LOUISIANA POWER & LIGHT / 142 DELARONDE STREET
P. O. BOX 6008 • NEW ORLEANS, LOUISIANA 70174 • (504) 366-2345

MIDDLE SOUTH UTILITIES SYSTEM

L.V. MAURIN
Vice President Nuclear Operations

April 30, 1982

W3P82-1160
3-V59
3-A111.02

Mr. R. L. Tedesco
Assistant Director of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

SUBJECT: Waterford 3 SES
Human Factors Control Room Review
May 10, 11, 12 and 13, 1982

Reference: 1.) W3P82-0744 dated March 19, 1982
2.) Letter from R. L. Tedesco to L. V. Maurin dated April 14, 1982
3.) Letter from R. L. Tedesco to L. V. Maurin dated April 20, 1982

Dear Mr. Tedesco:

In Reference 1, LP&L submitted information on the status of our efforts related to the Control Room Review for Waterford 3. This letter also documented the current construction status of the Control Room and listed some design changes incorporated in the Waterford 3 Control Room. As a follow up to our letter, you issued two letters, (References 2 and 3), which requested additional information necessary for the NRC to perform their review of the Waterford 3 Control Room. In response to your request, I am sending the following documents:

1.) LP&L Resolution of HED's - LP&L's proposed resolution of many of the HED's produced by our Human Factors Consultant, Lockheed.

2.) Abbreviations List - List of standard abbreviations used to label the Control Room.

3.) Color Code Guide - LP&L color code guide used for the construction of the control panels.

If you have any questions or need any additional information, please contact W. M. Alphonso at (504) 363-8790 or (504) 464-3200.

Yours very truly,

W. Maurin

L. V. Maurin

LVM/WMA/jal
Enclosures
cc: W. M. Stevenson, E. L. Blake

B001
S1/1

30 April, 1982

HED COMMITMENT TO RESOLVE

Number	Locator no.	Before Fuel Load	Comments
2	2-C1	Yes	Reactor pushbuttons shall be changed to red guarded type in accordance with NUREG 0700 pg. 6.4-4.
6	4-C1	Yes	Labeling will be corrected to indicate proper charging pumps selection.
8	7-C1	Yes	Switch labels/abbreviations shall be corrected as appropriate.
12	8-D2	-	No action required, duplicate meters are provided for redundancy.
13	8-D3	-	No action required, duplicate meters are provided for redundancy.
15	8-D8	Yes	Labeling and/or other corrective action will be performed.
16	8-D9	Yes	Labeling will be corrected.
17	G-D4	Yes	Labels will be permanently affixed.
18	8-D11	-	No action required, indicating lights provide proper status.
19	8-P2	-	No action required, the layout is proper for the actions required by the operator.
22	8-C8	Yes	Protective housing will be added where appropriate.
23	8-P1	-	This will be corrected by relocating indicators.
24	8-C7	-	No action required, status lights provide proper indication.
26	G-C2	-	No action required.
38	G-D8	Yes	Labeling will be enhanced.
41	G-D5	Yes	Additional labeling will be provided where required.

30 April, 1982

HED COMMITMENT TO RESOLVE

Number	Locator no.	Before Fuel Load	Comments
43	G-D11	Yes	Correct recorder paper will be installed.
47	G-C7	Yes	This will be handled through good operating practices.
49	G-C9	-	No action required, the intended operation of the valve is engraved on its control switch.
51	G-C11	-	No action required, we do not know of any instance where operator may press a pushbutton and have no feedback to his action.
52	FP-C1	-	Proper corrective action will be determined and implemented.
54	33-C1	-	No action required, vibration reset pushbutton is related to annunciator window on the same panel.
55	33-C2	Yes	Corrective action shall be performed on Item 1. Item 2 & 3, no action required. HFE misunderstood control scheme.
56	33-D1	Yes	Labeling will be corrected.
59	4-C2	Yes	Corrective action shall be taken to place these valves in proper position on the control board.
61	4-C4	Yes	Switch shall be labeled as appropriate.
62	4-D2	Yes	Meter shall be labeled as appropriate.
63	4-D3	Yes	Meter placement shall be corrected.
64	4-D4	Yes	Meter shall be labeled as appropriate.
65	4-D5	Yes	Ink color coding shall be corrected as appropriate.

