REMOVAL

CCW HXs 1 SFP HX 1
CCW Pps 1 SFP Pp 1
Excl. SFP CCW Heat Load 10,200,000
SFP Heat Load 22,000,000

Other Unit Mode 5

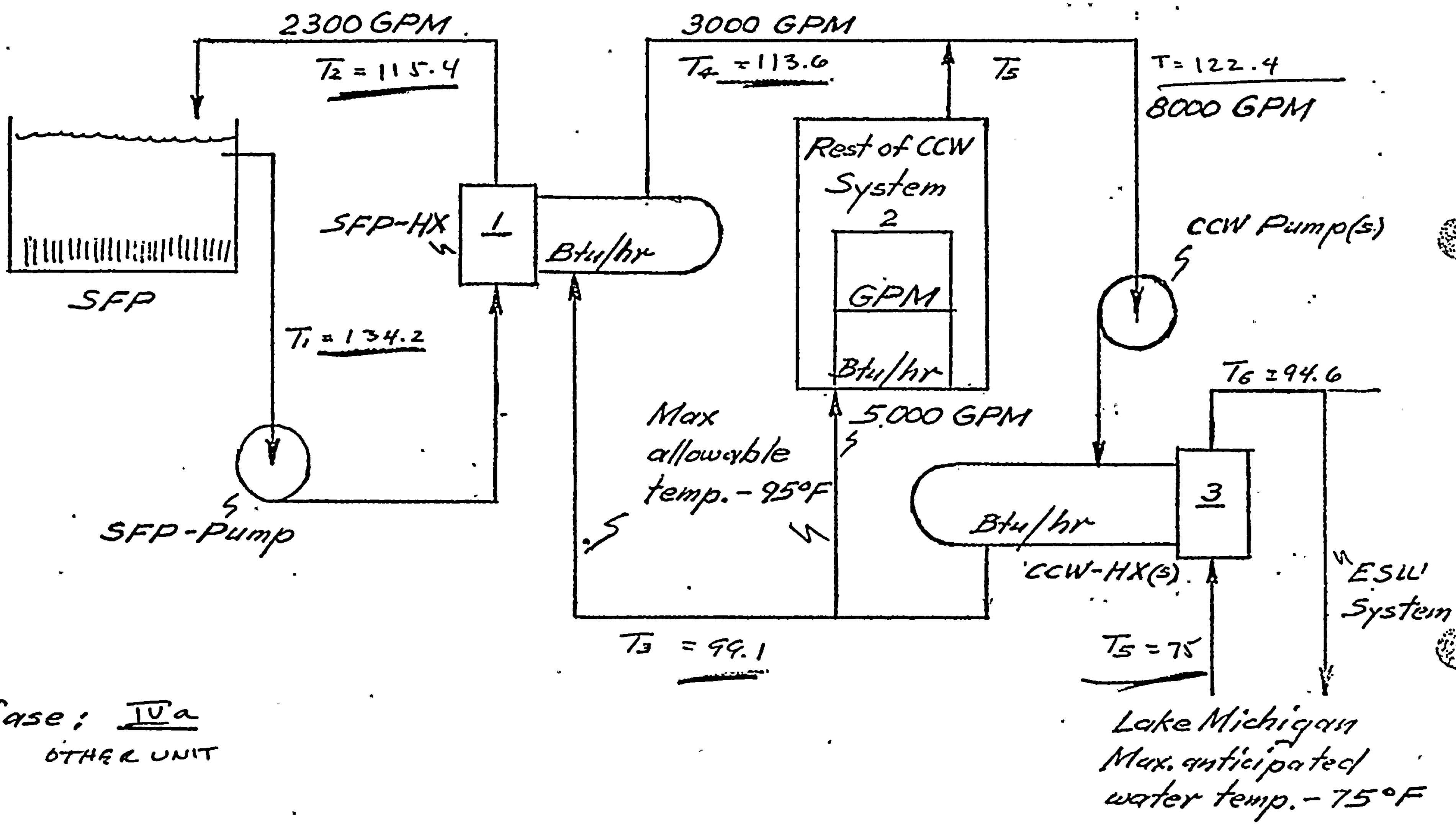
CCW HXs 1 SFP HX 1
CCW Pps 1 SFP Pp 1
CCW Heat Load 72,800,000 excl. SFP
SFP Heat Load 22,000,000

