



LOUISIANA
POWER & LIGHT

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

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,

L. V. Maurin

LVM/WMA/jal

Enclosures

cc: W. M. Stevenson, E. L. Blake

8205070267 820430
PDR ADOCK 05000382
A PDR

Boo!
Sili

30 April, 1982

HED COMMITMENT TO RESOLVE

<u>Number</u>	<u>Locator no.</u>	<u>Before Fuel Load</u>	<u>Comments</u>
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

<u>Number</u>	<u>Locator no.</u>	<u>Before Fuel Load</u>	<u>Comments</u>
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

<u>Number</u>	<u>Locator no.</u>	<u>Before Fuel Load</u>	<u>Comments</u>
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

<u>Number</u>	<u>Locator no.</u>	<u>Before Fuel Load</u>	<u>Comments</u>
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

<u>COLOR</u>	<u>USE</u>
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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
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ABBREVIATION

WORD

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

NOTES:

- ABBREVIATIONS SHOULD NOT BE USED WHERE THE MEANING WILL NOT BE CLEAR. IN CASE OF DOUBT, SPELL OUT.
- 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.

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ANALOG	ANALOGUE	B	BURNER
ANN	ANNUNCIATOR	BOT	BOTTLE, BOTTOM
APPL	APPLICATION	BR	BRANCH
APPROX	APPROXIMATE, APPROXIMATELY	BRG	BEARING
APR	APRIL	BTU	BRITISH THERMAL UNIT
ARM	ARMATURE		
ARR	ARRANGEMENT, ARRESTOR	B-U	BACK-UP
AS	AMMETER SWITCH	BUSH	BUSING
ASSY	ASSEMBLY	BUZ	BULZER
ATM	ATMOSPHERE	BV	BALANCED VOLTAGE
AUG	AUGUST	BYP	BYPASS
AUTO	AUTOMATIC		
AUTO RECL	AUTOMATIC RECLOSING	C	CABLE, CENTIGRADE
AUTO TR	AUTO TRANSFORMER	CAB	CABINET
AUX	AUXILIARY	CAP.	CAPACITOR, CAPACITY
AVG	AVERAGE	CAT.	CATALOGUE
AVC	AUTOMATIC VOLUME CONTROL	CB	CIRCUIT BREAKER
AWG	AMERICAN WIRE GAUGE		

E D

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APPROVED

EBASCO SERVICES INCORPORATED

DIV I & C DR AC

CH S. MUKHERJEE

DATE OCT 20, 1978

APPROVED

[Signature]

[Signature]

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

LOU-1564
B-424
SHEET XXIV

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 ISOLATION
 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

CLSG CLOSING

CM CENTIMETER, CIRCUMFERENCE

CMPTR COMPUTER

CNDTY CONDUCTIVITY

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	CONF	CONFERENCE	COOL	COOLANT
ION 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	CUB	CUBICLE
	COND	CONDENSER, CONDUCTIVITY CONDUCTOR, 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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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 XXV	
DIV 14C DR AC	APPROVED				
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DATE OCT. 20, 1978	<i>[Signature]</i>				

C (CONT)