30 April, 1982

HED COMMITMENT TO RESOLVE

Number	Locator no.	Before Fuel Load	Comments
67	8-C3	Yes	Error in the bill of material, switches installed on panel are correct.
68	8-D5	-	No action required, duplicate meters are provided for redundancy.
69	8-D6	-	No action required, duplicate meters are provided for redundancy.
70	8-D7	-	No action required, valve is used for protection of EFW turbines not for control.
71	G-D15	Yes	Meter labels will be enhanced and corrected as appropriate.
77	X-01	Yes	Access to the control room will be adequately controlled by administrative controls.
78	43-D1	-	No action required, indicating lights will not be available on LCP-43 for those circuits where transfer switch was not operated.
80	X-02	Yes	Access door labeling will be enhanced.
81	X-03	Yes	Corrective action will be implemented to protect operators.
85	G-D23	Yes	Scales shall be corrected as appropriate.
86	G-C13	-	No corrective action required. This was a misunderstanding as to how the controls actually worked.
89	G-D25	Yes	Scales shall be corrected as appropriate.
90	G-D26	Yes	Meter labels will be corrected.
92	1-C1	-	No corrective action required. River water pump is used during the plant shut down, with all CW pumps inoperable, to replenish water consumption by primary water system and chiller cooling tower.

30 April, 1982

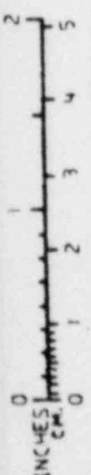
HED COMMITMENT TO RESOLVE

Number	Locator no.	Before Fuel Load	Comments
94	1-D4	Yes	Appropriate corrections will be provided.
97	1-D6	-	Mimic will be improved and/or corrected as required.
98	1-C2	-	No action required, exciter breaker is interlocked with generation breakers so that it cannot be opened with a control switch while unit is on the line.
99	1-D7	Yes	Labeling will be corrected.
104	43-P1	Yes	Will correct with platform for operators.
108	FP-D1	-	This is not a problem due to the changes made at Waterford for Appendix R.
109	FP-D2	Yes	Labels will be corrected.
121	FP-D5	Yes	Labeling will be enhanced.
122	FP-D6	Yes	Labeling will be enhanced.
124	FP-D8	Yes	Labeling will be enhanced.
137	CR-L9	-	No action required.

LOUISIANA POWER & LIGHT COMPANY
WATERFORD SES UNIT NO. 3
CONTROL ROOM COLOR CODE

COLOR	USE
	CONTROL/COMPONENT STATUS
Red	Process Flow Established (i.e. valve open)
Green	Process Flow Interrupted (Equipment ready for operation)
Amber	Abnormal Condition (Automatic trip)
White	Advisory Indication
	ELECTRICAL STATUS
Red	Circuit Breaker Closed
Green	Circuit Breaker Open
	CONTROL PANEL SURFACE
Sea Foam Green	Neutral Background

ABBREVIATION	WORD
&	AND
1/C	SINGLE CONDUCTOR
1 PH OR 1 Ø	SINGLE PHASE
2/C	TWO CONDUCTOR
2 PH OR 2 Ø	TWO PHASE
3/C	THREE-CONDUCTOR
3 P	THREE-POLE
3 PH OR 3 Ø	THREE-PHASE
4/C	FOUR CONDUCTOR
4P	FOUR-POLE
7/C	SEVEN-CONDUCTOR
Ω	OHM (DIAGRAMS ONLY)
	THIS SHEET
	A
A	AREA, AMBER
AB	AIR BLAST
ABBR	ABBREVIATE
AC	ALTERNATING CURRENT
ACB	AIR CIRCUIT BREAKER
ACT	ACTUATE
ACCEL	ACCELERATE
ACCU	ACCUMULATOR, ACCUMULATED
ADJ	ADJUST, ADJUSTABLE
ADV	ADVANCE
AFC	AUTOMATIC FREQUENCY CONTROL
AHM	AMPERE HOUR METER
AL	ALUMINUM
ALT	ALTERNATOR, ALTERNATE
AM	AMMETER
AMB	AMBIENT
AMP	AMPERE
AMPL	AMPLIFIER
ANAL	ANALYZER



