

CUSTOMER: WESTINGHOUSE ELECTRIC CORP.
 REF NO: AUBURNDALE PROJECT
 PO NO: 0000048697

DATE: 8-9-93
 QTY: TWO (2)
 LSI#: SO-3235-1

ITEM	QTY	DESCRIPTION	
10	(1)	AUX.OIL PUMP	DELAVAL "IMO" D3EBSC-87P / STEEL CASE WITH MECHANICAL SEALS RATED @ 6.6 GPM @ 25 PSIG WHILE RUNNING AT 3600 RPM. BHP @ 650 SSU @ 70 PSIG = 0.65
11	(1)	AUX.OIL PUMP DRIVER	3/4 HP @ 3600 RPM / TEFC ENCLOSURE / 230/460 VOLT / 3 PH / 60 HERTZ. FRAME 56C WITH FEET / 1.15 S.F. NEMA DESIGN "B", CLASS "F" INSULATION.
12	(1)	AUX.OIL PUMP & DRIVER COUPLING	LOVEJOY MODEL L095 ELASTOMERIC JAW TYPE WITH BUNA "N" SPYDER. BORE BOTH HUBS AS FOLLOWS: (1) 5/8" DIA. W/ 3/16" X 3/32" KEYWAY. (1) 1/2" DIA. W/ 1/8" X 1/16" KEYWAY.
13	(1)	BRACKET/CPL'G GUARD	VESCOR MOD. 6028, 2-BOLT SAE / FRAME 56C.
14	(2)	RELIEF VALVE	FULFLO MOD. VS-4R, 3/4" FNPT CONN CARBON STEEL BODY W/ STAINLESS STEEL PISTON AND "WS" SPRING. RANGE 30-100 PSIG. SET AT 70 PSIG
15	(1)	COOLER	THERMAL TRANSFER MODEL NO. C-614-1.3-4-F, CARBON STEEL SHELL BRASS BAFFLES / CAST IRON BONNETS & COPPER TUBES. DATA: SHELL TUBE FLUID OIL WATER FLOW-GPM 6.6 TEMP.IN-DEG.F 85 TEMP.OUT-DEG.F 120 HEAT LOAD:BTU/HR 12,800 DESIGN PRESS-PSIG 150 150 DESIGN TEMP.-DEG.F 200 200 OIL TYPE - ISO VG32

LUBE OIL SYSTEM
BILL OF MATERIAL

CUSTOMER: WESTINGHOUSE ELECTRIC CORP.
CUSTOMER P.O. NO.: 807458
CUSTOMER TAG NO: AUBURNDALE PROJECT
SERVICE: BOILER FEEDWATER PUMPS

IDPCO P.O. NO.: 0000048697
IDPCO BRANCH ORDER NO.: 012-32985-01101
IDPCO P/N: 62609110
IDPCO REQ. NO.: REQ-038124/1

FLOW: 4.5 GPM
FLUID: ISO VG32 (150 SSU @ 100 DEG.F)
(LIGHT TURBINE OIL)
DELIVERY PRESSURE: 15 PSIG
HEAT LOAD: 12,800 BTU/HR
AREA CLASSIFICATION: NEMA 4
DELIVERY TEMPERATURE: 120 DEG.F
QUANTITY: TWO (2)
L.S.I. DWG. NO.: SO-3235-1 REV.04

BY: ROGER SOHAYDA
DATE: 3-30-93

BILL OF MATERIAL

LUBE SYSTEMS JOB NO. SO-3235

CUSTOMER: WESTINGHOUSE ELECTRIC CORP.

REVISION: 01 DATE: 6-16-93

COVER SHEET: FLOW RATE WAS 3.5 GPM

HEAT LOAD WAS 10,000 BTU/HR

B/M #7 - MANUFACTURER WAS INDEECO

B/M #15 - HEAT LOAD WAS 10,000 BTU/HR.