Spent Fuel Pit - Decay Heat Removal



4/20/82

Spent Fuel Pit - Decay Heat Removal



Case: IVa
OTHER UNIT

4/20/82

TABLE 1

COMPONENT COOLING WATER SYSTEM

Case: IVb

Services		CCW Flow gpm-each		Base Unit	Heat Load Btu/hr-each Design Values	Other Unit
Main Train 2 per unit (parallel)						
RHR HX	2	5000		—	41,500,000	✓
CC Pump HXs	2	40		—	87,000	—
SI Pump HXs	2	20		—	50,000	—
RHR Pump HX	2	5		—	12,500	✓
CS Pump HX	2	10		—	25,000	—
Aux. Train 1 per unit (in parallel with main trains)						
BA Evap	1 (Unit 1)	1450		✓	18,100,000	—
Waste Evap	1 (Unit 2)	1000		—	10,000,000	✓
Waste Gas Comp	2	25		—	50,000	✓
Sample Coolers	12	140	(total)	✓	200,000	✓
Recip Chg Pump	1	90		—	437,500	✓
Letdown HX	1	1000		—	15,000,000	—
Seal Wtr HX	1	200		—	2,500,000	—
Pen. Cooling	1	300		—	1,500,000	—
RCP Motor	4	105		—	503,000	—
RCP Th Bar	4	35		—	1,000,000	—
Reactor Supports	4	10		—	300,000	—
Hydrogen Analyzer	1	12		—	30,000	—
Excess Letdown HX	1	230		—	4,600,000	—
				18,300,000 Base Unit	Totals	64,687,500 excl. SFP Other Unit
SFP HX	1	3000			15,000,000	
				Total SFP	44,000,000	

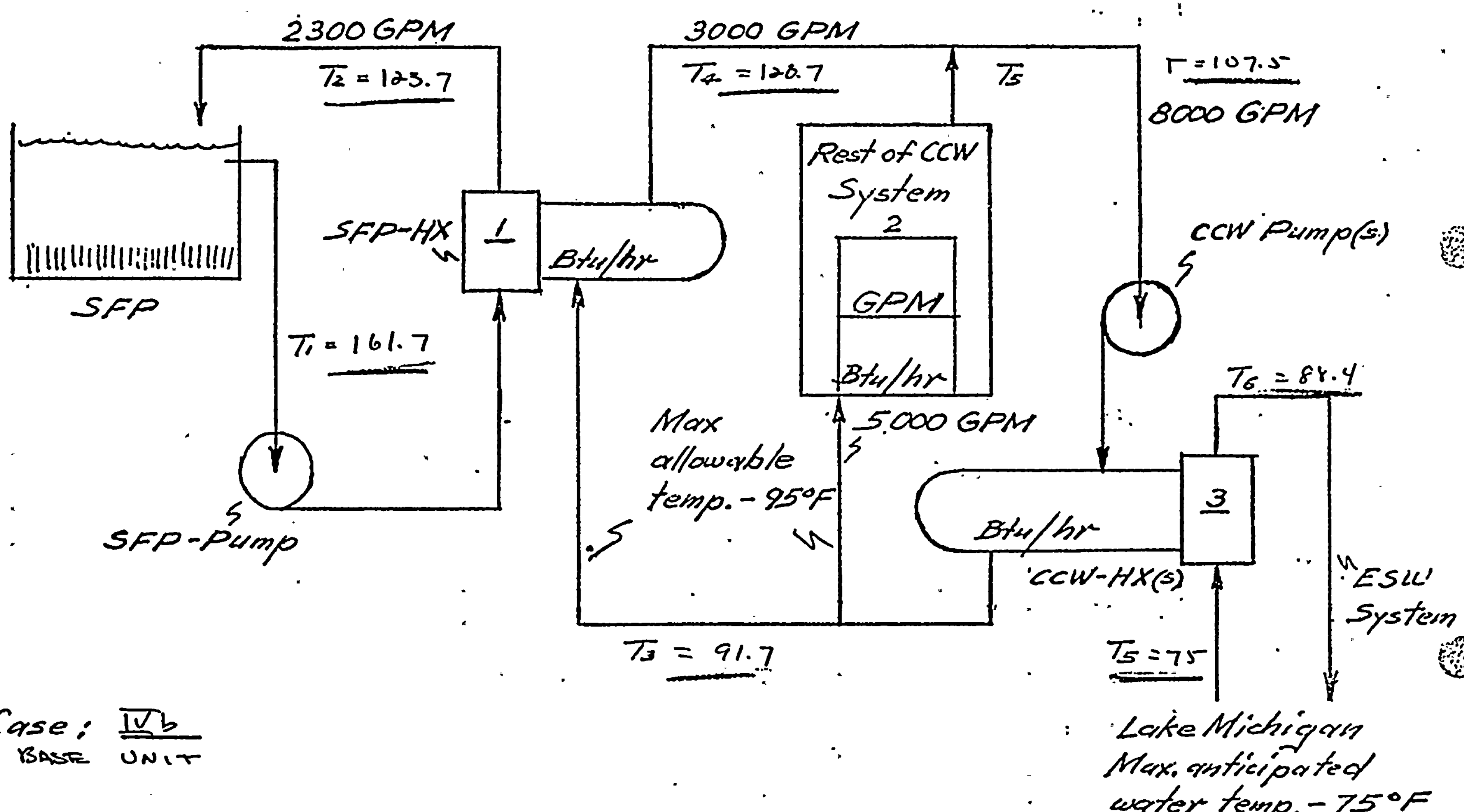
Base Unit Mode 6 COMPLETE CORE REMOVAL

CCW HXs 1 SFP HX 1
CCW Pps 1 SFP Pp 1
Excl. SFP CCW Heat Load 18,300,000
SFP Heat Load 44,000,000

