CAUTION: IF THIS SHEET IS NOT 24"x36" IT IS A REDUCED PRINT. SCALE ACCORDINGLY.

AUTOMATIC TRANSFER SWITCH FOR RMS CONTROL POWER

General description of operation:

1. There are 2 - 120 volt ac sources.

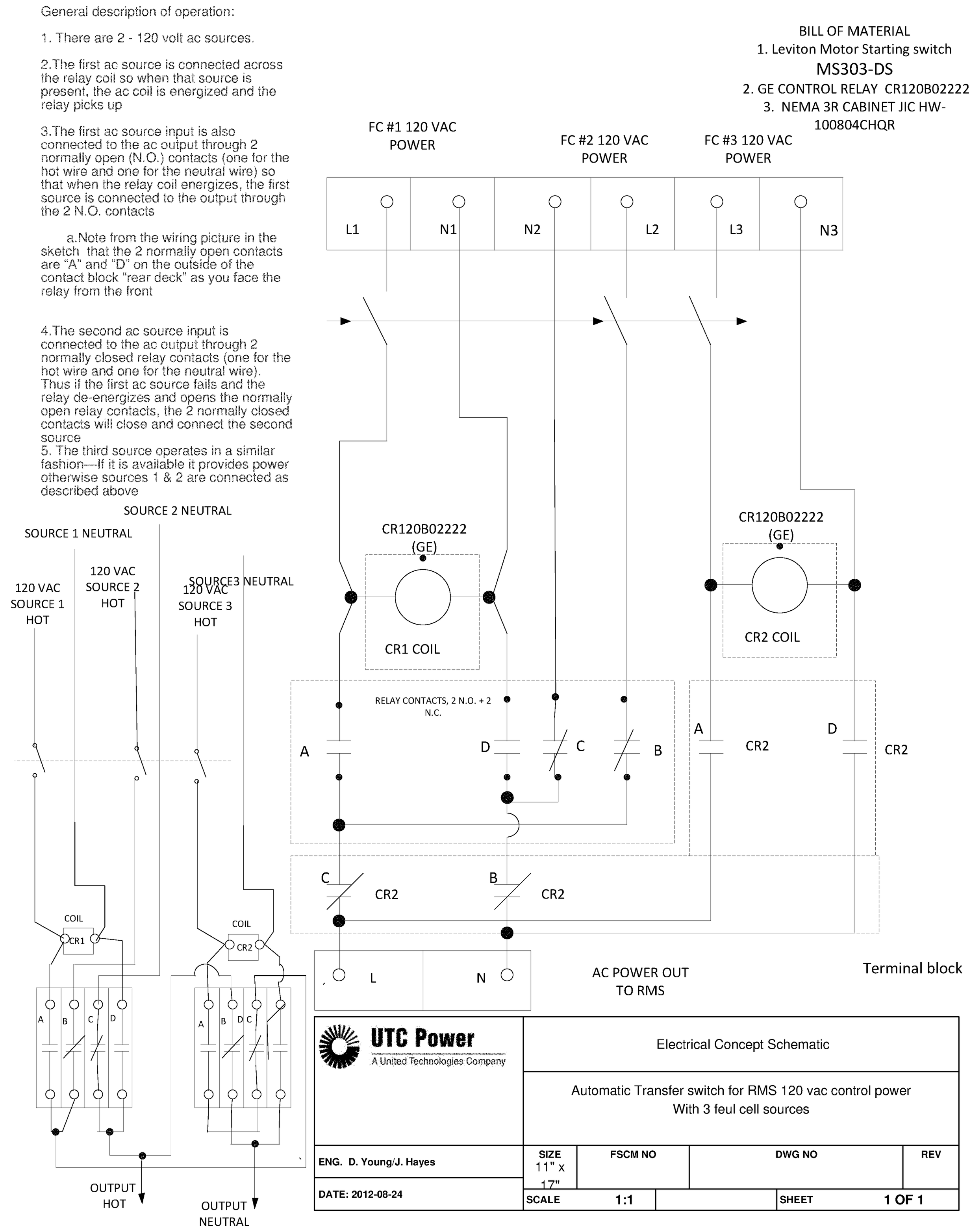
2.The first ac source is connected across the relay coil so when that source is present, the ac coil is energized and the relay picks up

3.The first ac source input is also connected to the ac output through 2 normally open (N.O.) contacts (one for the hot wire and one for the neutral wire) so that when the relay coil energizes, the first source is connected to the output through the 2 N.O. contacts

a.Note from the wiring picture in the sketch that the 2 normally open contacts are "A" and "D" on the outside of the contact block "rear deck" as you face the relay from the front

4.The second ac source input is connected to the ac output through 2 normally closed relay contacts (one for the hot wire and one for the neutral wire). Thus if the first ac source fails and the relay de-energizes and opens the normally open relay contacts, the 2 normally closed contacts will close and connect the second source
5. The third source operates in a similar fashion—If it is available it provides power otherwise sources 1 & 2 are connected as described above

BILL OF MATERIAL
1. Leviton Motor Starting switch
MS303-DS
2. GE CONTROL RELAY CR120B02222
3. NEMA 3R CABINET JIC HW-100804CHQR



UTC Power A United Technologies Company	Electrical Concept Schematic		
	Automatic Transfer switch for RMS 120 vac control power With 3 feul cell sources		
ENG. D. Young/J. Hayes	SIZE 11" x 17"	FSCM NO	DWG NO	REV
DATE: 2012-08-24	SCALE 1:1		SHEET 1 OF 1