B/M #34 - NEW ITEM

B/M #35 - " "

B/M #36 - " "

B/M #37 - " "

B/M #38 - " "

B/M #39 - " "

B/M #40 - " "

B/M #41 - " "

B/M #42 - " "

REVISION: 02 DATE: 7-22-93

B/M #23 - ADDED SET POINTS

B/M #24 - ADDED SET POINTS

B/M #25 - ADDED SET POINT

B/M #26 - ADDED SET POINT

B/M #40 - WAS INSTRUMENT VALVE

B/M #41 - WAS PRESSURE GAUGE

REVISION: 03 DATE: 8-09-93

B/M #43 - NEW ITEM

REVISION: 04 DATE: 9-07-93

B/M #43 - REV'D. CAT. NO'S. ADDED LEGEND PLATE NO'S.

LUBE SYSTEMS, INC.	BILL OF MATERIAL DWG. NO.: SO-3235-1
NEWTON, NEW JERSEY	REVISION PAGE: 1
	BY: ROGER SOHAYDA

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<u>ITEM</u>	<u>QTY</u>	<u>DESCRIPTION</u>	
1	(1)	RESERVOIR	L.S.I. FABRICATED 304L STAINLESS STEEL COMP. W/ BAFFLE / SLOPING BOTTOM AND TWO (2) SIDE MOUNTED MANWAYS. PER VESCOR DWG.10030 EXCEPT "B" (HEIGHT) DIMENSION SHALL BE 17-3/8".
2	(1)	LEVEL GAUGE	PENBERTHY MOD. 1RMW4, REFLEX TYPE W/ 304 STAINLESS STEEL WELD PAD / 6-3/4" VISIBLE LENGTH / 8-1/4" OVERALL LENGTH. (OR EQUAL).
3	(1)	FILLER / BREATHING	VESCOR MOD. #5201-40M, W/ 30 MESH STAINLESS STEEL STRAINER AND REMOVABLE FILL CAP.
4	(1)	FILLER RISER BLOCK	FABRICATED 304L STAINLESS STEEL TO MOUNT ITEM #3.
5	(1)	THERMOMETER	ASHCROFT MOD. 50EI60E060, 5" DIAL RANGE 0-250 DEG.F / 1/2" MNPT UNION CONN."EVERY ANGLE".
6	(1)	THERMOWELL	ALLOY ENG. MOD. 3/4"-260S-U4-1/2 304 STAINLESS STEEL / 3/4" MNPT PROCESS CONN.
7	(1)	HEATER	HEATTUBE MOD. DSP1 / 1.0 KW / STAINLESS STEEL SHEATH RATED @ 15 W/SQ.IN @ 120V-1 PH-60 HZ. 2" MNPT PROCESS CONN. / NEMA 4 HOUSING COMP. W/ INTERGAL T'STAT RG. 60-250 DEG.F.(OR EQUAL).
8	(2)	FOOT VALVE	FLOMATIC MOD.# 60S-4104, 1" FNPT CONN. WITH STAINLESS STEEL SCREEN.
9	(2)	SUCTION STRAINER	MUESSCO MODEL NO. 862 "Y" TYPE / 600# RATED CARBON STEEL BODY / 1" SOCKET WELD ENDS / WITH 100 MESH STAINLESS STEEL SCREEN.