Other Unit Mode 5

CCW HXs 1 SFP HX —
CCW Pps 1 SFP Pp —
CCW Heat Load 64,700,000 excl. SFP
SFP Heat Load —

Spent Fuel Pit - Decay Heat Removal



Case: IVb
BASE UNIT

4/20/82

```
OLD ØXTEMP

READY
LS\ISTNH 1310-1340

1310  TF=.001
1320  TS=.0005
1330  T1=17
1340  SID=49.0
```

```
HXTEMP      UTS/EASY      10:59 MAY 19,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,31.2E6
NUMBER OF ITERATIONS=   7
CALC. HEAT TRANSFER COEFF. 316.4
INPUTTED HEAT LOAD =   31200000.00
HEAT LOAD Q           31690464.00
MTD CORRECTION F     =  .882
MTD CORRECTED        =  7.00
TC1=  75.00  TC2=  81.67  TH1=  91.30  TH2=  83.48

 INPUT NEW TH1=
?0
 *STOP*

USED   12.7 CPV

READY
RUN
```

CCW Base Unit IIIa

```
HXTEMP      UTS/EASY      11:00 MAY 19,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,60.6E6
NUMBER OF ITERATIONS=   8
CALC. HEAT TRANSFER COEFF. 324.7
INPUTTED HEAT LOAD =   60600000.00
HEAT LOAD Q           61689616.00
MTD CORRECTION F     =  .880
MTD CORRECTED        = 15.00
TC1=  75.00  TC2=  87.99  TH1= 106.70  TH2=  91.38

 INPUT NEW TH1=
?0
 *STOP*

USED    8.2 CPV
```

CCW Other Unit IIIa

```
READY
RUN


HXTEMP       UTS/EASY      11:02 MAY 19,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,60.3E6
NUMBER OF ITERATIONS=   8
CALC. HEAT TRANSFER COEFF. 324.7
INPUTTED HEAT LOAD =    60300000.00
HEAT LOAD Q            61459424.00
MTD CORRECTION F     =  .881
MTD CORRECTED        = 15.00
TC1=  75.00  TC2=  87.94  TH1= 106.60  TH2=  91.33


 INPUT NEW TH1=
?0
 *STOP*

USED    8.1 CPV

READY
RUN


HXTEMP       UTS/EASY      11:04 MAY 19,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,75E6
NUMBER OF ITERATIONS=   9
CALC. HEAT TRANSFER COEFF. 325.3
INPUTTED HEAT LOAD =    75000000.00
HEAT LOAD Q            76438352.00
MTD CORRECTION F     =  .868
MTD CORRECTED        = 18.00
TC1=  75.00  TC2=  91.09  TH1= 113.40  TH2=  94.39

 INPUT NEW TH1=
```

CCW Base Unit III b

CCW Base Unit III C

```
HXTEMP      UTS/EASY      11:08 MAY 19,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,83.5,110,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,21E6
NUMBER OF ITERATIONS=   9
CALC. HEAT TRANSFER COEFF. 363.5
INPUTTED HEAT LOAD =   21000000.00
HEAT LOAD Q             20585216.00
MTD CORRECTION F    =  .856
MTD CORRECTED       = 15.00
TC1=  83.50  TC2=  97.32  TH1= 117.70  TH2=  99.54


 INPUT NEW TH1=
?0
 *STOP*

USED    6.3 CPV

READY
RUN
```

Sp. HX
Base Unit
IIIa

```
HXTEMP      UTS/EASY      11:12 MAY 19,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,91.4,110,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,21E6
NUMBER OF ITERATIONS=   9
CALC. HEAT TRANSFER COEFF. 365.9
INPUTTED HEAT LOAD =   21000000.00
HEAT LOAD Q             20593856.00
MTD CORRECTION F    =  .846
MTD CORRECTED       = 14.00
TC1=  91.40  TC2= 105.22  TH1= 125.10  TH2= 106.93


 INPUT NEW TH1=
```

