



Commonwealth Edison  
1400 Opus Place  
Downers Grove, Illinois 60515

September 23, 1993

Dr. Thomas E. Murley  
Office of Nuclear Regulatory Commission  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Quad Cities Units 1 & 2  
Degraded Voltage Calculations  
NRC Docket Nos. 50-254/265

Dear Dr. Murley:

Per the request of your staff, the attached documents pertaining to Quad Cities Units 1 and 2 Degraded Voltage Issues (Task ID #M83299 & M83300) are being provided for your information and review.

If you have any questions regarding these documents please contact this office.

Very truly yours,

Wayne E. Morgan  
Nuclear Licensing Administrator

cc: C. Patel, Project Manager NRR  
R. Jenkins, NRR

010052

k:/nla/quad/nrc/7

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PDR ADDCK 05000254  
P PDR

DOCUMENTS TO BE DOCKETED BY LICENSEE

1. Sargent & Lundy (S&L) Design Information Transmittal (DIT) No. QC-EPED-0498-01, dated 4-1-92, "Load Tables and Assumptions and Load Shedding List for Division I, Unit 2."
2. S&L DIT No. QC-EPED-0497-01, dated 4-1-92, "Load Tables and Assumptions and Load Shedding List for Division I, Unit 1."
3. S&L DIT No. QC-EPED-0488-01, dated 4-1-92, "Load Tables and Assumptions and Load Shedding List for Division II, Unit 2."
4. S&L DIT No. QC-EPED-0489-01, dated 4-1-92, "Load Tables and Assumptions and Load Shedding List for Division II, Unit 1."
5. S&L Calculation No. 8913-67-19-1, Rev. 0, entitled "Calc. for Quad Cities 1/I Safety-related Continuous Loads Running/Starting Voltages," approved 7-31-92.
6. S&L Calculation No. 8913-67-19-2, Rev. 0, dated 4-15-92, entitled "Evaluation of 460-V Diesel Generator Cooling Water Pump Minimum Starting Voltage."
7. S&L Calculation No. 8913-67-19-3, Rev. 0, dated 4-31-92, entitled "Calc. for Second Level Undervoltage Relay Setpoint."
8. S&L Calculation No. 8913-69-19-1, Rev. 0, entitled "Calc. for Quad Cities 1/II Safety-related Continuous Loads Running/Starting Voltages," approved 5-4-92.
9. S&L Calculation No. 8913-71-19-1, Rev. 0, entitled "Calc. for Quad Cities 2/I Safety-related Continuous Loads Running/Starting Voltages," approved 5-13-92.
10. S&L Calculation No. 8913-73-19-1, Rev. 0, entitled "Calc. for Quad Cities 2/II Safety-related Continuous Loads Running/Starting Voltages," approved 4-15-92.
11. S&L Calculation No. 8913-73-19-4, Rev. 0, dated 4-16-92, entitled "Calc. for Second Level Undervoltage Relay Setpoint."
12. S&L Calculation No. 8913-73-19-2, Rev. 0, entitled "Evaluation of DG 2 Cooling Water Pump Cooler Fan A & B Minimum Starting Voltage," approved 4-3-92.

# Index Of Degraded Voltage Calculations

CHRON #	Station	Unit	Division	Calculation Number	Revision	Calc Date	S&L Letter	Description
189981	Quad Cities	1	I	8913-67-19-1	0	7/31/92	Q1528E	Critical Voltage Calculation
184669	Quad Cities	1	I & II	8913-67-19-2	0	4/15/92	Q1452E	DGCWP Minimum Starting Voltage (Lincoln motors)
		2	I					
184941	Quad Cities	2	II	8913-73-19-3	0	4/20/92	Q1463E	DGCWP Minimum Starting Voltage (Toshiba motor)
185290	Quad Cities	1	II	8913-69-19-1	0	5/4/92	Q1469E	Critical Voltage Calculation
195055	Quad Cities	2	I	8913-71-19-1	1	11/18/92	Q1567E	Critical Voltage Calculation
184363	Quad Cities	2	II	8913-73-19-1	0	4/15/92	Q1449E	Critical Voltage Calculation
187171	Quad Cities	2	II	8913-73-19-4	1	5/21/92	Q1479E	Relay Setpoint Calculation
184086	Quad Cities	2	II	8913-73-19-2	0	4/3/92	Q1443E	DGCWP Clr Fan Starting

RLB-92-073

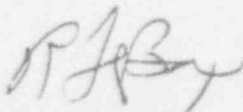
March 25, 1992

TO: M. L. Reed  
E/I & C Design Superintendent

SUBJECT: QUAD CITIES REVIEW OF LOAD TABLES AND ASSUMPTIONS  
(Reference CHRON #182866)

The Load Tables and Assumptions provided in CHRON #182866 have been reviewed by Quad Cities Operating and Technical Staff personnel. Minor corrections to the Load Tables are noted on the affected pages.

If you have any questions or require any additional information please contact J. Wethington at Quad Cities Station on extension 3190.



R. L. Bax  
Station Manager  
Quad Cities Station

RLB/JW/rjb



March 21, 1992

In Reply, Refer to

CHRON # 182866

Subject: Load Tables and Assumptions  
Degraded Voltage Analysis  
Quad Cities Station

Mr. R.L. Bax

Calculations are in progress under the direction of the E/I&C group of NED for the degraded voltage analysis. A new analysis is required by the recent EDSFI NRC inspection. This analysis requires a determination of the actual worst case loading conditions of the 480 Volt Switchgear and Motor Control Centers for Quad Cities Station. To assist in this effort, Quad Cities personnel with operating experience have been providing input to the load tabulations.

The load tables have been revised to incorporate comments from Quad Cities, provide better references and to incorporate "lessons learned" from the recently completed Dresden degraded voltage analysis. The revised tables and assumptions are attached.

The degraded voltage analysis must be completed for Unit 2 prior to restart. To support this effort, it is requested that the load tables be reviewed and signed by March 25, 1992.

Please call Mike Tucker on extension 7648 at Downers Grove if you have any questions related to the load tables or to the degraded voltage analysis.



M.L. Reed  
E/I&C Design Superintendent

quad loads\QCLTCVR.DOC

cc: J.W. Wethington H.L. Massin (w/o att.)  
M.L. Reed M.F. Pietraszewski (w/o att.)  
D.C. Bucknell C.H. Norton  
D.V. Lubbe R.E. Charneski  
M.S. Tucker E.M. Schiavoni (S&L)  
NEDCC

# **LOAD ASSUMPTIONS FOR DEGRADED VOLTAGE ANALYSIS QUAD CITIES STATION**

1. Load data, such as motor horsepower, power factor and efficiency, is taken from the preliminary ELMS input data sheets with the exception of the PCP battery chargers (125 and 250 Volt Battery Chargers). The value given in the vendor manual is used. Although the ELMS run is preliminary, the load data is assumed to be correct.
2. The voltage drop between unit substation transformers and the 480 Volt switchgear has been neglected. The secondary of this transformer is directly connected to an extension of the switchgear bus bar. The impedance of this bus section is insignificant in comparison with the cable and transformer impedance.
3. The load conditions are as shown in Appendix A. This information was supplied by Quad Cities Station personnel having reactor operating experience.
4. Motor operated valve (MOV) currents are neglected for running conditions. The operation of the MOVs may cause a temporary (less than one minute) dip in voltage at the motor terminals to below 90% of rated voltage. This may result in heating of the motor windings. The short duration of this dip is unlikely to cause sudden failure of the motor. Heat rise is a cumulative effect which is dependent on the insulation class and service factor of the motor. It is further assumed that the modest heat rise from this voltage dip from MOV operation causes a negligible reduction in motor life.

Under starting conditions for the Diesel Generator Cooling Water Pump, there are three valves which change state concurrent with the LOCA signal: the recirc. pump discharge valve (MOV 202-5A or 202-5B) and the LPCI Inboard PCI valve (MOV 1001-28A or 1001-28B). These two valves operate on a reactor pressure permissive of 900 psia signal (LPCI loop select logic), which may occur within a very brief time of the LOCA signal (2.5 pounds drywell pressure); therefore, the current from these MOVs is included in the starting case. In general, other MOV motors do not start to operate for the large break LOCA until several seconds into the event, allowing the starting currents to decay to running current levels. For large break conditions, the MOVs of injection valves (LPCI and core spray) do not start to operate for approximately 35 seconds after the ECCS initiation signal. This is from an interlock on reactor pressure (350 psia).

5. The operation of the drywell coolers will be neglected for the running voltage analysis. The operation of the drywell coolers will be included in the starting voltage analysis. The Quad Cities Emergency Operating Procedures instruct the operator to initiate drywell sprays at a containment pressure of greater than 9 psia. Prior to the initiation of drywell sprays the drywell coolers are tripped. It is estimated that, for large break LOCA, drywell sprays will be initiated within 2 minutes of the ECCS initiation.

