

ELLIOTT COMPANY — ENGINEERING DEPARTMENT
TURBINE DESIGN SPECIFICATIONS FOR SO:

ITEM		ORDER TO DWG. OR QUOT. NO.	SPECIAL INSTRUCTIONS
CASING-ROTOR PARTS	BEARING CASE-STEAM END	Same as 778	<i>Center 91" from</i> Special NC with "V" Gov. Wobble Plate
	BEARING CASE-EXHAUST END		In exhaust <i>similar 7378</i> Special Supports FOB 10# Back Pres.
	BEARING PEDESTAL-OUTBOARD		By Ridgway (Brg.)
	GAUGE PANEL		Elliott Co.
	COUPLING GUARD		Std.
	PACKING CASE-STEAM END		Rot. Laby.
	PACKING CASE-EXHAUST END		Rot. Laby & Huhn
	PIPING-STEAM SEAL PACKING LEAK		See Page 2
	PIPING-VALVE STEM LEAKOFF		See Page 2
	PIPING-INLET ELBOW, UPPER		
	PIPING-INLET ELBOW, LOWER		
	INLET GASKETS		Std.
	SOLEPLATE-STEAM END		Std.
	SOLEPLATE-EXHAUST END		Std.
	SOLEPLATE- ALTERNATOR		Std.
	SOLEPLATE- EXCITOR		Std. (By Ridgway)
	MICARTA TAPER DOWELS		Std.
	DOWEL NUTS		Std.
	ROTOR ASSEMBLY		See Page 2
	TURBINE SHAFT & MATERIAL		Forging #78
	TURBINE CASING- STEAM END		8" - 400# Cast Steel
	TURBINE CASING-EXHAUST END		Cast Iron 72" down (<i>center line support similar 7378</i>)
	TURBINE-GENERAL MATERIAL & LAG.		Std.
	TURBINE GENERATOR OUTLINE		Std.
	TURBINE & CONDENSER ARRANGEMENT		Cond. axis at right angle to turbine axis.
	TURBINE INSTRUCTION BOOK		By Turb. Engr.
	TOOLS & WRENCHES		Special tools, wrenches, eyebolts, shims, chock blocks.
	FOUNDATION DRAWING		No

PLAINTIFF'S EXHIBIT

ET-34

PLAINTIFF'S
EXHIBIT

WK ET 5017

SC-ETM-0033

DEPARTMENT
TURBINE DESIGN SPECIFICATION. FOR S.O:

	ITEM	ORDER TO DWG. OR QUOT. NO.	SPECIAL INSTRUCTI
CASING-ROTOR PARTS (CONT'D)			
SPEED & PRESSURE CONTROL	SPEED REG. REQUIRED <u>4</u> %, FROM <u>0</u> % LOAD TO <u>100</u> % LOAD. VALVE TRAVEL AT <u> </u> %, LOAD <u> </u> . LEVER RATIO <u> </u> CALC. GOV. STROKE <u> </u> CALC. REGULATION <u> </u>		
	GOVERNOR ASSEMBLY		nyn In NC Brg. Case
	GOVERNOR DRIVE-RATIO		
	GOVERNOR SPEED CHANGER	Spring	648297
	GOVERNOR SERVO-MOTOR		648297 653006
	GOVERNOR SPRING ASS'LY.	Spring Std. Weight	648251-1 648271-1
	GOVERNOR VALVE ASS'LY.		NC
	GOVERNOR VALVE PACKING		NC
	VALVE SERVO-MOTOR (GOV. VALVE)		10" H1 Speed
	10% TRIP		
	10% SPEED RANGE		

ELLIOTT COMPANY ~ ENGINEERING DEPARTMENT
TURBINE DESIGN SPECIFICATION, FOR S.O:
AUXILIARY EQUIPMENT-FOR EACH UNIT.