CW CLOCKWISE, CIRCULATING
WATER

CWD CONTROL WIRING DIAGRAM

CWP CIRCULATING WATER PUMP

CYL CYLINDER

DC DIESEL GENERATOR

DLA DIAMETER

DIAG DIAGRAM

DIAPH DIAPHRAGM

DIFF DIFFERENTIAL

DIM DIMENSION

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

DIR DIRECTION

DISC DISCONNECT

DISCH DISCHARGE

DIST DISTANCE

DISTR DISTRIBUTION

DIV DIVISION

DN DOWN

DMPR DAMPER

DNBR DEPARTURE FROM NUCLEATE
BOILING RATIO

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		<u>E</u>	
DPT5	DIFFERENTIAL PRESSURE INDICATING SWITCH	EA	EACH
DPR	DIFFERENTIAL PRESSURE RECORDER	ECCY	ECCENTRICITY
DPS	DIFFERENTIAL PRESSURE SWITCH	EFAS	EMERGENCY FEEDWATER ACTUATION SIGNAL SYSTEM
DPT	DIFFERENTIAL PRESSURE TRANSMITTER	EHC	ELECTROHYDRAULIC CONTROL, ELECTRIC HEATING COIL
EPDT	DOUBLE POLE, DOUBLE THROW	EHP	EMERGENCY FEED PUMP
DPST	DOUBLE POLE SINGLE THROW	E-H	ELECTRO-HYDRAULIC
DRN	DRAIN	EL	ELEVATION
DRVN	DRIVEN	ELEC	ELECTRIC, ELECTRICAL
DSL	DIESEL	ELEM	ELEMENTARY
DSLVD	DISSOLVED	ELEV	ELEVATOR
DSUPHTR	DESUPERHEATER	EMERG	EMERGENCY
DT	DOUBLE THROW	EMF	ELECTROMOTIVE FORCE
DUP	DUPLICATE	ECNL	ENCLOSE, ENCLOSURE
DWG	DRAWING	ENERG	ENERGIZED
		ENG	ENGINE
		E/P	ELECTRICAL/PNEUMATIC

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 XXV
DIV	I & C DR AC	APPROVED <i>[Signature]</i>		
CH	S. MUKHERJEE			
APPROVED	DATE OCT. 20, 1978			

<u>E</u> (CONT)		<u>F</u>	
EQUIP	EQUIPMENT	F	FAHRENHEIT, FARAD
EQUV	EQUIVALENT	FC	FAIL CLOSED, ENCLOSED FAN-COOLED
ESFAS	ENGINEERED SAFETY FEATURES ACTUATION SYSTEM/SIGNAL	FD	FORCED DRAFT
EST	ESTIMATE	FDF	FORCED DRAFT FAN
EUH	ELECTRIC UNIT HEATER	FDR	FEEDER
EVAP	EVAPORATOR	FEB	FEBRUARY
EXC	EXCITER, EXCITATION	FI	FLOW INDICATOR
EXCH	EXCHANGE, EXCHANGER	FIG	FIGURE
EXH	EXHAUST	FHB	FUEL HANDLING BUILDING
EXH V	EXHAUST VENT	FID	FIELD
EXIST	EXISTING	FLEX	FLEXIBLE
EXP	EXPANSION	FLM	FLAME
EXT	EXTENSION, EXTRA, EXTERNAL	FLT	FILTER
EXTN	EXTRACTION	FM	FREQUENCY MODULATION
EXTR	EXTRACTOR		

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FO	FUEL OIL	GRD	GROUND, GROUNDING, GUARD
FREQ	FREQUENCY	GRD DET	GROUND DETECTOR
FRM	FREQUENCY METER	GRD VM	GROUND VOLT METER
FS	FLOW SWITCH	GS	GLANDSTEAM
FIS	FLOW INDICATING SWITCH	GSR	GROUP SELECT RELAY
FT	FLOW TRANSMITTER	GTV	GATE VALVE
FW	FEED WATER	<u>H</u>	
FWCS	FEED WATER CONTROL SYSTEM	HE	HYDROGEN
FU	FUSE	H ₂ O	WATER
FWP	FEEDWATER PUMP	HEV	HEATING AND VENTILATION
FWPT	FEEDWATER PUMP TURBINE	HDR	HEADER
	<u>G</u>	HEPA	HIGH EFFICIENCY PARTICULATE AIR
G	GAS, GREEN	HG	MERCURY
GEN	GENERATOR	HI	HIGH
GOV	GOVERNOR	HP	HIGH PRESSURE, HORSEPOWER
GPM	GALLONS PER MINUTE	HPSI	HIGH PRESSURE SAFETY INJECTION
		HPSIP	HIGH PRESSURE SAFETY INJECTION PUMP

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DATE OCT. 20, 1978	<i>[Signature]</i>		
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H (CONT)

HS HAND SWITCH

INCR INCREASE

HR HOUR HAND RESET

IND INDICATE, INDICATING
INDICATOR

HT HEAT

INI INJECTION

HTR HEATER

INST INSTANTANEOUS, INSTRUCTION

HV HIGH VOLTAGE

INSTR INSTRUMENT

HYD HYDRAULIC

INT INTAKE

Hz HERTZ

INTER INTERMEDIATE, INTERRUPT

I (CONT)