The operation of the drywell coolers may cause a temporary dip in voltage at the motor terminals to below 90% of rated voltage. This may result in heating of the motor windings. The short duration of this dip is unlikely to cause sudden failure of the motor. Heat rise is a cumulative effect which is dependent on the insulation class and service factor of the motor. The short duration of this voltage dip is assumed to have a negligible reduction in motor life. *Must verify this assumption for a small break LOCA, or design a plant modification to trip the drywell coolers on high drywell pressure / low-low reactor water level logic.*

6. The voltage dip from loads neglected under the previous assumptions will not cause the critical motor load under study to stall. Verification of this assumption will require a review of the motor torque-speed characteristics with the pump load. Any available pump characteristics will need to be retrieved and evaluated when specific pumps are identified.
7. The neglected voltage dips will not cause the overload device to trip from the increased current. The setting of the overload must be reviewed to justify this assumption.
8. Other intermittent loads, such as sump pumps, drain tank pumps, and area cooling units, have an assumed duty cycle of 30%. The number of intermittent loads varies for each load case and condition. 30% of the intermittent loads (rounded up to the nearest whole number) are considered to be on. The largest loads are considered for conservatism. For the winter load case, all area cooling units are assumed off and all heaters are assumed on (not intermittent). For the summer case, all area cooling units are considered on continuously.
9. LOCA causes normal reactor SCRAM (no ATWS considered). Therefore, Standby Liquid Control System is not actuated and load on Reactor Protection MG set drops from value given in BOP ELMS to 75% of value shown (22 BHP X 75%=16.5 BHP) *Must verify this assumption.*
10. EDG Starting Air Compressor is assumed off under the starting voltage condition and on under the running voltage condition.

11. EDG Vent fan starts when EDG is at 800 rpm. The EDG Cooling Water Pump starts from Relay SDR, which in turn is initiated from the fast start relay (FSR). It is assumed that there is approximately six seconds between pump and fan start. The pump starting current will have decayed to a value close to the running current by the start of the vent fan. Therefore, the vent fan is considered on only for the running condition.
12. The ACAD Air Compressor is assumed off. This is used to force air into the containment for dilution of hydrogen. Significant amounts of hydrogen are not expected until very late in the event, when many of the other motors would be secured *Must verify this assumption.*
13. EDG Oil Transfer pump is assumed off for starting condition and on for running condition.
14. The resistance of the overload heaters has been neglected. The value of this resistance is small compared to the cable impedance. The critical loads appear to be larger motors; for smaller loads (less than 5 HP) this assumption would require verification. However, for the larger motors, the overall impedance is bounded by the accuracy of impedance of the cable based on the accuracy of the cable length. Therefore, neglecting the heater resistance has a negligible impact on calculational accuracy.
15. The internal impedance of switchgear 19 and the MCC's is negligible compared to the impedance of the cables and transformer 19.
16. Motors are assumed to be constant KVA loads over the voltage range of interest, as is the UPS Panel 902-63. All motors on switchgear 19 and associated MCC's are three phase induction motors.
17. All other loads are assumed to be constant impedance loads.
18. The voltage rating of the Control Room Standby HVAC motors is 460 V per NUS (letter in file). All other voltage ratings taken from ELMS Input Data sheets.
19. To obtain values for total current, a terminal voltage of 414V is used for motors (90% of 460) and 432V for non-motor loads (90% of 480) independent of actual equipment rated voltage.

20. Under extremely degraded voltage conditions (less than 90% of rated voltage), heaters are assumed to cycle on more often or remain on for longer periods. Low voltage levels will not damage the heaters; rather, the heater will simply not provide as much heat. The reduced heat output is assumed to be sufficient for the intended purpose. The exception to this is the Control Room Standby HVAC (Train B) Air Filter Unit Heater. This heater requires a minimum of 438 Volts to provide the technical specification requirement on filter efficiency. *Must verify this assumption.*
21. The output voltage of the battery chargers will drop when less than 90% of rated input voltage is available. This will result in a "Battery Low Voltage" alarm before the battery discharges to a point where there is insufficient energy available from the battery to supply the load profile.



Append - Load Tables (Pre-Mods)

Station: Quad Cities Units: 2

Preparer: *JS Tulken* Date: *3/21/92* Concurrence: *(Signature)* Date: *3-23-92* Concurrence: *DCB 3-24/92* Date: \_\_\_\_\_

Load Center: SWGR 29

Comments By	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Sdby HVAC Initiation	Post LOCA Steady State	Remarks	SR or NSR
	FUEL POOL CLG WTR PMP 2B	2-1902B	ON	ON	ON	ON		NSR
	RX BLDG CLG WTR PMP 2B	2-3701B	ON	ON	ON	ON		NSR
S&L	RX BLDG EXH FAN 2B	2-5704B	TRIP	OFF	OFF	OFF	TRIP ON HIGH RAD OR GROUP II	NSR
S&L	RX BLDG EXH FAN 2C	2-5704C	TRIP	OFF	OFF	OFF	TRIP ON HIGH RAD OR GROUP II	NSR
S&L	RX BLDG SPLY FAN 2A	2-5703A	TRIP	OFF	OFF	OFF	TRIP ON HIGH RAD OR GROUP II	NSR
	TURB BLDG EXH FAN 2C	2-5705C	ON	ON	ON	ON		NSR
	RX BLDG LIGHTING 2		ON	ON	ON	ON		NSR
	E. TURB BLDG SPLY FAN 2B	2-5702B	ON	ON	ON	ON		NSR
	DG CLG WTR PMP #2	2-3903	START	ON	ON	ON		SR
	RX BLDG CLG PMP 1/2C	1/2-3701C	ON	ON	ON	ON	COULD BE ON	NSR
	480V MCC 29-1		ON	ON	ON	ON		SR
	480V MCC 29-2		ON	ON	ON	ON		SR
	480V MCC 29-3		ON	ON	ON	ON		SR
	480V MCC 29-4		ON	ON	ON	ON		SR
	480V MCC 28/29-5		ON	ON	ON	ON		SR
	480V MCC 29-6		ON	ON	ON	ON		SR

## Appendix A - Load Tables (Pre-Mods)

Station: 1d Cities Units: 2

Preparer: *John Sullivan* Concurrency: *WJ*Date: *3-24-92* Concurrency: *ACB 3-24-92* Date:

Load Center: MCC 29-1

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Stdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By								
S&L	NORM FD EDG HVAC SPLY FAN #2	2-5727	OFF	ON	ON	ON	STARTS AT 800 RPM	SR
	CORE SPRAY EMERG AHU 2B	2-5748B	OFF	ON	ON	ON	THERMOSTAT	SR
	NORM FEED DG OIL XFER PMP 2	2-5203	OFF	OFF	ON	ON		SR
	ALT FD DG #1 FUEL OIL XFRPMP	2-5203	OFF	OFF	OFF	OFF		SR
	120/208V XFMR FD 29-1-1		ON	ON	ON	ON		SR
	ST JDBY LOD CONTRL PMP 2B	2-1102B	OFF	OFF	OFF	OFF		SR
S&L	NORM FD RHRS EMERG AHU 2B	2-5746B	OFF	ON	ON	ON	THERMOSTAT	SR
S&L	RX WTR CLNUP SYS FLTR HOLDING PUMP	2-1279-2B	OFF	ON	ON	ON	START ON LO FLOW AFTER GROUP III	NSR
S&L	DW&TORUS PURGE EXH FAN 2B	2-5708B	OFF	OFF	OFF	OFF		NSR
DVL	HPCI EMERG AHU #2	2-5747	OFF	ON	ON	ON	HIGH TEMP. IN ROOM THERMOSTAT	SR
	RESIN FEED TNK AGITATOR	2-1279-11B	OFF	OFF	OFF	OFF		NSR
	HPCI CLG WTR GLN SL COND PMP	2-2301-57	OFF	OFF	OFF	OFF		NSR
DVL	ALT FD DG RM HVAC SPLY FAN1	1-5727	OFF	OFF	OFF	OFF		SR
S&L	RX WTR CLNUP SYS RECIRC PMP 2B	2-1205B	TRIP	OFF	OFF	OFF	TRIP ON GROUP III	NSR
	POST LOCA H2 O2 MON PMP 2B	2-252-81B	OFF	ON	ON	ON	START AFTER LOCA	SR
S&L	ALT FD RHRS EMERG AHU 1B	1-5746B	OFF	OFF	OFF	OFF		SR
S&L	RWCU SYS RX-BOILER ISOL VLV	2-1201-80	START	OFF	OFF	OFF	CLOSES ON GROUP III	NSR
S&L							6 STROKES @ 100#. BETWEEN T=0 & RHR SW INITIATION	SR
	HPCI TURB STM SUP ISOL VLV	2-2301-4	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS HT EXCH REV INLET VLV	2-1001-186B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	CORE SPRAY OTBD ISOL VLV 2B	2-1402-24B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
DVL/S&L							STARTS @ 325 PSI. ASSUMED N/N COINCIDENT WITH VALVES STARTING @ 900 PSI	SR
	CORESPRY INBD ISOL VLV 2B	2-1402-25B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS HT EXCH REV NORM VLV	2-1001-185B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS HT EXCH REV OUT VLV	2-1001-187B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS HT EXCH NORM INL VLV	2-1001-4B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
DVL	HPCI TK HTR		OFF	OFF	OFF	OFF	OIL TANK	SR
S&L							CLOSE ON OTHER UNIT HIGH RAD OR GROUP II	SR
	RX BLDG VNT-SBGT SUP DMPR	2-7503	OFF	OFF	OFF	OFF	THERMOSTAT	SR
	STANDBY LOD CONT TK HTR	2-1103	ON	ON	ON	ON	ASSUMPTION 4	SR
	CLSD CLG WTR HDR ISOL VLV	2-3701	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	CORESPRY PMP SUCT VLV 2B	2-1402-3B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	CORESPRY TST BYPS VLV	2-1402-4A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR

## Appendix - Load Tables (Pre-Mods)

Station: Load Cities Units: 2

Preparer: *2-5-92* Concurrency: *OK*Date: *3-23-92*Concurrency: *DCB**3-24-92*Date: *This note should be on all RF MGS*