NOTES:
1. ABBREVIATIONS SHOULD NOT BE USED WHERE THE MEANING WILL NOT BE CLEAR. IN CASE OF DOUBT, SPELL OUT.
2. ABBREVIATIONS NOT APPEARING ON THIS LIST MAY BE USED PROVIDED THEY ARE ADDED TO THIS LIST. HOWEVER, THE CHOICE OF SUCH ABBREVIATIONS SHOULD BE GOVERNED BY ESTABLISHED PRACTICE.

REV	DATE	BY	APPROVED	REV	DATE	BY
8				4		
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ANALOG	ANALOGUE
ANN	ANNUNCIATOR
APPL	APPLICATION
APPROX	APPROXIMATE, APPROXIMATELY
APR	APRIL
ARM	ARMATURE
ARR	ARRANGEMENT, ARRESTOR
AS	AMMETER SWITCH
ASSY	ASSEMBLY
ATM	ATMOSPHERE
AUG	AUGUST
AUTO	AUTOMATIC
AUTO RECL	AUTOMATIC RECLOSING
AUTO TR	AUTO TRANSFORMER
AUX	AUXILIARY
AVG	AVERAGE
AVC	AUTOMATIC VOLUME CONTROL
AWG	AMERICAN WIRE GAUGE

B

BNR	BURNER
BOT	BOTTLE, BOTTOM
BR	BRANCH
BRG	BEARING
BTU	BRITISH THERMAL UNIT
B-U	BACK-UP
BUSH	BUSHING
BUZ	BUZZER
BV	BALANCED VOLTAGE
BYP	BYPASS

C

C	CABLE, CENTIGRADE
CAB	CABINET
CAP.	CAPACITOR, CAPACITY
CAT.	CATALOGUE
CB	CIRCUIT BREAKER

	EBASCO SERVICES INCORPORATED	LOUISIANA POWER & LIGHT CO. WATERFORD S.E.S. UNIT No.3 CONTROL WIRING DIAGRAM LIST OF ABBREVIATIONS	LOU-1564 B-424 SHEET XXIV
APPROVED	DIV I & C DR AC CH S. MUKHERJEE DATE OCT 20, 1978	APPROVED	

C (CONT)

CCAS	CONTAINMENT COOLING ACTIVATOR SIGNAL COMPONENT COOLING AUXILIARY SYSTEM
CC	COUPLING
CCW	COUNTERCLOCKWISE, COMPONENT COOLING WATER
CCWP	COMPONENT COOLING WATER PUMP
CEA	CONTROL ELEMENT ASSEMBLY
CEAC	CONTROL ELEMENT ASSEMBLY CALCULATOR
CEDM	CONTROL ELEMENT DRIVE MECHANISM
CEDMCS	CONTROL ELEMENT DRIVE MECHANISM CONTROL SYSTEM
CHAMB	CHAMBER
CHEM	CHEMICAL
CHK	CHECK
CHGR	CHARGER
CHG	CHARGING
CIR	CIRCULAR
CIS	CONTAINMENT ISOLATION SIGNAL
CIRC	CIRCULATE
CIAS	CONTAINMENT ISOLA SYSTEM/SIGNAL
CKT	CIRCUIT
CKT CL	CIRCUIT CLOSING
CL	CLOSE
CL2	CHLORINE
CLASS	CLASSIFICATION
CLG	COOLING
CLNG	CLEANING
CLOS	CLOSURE
CLR	CLEAR, COOLER
CLSD	CLOSED
CLSNG	CLOSING
CM	CENTIMETER, CIRCU
CMPTR	COMPUTER
CNDTY	CONDUCTIVITY