ITEM	ORDER TO DWG. OR QUOT. NO.	SPECIAL INSTRUCTIONS	PURCHASE ORDER NO.	HOLD FOR CUST. APP.	REL. FOR MFR.
AIR COOLER	75° H ₂ O	S&K By Ridgway 8" L.H. 400#-750°FTT BUILT-IN STRAINER	ENGR 1125/55 176402 ✓		
TRIP & THROTTLE VLV.	GIMPLE	8" L.H. 400#-750°FTT BUILT-IN STRAINER	ENGR 1125/55 176403 ✓		
NON-RETURN TRIP VLV.					
STEAM STRAINER		BUILT-IN T & T VALVE			
H.S. COUPLING & ADAPT.		#8 Solid Bored 6-1/4"	B/M		
L.S. COUPLING & ADAPT.					
OIL COOLER	Cost - 78.00 will order as 30°	7" B&G 005-126 75° H ₂ O	Engr. 176407 ✓		
AUXILIARY OIL PUMP	NEW STYLE	3/4" I.M.P. ONE INLET 2-250/500 NOZ.	B/M		
AUX. OIL PUMP GOVERNOR	1" - M.N. RELIEF	1-1/4" Leslie PTIS-3X 400#-750°FTT 5" G	Engr. 176409		
MAIN OIL PUMP		12-25 Gals - 3 gear CENTRIFUGAL	B/M		
OIL STRAINER		See page 6a 3" - ELLIOTT 1W1N	ENGR 176408 ✓		
OIL THERMOMETERS		See page 6a			
STEAM THERMOMETERS		See page 6a			
GENERATOR AIR THERMOMETER					
SYN. MOTOR & VOLTAGE	Z-633807-1	125 V - DC 120 V AC.	Stock		
GENERATOR AIR TEMP ALARM					
TACHOMETER		0-1500 RPM Model 252 Weston	Engr. 176411 ✓		
TACHOMETER PROBES Magnet		Stator & Rotor ✓	Engr. 176411		
SENTINEL VALVE	P66A13	1" set at 20#	Stock		
RELIEF VALVE					
INSULATION		Block and Plastic with Blankets on Horiz. joint	Engr. 188869		
FLOW METERS					
EJECTOR	S-644622-2	Pedersen for steam of 400#G- 750°FTT 5" G	Dwg. ✓		
GLAND CONDENSER	S-646855	Thrust Heater B & G U-46-4	Stock ENGR 188873 ✓		
SYNCHRONIZER CONTR. SW.					
STEAM GAUGES		See Page 7			
OIL GAUGES		See Page 7			

AUXILIARY EQUIPMENT-FOR EACH UNIT

ITEM	ORDER TO DWG. OR QUOT. NO.	SPECIAL INSTRUCTIONS	PURCHASE ORDER NO.	HOLD FOR CUST. APP.	REL. FOR MFR.
Cuno Oil Filter	614941-1	1 req'd - 3" (HAPP) (HAPP)	stock		
Cuno Oil Filter	614942-1	1 req'd. - 2" (CONTROL OIL)	stock		
Thrust brg. therm.		9" Moeller 30°-240°F Extension Neck straight or back angle	Engr. 195137		
#1 Brg. Therm.			195137		
#2 Brg. Therm.			195137		
#3 Brg. Therm.			195137		
#4 Brg. Therm.			195137		
#5 Brg. Therm.			195137		
#6 Brg. Therm.			195137		
Oil Cooler Water In Therm.					
Oil Cooler Water Out Therm.					
Oil Cooler Oil Out Therm.	9" 110°-115° F	6" Dial American any angle 6-6070 BM	195137		
Inlet Steam Therm.	Moeller	9" 200°-950°F			
Exhaust Steam Therm.	Moeller	9" 50-400°F			
Charge Tube Oil		12 Barrels	Engr.		
Main Controller For Gland Sealing Steam	M. N.	Similar to valves on 2-11375	B/M 188867		
Steam end packing Leak-off Bleeder Reg.	M. N.	EN-4	B/M 188867		
Low Brg. Oil Press. Switch		Squared class 9012 type ACW-4 110V 60-250V Paraday 115 VAC 127-UP	Engr. Engr.		
Alarm Horn					
Cuno Filter (Oil Supply to Gov.)	Micro-Kleen 2 Reg'd.	Model #181-2278-11 1/2" I.P.S. (In parallel)	Stock		
3-WAY VALVE	Z-635318-12	3"-300# A4M	789750 DWG		
PRESSURE REG. FOR LEAK-OFF SYSTEM			B/M		
CHARGE PANEL	627581 V.E.P. ELECTRICAL		B/M 175-28		