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<u>ITEM</u>	<u>QTY</u>	<u>DESCRIPTION</u>	
16	(1)	FILTER	HILCO MOD. 51310-0250-1001 "DUPLEX TYPE" WITH INTERGAL TRANSFER VALVE. CARBON STEEL HEAD AND CANISTERS AND WITH 10 MICRON PLEATED PAPER CARTRIDGES. 3/4" FNPT INLET & OUTLET CONN'S.
16A	(2)	SPARE FILTER CARTRIDGES	HILCO MOD. PL-310-10
17	(1)	PRESS.CONTROL VALVE	FISHER MOD. 98L CARBON STEEL BODY WITH COMPOSITION TRIM, SPRING RANGE 12-25 PSIG. SET TO MAINTAIN 15 PSIG @ BEARING OIL HEADER.
18	(2)	THERMOMETER	ASHCROFT MOD. 50EI60E040, 5" DIAL RANGE 0-250 DEG.F / 1/2" MNPT UNION CONN. "EVERY ANGLE".
19	(2)	THERMOWELL	ALLOY ENG. MOD. 3/4"-260S-U2-1/2 3/4" MNPT PROCESS CONN. & 304 SS MATERIAL.
20	(2)	PRESSURE GAUGE "PUMP OUTLETS"	ASHCROFT MOD. 4.5-1279SS-04L / 4-1/2" DIAL / RANGE 0-100 PSIG / 1/2" MNPT CONN. W/ STAINLESS STEEL TUBE/SOCKET & TIP.
21	(1)	PRESSURE GAUGE "MANIFOLD"	SAME AS ITEM #20 EXCEPT RANGE TO BE 0-30 PSIG.
22	(1)	DIFF. PRESS. TRANSMITTER "ACROSS BEARINGS"	ROSEMOUNT MOD.1151DP-6-S-22-B1, RANGE 0-30 PSID / 4-20 mA dc OUTPUT SIGNAL. STAINLESS STEEL WETTED PARTS / SILCONE FILLED.
23	(1)	PRESS. SWITCH	UNITED ELECTRIC MOD.NO.H402-S146B NEMA 4 ENCLOSURE WITH TWO (2) SPDT INDEPENDENTLY ADJUSTABLE SNAP ACTING SWITCHES. 1/2" FNPT STAINLESS STEEL PRESSURE PORT. RANGE 0-30 PSIG. SET ONE SWITCH @ 8 PSIG DECR. (TRIP MAIN DRIVER). SET ONE SWITCH @ 11 PSIG INCR. (PERMISSIVE START).

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24	(1)	PRESS.SWITCH	SAME AS ITEM #23 EXCEPT SET SWITCHES AS FOLLOWS: SET ONE SWITCH @ 20 PSIG INCR. (AUX. OIL PUMP STOP). SET ONE SWITCH @ 12 PSIG DECR. (AUX. OIL PUMP START).
25	(1)	PRESS.SWITCH	SAME AS ITEM #23 EXCEPT SET SWITCHES AS FOLLOWS: SET ONE SWITCH @ 8 PSIG DECR. (TRIP MAIN DRIVER).
26	(1)	PRESS.SWITCH	SAME AS ITEM #23 EXCEPT SET SWITCHES AS FOLLOWS: SET ONE SWITCH @ 8 PSIG. (TRIP MAIN DRIVER).
27	(3)	CHECK VALVE	3/4"-800# SOCKET WELD CARBON STEEL BODY W/ S.S. TRIM. VOGT # SW701 (OR EQUAL).
28	(9)	INSTRUMENT VALVE	ANDERSON GREENWOOD MODEL NO. M9VIS-46 6000# RATED 3/4" MNPT X 1/2" FNPT STAINLESS STEEL BODY AND STEM W/ INTERGAL BLEED VALVE.
29	(1)	GATE VALVE	3/4"-800# THREADED CARBON STEEL BODY W/ (13% CR.) STAINLESS STEEL TRIM. VOGT #12111.(OR EQUAL
30	(1)	JUNCTION BOX	HOFFMAN CATALOG NO. A12106CHNFSS NEMA 4X STAINLESS STEEL ENCLOSURE COMPLETE WITH #A12P10 SUB-PANEL.
31	(32)	TERMINAL BLOCK	CONNECTRON #NTV4, 600 VOLT RATED COMPRESSION TYPE.
32	(1)	TERMINAL BLOCK RAIL	CONNECTRON #NR37 1/2" STAINLESS STEEL RAIL.
33	(1)	SIGHT FLOW INDICATOR	JOHN C. ERNST MDL #020 ROTATOR TYPE, 3/4"-SW END CONN'S, C.S. BODY & VITON SEALS.