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CM. 0 1 2 3

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	CONF	CONFERENCE	COOL	COOLANT
TION ACTUATION	CO	CUTOUT, COMPANY	CP	CONTROL PANEL
	CO2	CARBON DIOXIDE	CPC	CORE PROTECTION CALCULATORS
	COAX	COAXIAL	CRIT	CRITICAL
	COL	COLUMN	CSAS	CONTAINMENT SPRAY ACTUATION SIGNAL
	COLL	COLLECTOR	CS	CONTROL SWITCH
	COMP	COMPOUND	CT	CURRENT TRANSFORMER
	COMPR	COMPRESSOR	CTR	CENTER
	COMPT	COMPARTMENT	CU	CUBIC, COPPER
	CONCENT	CONCENTRATOR	C UB	CUBICLE
	COND	CONDENSER, CONDUCTIVITY CONDUCOTR, CONDENSATE	CUR	CURRENT
	CONN	CONNECTION, CONNECTOR	CV	CHECK VALVE
	CONST	CONSTANT, CONSTRUCTION	CVAS	CONTROLLED VENTILATION AREA SYSTEM
AR MIL	CONT	CONTACT, CONTINUOUS, CONTROLLER' CONTAINMENT	CVP	CONDENSER VACUUM PUMP
	CONTR	CONTROL	CVCS	CHEMICAL AND VOLUME CONTROL SYSTEM
	CONV	CONVERTER		

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DIV 14C DR AC
CH S. MUKHERJEE
DATE OCT. 20, 1978
APPROVED

LOUISIANA POWER & LIGHT CO.
WATERFORD S.E.S. UNIT No.3
CONTROL WIRING DIAGRAM
LIST OF ABBREVIATIONS

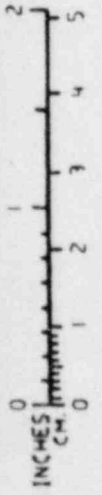
LOU-1564
B-424
SHEET XXV

C (CONT)

CW	CLOCKWISE, CIRCULATING WATER
CWD	CONTROL WIRING DIAGRAM
CWP	CIRCULATING WATER PUMP
CYL	CYLINDER

D

D PNL	DISTRIBUTION PANEL
DDC	DIRECT DIGITAL CONTROL
DC	DIRECT CURRENT
DEC	DECEMBER
DECON	DECONTAMINATION
DEH	DIGITAL ELECTROHYDRAULIC
DEMIN	DEMINERALIZER
DEPT	DEPARTMENT
DECR	DECREASE
DET	DETAIL, DETECTOR
DG	DIESEL GENERATOR
DIA	DIAMETER
DIAG	DIAGRAM
DIAPH	DIAPHRAGM
DIFF	DIFFERENTIAL
DIM	DIMENSION
DIR	DIRECTION
DISC	DISCONNECT
DISCH	DISCHARGE
DIST	DISTANCE
DISTR	DISTRIBUTION
DIV	DIVISION
DN	DOWN
DMPR	DAMPER
DNBR	DEPARTURE FROM NUCLEATE BOILING RATIO
DOZ	DOZEN



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E

DPIS	DIFFERENTIAL PRESSURE INDICATING SWITCH
DPR	DIFFERENTIAL PRESSURE RECORDER
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DRN	DRAIN
DRVN	DRIVEN
DSL	DIESEL
DSLVD	DISSOLVED
DSUPHTR	DESUPERHEATER
DT	DOUBLE THROW
DUP	DUPLICATE
DWG	DRAWING
EA	EACH
ECCY	ECCENTRICITY
EFAS	EMERGENCY FEEDWATER ACTUATION SIGNAL SYSTEM
EHC	ELECTROHYDRAULIC CONTROL, ELECTRIC HEATING COIL
EFP	EMERGENCY FEED PUMP
E-H	ELECTRO-HYDRAULIC
EL	ELEVATION
ELEC	ELECTRIC, ELECTRICAL
ELEM	ELEMENTARY
ELEV	ELEVATOR
EMERG	EMERGENCY
EMF	ELECTROMOTIVE FORCE
ENCL	ENCLOSE, ENCLOSURE
ENERG	ENERGIZED
ENG	ENGINE
E/P	ELECTRICAL/PNEUMATIC

APPROVED	EBASCO SERVICES INCORPORATED DIV I&C DR AC CH S. MUKHERJEE DATE OCT. 20, 1978	APPROVED 22 Jun	LOUISIANA POWER & LIGHT CO. WATERFORD S.E.S. UNIT No.3 CONTROL WIRING DIAGRAM LIST OF ABBREVIATIONS	LOU-1564 B-424 SHEET XXV