Sp. HX
other Unit
IIIa

```
?0
 *STOP*

USED    8.8 CPV

READY
RUN


HXTEMP      UTS/EASY     11:14 MAY 19,'82

 U;A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,91.3,110,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,42E6
NUMBER OF ITERATIONS=  10
CALC. HEAT TRANSFER COEFF. 376.4
INPUTTED HEAT LOAD =   42000000.00
HEAT LOAD Q           41203056.00
MTD CORRECTION F    =  .839
MTD CORRECTED       = 29.00
TC1=  91.30  TC2= 118.95  TH1= 158.00  TH2= 121.75

 INPUT NEW TH1=
?0
 *STOP*

USED   21.3 CPV

READY
RUN


HXTEMP      UTS/EASY     11:16 MAY 19,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,94.4,110,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19M\,.9375
 INPUT NT,NP,Q
?540,4,42E6
NUMBER OF ITERATIONS=  10
CALC. HEAT TRANSFER COEFF. 377.4
INPUTTED HEAT LOAD =   42000000.00
HEAT LOAD Q           41180224.00
MTD CORRECTION F    =  .846
MTD CORRECTED       = 29.00
TC1=  94.40  TC2= 122.04  TH1= 161.70  TH2= 125.47
```

SP Ht Base Unit III b

SP. Ht other Unit III c

```
 INPUT NEW TH1=
?0
 *STOP*

USED   22.5 CPV

READY
RUN


HXTEMP      UTS/EASY     11:19 MAY 19,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,94.4,110,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,21E6
NUMBER OF ITERATIONS=   9
CALC. HEAT TRANSFER COEFF. 370.4
INPUTTED HEAT LOAD =   21000000.00
HEAT LOAD Q           20593696.00
MTD CORRECTION F     =  .846
MTD CORRECTED        = 14.00
TC1=  94.40  TC2= 108.22  TH1= 128.10  TH2= 109.93


 INPUT NEW TH1=
?0
 *STOP*

USED    9.8 CPV

READY
```

SP. Hx other unit IVa

```
 INPUT NEW TH1=
?0
 *STOP*

USED     3.6 CPV

READY
RUN



HXTEMP       UTS/EASY      13:01 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,89.4,100,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,15R\E6
NUMBER OF ITERATIONS=   8
CALC. HEAT TRANSFER COEFF. 362.9
INPUTTED HEAT LOAD =    15000000.00
HEAT LOAD Q              14703291.00
MTD CORRECTION F     =  .837
MTD CORRECTED        = 10.00
TC1=  89.40  TC2=  99.27  TH1= 113.20  TH2= 100.20


 INPUT NEW TH1=
?0
 *STOP*

USED     7.5 CPV

READY
RUN



HXTEMP       UTS/EASY      13:04 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49R\E6,87.3,100,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,15E6
NUMBER OF ITERATIONS=   8
CALC. HEAT TRANSFER COEFF. 362.1
INPUTTED HEAT LOAD =    15000000.00
HEAT LOAD Q              14703405.00
MTD CORRECTION F     =  .837
MTD CORRECTED        = 10.00
TC1=  87.30  TC2=  97.17  TH1= 111.10  TH2=  98.10


 INPUT NEW TH1=
?0
 *STOP*
```

SPF Base Unit IIa

SPF Other Unit IIa

```
HXTEMP          UTS/EASY      1[illegible]05 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,93.4,100,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,30E6
NUMBER OF ITERATIONS=  10
CALC. HEAT TRANSFER COEFF. 373.3
INPUTTED HEAT LOAD =    30000000.00
HEAT LOAD Q            29447472.00
MTD CORRECTION F     =  .844
MTD CORRECTED        = 21.00
TC1=  93.40  TC2= 113.16  TH1= 141.40  TH2= 115.47


 INPUT NEW TH1=
?0
 *STOP*

USED   17.5 CPV

READY
RUN



HXTEMP          UTS/EASY      13:07 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,91.6,100,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,_

USED    3.1 CPV

READY
RUN



HXTEMP          UTS/EASY      13:09 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,83.95,100,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,22E6
NUMBER OF ITERATIONS=   9
CALC. HEAT TRANSFER COEFF. 364.0
INPUTTED HEAT LOAD =    22000000.00
HEAT LOAD Q            21570096.00
MTD CORRECTION F     =  .851
MTD CORRECTED        = 15.00
TC1=  83.95  TC2=  98.43  TH1= 119.50  TH2= 100.48

 INPUT NEW TH1=
?0
 *STOP*
```