Load Center: MCC 29-2

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Sdby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By	RECIRC MG SET VENT FAN 2A	2A-5701	ON	ON	ON	ON		NSR
S&L	RX PROT M-G SET 2B		ON	ON	ON	ON	LOAD DROPS, SEE ASSUMPTION 9	NSR
S&L	DG STARTING AIR COMPR 2B	2-5209B	OFF	ON	ON	ON	STARTS SOON AFTER LOCA & CYCLES ON RECOVER PRESSURE	SR
	250VDC BATTERY CHARGER #2		ON	ON	ON	ON		SR
S&L	DG STARTING AIR COMPR 2A	2-5209A	OFF	ON	OFF	OFF	STARTS SOON AFTER LOCA & CYCLES ON RECOVER PRESSURE	SR
	125VDC BATTERY CHARGER #2		ON	ON	ON	ON		SR
	TURB BLDG EMERG LGTS		OFF	OFF	OFF	OFF		NSR
S&L	ALT FD DG1 CLG WTR PMP CLR FANS A&B		OFF	OFF	OFF	OFF		SR
	RHR SW PMP 2C CLR FAN A		OFF	START	ON	ON		SR
	RHR SW PMP 2C CLR FAN B		OFF	START	ON	ON		SR
	RHR SW PMP 2C CLR FAN C		OFF	START	ON	ON		SR
	RHR SW PMP 2C CLR FAN D		OFF	START	ON	ON		SR
S&L	DG2 CLG WTR PMP CLR FAN A		START	ON	ON	ON	STARTS ON DGCWP START	SR
S&L	DG2 CLG WTR PMP CLR FAN B		START	ON	ON	ON	STARTS ON DGCWP START	SR
	RHR SW PMP 2D CLR FAN A		OFF	START	ON	ON		SR
	RHR SW PMP 2D CLR FAN B		OFF	START	ON	ON		SR
	RHR SW PMP 2D CLR FAN C		OFF	START	ON	ON		SR
	RHR SW PMP 2D CLR FAN D		OFF	START	ON	ON		SR
	RX FD PMP VENT FAN 2B	2-5707B	ON	ON	ON	ON		NSR
	ACAD AIR COMPR	2-2501	OFF	OFF	OFF	OFF		SR

Appendix - Load Tables (Pre-Mods)

Station: Load Cities Units: 2

Preparer: *ms [signature]* Concurrence: *(H)* Date: *3/24/92* Concurrence: *DCB* Date: *3/24/92*

Load Center: MCC 29-3

Comments By	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Sdby HVAC	Post LOCA Steady State	Remarks	SR or NSR
	TURB BEARING LIFT PMP 2A	2-5620A	OFF	ON	ON	ON		NSR
	TURB BEARING LIFT PMP 2B	2-5620B	OFF	ON	ON	ON		NSR
	TURB BEARING LIFT PMP 2C	2-5620C	OFF	ON	ON	ON		NSR
	TURB BEARING LIFT PMP 2D	2-5620D	OFF	ON	ON	ON		NSR
	TURB BEARING LIFT PMP 2E	2-5620E	OFF	ON	ON	ON		NSR
	TURBINE TURNING GEAR	2-5600	OFF	ON	ON	ON		NSR
	TURB TURNING GEAR OIL PMP	2-5608	OFF	ON	ON	ON		NSR
S&L	DRYWELL CLG BLOWER 2E	2-5788E	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR
S&L	TURBINE TURNING GEAR PIGGYBACK MOTOR		OFF	ON	ON	ON		NSR

TURB BEARING LIFT PMP 2C	2-5620C	OFF	ON	ON	ON		NSR
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Append - Load Tables (Pre-Mods)

Station: Load Cities Units: 2

Preparer: *[Signature]* Concurrence: *[Signature]*

Date: 3-23-92 Concurrence:

DCB 3-24-92 Date:

Load Center: MCC 29-4

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Stdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By S&L	DRYWELL CLG BLOWER 2D	2-5734	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR
S&L	SJGT AIR HTRS	1/2-7503A	START	ON	ON	ON	START ON HI RAD OR GROUP II	SR
S&L	SJGT FAN	1/2-7506A	START	ON	ON	ON	START ON HI RAD OR GROUP II	SR
S&L	DRYWELL/TORUS DIFF PRESS COMP 2B	2-8740-1B	TRIP	OFF	OFF	OFF	TRIPS ON GROUP II ISOLATION OF SUCTION	NSR
S&L	SBGT OUTSD AIR SPLY DAMPER	1/2-7504A	START	OFF	OFF	OFF	START ON HI RAD OR GROUP II	SR
S&L	SBGT FAN DISCH DAMPER 1/2A	1/2-7507A	START	OFF	OFF	OFF	START ON HI RAD OR GROUP II	SR
S&L	SBGT SYS IN DAMPER 1/2A	1/2-7505A	START	OFF	OFF	OFF	START ON HI RAD OR GROUP II	SR
	RHRS CONT SPRY SHTOF ISOVLV	2-1001-26B	OFF	ON	OFF	OFF	4 OF 8 COULD BE ON AT TIME OF RHR SW INITIATION; FIRST 4 ARBITRARILY TAKEN AS ON	SR
	RHRS BACKUP CONT SPRY VLV2B	2-1001-23B	OFF	ON	OFF	OFF	AS ABOVE	SR
S&L	RHR MN SHTOF TO SPRN CH VLV	2-1001-34B	OFF	ON	OFF	OFF	AS ABOVE	SR
	RHRS SPRN CH DMPLN VLV 2B	2-1001-36B	OFF	ON	OFF	OFF	AS ABOVE	SR
	RHRS SPRN CH SPRY HDR VLV2B	2-1001-37B	OFF	OFF	OFF	OFF	4 OF 8 COULD BE ON AT TIME OF RHR SW INITIATION; LAST 4 ARBITRARILY TAKEN AS OFF	SR
S&L	RHRS CLG PMP DRS HDR VLV	2-1001-19B	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
S&L	RHRS HT EXCH 1003B BYPS VALV	2-1001-16B	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
S&L	RHRS CONT CLNT SERV WTR VLV	2-1001-5B	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
	RHRS SHTDN CLG VLV 2C	2-1001-43C	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS SHTDN CLG VLV 2D	2-1001-43D	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS CLNT PMP SUCT HDR VLV	2-1001-7D	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS CONT CLNT SERV WTR VLV	2-1001-5B	OFF	ON	OFF	OFF	SEE 2-1001-37B VALVE	SR
	RHRS CLNT PMP SUCT HDR VLV	2-1001-7C	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR



## Appendix - Load Tables (Pre-Mods)

Station: Load Cities Units: 2

Preparer: *Joe Teller*Concurrence: *(H)*

Date: 2/23/92

Concurrence:

BCB 32492

Date:

## Load Center: MCC 28/29-5

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Sldby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By								
S&L	RX WTR RECIRC LOOP EQUAL VALVE 2A	2-202-6A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	RX WTR RECIRC PUMP SUCTION VALVE 2A	2-202-4A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	RX WTR RECIRC PUMP DISCHG VALVE 2A	2-202-5A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	RHRS INBD SHUTOFF VLV 2A	2-1001-29A	START	OFF	OFF	OFF	START AT 900 PSI	SR
S&L	RHRS OUTBD SHUTOFF VLV 2A	2-1001-28A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	RX WTR RECIRC LOOP EQUAL BYPASS VALVE 2A	2-202-9A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	RX WTR RECIRC LOOP EQUAL VALVE 2B	2-202-6B	START	OFF	OFF	OFF	START AT 900 PSI	SR
S&L	RX WTR RECIRC PMP SUCTION VALVE 2B	2-202-4B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	RX WTR RECIRC PUMP DISCH VALVE 2B	2-202-5B	START	OFF	OFF	OFF	START AT 900 PSI	SR
S&L	RHRS INBD SHUTOFF VLV 2B	2-1001-29B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	RHRS OUTBD SHUTOFF VLV 2B	2-1001-28B	OFF	OFF	OFF	OFF	START AT 325 PSI ASSUMED NON-COINCIDENT WITH VALVES STARTING @ 900 PSI	SR
S&L	RX WTR RECIRC LOOP EQUAL BYPASS VALVE 2B	2-202-9B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR

Appendix - Load Tables (Pre-Mode)

Station: Load Cities Units: 2

Preparer: *[Signature]* Concurrence: *[Signature]* Date: 3/24/92 Concurrence: *[Signature]* Date: 3/24/92

Load Center: MCC 29-6

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Sdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By S&L	DRYWELL CLG BLOWER 2G	2-5734G	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR
S&L	DRYWELL CLG BLOWER 2C	2-5734C	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR

Appendix - Load Tables (Pre-Mode)

Station: Quad Cities Units: 2

Preparer: *[Signature]*

Concurrence: *[Signature]*

Date: 3-23-92

Concurrence: *[Signature]*

DCB 3-24-92

Date:

Load Center: SWGR 28

Comments	Equipment	LOCA Time	RHR SW	CR Stdb	Post LOCA Steady	Remarks	SR or NSR
By	Number	Zero	Initiation	HVAC	State		
	Load Name						
	DG CLG WTR PMP 1/2 ALT FD	1/2-3903	OFF	OFF	OFF		SR
	FUEL POOL CLG WTR PMP 2A	2-1902A	ON	ON	ON		NSR
S&L	RX BLDG EXH FAN 2A	2-5704A	TRIP	OFF	OFF	TRIP ON HIGH RAD OR GROUP II	NSR
S&L	RX BLDG SPLY FAN 2B	2-5703B	TRIP	OFF	OFF	TRIP ON HIGH RAD OR GROUP II	NSR
S&L	RX BLDG SPLY FAN 2C	2-5703C	TRIP	OFF	OFF	TRIP ON HIGH RAD OR GROUP II	NSR
	E. TURB BLDG SPLY FAN 2A	2-5702A	ON	ON	ON		NSR
	120/240VAC UPS PNL 902-63		ON	ON	ON		NSR
	TURB & RX BLDGS LTG 2B		ON	ON	ON		NSR
	INST AIR COMPSR	1B-4709	ON	ON	ON	RUNS CONTINUOUSLY	NSR
DVL	480V MCC 28-1A		ON	ON	ON		SR
DVL	480V MCC 28-1B		ON	ON	ON		SR
DVL	480V MCC 28-2		ON	ON	ON		SR
DVL	480V MCC 28-3		ON	ON	ON		SR
S&L	480V MCC 28/29-5		ON	ON	ON		SR
S&L	RX BLDG CLG WTR PMP 2A	2-3701A	ON	ON	ON		NSR