E (CONT)

EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ESFAS	ENGINEERED SAFETY FEATURES ACTUATION SYSTEM/SIGNAL
EST	ESTIMATE
EUH	ELECTRIC UNIT HEATER
EVAP	EVAPORATOR
EXC	EXCITER, EXCITATION
EXCH	EXCHANGE, EXCHANGER
EXH	EXHAUST
EXH V	EXHAUST VENT
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTENSION, EXTRA, EXTERNAL
EXTN	EXTRACTION
EXTR	EXTRACTOR

F

F	FAHRENHEIT, FARAD
FC	FAIL CLOSED, ENCLOSED FAN-COOLED
FD	FORCED DRAFT
FDF	FORCED DRAFT FAN
FDR	FEEDER
FEB	FEBRUARY
FI	FLOW INDICATOR
FIG	FIGURE
FHB	FUEL HANDLING BUILDING
FLD	FIELD
FLEX	FLEXIBLE
FLM	FLAME
FLT	FILTER
FM	FREQUENCY MODULATION

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REV	DATE	BY	APPROVED	REV	DATE	BY
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FO	FUEL OIL
FREQ	FREQUENCY
FRM	FREQUENCY METER
FS	FLOW SWITCH
FIS	FLOW INDICATING SWITCH
FT	FLOW TRANSMITTER
FW	FEED WATER
FWCS	FEED WATER CONTROL SYSTEM
FU	FUSE
FWP	FEEDWATER PUMP
FWPT	FEEDWATER PUMP TURBINE

G

G	GAS, GREEN
GEN	GENERATOR
GOV	GOVERNOR
GPM	GALLONS PER MINUTE
GRD	GROUND, GROUNDING, GUARD
GRD DET	GROUND DETECTOR
GRD VM	GROUND VOLTMETER
GS	GLANDSTEAM
GSR	GROUP SELECT RELAY
GTV	GATE VALVE

H

H2	HYDROGEN
H_2O	WATER
HEV	HEATING AND VENTILATION
HDR	HEADER
HEPA	HIGH EFFICIENTY PARTICULATE AIR
HG	MERCURY
HI	HIGH
HP	HIGH PRESSURE, HORSEPOWER
HPSI	HIGH PRESSURE SAFETY INJECTION
HPSIP	HIGH PRESSURE SAFETY INJECTION PUMP

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H (CONT)

HS	HAND SWITCH
HR	HOUR HAND RESET
HT	HEAT
HTR	HEATER
HV	HIGH VOLTAGE
HYD	HYDRAULIC
HZ	HERTZ

I (CONT)

IA	INSTRUMENT AIR
ID	INDUCED DRAFT
IDF	INDUCED DRAFT FAN
ILLUM	ILLUMINATE
IN	INCH
INBD	INBOARD
INC	INCORPORATED
INCPT	INTERCEPT
INCR	INCREASE
IND	INDICATE, INDICATING INDICATOR
INJ	INJECTION
INST	INSTANTANEOUS, INSTRUCTION
INSTR	INSTRUMENT
INT	INTAKE
INTER	INTERMEDIATE, INTERRUPT
INTLK	INTERLOCK
IP	INTERMEDIATE PRESSURE
ISOL	ISOLATION, ISOLATED

J

JAN	JANUARY
JB	JUNCTION BOX
JKT	JACKET
JCT	JUNCTION
JT	JOINT
JUL	JULY
JUN	JUNE

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K

KG	KILOGRAM
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAH	KILOVOLT-AMPERE HOUR
KVAR	KILOVAR
KW	KILOWATT

L

L	LAMP
LAB	LABORATORY
LB	POUNT
LCP	LOCAL CONTROL PANEL
LEV	LEVEL
LH	LEFT HAND
LI	LEVEL INDICATOR
LIM	LIMIT
LIN	LINEAR
LIQ	LIQUID
LO	LOW
LOC	LOCATE, LOCATION
LP	LOW PRESSURE
LPD	LOCAL POWER DENSITY
LPSI	LOW PRESSURE SAFETY INJECTION
LPSIP	LOW PRESSURE SAFETY INJECTION PUMP
LPT	LOW PRESSURE TURBINE
LS	LIMIT SWITCH, LEVEL SWITCH
LT	LIGHT, LOW TENSION
LTDN	LETDOWN
LTG	LIGHTING
LUBE	LUBRICATE
LV	LOW VOLTAGE
LVL	LEVEL