SPF BASE UNIT IIIa – IVa

```
HXTEMP       UTS/EASY      13:11 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,91.6,100,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,22E6
NUMBER OF ITERATIONS=   9
CALC. HEAT TRANSFER COEFF. 366.3
INPUTTED HEAT LOAD =    22000000.00
HEAT LOAD Q            21573888.00
MTD CORRECTION F     =  .846
MTD CORRECTED        = 15.00
TC1=  91.60  TC2= 106.08  TH1= 126.90  TH2= 107.87


 INPUT NEW TH1=
?0
 *STOP*

USED   12.2 CPV

READY
RUN



HXTEMP       UTS/EASY      13:12 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,91.73,100,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,44E6
NUMBER OF ITERATIONS=  10
CALC. HEAT TRANSFER COEFF. 377.2
INPUTTED HEAT LOAD =    44000000.00
HEAT LOAD Q            43159680.00
MTD CORRECTION F     =  .840
MTD CORRECTED        = 30.00
TC1=  91.73  TC2= 120.70  TH1= 161.69  TH2= 123.74


 INPUT NEW TH1=
?0
 *STOP*

USED   25.6 CPV

READY
RUN



HXTEMP       UTS/EASY      13:14 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,96.9,100,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,44E6
NUMBER OF ITERATIONS=  ..
```

SPF ~~BASE~~ R. UNIT IIb, IVb

SPF OTHER UNIT IIc

```
 INPUT NEW TH1=
?0
 *STOP*

USED   27.0 CPV

READY
RUN


HXTEMP      UTS/EASY      13:16 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,99.1,100,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,22E6
NUMBER OF ITERATIONS=   9
CALC. HEAT TRANSFER COEFF. 372.3
INPUTTED HEAT LOAD =    22000000.00
HEAT LOAD Q            21573456.00
MTD CORRECTION F     =  .846
MTD CORRECTED        = 15.00
TC1=  99.10  TC2= 113.58  TH1= 134.40  TH2= 115.37


 INPUT NEW TH1=
?0
 *STOP*

USED   13.6 CPV

READY
RUN


HXTEMP      UTS/EASY      13:19 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?377,3800,1.14E6,1.49E6,104.3,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,19,.9375
 INPUT NT,NP,Q
?540,4,44E6
NUMBER OF ITERATIONS=  11
CALC. HEAT TRANSFER COEFF. 380.5
INPUTTED HEAT LOAD =    44000000.00
HEAT LOAD Q            43164640.00
MTD CORRECTION F     =  .841
MTD CORRECTED        = 30.00
TC1= 104.30  TC2= 133.27  TH1= 174.30  TH2= 136.33


 INPUT NEW TH1=
?BYE

FLAG RUN-TIME ERROR IN 'BCDREAD' CALLED AT LOC X'12A4E'.
BYE
!
ILLEGAL NUMERIC INPUT CHARACTER.  FIELD TERMINATED.
```

SPC PIT
OTHER UNIT
IVa

SPC PIT
OTHER UNIT
IVc

```
USED   23.2 CPV

READY
BYE

CPV = 169.13 CON= 00:26
```

```
WARNER COMPUTER SYSTEMS
12:11 MAY 13,'82   USER# 40    LINE# 15
LOGON PLEASE: BDM48\7150,AEP,RONALD,AF

ON AT 12:11 MAY 13,'82

!XEASY

XEASY AT YOUR SERVICE

IS A RESTART DESIRED? --NO

YOUR NEW RESTART NUMBER IS -- 50C0B370
READY
SYS FOR

READY
OLD HXTEMP

READY
LISTNH 1310-1340

1310  TF=.001
1320  TS=.0005
1330  T1=17
1340  SID=49.0

READY
RUN


HXTEMP      UTS/EASY     12:14 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,54.6E6
NUMBER OF ITERATIONS=   8
CALC. HEAT TRANSFER COEFF. 324.4
INPUTTED HEAT LOAD =   54600000.00
HEAT LOAD Q           55615712.00
MTD CORRECTION F     =  .874
MTD CORRECTED        = 13.00
TC1=  75.00  TC2=  86.71  TH1= 103.20  TH2=  89.40

 INPUT NEW TH1=
?0
 *STOP*

USED    9.1 CPV

READY
```

CCW
Base unit
II a

```
HXTEMP      UTS/EASY      :17 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,46.5E6
NUMBER OF ITERATIONS=   8
CALC. HEAT TRANSFER COEFF. 317.1
INPUTTED HEAT LOAD =    46500000.00
HEAT LOAD Q               47215504.00
MTD CORRECTION F      =  .875
MTD CORRECTED         = 11.00
TC1=  75.00  TC2=  84.94  TH1=  99.00  TH2=  87.29


 INPUT NEW TH1=
?0
 *STOP*

USED   10.5 CPV

READY
RUN
```

BOILER UNIT IIa

CCW Base Unit IIb

```
HXTEMP      UTS/EASY      12:18 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9374\5,.9375
 INPUT NT,NP,Q
?2260,2,69.6R\E6
NUMBER OF ITERATIONS=   9
CALC. HEAT TRANSFER COEFF. 325.1
INPUTTED HEAT LOAD =    69600000.00
HEAT LOAD Q               70962176.00
MTD CORRECTION F      =  .874
MTD CORRECTED         = 17.00
TC1=  75.00  TC2=  89.94  TH1= 111.00  TH2=  93.36

 INPUT NEW TH1=
?0
 *STOP*

USED    6.6 CPV

READY
RUN
```