IA INSTRUMENT AIR

INTLK INTERLOCK

ID INDUCED DRAFT

IP INTERMEDIATE PRESSURE

IDF INDUCED DRAFT FAN

ISOL ISOLATION, ISOLATED

ILLUM ILLUMINATE

JAN JANUARY

IN INCH

JB JUNCTION BOX

INBD INBOARD

JKT JACKET

INC INCORPORATED

JCT JUNCTION

INCP INTERCEPT

JT JOINT

JUL JULY

JUN JUNE

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K

KG KILOGRAM

LO LOW

KV KILOVOLT

LOC LOCATE, LOCATION

KVA KILOVOLT-AMPERE

LP LOW PRESSURE

KVAH KILOVOLT-AMPERE HOUR

LPD LOCAL POWER DENSITY

KVAR KILOVAR

LPSI LOW PRESSURE SAFETY INJECTION

KW KILOWATT

LPSIP LOW PRESSURE SAFETY INJECTION PUMP

L

L LAMP

LS LIMIT SWITCH, LEVEL SWITCH

LAB LABORATORY

LT LIGHT, LOW TENSION

LB POUND

LTDN LETDOWN

LCP LOCAL CONTROL PANEL

LTC LIGHTING

LEV LEVEL

LUBE LUBRICATE

LH LEFT HAND

LV LOW VOLTAGE

LI LEVEL INDICATOR

LV' LEVEL

LIM LIMIT

LIN LINEAR

LIQ LIQUID

EBASCO SERVICES INCORPORATED

LOUISIANA POWER & LIGHT CO
WATERFORD S. E. S. UNIT No 3
CONTROL WIRING DIAGRAM
LIST OF ABBREVIATIONSLOU-1564
B-424
SHEET XXVIIIDIV I & C DR AC
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<u>M</u>			
M	METER	MFR	MANUFACTURE, MANUFACTURING
MACH	MACHINE	MG	MOTOR GENERATOR
MA	MEASUREMENT CHANNEL A	MH	MANHOLE
MAG	MAGNET, MAGNETIC	MIN	MINIMUM, MINUTE
MAN	MANUAL	MISC	MISCELLANEOUS
MAR	MARCH	MIX	MIXTURE
MAX	MAXIMUM	MIN	MIN
MB	MEASUREMENT CHANNEL B, MIXED BED	MO	MONTH, MOTOR OPERATED
MC	MEASUREMENT CHANNEL C	MOIST	MOISTURE
MCC	MOTOR CONTROL CENTER	MOP	MAIN OIL PUMP
MCM	THOUSAND CIRCULAR MILS	MPW	MARKER PULSE WHEEL
MD	MEASUREMENT CHANNEL D	MS	MAIN STEAM
MECH	MECHANICAL, MECHANISM	MSIS	MAIN STEAM ISOLATION SIGNAL
MEG	MEGOHM	MSR	MOISTURE SEPARATOR REHEATER
MW	MEGAWATT	MT	MAIN TRANSFORMER
MWH	MEGAWATT HOUR	MTD	MOUNTED
		MTR	MOTOR

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MULT	MULTIPLE	O	ORANGE
MUX	MULTIPLER	OC	OPERATING COIL
MV	MILLIVOLT	OCB	OIL CIRCUIT BREAKER
MWH	MEGAWATT-HOUR	OCT	OCTOBER
		OHM	OHMMETER
Na	SODIUM	OL	OVERLOAD
NC	NORMALLY CLOSED	OP	OPEN
NEG	NEGATIVE	OPER	OPERATING
NEUT	NEUTRAL, NEUTRALING	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

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 XXIX
DIV I & C	DR AC	APPROVED		
CH S. MUKHERJEE		<i>[Signature]</i>		
DATE OCT. 20, 1978		<i>[Signature]</i>		

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	PT	PART, POINT, POTENTIAL TRANSFORMER, PRESSURE TRANSMITTER
PH	PHASE, POWERHOUSE	PU	PICKUP
PM	PERMANENT MAGNET	PURIF	PURIFICATION
PNL	PANEL	PWR	POWER, PRESSURIZED WATER REACTOR
POS	POSITION, POSITIVE	P/R	PRESSURIZER
PPS	PLANT PROTECTION SYSTEM		

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R (CONT)