## Append - Load Tables (Pre-Mods)

Station: Quad Cities Units: 2

Preparer: *[Signature]*Concurrence: *[Signature]*

Date: 3-24-92

Concurrence: *[Signature]*

DCB 3-24-92

Date:

## Load Center: MCC 28-1A

Comments By	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Sdby HVAC	Post LOCA Steady State	Remarks	SR or NSR
	STANDBY LIQUID CONT PMP 2A	2-1102A	OFF	OFF	OFF	OFF		SR
	RHRS EMERG AHU 2A	2-5746A	OFF	ON	ON	ON	THERMOSTAT	SR
	CG RM HVAC SPLY FAN 1/2	1/2-5727	START	ON	ON	ON	AT 800 RPM	SR
	CORESPRAY EMERG AHU 2A	2-5748A	OFF	ON	ON	ON	THERMOSTAT	SR
	RX BLDG EMERG LGTING		OFF	OFF	OFF	OFF		SR
	XFMR TO FD 28-1A-1		ON	ON	ON	ON		SR
S&L	DRYWELL CLG BLOWER 2A	2-5734	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR
S&L	POST LOCA H2 & O2 MON PMP	2252-61A	OFF	ON	ON	ON	WILL NOT REACH LOW LEVEL UNTIL LONG INTO EVENT	SR
	DIESEL OIL XFER PMP 1/2	1/2-5203	OFF	OFF	OFF	ON		SR
	CORESPRAY PMP 2A SUCT VLV	2-1402-3A	OFF	OFF	OFF	OFF		SR
S&L	CORE SPRAY INBD ISOL VLV 2A	2-1402-25A	OFF	OFF	OFF	OFF	STARTS AT 325 PSI ASSUMED NON-COINCIDENT WITH VALVES STARTING @ 900 PSI	SR
	CORE SPRAY OUTBD ISOL VLV 2A	2-1402-24A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
DVL	RHRS HEAT EXCH NORM INL VLV	2-1001-4A	OFF	OFF	OFF	OFF		SR
DVL	RHRS HT EXCH REV OUT VLV	2-1001-188A	OFF	OFF	OFF	OFF		SR
	CORESPRAY TST BYPS VLV 2A	2-1402-4A	OFF	OFF	OFF	OFF		SR
DVL	RHRS HT EXCH NORM OUT VLV	2-1001-185A	OFF	OFF	OFF	OFF		SR
S&L	RX WTR CLNUP SYS RSO ISO VLV	2-1201-2	START	OFF	OFF	OFF	CLOSES ON GROUP III	SR
	DRYWELL TORUS PRG EXH FAN2A	2-5708A	OFF	OFF	OFF	OFF		NSR
	DC STARTING AIR COMP 1/2A	1/2-5209A	OFF	ON	ON	ON		SR
	MN STM LN DRN VLV 2A	2-220-1	OFF	OFF	OFF	OFF		SR
	MN STM LN DRN CONDSR VLV #2	2-220-3	OFF	OFF	OFF	OFF		NSR
	MN STM LN COMBINED DRN VLV	2-220-4	OFF	OFF	OFF	OFF		NSR
	CRD HYD SYS PR CONT VLV 2A	2-302-8	OFF	OFF	OFF	OFF		NSR
S&L	MAIN STEAM LINE A DRAIN VLV	2-220-90A	OFF	OFF	OFF	OFF		NSR
S&L	MAIN STEAM LINE B DRAIN VLV	2-220-90B	OFF	OFF	OFF	OFF		NSR
S&L	MAIN STEAM LINE C DRAIN VLV	2-220-90C	OFF	OFF	OFF	OFF		NSR
S&L	MAIN STEAM LINE D DRAIN VLV	2-220-90D	OFF	OFF	OFF	OFF		NSR

Append - Load Tables (Pre-Mods)

Station: Quad Cities Units: 2

Preparer: *[Signature]*

Concurrence: *[Signature]*

Date: 3-23-92

Concurrence: *[Signature]*

DCB 3-24-92

Date:

Load Center: MCC 28-1B

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Sdby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By S&L	DRYWELL CLG BLOWER 2B	2-5788B	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR
S&L	DRYWELL/TORUS DIFF PRESS COMP 2A	2-8740-1A	TRIP	OFF	OFF	OFF	TRIPS ON GROUP 8 ISOLATION OF SUCTION	NSR
S&L	DRYWELL CLG BLOWER 2F	2-5788F	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR
	RHRS CONT ISOL VLV 2A	2-1001-26A	OFF	ON	OFF	OFF	4 OF 8 COULD BE ON AT TIME OF RHR SW INITIATION; FIRST 4 ARBITRARILY TAKEN AS ON	SR
S&L	RHRS BACKUP CONT SPRY VLV2A	2-1001-23A	OFF	ON	OFF	OFF	"AS ABOVE"	SR
S&L	RHRS MN SHTOF TO SPRN VLV2A	2-1001-34A	OFF	ON	OFF	OFF	"AS ABOVE"	SR
S&L	RHRS SUPP CH DUMP LINE VLV 2A	2-1001-36A	OFF	ON	OFF	OFF	"AS ABOVE"	SR
S&L							4 OF 8 COULD BE ON AT TIME OF RHR INITIATION; LAST 4 ARBITRARILY TAKEN AS OFF	SR
	RHRS SPRN CH SPRY HDR VLV2A	2-1001-37A	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
S&L	RHRS CLNT PMP CHS HDR VLV	2-1001-19A	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
S&L	RHRS HEAT EXCH BYPS VLV 2A	2-1001-16A	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
S&L	RHRS CONT CLNT HX DISCH VLV	2-1001-5A	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
	RHRS SHTOF VLV RECIRCL-CLNT	2-1001-50	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS CLNT PMP SUCT HDR VLV2A	2-1001-7A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS CLNT PMP SUCT HDR 2B	2-1001-7B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS SHTDN CLG VLV	2-1001-43A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS SHTDN CLG VLV	2-1001-43B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	ESSN FILL SYS JOCKEY PMP		ON	ON	ON	ON		SR
	RHRS HT EXCH REV OUT VLV	2-1001-187A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR



Append - Load Tables (Pre-Mode)

Station: Quad Cities Units: 2

Preparer: *[Signature]* Concurrency: *[Signature]*

Date: 3-23-92

Concurrency: *[Signature]*

Date:

Load Center: MCC 28-2

Comments By	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Stdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
	RECIRC MG SET VENT FAN 2B	2-5701B	ON	ON	ON	ON		NSR
	MAIN H2 SEAL OIL PMP		ON	ON	ON	ON		NSR
	RX PROT SYS MG SET 2A		ON	ON	ON	ON		NSR
	H2 SEAL OIL VACCUUM PMP	2-5616	ON	ON	ON	ON		NSR
DVL	125V BATTERY CHGR#2A		ON	ON	ON	ON		SR
	120/240VAC XFMR FD 28-2-1		ON	ON	ON	ON		SR
DVL	250V BATTERY CHARGER 1/2		ON	ON	ON	ON		SR
	RHR SW PMP 2A CLR FAN A	2-5745A	OFF	START	ON	ON		SR
	RHR SW PMP 2A CLR FAN B	2-5745A	OFF	START	ON	ON		SR
	RHR SW PMP 2A CLR FAN C	2-5745A	OFF	START	ON	ON		SR
	RHR SW PMP 2A CLR FAN D	2-5745A	OFF	START	ON	ON		SR
	RHR SW PMP 2B CLR FAN A	2-5745B	OFF	START	ON	ON		SR
	RHR SW PMP 2B CLR FAN B	2-5745B	OFF	START	ON	ON		SR
	RHR SW PMP 2B CLR FAN C	2-5745B	OFF	START	ON	ON		SR
	RHR SW PMP 2B CLR FAN D	2-5745B	OFF	START	ON	ON		SR
	CLN DEMIN WTR TO CONDSR VLV	2-4901	OFF	OFF	OFF	OFF	ASSUMPTION 4	NSR
S&L	120/240V AC INSTR & RX PROT. BUS 2A & 2B RE'S TRANS FEED		OFF	OFF	OFF	OFF		SR
S&L	MAIN STEAM ISOL VLV UNIT COOLERS 2-3908A THRU 2-3906F	2-3908A-F	ON	ON	ON	ON		NSR

# Appendix - Load Tables (Pre-Mods)

Station: Load Cities Units: 2

Preparer: MS [Signature]

Concurrence: (16)