CCW Boiler Unit IIb

```
HXTEMP      UTS/EASY      12:20 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,61.5E6
NUMBER OF ITERATIONS=
CALC. HEAT TRANSFER COEFF. 324.0
INPUTTED HEAT LOAD =    [illegible]
HEAT LOAD Q               [illegible]
```

```
MTD CORRECTION F     =
MTD CORRECTED        = 1.
TC1=  75.00  TC2=  88.18  TH1= 107.10  TH2=  91.55

 INPUT NEW TH1=
?0
 *STOP*

USED    7.9 CPV

READY
RUN


HXTEMP      UTS/EASY      12:21 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,22.2E6
NUMBER OF ITERATIONS=   5
CALC. HEAT TRANSFER COEFF. 316.0
INPUTTED HEAT LOAD =    22200000.00
HEAT LOAD Q            22616704.00
MTD CORRECTION F     =  .890
MTD CORRECTED        =  5.00
TC1=  75.00  TC2=  79.76  TH1=  86.80  TH2=  81.24


 INPUT NEW TH1=
?0
 *STOP*

USED   13.9 CPV

READY
RUN


HXTEMP      UTS/EASY      12:23 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,32.2E6
NUMBER OF ITERATIONS=   7
CALC. HEAT TRANSFER COEFF. 316.5
INPUTTED HEAT LOAD =    32200000.00
HEAT LOAD Q            32605872.00
MTD CORRECTION F     =  .888
MTD CORRECTED        =  8.00
TC1=  75.00  TC2=  81.86  TH1=  92.00  TH2=  83.95


 INPUT NEW TH1=
?0
 *STOP*

USED   13.5 CPV
```

CCW
Base Unit
IIIa, IVa

CCW
OTHER UNIT
IIa

```
HXTEMP          UTS/EASY        12:24 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,1286\55,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,61.6E6
NUMBER OF ITERATIONS=    8
CALC. HEAT TRANSFER COEFF. 324.8
INPUTTED HEAT LOAD =    61600000.00
HEAT LOAD Q              62610464.00
MTD CORRECTION F      =  .879
MTD CORRECTED         = 15.00
TC1=  75.00  TC2=  88.18  TH1= 107.10  TH2=  91.55


 INPUT NEW TH1=
?0
 *STOP*

USED     7.9 CPV

READY
RUN
```

CCW
BASE UNIT
IIb IVb

```
HXTEMP          UTS/EASY        12:26 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,62.3E6
NUMBER OF ITERATIONS=    8
CALC. HEAT TRANSFER COEFF. 324.8
INPUTTED HEAT LOAD =    62300000.00
HEAT LOAD Q              63531312.00
MTD CORRECTION F      =  .878
MTD CORRECTED         = 15.00
TC1=  75.00  TC2=  88.38  TH1= 107.50  TH2=  91.72


 INPUT NEW TH1=
?0
 *STOP*

USED     7.7 CPV

READY
RUN
```

CCW
OTHER UNIT
IIb

```
HXTEMP          UTS/EASY        12:27 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
[illegible]
```

```
HEAT LOAD Q                  31968560.00
MTD CORRECTION F      =  .88
MTD CORRECTED         =  7.0
TC1=  75.00  TC2=  81.73  TH1=  91.40  TH2=  83.51

 INPUT NEW TH1=
?0
 *STOP*

USED   12.7 CPV

READY
RUN

HXTEMP      UTS/EASY     12:29 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,10.2E6
NUMBER OF ITERATIONS=   4
CALC. HEAT TRANSFER COEFF. 315.7
INPUTTED HEAT LOAD =   10200000.00
HEAT LOAD Q            10241752.00
MTD CORRECTION F      =  .970
MTD CORRECTED         =  5.00
TC1=  75.00  TC2=  77.16  TH1=  82.90  TH2=  80.44

 INPUT NEW TH1=
?0
 *STOP*

USED   14.5 CPV

READY
RUN

HXTEMP      UTS/EASY     12:30 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,83.6E6
NUMBER OF ITERATIONS=   9
CALC. HEAT TRANSFER COEFF. 325.7
INPUTTED HEAT LOAD =   83600000.00
HEAT LOAD Q            85153824.00
MTD CORRECTION F      =  .872
MTD CORRECTED         = 20.00
TC1=  75.00  TC2=  92.93  TH1= 118.10  TH2=  96.91

 INPUT NEW TH1=
?0
 *STOP*
```