RPS REVOLUTIONS PER SECOND

SEC SECOND, SECONDARY

RTN RETURN

SECT SECTION

RTD RESISTANCE TEMPERATURE DETECTOR

SEL SELECTOR

RTGB REACTOR TURBINE GENERATOR BOARD

SEP SEPTEMBER

RWSP REFUELING WATER STORAGE POOL

SEPR SEPARATOR

RX ROTOR ECCENTRICITY

SEQ SEQUENCE

SER SERIAL, SERIES

SG STEAM GENERATOR

^S
S, SHD SHIELD

SERV SERVICE

SA SEAL AIR, SAFETY CHANNEL A

SGFP STEAM GENERATOR FEED PUMP

SAF SAFETY

SGFPT STEAM GENERATOR FEED PUMP
TURBINE

SAMP SAMPLING

SH SHEET, SHUNT

SB SOOT BLOWER, SAFETY CHANNEL B

SHDN SHUTDOWN

SAB SAFETY CHANNEL AB

SI SAFETY INJECTION

SCHEM SCHEMATIC

SIAS SAFETY INJECTION ACTUATION

SCR SECURITY

SIG SIGNAL

SCRN SCREEN

SIM SIMILAR

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SK	SKETCH	SURSTA	SUBSTATION
SOL	SOLENOID	SUCT	SUCTION
SP	SINGLE POLE, SPARE, SPECIFIC		
SPEC	SPECIFICATION	SUP	SUPPLY
SQ	SQUARE	SV	SOLENOID VALVE
SS	SELECTOR SWITCH	SW	SWITCH
ST	SINGLE THROW, STEAM START UP TRANSFORMER	SWBD	SWITCHBOARD
STA	STATION, STATIONARY	SWGR	SWITCHGEAR
STAT	STATUS, STATOR	SYM	SYMBOL
STBY	STANDBY	SYN	SYNCHRONOUS, SYNCHRONIZING
STD	STANDARD	SYN LP	SYNCHRONIZING LAMPS
STG	STORAGE, STAGE	SYS	SYSTEM
STM	STEAM		
STR	STARTER	<u>T</u>	
STRM	STREAM	TB	TERMINAL BOX
STRN	STRAINER	TC	THERMOCOUPLE, TRIP COIL
STRUCT	STRUCTURE	TCW	TURBINE COOLING WATER
		TCWP	TURBINE COOLING WATER PUMP

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 XXXI
DIV <u>I & C</u> DR <u>AC</u> CH <u>S. MUKHERJEE</u> DATE <u>OCT. 20, 1978</u>	APPROVED <i>[Signature]</i> REVIS <u>1</u> <i>[Signature]</i>		

T (CONT)

TD TIME DELAY, TURBINE-DRIVEN

TURB TURBINE

TDC TIME DELAY CLOSING

TURB TURNING

TDDO TIME DELAY DROP OUT

TV THROTTLE VALVE

TDO TIME DELAY OPENING

TWR TOWER

TDFU TIME DELAY PICKUP

TYP TYPICAL

TEMP TEMPERATURE

U

TERM TERMINAL

U BLUE

TGM TURNING GEAR MOTOR

UF MICROFARAD

TIS TEMPERATURE INDICATING
SWITCH

UG UNDERGROUND

TK TANK

UT UNIT TRANSFORMER

TO TIME OPENING

UV UNDER VOLTAGE

TR TRIP

V

TRANS TRANSFER

V VELOCITY, VALVE, VOLT,
VENT

TRANSF TRANSFORMER

VA VOLTAMPERE, VALVE

TREAT TREATMENT

VAC VACUUM

TS TEMPERATURE SWITCH,
TEST SWITCH

VAR REACTIVE VOLT-AMPERE,
VARIABLE,

VARM VAR METER

RECEIVED

NOV 10 1978

PCPT

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

INCHES
CM

X

VENT	VENTILATE, VENTILATING	XMTR	TRANSMITTER
VIB	VIBRATE, VIBRATION		
		<u>Y</u>	
VM	VOLTMETER	YD	YARD
VOL	VOLUME	YR	YEAR
VR	VOLTAGE REGULATOR		
VS	VOLTMETER SWITCH		

CABLE COLOR CODING

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

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

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 XXXII
DIV I & C	DR AC	APPROVED		
CH S. MUKHERJEE		<i>[Signature]</i>		
DATE OCT. 20, 1978		<i>[Signature]</i>		