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M

M	METER
MACH	MACHINE
MA	MEASUREMENT CHANNEL A
MAG	MAGNET, MAGNETIC
MAN	MANUAL
MAR	MARCH
MAX	MAXIMUM
MB	MEASUREMENT CHANNEL B, MIXED BED
MC	MEASUREMENT CHANNEL C
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILS
MD	MEASUREMENT CHANNEL D
MECH	MECHANICAL, MECHANISM
MEG	MEGOHM
MW	MEGAWATT
MWH	MEGAWATT HOUR
MFR	MANUFACTURE, MANUFACTURING
MG	MOTOR GENERATOR
MH	MANHOLE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MIX	MIXTURE
MN	MAIN
MO	MONTH, MOTOR OPERATED
MOIST	MOISTURE
MOP	MAIN OIL PUMP
MPW	MARKER PULSE WHEEL
MS	MAIN STEAM
MSIS	MAIN STEAM ISOLATION SIGNAL
MSR	MOISTURE SEPARATOR REHEATER
MT	MAIN TRANSFORMER
MTD	MOUNTED
MTR	MOTOR

REV	DATE	BY	APPROVED	REV	DATE	BY
8				4		
7				3		
6				2		
5				1		

MULT	MULTIPLE	O	ORANGE
MUX	MULTIPLEXER	OC	OPERATING COIL
MV	MILLIVOLT	OCB	OIL CIRCUIT BREAKER
MWH	MEGAWATT-HOUR	OCT	OCTOBER
		OHM	OHMMETER
N			
Na	SODIUM	OL	OVERLOAD
NC	NORMALLY CLOSED	OP	OPEN
NEG	NEGATIVE	OPER	OPERATING
NEUT	NEUTRAL, NEUTRALIZING	OPP	OPPOSITE
NI	NICKEL	OPR	OPERATE, OPERATOR
N2	NITROGEN	ORIG	ORIGINAL
NO	NORMALLY OPEN, NUMBER	OUTL	OUTLET
NORM	NORMAL	OUTBD	OUTBOARD
NOV	NOVEMBER	OVSP	OVERSPEED
NUC	NUCLEAR	O2	OXYGEN

APPROVED	EBASCO SERVICES INCORPORATED		LOUISIANA POWER & LIGHT CO. WATERFORD S.E.S. UNIT No.3 CONTROL WIRING DIAGRAM	LOU-1564 B-424
	DIV I&C DR AC	APPROVED		
	CH S. MUKHERJEE		LIST OF ABBREVIATIONS	
	DATE OCT. 20, 1978			SHEET XXIX

P (CONT)

P	PAGE, POLE, PUMP	PR	PAIR
P/E	PNEUMATIC/ELECTRIC	PRECIP	PRECIPITATOR
PAC	PROCESS ANALOG CONTROL	PRELIM	PRELIMINARY
PAR	PARAGRAPH, PARALLEL	PRESS	PRESSURE
PB	PUSH BUTTON, PULL BOX	PRI	PRIMARY
PB STA	PUSH BUTTON STATION	PROJ	PROJECT, PROJECTION
PCV	POWER CONTROL VALVE	PROT	PROTECTION
PDP	POWER DISTRIBUTION PANEL	PS	PRESSURE SWITCH
PERM	PERMANENT	PSI	POUNDS PER SQUARE INCH
PEN	PENETRATION	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PF	POWER FACTOR	PSIG	POUNDS PER SQUARE INCH GAGE
PFM	POWER FACTOR METER		
PH	PHASE, POWERHOUSE	PT	PART, POINT, POTENTIAL TRANSFORMER, PRESSURE TRANSMITTER
PM	PERMANENT MAGNET	PU	PICKUP
PNL	PANEL	PURIF	PURIFICATION
POS	POSITION, POSITIVE	PWR	POWER, PRESSURIZED WATER REACTOR
PPS	PLANT PROTECTION SYSTEM	P/R	PRESSURIZER