1 / E0.12 **AUTOMATIC TRANSFER SWITCH FOR RMS CONTROL POWER**

SCALE: NONE

[LOCATED IN CHILLER BUILDING]

MOUNTING : SURFACE — EXISTING PANEL A — MAIN 150A

208 / 120 VOLTS 3 PHASE 4 WIRE A.I.C. RATING : 10,000 — BUS 225A

DESCRIPTION	VOLT AMPS Ø A	Ø B	Ø C	LTG	REC	MISC	BRK	CIRC	CIRC	BRK	MISC	REC	LTG	VOLT AMPS Ø A	Ø B	Ø C	DESCRIPTION
(E)ROOF RECEPT	540				3		20/1	1	2	20/1	1			500			(E)CHILLER LEAK DETECT. PANEL
(E)ROOF LIGHTING		480				4	20/1	3	4	20/1	1				500		(E)DDC CONTROL PANEL
(E)CHILLER RM. RECEPT			540		3		20/1	5	6	20/1	1					500	(E)EPO RELAY CABINET
(E)CHILLER RM. RECEPT	360				2		20/1	7	8	20/1	1			500			(E)EXH. CONTROL PANEL
(E)ELECTRICAL RM. RECEPT		360			2		20/1	9	10	20/1							SPARE
SPARE							20/1	11	12	20/1							SPARE
SPACE								13	14								SPACE
SPACE								15	16								SPACE
SPACE								17	18								SPACE
SPACE								19	20								SPACE
SPACE								21	22								SPACE
SPACE								23	24								SPACE
SPACE								25	26								SPACE
(E)LOAD							20/1	27	28								SPACE
(E)LOAD							20/1	29	30	40/1	1					2400	REVERSE OSMOSIS SYSTEM RO-1 *
(E)LOAD							20/1	31	32								SPACE
(E)LOAD							20/1	33	34								SPACE
(E)LOAD							20/1	35	36								SPACE
(E)LOAD							20/1	37	38								SPACE
(E)LOAD							20/1	39	40								SPACE
(E)LOAD							20/1	41	42								SPACE

Ø A = 1900 VA Ø B = 1340 VA Ø C = 3440 VA LCL = (N/A) LARGEST MOTOR (LM) = (N/A)

TOTAL (Ø A + Ø B + Ø C) = 6680 VA + 25% LCL + 25% LARGEST MOTOR = 6680 VA OR 18.5 AMPS

HIGH PHASE (Ø C) = 3440 VA + 25% LCL + 25% LARGEST MOTOR = 3440 VA OR 28.6 AMPS

* PROVIDE NEW CIRCUIT BREAKER: MATCH EXISTING MANUFACTURER, TYPE, AND INTERRUPTING RATING

[LOCATED IN COGEN/FUEL CELL YARD]

MOUNTING : SURFACE [WP NEMA 3R] — PANEL FCL — MAIN 100A

208 / 120 VOLTS 3 PHASE 4 WIRE A.I.C. RATING : 10,000 — BUS 100A

DESCRIPTION	VOLT AMPS Ø A	Ø B	Ø C	LTG	REC	MISC	BRK	CIRC	CIRC	BRK	MISC	REC	LTG	VOLT AMPS Ø A	Ø B	Ø C	DESCRIPTION
LIGHTS-CHILLER BLDG.	750			5			20/1	1	2	20/1		3		540			RECEPTS-SERVICE YARD
SPARE							20/1	3	4	20/1							SPARE
SPARE							20/1	5	6	20/1							SPARE
SPARE							20/1	7	8	20/1							SPARE
SPARE							20/1	9	10	20/1							SPARE
SPARE							20/1	11	12	20/2	1					300	A/C UNIT FOR HRM/RMS CABINET
SPARE							20/1	13	14					300			SPARE
SPARE							20/1	15	16	20/1							SPARE
SPARE							20/1	17	18	20/1							SPARE
SPARE							20/1	19	20	20/1							SPARE
SPACE								21	22								SPACE
SPACE								23	24								SPACE
SPACE								25	26								SPACE
SPACE								27	28								SPACE
SPACE								29	30								SPACE

Ø A = 1590 VA Ø B = Ø C = 300 VA LCL = 750 VA LARGEST MOTOR (LM) = (N/A)

TOTAL (Ø A + Ø B + Ø C) = 1890 VA + 25% LCL + 25% LARGEST MOTOR = 2078 VA OR 5.8 AMPS

HIGH PHASE (Ø A) = 1590 VA + 25% LCL + 25% LARGEST MOTOR = 1778 VA OR 14.8 AMPS

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DIAGRAMS AND SCHEDULES

ID	DATE	REMARKS	ID	DATE	REMARKS
1	7/02/12	PRELIMINARY DESIGN REVIEW			
2	8/20/12	PLAN CHECK			
3	9/4/12	BID CLARIFICATIONS			
4	9/19/12	UTC RECOMMENDED CORRECTIONS			
5	10/18/12	UTC. REV., PLAN CHECK CORRECTIONS			

ENGR:	
DRWN BY:	TEAM 1
CHCK'D BY:	RLL
DATE:	9/19/12
JOB NO.:	12-010
SCALE:	AS NOTED

SHEET
E0.13