ELLIOTT COMPANY ~ ENGINEERING DEPARTMENT
TURBINE DESIGN SPECIFICATION FOR SO:
GAUGES AND GAUGE PANEL-FOR EACH UNIT

ITEM	AMT	ORDER TO DWG. OR QUOT. NO.	SPECIAL INSTRUCTIONS	PURCHASE ORDER NO.	HOLD FOR CUST. APPR.	REL. FOR MFR.
GAUGES ON PANEL <i>valve room</i>	1	15# 63393E 41	6"-1077A 0-100# "THROTTLE STEAM PRESS"	ENGR 195049		
	1	17# 49	6"-1077A 0-80# "FIRST STAGE PRESS"	ENGR 195049		
	1	2# 47	6"-1077AC 30"-30" "EXHAUST PRESS"	ENGR 195049		
	1		4 1/2"-1077A 0-160# "MAIN OIL PUMP SUCTION PRESS"	ENGR 195049		
	1		4 1/2"-1077A 0-160# "MAIN OIL PUMP DISC. PRESS"	ENGR 195049		
	1		4 1/2"-1077A 0-30# "BES OIL PRESS"	ENGR 195049		
	1		4 1/2"-1077A 0-100# "HIGH PRESS OIL"	ENGR 195049		
	1		4 1/2"-1077A 0-100# "TGT VLV OIL PRESS"	ENGR 195049		
			WESTON TACHOMETER	SEE PG 6		
OTHER INSTRUMENTS ON PANEL						
GAUGES ON TURBINE FINAL	2	4 1/2"-1077A 30" 30"	"SLIDING STEAM"	ENGR 195049		
	1	100# 2 1/2"	0-60# "ELRING SEMI OIL PRESS"	ENGR 195049		
	1		30"-30" "EQUIL. STEAM PRESS"	ENGR 195049		
	4	2 1/2" 100#	0-100# "CUNO FILTER"	ENGR 195049		
	3	2 1/2" 100#	0-100# "HIGH PRESS OIL" "GOV. OIL PUMP" "GOV. CONTROL PRESS"	ENGR 195049		
PANEL FURNISHED BY: ELLIOTT CO.			WALL MOUNTED: FLOOR MOUNTED: A-LINE TYPE JACKET - FLOOR			