REV	DATE	BY	APPROVED	REV	DATE	BY
8				4		
7				3		
6				2		
5				1		

10/16/78 - 12/31/78

Q

QTY	QUANTITY

R

R	RED, RIGHT
RAB	REACTOR AUXILIARY BUILDING
RAD	RADIATOR, RADIATION
RAS	RECIRCULATION ACTUATION SIGNAL
RC	RESET COIL
RCS	REACTOR COOLING SYSTEM
RCP	REACTOR COOLING PUMP
RCV	RESERVE CURRENT VALVE
REAC	REACTOR
REC	RECORDER, RECORD, RECORDING
RECD	RECEIVED
RECIRC	RECIRCULATE, RECIRCULATION
RECPT	RECEPTACLE
RECT	RECTIFIER
REF	REFERENCE
REG	REGISTER, REGULATOR
REGEN	REGENERATIVE
REL	RELAY, RELEASE, RELIEF
REQD	REQUIRED
RES	RESISTANCE, RESISTOR
RESP	RESPECTIVE
RET	RETURN
REV	REVERSE, REVISE, REVOLUTION
RGEN	REGENERATION
RH	RIGHT HAND
RHEO	RHEOSTAT
RHT	REHEAT
RHTR	REHEATER
RM	ROOM
RRS	REACTOR REGULATING SYSTEM
RPM	REVOLUTIONS PER MINUTE

APPROVED	EBASCO SERVICES INCORPORATED DIV I&C DR AC CH S. MUKHERJEE DATE OCT. 20, 1978	APPROVED	LOUISIANA POWER & LIGHT CO. WATERFORD S.E.S. UNIT No 3 CONTROL WIRING DIAGRAM LIST OF ABBREVIATIONS	LOU-1564 B-424 SHEET XXX

R (CONT)

RPS	REVOLUTIONS PER SECOND
RTN	RETURN
RTD	RESISTANCE TEMPERATURE DETECTOR
RTGB	REACTOR TURBINE GENERATOR BOARD
RWSP	REFUELING WATER STORAGE POOL
RX	ROTOR ECCENTRICITY

S

S, SHD	SHIELD
SA	SEAL AIR, SAFETY CHANNEL A
SAF	SAFETY
SAMP	SAMPLING
SB	SOOT BLOWER, SAFETY CHANNEL B
SAB	SAFETY CHANNEL AB
SCHEM	SCHEMATIC
SCR	SECURITY
SCRN	SCREEN
SEC	SECOND, SECONDARY
SECT	SECTION
SEL	SELECTOR
SEP	SEPTEMBER
SEPR	SEPARATOR
SEQ	SEQUENCE
SER	SERIAL, SERIES
SG	STEAM GENERATOR
SERV	SERVICE
SGFP	STEAM GENERATOR FEED PUMP
SGFPT	STEAM GENERATOR FEED PUMP TURBINE
SH	SHEET, SHUNT
SHDN	SHUTDOWN
SI	SAFETY INJECTION
SIAS	SAFETY INJECTION ACTUATION S
SIG	SIGNAL
SIM	SIMILAR

REV	DATE	BY	APPROVED	REV	DATE	BY
8				4		
7				3		
6				2		
5				1		

SK	SKETCH
SOL	SOLENOID
SP	SINGLE POLE, SPARE, SPECIFIC
SPEC	SPECIFICATION
SQ	SQUARE
SS	SELECTOR SWITCH
ST	SINGLE THROW, STEAM START UP TRANSFORMER
STA	STATION, STATIONARY
STAT	STATUS, STATOR
STBY	STANDBY
STD	STANDARD
STG	STORAGE, STAGE
STM	STEAM
STR	STARTER
STRM	STREAM
STRN	STRAINER
STRUCT	STRUCTURE
SUBSTA	SUBSTATION
SUCT	SUCTION
SUP	SUPPLY
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMBOL
SYN	SYNCHRONOUS, SYNCHRONIZING
SYN LP	SYNCHRONIZING LAMPS
SYS	SYSTEM