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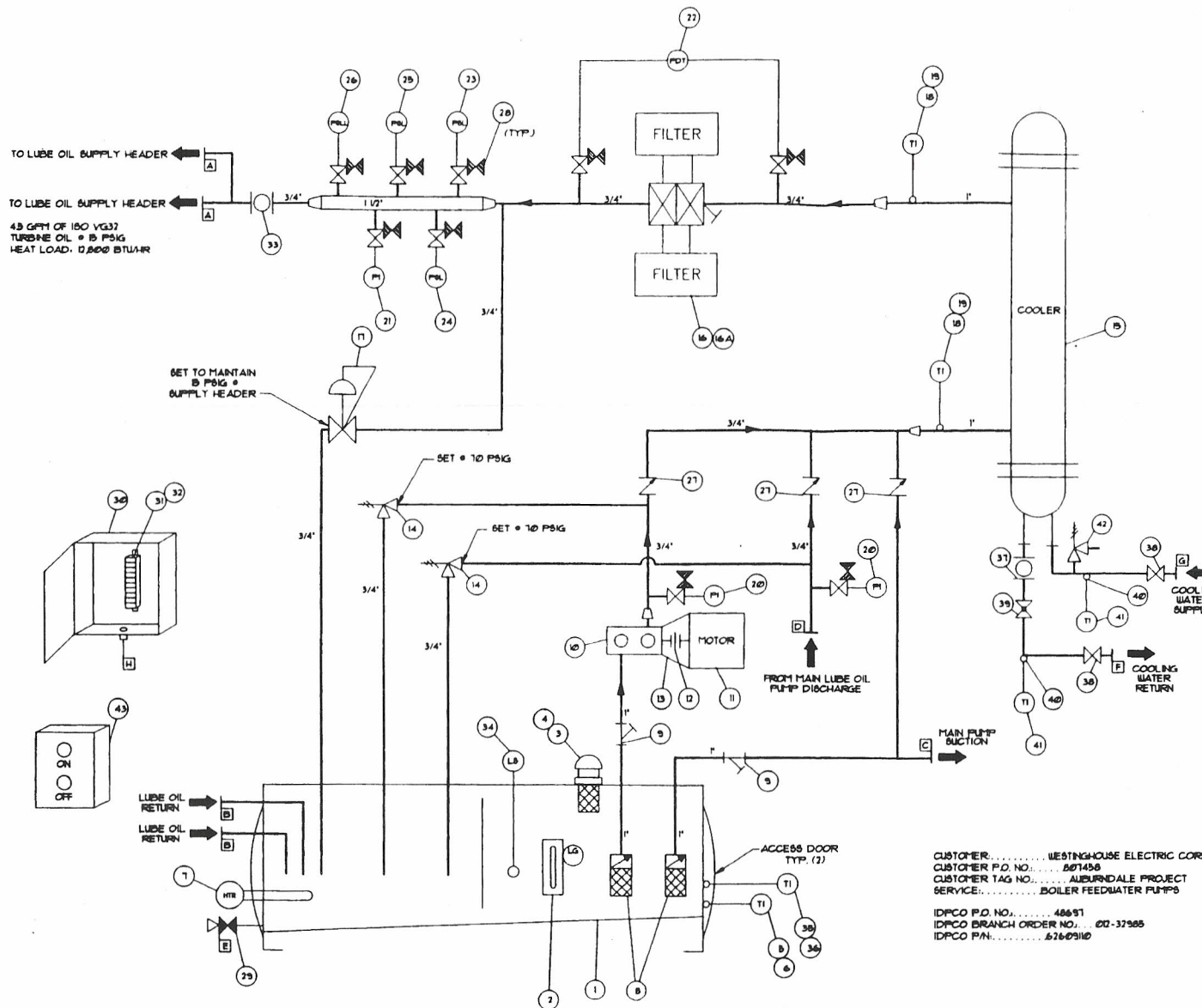
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<u>ITEM</u>	<u>QTY</u>	<u>DESCRIPTION</u>	
34	(1)	LEVEL SWITCH	GEMS MOD. LS-1900, (1) SPST CONTACT / S.S. STEM / BUNA-N FLOAT / P/N 019077SS. SET TO ACTUATE ON LOW OIL LEVEL.
35	(1)	TEMPERATURE SWITCH	UNITED ELECTRIC MOD. C402-120 RANGE 0-225 DEG.F / 1/2" MNPT INTERGAL STEM W/ BULB / NEMA 4 HOUSING COMP. W/ TWO (2) SPDT SWITCHES. SET @ 140 DEG.F INCR. TEMPERATURE.(HIGH TEMP. ALARM).
36	(1)	THERMOWELL	UNITED ELECTRIC MOD. SD6225-140 / 3/4" MNPT CONN. / S.S. MATERIAL.
37	(1)	SIGHT FLOW INDICATOR	JOHN ERNST MOD. 020 ROTATOR TYPE, 3/4" FNPT CONN. / CARBON STEEL BODY AND VITON SEALS.