Date: 3-23-92

Concurrence: ACP 3-24-92

Date: 3-24-92

## Load Center: MCC 28-3

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Stdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By								
DVL	RX BLDG VENT SYS MAP CLR	2-5714	OFF	OFF	OFF	OFF	OO'S	NSR
S&L	DRYWELL PNEUMATIC COMPRESSOR MTR	2-4708	TRIP	OFF	OFF	OFF	TRIPS ON GROUP II ISOLATION OF SUCTION	NSR
S&L	RX WTR CLN UP SYS RECIRC P 2A	2-1205A	TRIP	OFF	OFF	OFF	TRIPS ON GROUP III	NSR
DVL	P-31 CONTMT PARTCTL SMPL PMP	2-8841-9	TRIP	OFF	OFF	OFF	AS8, GROUP II	NSR
	RX DRYWELL EQUIP DRN SMPPMP	2-2001-245A	TRIP	OFF	OFF	OFF	AS8, TRIPS ON GROUP II	NSR
	RX DRYWELL EQUIP DRN SMPPMP	2-2001-245B	TRIP	OFF	OFF	OFF	AS8, TRIPS ON GROUP II	NSR
	RX DRYWELL FLR DRN SMP PMP	2-2001-241A	TRIP	OFF	OFF	OFF	AS8, TRIPS ON GROUP II	NSR
	RX DRYWELL FLR DRN SMP PMP	2-2001-241B	TRIP	OFF	OFF	OFF	AS8, TRIPS ON GROUP II	NSR
	RX WTR CLNUP SYS PCT PMP	2-1279-7	OFF	OFF	OFF	OFF	ASSUMPTION 8	NSR
	HPCI RM DRN PMP #2	2-2001-265	TRIP	OFF	OFF	OFF		NSR
S&L	RX WTR CLNUP SYS FLTR HOLDING PUMP	2-1279-2A	OFF	ON	ON	ON	START ON LO FLOW AFTER GRCUP III	NSR
	RX WTR CLNUP PRECOAT AGITAT	2-1279-B	OFF	OFF	OFF	OFF		NSR
	RX FD PMP VENT FAN 2A	2-5707A	ON	ON	ON	ON		NSR
DVL	RX BLDG EQUIP DRN TNK PMP	2-2001-246	TRIP	OFF	OFF	OFF	AS8, GROUP II SIGNAL	NSR
	RX BLDG CONDST RTN TO DTR2A	2-5782A	ON	ON	ON	ON		NSR
	RX BLDG CONDST RTN TO DTR2B	2-5782B	ON	ON	ON	ON		NSR
	RX BLDG FLR DRN SMP PMP 2A	2-2001-242A	OFF	OFF	OFF	OFF	ASSUMPTION 8 (TRIP ON)	NSR
	RX BLDG FLR DRN SMP PMP 2B	2-2001-242B	OFF	OFF	OFF	OFF	ASSUMPTION 8 (GR II)	NSR
	RX BLDG DW EQUIP ACC DR #2		OFF	OFF	OFF	OFF	REFUEL ONLY	NSR
	120/208V FEED TO 28-3-1		ON	ON	ON	ON		SR
DVL	RX BLDG ELEVATOR		OFF	OFF	OFF	OFF	ASSUMPTION 8	NSR
	RX BLDG CRANE 1/2		OFF	OFF	OFF	OFF		NSR
DVL	PRIMARY CONTMT RECIRC PMP	2-8841-20	TRIP	OFF	OFF	OFF	REFUEL ONLY	NSR
	ROD REMOVAL PLATFORM RECPT		OFF	OFF	OFF	OFF		NSR
	REACTOR VESSEL HEAT-UP EQUIP		OFF	OFF	OFF	OFF		NSR
S&L	TORUS AREA RECEPT'S	JB 2RB-3	OFF	OFF	OFF	OFF		NSR
S&L	GRADE FLOOR RECEPT'S	JB 2RB-4	OFF	OFF	OFF	OFF		NSR
S&L	RB WELDER RECEPT'S	JB 2RB-5	OFF	OFF	OFF	OFF		NSR
S&L	RB WELDER RECEPT'S	JB 2RB-6	OFF	OFF	OFF	OFF		NSR
S&L	FUEL POOL RECEPT'S	JB 2RB-22	OFF	OFF	OFF	OFF		NSR
S&L	REFUELING PLATFORM RECEPT'S	JB 2RB-23	OFF	OFF	OFF	OFF		NSR

Append - Load Tables (Pre-Mods)

Station: Quad Cities Units: 2

Preparer: *[Signature]* Concurrence: *[Signature]* Date: 3-23-92 Concurrence: *[Signature]* Date: 3-24-92

Load Center: MCC 28-3 (CON'T)

Comments By	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Stdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
	RX WTR CLNUP SYS FLT BPSVLV	2-1201-133	OFF	OFF	OFF	OFF	ASSUMPTION 4	NSR
	RX WTR CLN SYS TESTR ORMLV	2-1201-76	OFF	OFF	OFF	OFF	ASSUMPTION 4	NSR
	RX WTR CLNUP SYS MN CONDVLV	2-1201-78	OFF	OFF	OFF	OFF	ASSUMPTION 4	NSR
	RX WTR CLNUP SYS RDWC VLV	2-1201-77	OFF	OFF	OFF	OFF	ASSUMPTION 4	NSR
S&L	RECEPTACLE B/MC-25&B/MC-28		OFF	OFF	OFF	OFF		NSR
DVL/S&L	TEMP CONT UNIT	JB 2RB-301	OFF	OFF	OFF	OFF		NSR
S&L	METEOROLOGICAL TOWER HOUSE ENVIRONS MONITORING		ON	ON	ON	ON		RR

## Appendix - Load Tables (Pre-Mods)

Station: Load Cities Units: 1

Preparer: *John Sullivan* Concurrence: *CK* Date: *3-23-92* Concurrence: *DCB 3-29-92* Date:

Load Center: SWGR 18

*START test 3/26/92*

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Stdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By								
S&L	DG CLG WTR PMP 1/2	1/2-3903	ON	ON	ON	ON		SR
	FUEL POOL CLG WTR PMP 1A	1-1902A	ON	ON	ON	ON		NSR
S&L	RX BLDG EXH FAN 1A	1-5704A	TRIP	OFF	OFF	OFF	TRIP ON HIGH RAD OR GROUP II	NSR
S&L	RX BLDG SPLY FAN 1B	1-5703B	TRIP	OFF	OFF	OFF	TRIP ON HIGH RAD OR GROUP II	NSR
S&L	RX BLDG SPLY FAN 1C	1-5703C	TRIP	OFF	OFF	OFF	TRIP ON HIGH RAD OR GROUP II	NSR
	E. TURB BLDG SPLY FAN 1A	1-5702A	ON	ON	ON	ON		NSR
	RX BLDG CLG WTR PMP 1A	1-3701A	ON	ON	ON	ON		NSR
	ESS SERV UPS PANEL 901-63		ON	ON	ON	ON		SR
S&L	TURB & RX BLDGS LTG #1		ON	ON	ON	ON		NSR
S&L	INST AIR COMPR 1/2	1/2-4709	ON	ON	ON	ON	ASSUMPTION 8	NSR
	480V MCC 18-1A		ON	ON	ON	ON		SR
	480V MCC 18-1B		ON	ON	ON	ON		SR
	480V MCC 18-2		ON	ON	ON	ON		SR
	480V MCC 18-3		ON	ON	ON	ON		SR
	480V MCC 18-4		ON	ON	ON	ON		SR
S&L	RX BLDG 480V MCC 18/19-5		ON	ON	ON	ON		SR



## Appendix - Load Tables (Pre-Mods)

Station: Quad Cities Units: 1

Preparer: *[Signature]*Concurrence: *[Signature]*

Date: 3/23/92

Concurrence: *[Signature]*

Date: DCB 3-24-92

## Load Center: MCC 18-1A

Comments By	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Stdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
	S* ANDBY LIQUID CONT PMP 1A	1-1102A	OFF	OFF	OFF	OFF		SR
	RHRS EMERG AHU 1A	1-5746A	OFF	ON	ON	ON	THERMOSTAT	SR
	DG RM HVAC SPLY FAN 1/2	1/2-5727	OFF	ON	ON	ON	START @ 800 RPM	SR
	CORES PRAY EMERG AHU 1A	1-5748A	OFF	ON	ON	ON	THERMOSTAT	SR
	RX BLDG EMERG LGTING		OFF	OFF	OFF	OFF		SR
	XFER TO FD 18-1A-1		ON	ON	ON	ON		SR
S&L	DRYWELL CLG BLOWER 1A	1-5788A	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	SR
S&L	POST LOCA H2 & O2 MON PMP 1A	2253-81A	OFF	ON	ON	ON	MANUAL START AFTER LOCA	SR
	ALT FD RHRS EMERG AHU 2A	2-5746A	OFF	OFF	OFF	OFF		SR
	DIESEL OIL XFER PMP 1/2	1/2-5203	OFF	OFF	OFF	ON	WILL NOT REACH LOW LEVEL UNTIL LONG INTO EVENT	SR
	CORES PRAY PMP 1A SUCT VLV	1-1402-3A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	CORE SPRAY INBOARD ISOL VLV	1-1402-25A	OFF	OFF	OFF	OFF	STARTS AT 325 PSI ASSUMED NON-COINCIDENT WITH VALVES STARTING @ 900 PSI	SR
	CORE SPRAY OUTBOARD ISO VLV	1-1402-24A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS HEAT EXCH NORM INL VLV	1-1001-4A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS HEAT EXCH REV INL VLV	1-1001-186A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	CORE SPRAY TEST BYPASS VLV	1-1402-4A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS HEAT EXCH NORM OUT VLV	1-1001-153A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS HEAT EXCH REV OUTLET	1-1001-187A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	RX WTR CLEANUP SYS RECIRC	1-1201-2	START	ON	ON	ON	CLOSES ON GROUP III	SR
DVL	DRYWELL & TORUS PURG EXH FAN	1-5708A	OFF	OFF	OFF	OFF		NSR
	DIESEL START AIR COMP 1/2B	1/2-5209B	OFF	ON	ON	ON	ASSUMPTION 8	SR
	MAIN STM LINE DRN VLV 1A	1-220-1	OFF	OFF	OFF	OFF		SR
	ESSENTIAL FILL SYS JOCK PMP		ON	ON	ON	ON		SR
S&L	MAIN STEAM LINE COMB. DRAIN VLV	1-220-4	OFF	OFF	OFF	OFF		NSR
S&L	MAIN STEAM LINE DRAIN VLV 1A	1-220-90A	OFF	OFF	OFF	OFF		NSR
S&L	CRD HYDR. SYS PRESS CONTROL VLV 1A	1-302-8	OFF	OFF	OFF	OFF		NSR
S&L	MAIN STEAM LINE DR. VLV 1C	1-220-90C	OFF	OFF	OFF	OFF		NSR
S&L	MAIN STEAM LINE DR. VLV 1B	1-220-90B	OFF	OFF	OFF	OFF		NSR
S&L	MAIN STEAM LINE DR. VLV 1D	1-220-90D	OFF	OFF	OFF	OFF		NSR
S&L	MIN. ST. LINE DRAIN COND. VLV 1C	1-220-3	OFF	OFF	OFF	OFF		NSR