CCW
Base unit
IIIC, IVC

CCW
other unit
IIIC

```
HXTEMP       UTS/EASY      12:31 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,94.8E6
NUMBER OF ITERATIONS=   9
CALC. HEAT TRANSFER COEFF. 326.0
INPUTTED HEAT LOAD =    94800000.00
HEAT LOAD Q            92917664.00
MTD CORRECTION F      =  .874
MTD CORRECTED         = 22.00
TC1=  75.00  TC2=  94.56  TH1= 122.40  TH2=  99.07


 INPUT NEW TH1=
?0
 *STOP*

USED    4.4 CPV

READY
RUN



HXTEMP       UTS/EASY      12:34 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75W\E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,64.7E6
NUMBER OF ITERATIONS=   8
CALC. HEAT TRANSFER COEFF. 324.9
INPUTTED HEAT LOAD =    64700000.00
HEAT LOAD Q            65833328.00
MTD CORRECTION F      =  .875
MTD CORRECTED         = 16.00
TC1=  75.00  TC2=  88.86  TH1= 108.50  TH2=  92.14


 INPUT NEW TH1=
?0
 *STOP*

USED    7.5 CPV

READY
RUN


HXTEMP       UTS/EASY      12:35 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,116.8E6
```

CCW OTHER UNIT 10a

CCW OTHER UNIT 10b

CCW OTHER UNIT 10c

```
ITD CORRECTION F     =  .871
ITD CORRECTED        = 27.00
'C1=  75.00  TC2=  99.10  TH1= 133.00  TH2= 104.28

 INPUT NEW TH1=
?0
 *STOP*

JSED   8.3 CPV

READY
RUN



HXTEMP      UTS/EASY      12:37 MAY 13,'82

 U,A,WH,WC,TC1,TH1,HXTYPE=
?328,12855,4E6,4.75E6,75,120,12
 INPUT TUBE OD,ID,BAFSP,PIT
?.75,.652,9.9375,.9375
 INPUT NT,NP,Q
?2260,2,75.3E6
NUMBER OF ITERATIONS=   9
CALC. HEAT TRANSFER COEFF. 325.3
INPUTTED HEAT LOAD =    75300000.00
HEAT LOAD Q            76666576.00
MTD CORRECTION F     =  .868
MTD CORRECTED        = 18.00
TC1=  75.00  TC2=  91.14  TH1= 113.50  TH2=  94.43


 INPUT NEW TH1=
?0
 *STOP*

USED    5.7 CPV

READY
BYE

CPV = 139.18 CON= 00:29
B;B'+SER# 25    LINE# 5C
LOGON PLEASE: BDM47150,AEP,RONALD,AF

ON AT 12:55 MAY 13,'82

!XEASY

XEASY AT YOUR SERVICE

IS A RESTART DESIRED? --N

YOUR NEW RESTART NUMBER I  -- 50C372C5
READY
SYS FOR

READY
OLD HXTEMP

READY
RUN


        UTS/EASY      12:56 MAY 13,'82
```

CCW
OTHER UNIT
TJC*

```
.TEMP ...
W,B,WH,WC,TC1,TH1,HXTYPE=
328,12855,4E6,4.75E6,75,120,12
INPUT TUBE OD,ID,BAFSP,PIT
?\.75,.652,9.9375,.9375
INPUT NT,NP,Q
2260,2,61.5\0E6
NUMBER OF ITERATIONS=    8
CALC. HEAT TRANSFER COEFF. 324.8
INPUTTED HEAT LOAD =    61000000.00
HEAT LOAD Q              62150000.00
MTD CORRECTION F      =   .880
MTD CORRECTED         = 15.00
TC1=  75.00  TC2=  88.08  TH1= 106.90  TH2=  91.46


 INPUT NEW TH1=
?0
 *STOP*

USED    8.1 CPV

READY
RUN
```

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AEP:NRC:1137A

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
CORRECTIONS TO MISCELLANEOUS ADMINISTRATIVE
TECHNICAL SPECIFICATION CHANGE REQUEST

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

Attn: T. E. Murley

September 13, 1991

Dear Dr. Murley:

During a recent telephone conference, your staff identified several editorial comments on our letter AEP:NRC:1137, "Miscellaneous Administrative Technical Specification Change Request," dated February 15, 1991. The purpose of this letter is to incorporate those editorial comments and provide the technical specification (T/S) pages as agreed upon with your staff. In reviewing these comments with your staff, we also agreed to make two additional changes. A description of the proposed changes, our reasons for the changes, and our analysis concerning significant hazards considerations are included in Attachment 1. The proposed revised T/Ss pages are contained in Attachment 2. Attachment 3 consists of the existing T/Ss pages marked to reflect how they will be impacted by this proposed amendment.