38	(2)	GATE VALVE	3/4"-800# THREADED CARBON STEEL BODY W/ S.S. TRIM.
39	(1)	GLOBE VALVE	3/4"-800# THREADED CARBON STEEL BODY W/ S.S. TRIM.
40	(2)	THERMOWELL	ALLOY ENGR'G. #3/4"-260A-U1 5/8 SS MAT'L., 3/4"-MNPT PROCESS CONN.
41	(2)	THERMOMETER	ASHCROFT MOD. 50EI60E025, 5" DIAL RANGE 0-250 DEG.F, / 1/2" STEM CONN. NUT, "EVERY ANGLE".
42	(1)	THERMAL RELIEF VALVE	WATTS MOD. 530-3/4" STOCK#2X318 / BRASS CONSTRUCTION W/ S.S. SPRING
43	(1)	ON-OFF SWITCH	ALLEN-BRADLEY MOD.800T-2TZ, NEMA 4/13 ENCLOSURE. ALLEN-BRADLEY MOD.800T-AIA GREEN FLUSH HEAD "ON" PUSH BUTTON. ALLEN-BRADLEY MOD.800T-A6A RED FLUSH HEAD "OPEN" PUSH BUTTON. (1) LEGEND PLATE: 800T-X530 "ON". (1) LEGEND PLATE: 800T-X531 "OPEN".