Appendix - Load Tables (Pre-Mods)

Station: Quad Cities Units: 1

Preparer: *[Signature]* Concurrence: *[Signature]*

Date: 3-23-92 Concurrence: *ACB 3-24-92*

Date:

Load Center: MCC 1B-1B

Comments	Equipment	LOCA Time	RHR SW	CH StdbY	Post LOCA Steady	Remarks	SR or NSR	
By	Load Name	Number	Zero	Initiation	HVAC	State		
S&L	DRYWELL CLG BLOWER 1B	1-5788B	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR
DVL/S&L	DRYWELL/TORUS DIFF PRESS COMP 1A	1-8740-1A	TRIP	OFF	OFF	OFF	TRIPS ON GROUP B ISOLATION OF SUCTION	NSR
	STNDBY LQD CONTRL TK HTR	1-1103	ON	ON	ON	ON	ASSUMPTION 8	SR
DVL	DRYWELL CLG BLOWER 1F	1-5788F	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR
DVL							4 OF 8 COULD BE ON AT TIME OF RHR SW INITIATION; FIRST 4 ARBITRARILY TAKEN AS ON	SR
DVL	RHRS CONTAIN SPRAY SHUTOFF	1-1001-26A	OFF	ON	OFF	OFF	"AS ABOVE"	SR
DVL	RHRS BACKUP CONTAIN SPRAY	1-1001-23A	OFF	ON	OFF	OFF	"AS ABOVE"	SR
DVL	RHRS MAIN SHUTOFF SUPPRESS	1-1001-34A	OFF	ON	OFF	OFF	"AS ABOVE"	SR
DVL	RHRS SUPP CHAMBER DUMPLINE	1-1001-36A	OFF	ON	OFF	OFF	"AS ABOVE"	SR
DVL							4 OF 8 COULD BE ON AT TIME OF RHR SW INITIATION; LAST 4 ARBITRARILY TAKEN AS OFF	SR
DVL	RHRS SUPP CHAMBER SPRAY HDR	1-1001-37A	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
DVL	RHRS COOLANT PMP CROSS HDR	1-1001-19A	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
DVL	RHRS CNMT CLNT HX DISCH VLV	1-1001-5A	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
DVL	RHRS HEAT EXCH R100 3A BYP	1-1001-16A	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
	RHRS SHUTOFF INBD VLV	1-1001-50	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS COOLANT 1002A PMP SUCT	1-1001-7A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS COOLANT 1002B PMP SUCT	1-1001-7B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS SHUTDOWN COOLANT VLV	1-1001-43A	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS SHUTDOWN COOLANT VLV	1-1001-43B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR

Append - Load Tables (Pre-Mods)

Station: Load Cities Units: 1

Preparer: *[Signature]* Concurrence: *[Signature]* Date: 3-23-92 Concurrence: *[Signature]* 3-24-92 Date:

Load Center: MCC 18-2

Comments By	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Stdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
	RECIRC MG SET VENT FAN 1B	1-5701B	ON	ON	ON	ON		NSR
S&L	MIN H2 SEAL OIL PMP		ON	ON	ON	ON		NSR
	RX PROT SYS MG SET 1A		ON	ON	ON	ON		NSR
	H2 SEAL OIL VACUUM PMP	1-5316	ON	ON	ON	ON		NSR
	125V BATTERY CHGR#1A		ON	ON	ON	ON		SR
	120/240VAC XFMR FD		ON	ON	ON	ON		SR
	250V BATTERY CHARGER 1/2		ON	ON	ON	ON		SR
DVL	3.5KV SWYD RLY HSE XFMR		ON	ON	ON	ON		NSR
	RHR SW PMP 1A CLR FAN A	1-5745A	OFF	START	ON	ON		SR
	RHR SW PMP 1A CLR FAN B	1-5745A	OFF	START	ON	ON		SR
	RHR SW PMP 1A CLR FAN C	1-5745A	OFF	START	ON	ON		SR
	RHR SW PMP 1A CLR FAN D	1-5745A	OFF	START	ON	ON		SR
S&L	DC 1/2 CLG WTR PMP CLG FANA	1/2-5749A	START	ON	ON	ON	STARTS ON DGCWP START	SR
S&L	DG 1/2 CLG WTR PMP CLG FANB	1/2-5749B	START	ON	ON	ON	STARTS ON DGCWP START	SR
	RHR SW PMP 1B CLR FAN A	1-5745B	OFF	START	ON	ON		SR
	RHR SW PMP 1B CLR	1-5745B	OFF	START	ON	ON		SR
	RHR SW PMP 1B CLR	1-5745B	OFF	START	ON	ON		SR
	RHR SW PMP 1B CLR	1-5745B	OFF	START	ON	ON		SR
DVL/S&L	MAIN STM ISOL VLV UN	1-3906 A-F	ON	ON	ON	ON		NSR
DVL	COMPUTER BY A/C UNIT B		ON	ON	ON	ON		NSR

## Appendix - Load Tables (Pre-Mods)

Station: Load Cities Units: 1

Preparer: *AS* Concurrency: *AS* Date: 3-23-92 Concurrency: *DLB* 3-24-92 Date:

## Load Center: MCC 18-3

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Sdby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By								
DVL	RX BLDG VENT SYS EVAP CLR	1-5714	OFF	OFF	OFF	OFF	OOS	NSR
S&L	DHYWELL PNEUMATIC COMPRESSOR MTR	1-4708	TRIP	OFF	OFF	OFF	TRIPS ON GROUP II ISOLATION OF SUCTION	NSR
S&L	RX WTR CLN UP SYS RECIRC PMP1A	1-1205A	TRIP	OFF	OFF	OFF	TRIPS ON GROUP III	NSR
DVL	PRI CONTMT PARTCTL SMPL PMP	1-8841-9	TRIP	OFF	OFF	OFF	AS8, GROUP II	NSR
DVL	RX DRYWELL EQUIP DRN SMPPMP	1-2001-245A	TRIP	OFF	OFF	OFF	AS 8, TRIPS ON GROUP II	NSR
DVL	RX DRYWELL EQUIP DRN SMPPMP	1-2001-245B	TRIP	OFF	OFF	OFF	AS 8, TRIPS ON GROUP II	NSR
DVL	RX DRYWELL FLR DRN SMP PMP	1-2001-241A	TRIP	OFF	OFF	OFF	AS 8, TRIPS ON GROUP II	NSR
DVL	RX DRYWELL FLR DRN SMP PMP	1-2001-241B	TRIP	OFF	OFF	OFF	AS 8, TRIPS ON GROUP II	NSR
	RX WTR CLNUP SYS PCT PMP	1-1279-7	OFF	OFF	OFF	OFF	ASSUMPTION 8	NSR
	HPCI RM DRN PMP	1-2001-265	TRIP	OFF	OFF	OFF		NSR
S&L	RX WTR CLNUP FLTR HOLDING P. P1A	1-1279-2A	OFF	OFF	ON	ON	START ON LO FLOW AFTER GROUP III	NSR
	RX WTR CLNUP SYS PCT TK AGT	1-1279-8	OFF	OFF	OFF	OFF		NSR
	RX FD PMP VENT FAN 1A	1-5707A	ON	ON	ON	ON		NSR
DVL	RX BLDG EQUIP DRN TNK PMP	1-2001-248	TRIP	OFF	OFF	OFF	AS8, GROUP II	NSR
	RX BLDG CONDST RTN TO DTR1A	1-5782A	ON	ON	ON	ON		NSR
	RX BLDG CONDST RTN TO DTR1B	1-5782B	ON	ON	ON	ON		NSR
DVL	RX BLDG FLR DRN SMP PMP 1A	1-2001-242A	OFF	OFF	OFF	OFF	ASSUMPTION 8 ON GRP II	NSR
DVL	RX BLDG FLR DRN SMP PMP 1B	1-2001-242B	OFF	OFF	OFF	OFF	ASSUMPTION 8 ON GRP II	NSR
	RB DW EQUIP ACCESS DOOR 1/2		OFF	OFF	OFF	OFF	REFUEL ONLY	NSR
	120/208V FEED TO 18-3-1		ON	ON	ON	ON		SR
	RX BLDG CRANE 1/2		OFF	OFF	OFF	OFF		NSR
DVL	RX BLDG ELEVATOR		OFF	OFF	OFF	OFF	ASSUMPTION 8	NSR
DVL	CONTROL ROD DR BRIDGE CRANE		OFF	OFF	OFF	OFF		NSR
DVL	TN-9 AUX SYSTEM		OFF	OFF	OFF	OFF		NSR
DVL	480/240V TRANSF RAIL CASK		OFF	OFF	OFF	OFF		NSR
DVL	PRI CONT RECRC SMPL CTR PMP	1-8841-20	TRIP	OFF	OFF	OFF		NSR
DVL	RX BLDG RAILWAY CAR PULLER		OFF	OFF	OFF	OFF		NSR
DVL	FUEL POOL SERV PLATF RECEPT		OFF	OFF	OFF	OFF		NSR
DVL	REFUEL PLATFORM RECEPTACLES		OFF	OFF	OFF	OFF		NSR
DVL	RX B. G JIB CRANE	1/2-5808	OFF	OFF	OFF	OFF		NSR
DVL	ROD REMOVAL RECEPTACLES		OFF	OFF	OFF	OFF		NSR
DVL	RX BLDG SAMPLE PNL TCL		OFF	OFF	OFF	OFF		NSR