T

TB	TERMINAL BOX
TC	THERMOCOUPLE, TRIP COIL
TCW	TURBINE COOLING WATER
TCWP	TURBINE COOLING WATER PUMP

IGNAL

APPROVED

EBASCO SERVICES INCORPORATED

DIV I&C DR AC

CH. S. MUKHERJEE

DATE OCT. 20, 1978

APPROVED

LOUISIANA POWER & LIGHT CO.
WATERFORD S.E.S. UNIT No.3
CONTROL WIRING DIAGRAM
LIST OF ABBREVIATIONS

LOU-1564
B-424
SHEET XXXI

T (CONT)

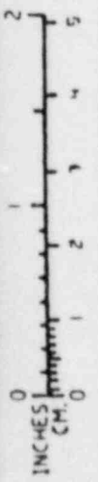
TD	TIME DELAY, TURBINE-DRIVEN
TDC	TIME DELAY CLOSING
TDDO	TIME DELAY DROP OUT
TDO	TIME DELAY OPENING
TDPU	TIME DELAY PICKUP
TEMP	TEMPERATURE
TERM	TERMINAL
TGM	TURNING GEAR MOTOR
TIS	TEMPERATURE INDICATING SWITCH
TK	TANK
TO	TIME OPENING
TR	TRIP
TRANS	TRANSFER
TRANSF	TRANSFORMER
TREAT	TREATMENT
TS	TEMPERATURE SWITCH, TEST SWITCH
TURB	TURBINE
TURB	TURNING
TV	THROTTLE VALVE
TWR	TOWER
TYP	TYPICAL

U

U	BLUE
UF	MICROFARAD
UG	UNDERGROUND
UT	UNIT TRANSFORMER
UV	UNDER VOLTAGE

V

V	VELOCITY, VALVE, VOLT, VENT
VA	VOLTAMPERE, VALVE
VAC	VACUUM
VAR	REACTIVE VOLT-AMPERE, VARIABLE,
VARM	VAR METER



REV	DATE	BY	APPROVED	REV	DATE	BY
8				4		
7				3		
6				2		
5				1		

VENT	VENTILATE, VENTILATING
VIB	VIBRATE, VIBRATION
VM	VOLTMETER
VOL	VOLUME
VR	VOLTAGE REGULATOR
VS	VOLTMETER SWITCH

W

W	WASTE, WHITE, WATER, WATT, WIDE, WIDTH, WIRE
W/O	WITHOUT
WC	WATER CHILLER
WH	WATT-HOUR
WHM	WATT-HOUR METER
WK	WEEK
WM	WATTMETER
WMC	WASTE CONCENTRATOR PACKAGE
WT	WEIGHT
WTR	WATER

X

XMTR	TRANSMITTER

Y

YD	YARD
YR	YEAR

CABLE COLOR CODING

1	BLACK	- B
2	WHITE	- W
3	RED	- R
4	GREEN	- G
5	ORANGE	- O
6	BLUE	- U
7	WHITE-BLACK	- WB
8	RED-BLACK	- RB
9	GREEN-BLACK	- GB
10	ORANGE-BLACK	- OB
11	BLUE-BLACK	- UB
12	BLACK-WHITE	- BW
13	RED-WHITE	- RW
14	GREEN-WHITE	- GW
15	BLUE-WHITE	- UW

DRAWING NUMBER EXPLANATION

1. DRAWING NUMBERS PREFIXED WITH "E" INDICATE A SEPARATE ELEMENTARY WIRING DIAGRAM HAS BEEN PROVIDED.

2. DRAWING NUMBERS SUFFICED WITH "S" INDICATE SHEET HAS SAFETY RELATED DESIGN INFORMATION AND IS SUBJECT TO EBASCO QUALITY PROGRAM "QC-4" REVIEW.

APPROVED	EBASCO SERVICES INCORPORATED DIV I&C DR AC CH S. MUKHERJEE DATE OCT. 20, 1978	APPROVED Oct 20 '78	LOUISIANA POWER & LIGHT CO. WATERFORD S.E.S. UNIT No.3 CONTROL WIRING DIAGRAM LIST OF ABBREVIATIONS

LOU-1564
B-424
SHEET XXXII