REVLOG			
REV	DESCRIPTION	DATE	APPRO
A	REV'D PER MARK-UP REDRAWN & REDESIGNED	6-11-93	RA
B	REV'D ITEM 40 & 41 PER REQ	1-22-93	RA
C	ADDED ITEM 43 "ON/OFF" SWITCH	8-9-93	RA

NOTES

- *** ALL MATERIAL TO BE OF DOMESTIC ORIGIN ***
- ALL FLANGE BOLT HOLES TO STRADDLE CENTERLINES.
 - ALL PIPING TO BE SCH 80S, ASTM A307 GR TP304L, SCH 80S.
 - ALL THIRD NIPPLES TO BE SCH 80S, ASTM A307 GR TP304L, SCH 80S. NO CLOSE NIPPLES ALLOWED.
 - ALL FITTINGS TO BE SCH 80S, SCH 80S, BUTT WELDING, ANSI B16.9, ASTM A403 GR WP304L.
 - WAGES TO BE USED IN LIEU OF BUSHINGS, WAGES TO BE 304L SS, ASTM A307 GR TP304L, SCHEDULE 80S CONCENTRIC.
 - ALL FLANGES TO BE 50" ANSI RF, BUTT WELDING W/ SCH 80S BORE, ASTM A182 F304L, ANSI B16.5 W/ 5-750 AARH FINISH.
 - ALL GASKETS TO BE 150" ANSI CLASS, SPIRAL WOUND PER API-601, 316 SS WINDINGS, 1/8" THK OUTER GAUGE RING, GRAPHITE FILLER.
 - ALL BOLTING TO BE:
 - STD BOLTS PER ASTM A193 GR B7, ZINC PLT.
 - NUTS PER ASTM A194 GR 7H, ZINC PLT.
 - PIPE BENDING WILL BE USED TO ELIMINATE FITTINGS WHEREVER POSSIBLE.
 - THIRD CONNECTIONS WILL BE MADE UP USING TEFON PIPE PASTE. NO TEFON TAPE WILL BE ALLOWED.
 - HYDRAULIC TUBING TO BE 1/2" OD X 0.065" WALL 304L SS, SCH 80S, FULLY ANNEALED, ASTM A269, TUBE FITTINGS TO BE 60 BWAGELOK.
 - UNPAINTED FABRICATED CARBON STEEL ONLY WILL BE PAINTED WITH THE FOLLOWING SHEARIN WILLIAMS PRODUCTS:
 - ONE (1) PRIME COAT OF KETROKROIC BROWN TO 3 MILS DFT.
 - ONE (1) FINISH COAT OF KETROKROIC ASA 405 GRAY TO 3-5 MILS DFT.
 - SUBVENDOR MANUFACTURED EQUIPMENT SHALL UTILIZE SUBVENDOR STD PAINTING PROCEDURES. THE SUBVENDOR FINISH COAT WILL SUFFICE WITHOUT SUBSEQUENT TOP COATING.
 - NO STAINLESS STEEL WILL BE PAINTED.
 - ALL OPENINGS SHALL BE PLUGGED OR BLANKED TO KEEP OUT FOREIGN MATTER. THIRD ENDS SHALL BE FITTED WITH ROUND HEAD METAL PLUGS/CAPS. FLANGED ENDS SHALL BE BLANKED WITH STEEL BLIND FLANGES.
 - 60 TAGS WILL BE WIRED TO COMPONENTS WITH 60 WIRE. NO NDE WILL BE REQUIRED.
 - HYDROSTATIC TESTING IN ACCORDANCE WITH API-614, PARA 4.3.2.
 - SYSTEM CLEANLINESS SHALL BE IN CONFORMANCE WITH API-614, PARA 4.3.3.1.
 - OPERATIONAL TESTING SHALL BE IN ACCORDANCE WITH API-614, PARA 4.3.3.3, & PARA 4.3.3.3.1 THRU 4.3.3.3.3.
 - TOLERANCE ON ALL CUSTOMER CONNECTIONS SHALL BE ± 0.001".
 - SEE THE FOLLOWING DRAWINGS FOR ADDITIONAL INFORMATION:
 - 80-3235-1 BILL OF MATERIAL
 - 80-3235-2 SCHEMATIC
 - 80-3235-3 GENERAL ARRANGEMENT
 - 80-3235-4 WIRING DIAGRAM

LET	DESCRIPTION	SIZE	TYPE	RTG
H	JUNCTION BOX CONDUIT CONN.	1 1/2"	PNPT	-
G	COOLING WATER (SUPPLY)	3/4"	PNPT	-
F	COOLING WATER (RETURN)	3/4"	PNPT	-
E	RESERVOIR DRAIN (PLUGGED)	3/4"	PNPT	6000
D	MAIN PUMP DISCHARGE	3/4"	RF FLG	6000
C	MAIN PUMP SUCTION	1"	RF FLG	6000
B	LUBE OIL RETURN (2 CONNS)	1 1/2"	RF FLG	6000
A	LUBE OIL TO LUBE SUPPLY HEADER (2 CONNS)	3/4"	RF FLG	6000

REFERENCES
CUSTOMER CONNECTIONS 1 1/2"
UNLESS OTHERWISE SPECIFIED

ALL DIMENSIONS SHOWN IN INCHES

DESIGNED BY	RA	4-2-93
CHECKED	RSB	4-13-93
APPROVED	RSB	4-13-93

FROM PLANT USE & PROPERTY OF LUBE SYSTEMS
SELECT TO RETURN WHEN DEMAND TIE TO SHIP
NEVER SOLD OR TRANSFERRED FOR ANY REASON
ALL RIGHTS IN INVENTION RESERVED

LUBE SYSTEMS, INC

LUBRICATOR OIL SYSTEM
SCHEMATIC

SIZE	D	DRAWING NO.	80-3235-2	REV.	C
SCALE	N.T.S.	DATE	10/11	SHEET	1 OF 1

CUSTOMER: WESTINGHOUSE ELECTRIC CORP.
CUSTOMER P.O. NO.: 507458
CUSTOMER TAG NO.: AUBURNDALE PROJECT
SERVICE: BOILER FEEDWATER PUMPS
IDPCO P.O. NO.: 48651
IDPCO BRANCH ORDER NO.: 00-37986
IDPCO P/N: 67609110