Appendix - Load Tables (Pre-Mods)

Station: Quad Cities Units: 1

Preparer: *M. Suber*

Concurrence: *[Signature]*

Date: 3-23-97

Concurrence: *OCB 3-24-97*

Date:

Load Center: MCC 1B-3 (CONT'D)

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Stdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By								
DVL	DIESEL ENG COOL WTR HTR 1/2		LUBE PUMPS	LUBE PUMPS	LUBE PUMPS	LUBE PUMPS ONLY	TRIPS AT 200 RPM; ALSO LUBE PUMPS WHICH DO NOT TRIP	NSR
DVL	EQUIPT HATCH JIB HOIST		OFF	OFF	OFF	OFF		NSR
DVL	RX VESSEL HEAT-UP EQUIPT	1-1295-2A&2	OFF	OFF	OFF	OFF		NSR
S&L	RB WELDER RECEPT'S	JB 1RB-3	OFF	OFF	OFF	OFF		NSR
S&L	RB WELDER RECEPT'S	JB 1RB-4	OFF	OFF	OFF	OFF		NSR
S&L	RC WELDER RECEPT'S	JB 1RB-5	OFF	OFF	OFF	OFF		NSR
S&L	RB WELDER RECEPT'S	JB 1RB-6	OFF	OFF	OFF	OFF		NSR
S&L	FUEL POOL RECEPT'S	JB 1RB-22	OFF	OFF	OFF	OFF		NSR
S&L	RX WTR CLUP SYS FILTER BYPASS VLV	1201-33	OFF	OFF	OFF	OFF		NSR
S&L	RX WTR CLUP SYS RESTRICTING OFFICE BYPASS VLV	1201-76	OFF	OFF	OFF	OFF		NSR
S&L	RX WTR CLUP SYS MAIN COND. DUMP VLV	1201-78	OFF	OFF	OFF	OFF		NSR
S&L	RX WTR CLUP SYS RAD WASTE DRAIN & WASTE COOL VLV	1201-77	OFF	OFF	OFF	OFF		NSR
S&L	REFUEL PLATFORM 480V, 3 PHASE RECEPTACLE		OFF	OFF	OFF	OFF		NSR



Appendix - Load Tables (Pre-Mods)

Station: Load Cities Units: 1

Preparer: *[Signature]* Concurrence: *[Signature]* Date: 3-23-92 Concurrence: *NB* 3-24-92 Date:

Load Center: MCC 18-4

Comments  
By

Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Sdbv HVAC	Post LOCA Steady State	Remarks	SR or NSR
CONRL RM AFU BSTR FAN A	1/2-9400-104	OFF	OFF	START	ON		SR
CONT RM AFU BSTR FAN B	1/2-9400-104	OFF	OFF	OFF	ON		SR
CONTL RM STANDBY A/C	1/2-9400-102	OFF	OFF	START	ON		SR
CONTL RM STNDBY AHU	1/2-9400-100	OFF	OFF	START	ON		SR
120/208 XFMR		ON	ON	ON	ON		SR
CONT RM AFU HTR	1/2-9400-101	OFF	OFF	ON	ON		SR

Appendix - Load Tables (Pre-Mods)

Station: Load Cities Units: 1

Preparer: *[Signature]* Concurrence: *[Signature]* Date: 3-23-92 Concurrence: *[Signature]* 3-24-92 Date:

Load Center: SWGR 19

Comments By	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Stdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
	FUEL POOL CLG WTR PMP 1B	1-1902B	ON	ON	ON	ON		NSR
S&L	RX BLDG CLG WTR PMP 1B	1-3701B	ON	ON	ON	ON		NSR
S&L	RX BLDG EXH FAN 1B	1-5704B	TRIP	OFF	OFF	OFF	TRIP ON HIGH RAD OR GROUP II	NSR
S&L	RX BLDG EXH FAN 1C	1-5704C	TRIP	OFF	OFF	OFF	TRIP ON HIGH RAD OR GROUP II	NSR
S&L	RX BLDG SPLY FAN 1A	1-5703A	TRIP	OFF	OFF	OFF	TRIP ON HIGH RAD OR GROUP II	NSR
	TURB BLDG EXH FAN 1C	1-5705C	ON	ON	ON	ON		NSR
S&L	RX BLDG LTGING 1B		ON	ON	ON	ON		NSR
	E. TURB BLDG SPLY FAN 1B	1-5702B	ON	ON	ON	ON		NSR
	DG CLG WTR PMP #1	1-3903	START	ON	ON	ON		SR
	RX BLDG CLG PMP 1/2C	1/2-3701C	ON	ON	ON	ON		NSR
	480V MCC 19-1		ON	ON	ON	ON		SR
	480V MCC 19-2		ON	ON	ON	ON		SR
	480V MCC 19-3		ON	ON	ON	ON		SR
	480V MCC 19-4		ON	ON	ON	ON		SR
	480V MCC 18/19-5		ON	ON	ON	ON		SR
	480V MCC 19-6		ON	ON	ON	ON		SR



Preparer: *John T. [Signature]* Concurrence: *[Signature]*

Date: 3-23-92 Concurrence: DCB 3-24-92 Date:

Comments

By

Load Center: MCC 19-1

	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Stdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
	HVAC SPLY FAN#1 NORMAL FEED	1-5727	OFF	ON	ON	ON	START 800 RPM	SR
	CORESPRAY EMERG AHU 1B	1-5748B	OFF	ON	ON	ON	THERMOSTAT	SR
S&L	ALT FD DG#2 FUEL OIL XFRPMP	2-5203-1	OFF	OFF	OFF	OFF		SR
S&L	DG FUEL OIL XFER PMP #1	1-5203-1	OFF	OFF	OFF	ON		SR
	120/208V XFMR FD 19-1-1		ON	ON	ON	ON		SR
S&L	STDBY LQD CNTRL PMP 1B	1-1102B	OFF	OFF	OFF	OFF		SR
S&L	RHR EMERG AHU 1B	1-5746B	OFF	ON	ON	ON	THERMOSTAT	SR
DVL/S&L	F1 WTR CLNUP SYS FLTR HOLDING PMP	1-1279-2B	OFF	ON	ON	ON	START ON LO FLOW AFTER GROUP III	NSR
	DRYWELL & TORUS PRG EXH FAN	1-5706-1B	OFF	OFF	OFF	OFF		NSR
DVL	HPCI EMERG AHU	1-5747	OFF	ON	ON	ON	THERMOSTAT HIGH TEMP. IN ROOM	SR
	RESIN FEED TNK AGITATOR	1-1279-11B	OFF	OFF	OFF	OFF		NSR
	HPCI CLG WTR GLN SL CONDPMP	2301-57	OFF	OFF	OFF	OFF		NSR
	ALT FD DG RM HVAC SPLY FAN2	2-5727	OFF	OFF	OFF	OFF		SR
DVL/S&L	R1 WTR CLNUP SYS RECIRC PMP 1B	1-1205B	TRIP	OFF	OFF	OFF	TRIPS ON GROUP III	NSR
S&L	POST LOCA H2 O2 MON PMP 1B	2252-61B	OFF	ON	ON	ON	MANUAL START AFTER LOCA	SR
	ALT FD RHRS EMERG AHU 2B	2-5746B	OFF	OFF	OFF	OFF		SR
DVL/S&L	RX WTR CLNUP SYS BOILER VLV	1-1201-80	START	OFF	OFF	OFF	CLOSES ON GROUP III	NSR
S&L	HPCI TURB STM SUPPLY VLV	1-2301-4	OFF	OFF	OFF	OFF	STROKES @ 100#. BETWEEN T=0 & RHR SW INITIATION	SR
	RHRS HX REV INLET VLV	1-1001-186B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	CORE SPRAY OTBD ISOL VLV 1B	1-1402-24B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
DVL/S&L	CORE SPRAY INBD ISOL VLV 1B	1-1402-25B	OFF	OFF	OFF	OFF	STARTS AT 325 PSI. ASSUMED NON-COINCIDENT WITH VALVES STARTING @ 900 PSI	SR
	CORE SPRAY TEST BYPASS VLV 1	1-1402-4B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS HX NORM OUTLET VLV	1-1001-185B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS HX REVERSE OUTLET VLV	1-1001-187B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	HPCI TANK HEATER		OFF	OFF	OFF	OFF		SR
	RHRS HX NORMAL INLET VLV	1-1001-4B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	CORE SPRAY PUMP SUCTION VLV 1B	1-1402-3B	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
S&L	CLOSED COOLING WTR HEADER ISO. VLV	1-3701	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR

Appendix - Load Tables (Pre-Mods)

Station: Load Cities Units: 1

Preparer: *W. J. J. J.* Concurrence: *W. J. J. J.* Date: *3-23-92* Concurrence: *W. J. J. J.* Date: *3-24-92*