We believe that the proposed changes will not result in (1) a significant change in the types of effluents or a significant increase in the amounts of any effluent that may be released offsite, or (2) a significant increase in individual or cumulative occupational radiation exposure.

These proposed changes have been reviewed by the Plant Nuclear Safety Review Committee and by the Nuclear Safety and Design Review Committee.

In compliance with the requirements of 10 CFR 50.91(b)(1), copies of this letter and its attachments have been transmitted to Mr. J. R. Padgett of the Michigan Public Service Commission and the Michigan Department of Public Health.

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This document has been prepared following Corporate procedures that incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Sincerely,

E. E. Fitzpatrick
Vice President

ldp

Attachments

cc: D. H. Williams, Jr.
A. A. Blind - Bridgman
J. R. Padgett
G. Charnoff
A. B. Davis - Region III
NFEM Section Chief
NRC Resident Inspector - Bridgman

ATTACHMENT 1 TO AEP:NRC:1137A

REASONS AND 10 CFR 50.92 ANALYSES FOR CHANGES TO THE

DONALD C. COOK NUCLEAR PLANT UNITS 1 AND 2

TECHNICAL SPECIFICATIONS

The proposed changes in this Technical Specifications (T/Ss) change request are purely administrative. A description of each proposed change is given below.

1) Incorporate subparagraph (e) as subparagraph (d)
Unit 1, Table 4.3-2, page 3/4 3-33

Item 4, subparagraph (d), is being revised to read "Steam Flow in Two Steam Lines-- High Coincident with T_{avg}--Low-Low or Steam Line Pressure-- Low. In our previous submittal, Steam Line Pressure -- Low was inadvertently numbered as a separate subparagraph (e).

2) Delete T/S 4.6.1.3.a and renumber subsequent paragraphs
Unit 1 pages 3/4 6-4 and 6-5

The requirement to visually inspect each containment air lock after each opening to verify that the seal has not been damaged was imposed during initial plant startup. The purpose for the visual inspection immediately after each opening is unknown because any physical damage to the seal is more likely to occur while the doors are open. The seals, therefore, are checked, by procedure, before door closure to ensure integrity for pressurization tests.

3) Delete the asterisk and the reference from T/S 4.6.1.3.b
Unit 1 page 3/4 6-4.

The reference to an exemption from Appendix J of 10 CFR 50 is no longer required because Appendix J has been revised to allow for multiple entries into the air lock and for a modified leak rate test once per 3 days.

4) Revise 4.6.1.3.b Unit 1 page 3/4 6-5

The reference to 4.6.1.3.b must be changed to 4.6.1.3.a because b. was renumbered to a. as a result of the deletion. Change gap to volume and insert door in front of seals.

5) Revise Item 17, subparagraph (A)
Unit 2, Table 2.2-1, page 2-6.

Item 17, subparagraph (A) is being revised from "Low Trip System Pressure" to "Low Fluid Oil Pressure." The table was inadvertently not sent with our previous submittal.

6) Delete the asterisk and the reference from T/S 4.6.1.3a
Unit 2 page 3/4 6-4

The reference to an exemption from Appendix J of 10 CFR 50 is no longer required because Appendix J has been revised to

allow for multiple entries into the air lock and for a modified leak rate test once per 3 days.

7) Revise T/S 4.6.1.3 subparagraph (a)
Unit 2 page 3/4 6-4

T/S 4.6.1.3, subparagraph (a), is being revised to read, ". . . when it shall be done at least once per 3 days . . . " rather than "once per 72 hours." This change provides consistency between units.

Analysis of Significant Hazards

Per 10 CFR 50.92, a proposed amendment will involve no significant hazards considerations if the proposed amendment does not:

(1) involve a significant increase in the probability or consequences of an accident previously evaluated,

(2) create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated, or

(3) involve a significant reduction in a margin of safety.

Criterion 1

The proposed changes are purely administrative and are intended to correct errors or problems in the T/Ss. Therefore, we believe these changes do not involve a significant increase in the probability or consequences of a previously analyzed accident.

Criterion 2

Since the proposed changes are purely administrative and introduce no new operating conditions, we believe that these changes will not create the possibility of a new or different kind of accident from any previously analyzed or evaluated.

Criterion 3

For the reasons cited in Criterion 1 above, we believe that the proposed changes will not result in a significant reduction in the margin of safety.

Lastly, we note that the Commission has provided guidance concerning the determination of significant hazards by providing certain examples of amendments not likely to involve significant hazards considerations. The first example is that of a purely administrative change to the T/Ss; for example, a change to achieve consistency throughout the T/Ss, correction of an error, or change in nomenclature. We believe that the changes requested in this letter are of the type specified in this example, since they are intended to correct errors and problems in the T/Ss. Therefore, we believe this change involves no significant hazards considerations as defined in 10 CFR 50.92.