Load Center: MCC 19-2

Comments	Equipment	LOCA Time	RHR SW	CR Stdb	Post LOCA Steady	Remarks	SR or NSR
By	Load Name	Number	Zero	Initiation	HVAC	State	
	RECIRC MG SET VENT FAN 1A	1-5701	ON	ON	ON	ON	NSR
S&L	RX PROT M-G SET 1B		ON	ON	ON	ON	NSR
	DG STARTING AIR COMPR 1B		OFF	ON	ON	ON	SR
	250VDC BATTERY CHARGER #1		ON	ON	ON	ON	SR
	DG STARTING AIR COMPR 1A		OFF	ON	ON	ON	SR
	125VDC BATTERY CHARGER #1		ON	ON	ON	ON	SR
	TURB BLDG EMERG LGTS		OFF	OFF	OFF	OFF	NSR
S&L	ALT FD DG2 CLG WTR PMP CLR FANS A & B		OFF	OFF	OFF	OFF	SR
	RHR SW PMP 1C CLR FAN A		OFF	START	ON	ON	SR
	RHR SW PMP 1C CLR FAN B		OFF	START	ON	ON	SR
	RHR SW PMP 1C CLR FAN C		OFF	START	ON	ON	SR
	RHR SW PMP 1C CLR FAN D		OFF	START	ON	ON	SR
S&L	DG1 CLG WTR PMP CLR FAN A		START	ON	ON	ON	SR
S&L	DG1 CLG WTR PMP CLR FAN B		START	ON	ON	ON	SR
	RHR SW PMP 1D CLR FAN A		OFF	START	ON	ON	SR
	RHR SW PMP 1D CLR FAN B		OFF	START	ON	ON	SR
	RHR SW PMP 1D CLR FAN C		OFF	START	ON	ON	SR
	RHR SW PMP 1D CLR FAN D		OFF	START	ON	ON	SR
	RX FD PUMP VENT FAN 1B	1-5707B	ON	ON	ON	ON	NSR

Station: 3d Cities Units: 1

Preparer: *[Signature]* Concurrency: *[Signature]* Date: 3-24-92 Date: 3-24-92

Load Center: MCC 19-3

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Sidby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By S&L	TURB BEARING LIFT PMP 1A	1-5620A	OFF	ON	ON	ON		NSR
S&L	TURB BEARING LIFT PMP 1B	1-5620B	OFF	ON	ON	ON		NSR
S&L	TURB BEARING LIFT PMP 1C	1-5620C	OFF	ON	ON	ON		NSR
S&L	TURB BEARING LIFT PMP 1D	1-5620D	OFF	ON	ON	ON		NSR
S&L	TURB BEARING LIFT PMP 1E	1-5620E	OFF	ON	ON	ON		NSR
	TURBINE TURNING GEAR	1-5600	OFF	ON	ON	ON		NSR
S&L	TURB TURNING GEAR OIL PMP	1-5608	OFF	ON	ON	ON	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR
	DRYWELL OIL BLOWER 1E	1-5788E	ON	OFF	OFF	OFF		NSR
S&L	TURBINE TURNING GEAR		OFF	ON	ON	ON		NSR
	PUMPBACK MOTOR		OFF	OFF	OFF	OFF		NSR
S&L	TURBINE OIL CENTRIFUGE		OFF	OFF	OFF	OFF		NSR

# Append' - Load Tables (Pre-Mods)

Station: ad Cities Units: 1

Preparer: MS Pickle Concurrency: 6/11 Date: 3-23-92 Concurrency: DB 3-24-92 Date:

## Load Center: MCC 19-4

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Sdby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By S&L	DRYWELL CLG BLOWER 1D	1-5788D	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR
S&L	SEGT AIR HTRS	1/2-7503B	START	ON	ON	ON	START ON HX RAD OR GROUP 1	SR
S&L	SEGT FAN	1/2-7506B	START	ON	ON	ON	START ON HX RAD OR GROUP 1	SR
S&L	ACAD AIR COMPR		OFF	OFF	OFF	OFF		SR
DVL, S&L	DRYWELL/TORUS DFF PRESS COMP 1B	1-8740-1B	TRIP	OFF	OFF	OFF	TRIP'S ON GROUP 1 ISOLATION OF SUCTION	NSR
S&L	RX BLDG VENT TO STANDBY GAS	1-7503	OFF	OFF	OFF	OFF	CLOSE ON OTHER UNIT HX RAD OFF GROUP 1	SR
S&L	SEGT OUTSIDE AIR SUPP DMPR	1/2-7504B	START	OFF	OFF	OFF	START ON HX RAD OR GROUP 1	SR
S&L	SEGT SYS FAN DISCH DAMPER	1/2-7507B	START	OFF	OFF	OFF	START ON HX RAD OR GROUP 1	SR
S&L	SEGT SYS INLET DAMPERS	1/2-7505B	START	OFF	OFF	OFF	START ON HX RAD OR GROUP 1	SR
	RHRS CONTAIN SPRAY ISOL VLV	1-1001-26B	OFF	ON	OFF	OFF	4 OF 8 COULD BE ON AT TIME OF RHRS SW INITIATION; FIRST 4 ARBITRARILY TAKEN AS ON	SR
	RHRS BACKUP CONTAIN SPRAY	1-1001-23B	OFF	ON	OFF	OFF	AS ABOVE	SR
	RHRS MIN SHUTOFF SUPP VLV 1B	1-1001-34B	OFF	ON	OFF	OFF	AS ABOVE	SR
	RHRS SUPP CHAMBER DUMPLINE	1-1001-36B	OFF	ON	OFF	OFF	AS ABOVE	SR
	RHRS SUPP CHAMBER SPRAY HDR	1-1001-37B	OFF	OFF	OFF	OFF	4 OF 8 COULD BE ON AT TIME OF RHRS SW INITIATION; LAST 4 ARBITRARILY TAKEN AS OFF	SR
	RHRS COOLING PMP CROSS HDR	1-1001-19B	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
	RHRS HX R1003B BYPASS VLV 1B	1-1001-16B	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
	RHRS CHMT COOLANT HX VLV 1B	1-1001-5B	OFF	OFF	OFF	OFF	"AS ABOVE"	SR
	RHRS SHUTDOWN COOLING VLV 1	1-1001-43C	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS SHUTDOWN COOLING VLV 1	1-1001-43D	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS COOLANT 1002C PMP SUCT	1-1001-7C	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR
	RHRS COOLANT 1002D PMP SUCT	1-1001-7D	OFF	OFF	OFF	OFF	ASSUMPTION 4	SR

Preparer: *M. Sullivan* Concurrence: *CH* Date: *3-23-92* Concurrence: *DB 3-24-92* Date:

## Load Center: MCC 18/19-5

Comments	Equipment	LOCA Time	RHR SW	CR Stdb	Post LOCA Steady	Remarks	SR or NSR
By	Load Name	Number	Zero	Initiation	HVAC	State	
DVL	CONTRL RM RTN AIR FAN 1/2	1/2-5795-30	TRBP	OFF	OFF	OFF	SR
S&L	RX WTR RECIRC LOOP EQUAL VLV 1A	1-202-6A	OFF	OFF	OFF	OFF	ASSUMPTION 4 SR
S&L	RX WTR RECIRC PMP SUCT VLV 1A	1-202-4A	OFF	OFF	OFF	OFF	ASSUMPTION 4 SR
S&L	RX WTR RECIRC PMP DISCH VLV 1A	1-202-5A	OFF	OFF	OFF	OFF	ASSUMPTION 4 SR
S&L	RHRS INBOARD SHUTOFF VLV 1A	1-1001-29A	START	OFF	OFF	OFF	START AT 900 PSI SR
S&L	RHRS OUTBOARD SHUTOFF VLV 1A	1-1001-28A	OFF	OFF	OFF	OFF	ASSUMPTION 4 SR
S&L	RX WTR RECIRC LOOP EQUAL B' PASS VLV 1A	1-202-9A	OFF	OFF	OFF	OFF	ASSUMPTION 4 SR
S&L	RX WTR RECIRC LOOP EQUAL VLV 1B	1-202-6B	START	OFF	OFF	OFF	START AT 900 PSI SR
S&L	RX WTR RECIRC PMP SUCTION VLV 1B	1-202-4B	OFF	OFF	OFF	OFF	ASSUMPTION 4 SR
S&L	RX WTR RECIRC PMP DISCH VLV 1B	1-202-5B	START	OFF	OFF	OFF	START AT 900 PSI SR
S&L	RHRS INBOARD SHUTOFF VLV 1B	1-1001-29B	OFF	OFF	OFF	OFF	ASSUMPTION 4 SR
S&L	RHRS OUTBOARD SHUTOFF VLV 1B	1-1001-28B	OFF	OFF	OFF	OFF	START AT 925 PSI ASSUMED NON-COINCIDENT WITH VALVES STARTING @ 900 PSI SR
S&L	RX WTR RECIRC LOOP EQUAL BYPASS VLV 1B	1-202-9B	OFF	OFF	OFF	OFF	ASSUMPTION 4 SR



Preparer: *MS Fisher* Concurrence: *UH* Date: *3-23-92* Concurrence: *DCB 3-24-92* Date:

## Load Center: MCC 19-6

Comments	Load Name	Equipment Number	LOCA Time Zero	RHR SW Initiation	CR Stdbby HVAC	Post LOCA Steady State	Remarks	SR or NSR
By								
S&L	DRYWELL CLG BLOWER 1C	1-5788C	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR
S&L	DRYWELL CLG BLOWER 1G	1-5788G	ON	OFF	OFF	OFF	SECURED BY OPERATOR PRIOR TO INITIATING DRYWELL SPRAY	NSR