SUGGESTED ARRANGEMENT BY: CUSTOMER ☐
FOR EACH UNIT ENG. DEPT. ☐

TURBINE DESIGN SPECIFICATION FOR S.O:
AUXILIARY EQUIPMENT-FOR EACH UNIT

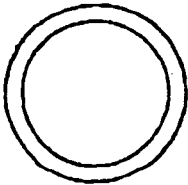
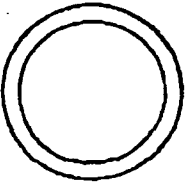
ITEM	ORDER TO DWG. OR QUOT. NO.	SPECIAL INSTRUCTIONS	PURCHASE ORDER NO.	HOLD FOR CUST. APP.	REL. FOR MFR.
Cuno Oil Filter	61h941-1	1 req'd. - 1" (HYPOL)	stock		
Cuno Oil Filter	61h942-1	1 req'd. - 2" (CONTROL OIL)	stock		
Thrust brg. therm.		9" Moeller 30°-240° Extension Neck straight or back angle	Engr. 195137		
#1 Brg. Therm.			195137		
#2 Brg. Therm.			195137		
#3 Brg. Therm.			195137		
#4 Brg. Therm.			195137		
#5 Brg. Therm.			195137		
#6 Brg. Therm.			195137		
Oil Cooler Water In Therm.					
Oil Cooler Water Out Therm.					
Oil Cooler Oil Inlet Therm.	9" Moeller	6" Hall American any angle 6-6070 BM	195137		
Exhaust Steam Therm.	Moeller	9" 200°-950°			
Exhaust Steam Therm.	Moeller	9" 50-400°			
Charge Tank Oil		12 Barrels	Engr.		
Main Controller For Gland Sealing Steam	M.V.	Similar to valves on	B/M 188867		
Steam end packing Leak-off Bleeder Reg.	M.V.	EN-2	B/M 188867		
Low Pressure Oil Press. Switch		Squared glass 2012 type ACW-1 110V 60W	Engr.		
Alarm Horn		Paraday 115 VAC 127-UP	Engr.		
Cuno Filter (Oil Supply to Gov.)	Micro-Kleen 2-Reg'd.	Model F181-2278-1 1 1/2" L.P.S. (In parallel)	stock		
3 WAY VALVE	Z-635376 = 12	3"-300# AQM	787750 DWG		
PRESSURE REG. FOR LEAK-OFF SYSTEM			B/M		
CHARGE PNEUM.	627681		B/M		
CHARGE PNEUM.	PERN ELECTRICAL		ENGR 195137		

ELLIOTT COMPANY - ENGINEERING DEPARTMENT
TURBINE DESIGN SPECIFICATION FOR SO:
GAUGES AND GAUGE PANEL-FOR EACH UNIT

ITEM	AMT	ORDER TO DWG. OR QUOT. NO.	SPECIAL INSTRUCTIONS	PURCHASE ORDER NO.	HOLD FOR CUST. APR.	REL. FOR MFR.
GAUGES ON PANEL	1	134 633932-41	6"-1077A 0-100" "THROTTLE STEAM PRESS"	ENGR 195049		
	1	174 49	6"-1077A 0-80" "FIRST STAGE PRESS"	ENGR 195049		
	1	24 47	6"-1077AC 30"-30" "EXHAUST PRESS"	ENGR. 195049		
	1		4 1/2"-1077A 0-160" "MAIN OIL PUMP SUCTION PRESS"	ENGR 195049		
	1		4 1/2" 1077A 0-160" "MAIN OIL PUMP DISC. PRESS"	ENGR 195049		
	1		4 1/2" 1077A 0-30" "BEES OIL PRESS"	ENGR 195049		
	1		4 1/2" 1077A 0-100" "HIGH PRESS OIL"	ENGR 195049		
	1		4 1/2" 1077A 0-100" "TST VLV OIL PRESS"	ENGR 195049		
			WESTON TACHOMETER	SEE P. 6		
GAUGES ON TURBINE	2	4 1/2"-1077A	30"-30" "SEALING STEAM"	ENGR 195049		
	1	10016-22	0-60" "GLAND SEAL OIL PRESS"	ENGR 195049		
	1		30"-30" "EQUIL. STEAM PRESS"	ENGR 195049		
	4	23 10046	0-100" "COND. FILTER"	ENGR 195049		
	3	24 10099	0-100" "HIGH PRESS OIL" "GOV. CONTROL PRESS"	ENGR 195049		
PANEL FURNISHED BY: ELLIOTT CO.			WALL MOUNTED:			
			FLOOR MOUNTED: 4-4 1/2" TUBE, 3/4" - 1/2"			

SUGGESTED ARRANGEMENT BY: CUSTOMER ☐
FOR EACH UNIT ENG. DEPT. ☐

TURBINE DESIGN SPECIFICATION, FOR S.O.:

PURCHASER _____															TURBINE NO. _____ S.O. _____ E _____														
EXTRACTION CONTROL	#1 CONTR. EXTR. (TYPE)															PORT AREA					BUCKETS								
	VLY. POSITION FACING DOWNSTREAM										STAGE	NO. NOZZ.	NO. EACH BANK	HEIGHT	AREA	TYPE	MATL.		DISC MTL.	PITCH DIA.	TYPE	LENGTH							
	GOV. VALVE SIZE																												
	NO. VALVES OPEN																												
											1																		
											2																		
											3																		
											4																		
											5																		
											6																		
7																													
VALVE S-M EXTR.																													
PRESS. REG.																													
OIL SYSTEM	#2 CONTR. EXTR. (TYPE)															PORT AREA					BUCKETS								
	VLY. POSITION FACING DOWNSTREAM										STAGE	NO. NOZZ.	NO. EACH BANK	HEIGHT	AREA	TYPE	MATL.		DISC MTL.	PITCH DIA.	TYPE	LENGTH							
	GOV. VALVE SIZE																												
	NO. VALVES OPEN																												
											1																		
											2																		
											3																		
											4																		
											5																		
											6																		
7																													
VALVE S-M EXTR.																													

ELLIOTT COMPANY ~ ENGINEERING DEPARTMENT
TURBINE DESIGN SPECIFICATIONS FOR SO:

	ITEM	ORDER TO DWG. OR QUOT. NO.	SPECIAL INSTRUCTIONS
CASING-ROTOR PARTS	BEARING CASE-STEAM END	See Page 2	Cent. Di. ^{1/2"} Special Wobble Plate NC with my Gov.
	BEARING CASE-EXHAUST END		In exhaust ^{50.7"} Special Supports FOR 10" Back Press
	BEARING PEDESTAL-OUTBOARD		By Ridgway (Brg.)
	GAUGE PANEL		Elliott Co.
	COUPLING GUARD		Std.
	PACKING CASE-STEAM END		Rot. Laby.
	PACKING CASE-EXHAUST END		Rot. Laby & Huhn
	PIPING-STEAM SEAL PACKING LEAK		See Page 2
	PIPING-VALVE STEM LEAKOFF		See Page 2
	PIPING-INLET ELBOW, UPPER		
	PIPING-INLET ELBOW, LOWER		
	INLET GASKETS		Std.
	SOLEPLATE-STEAM END		Std.
	SOLEPLATE-EXHAUST END		Std.
	SOLEPLATE-ALTERNATOR		Std.
	SOLEPLATE-EXCITOR		Std. (By Ridgway)
	MICARTA TAPER DOWELS		Std.
	DOWEL NUTS		Std.
	ROTOR ASSEMBLY		See Page 2
	TURBINE SHAFT & MATERIAL		Forging #78 8" - 400# Cast Steel
	TURBINE CASING-STEAM END		
	TURBINE CASING-EXHAUST END		Cast Iron 72" down (Cent. line ^{1/2"} support similar 1137)
	TURBINE-GENERAL MATERIAL & LAG.		Std.
	TURBINE GENERATOR OUTLINE		Std.
	TURBINE & CONDENSER ARRANGEMENT		Conn. axis at right angle to turbine axis.
	TURBINE INSTRUCTION BOOK		By Turb. Engr.
	TOOLS & WRENCHES		Special tools, wrenches, eyebolts, shims, chock blocks.
	FOUNDATION DRAWING		No
			No

DESIGN SPECIFICATION. FOR S.O:

ITEM		ORDER TO DWG. OR QUOT. NO.	SPECIAL INSTRUCTI
CASING-ROTOR PARTS (CONT'D)			
SPEED & PRESSURE CONTROL	SPEED REG. REQUIRED <u>4</u> %, FROM <u>0</u> % LOAD TO <u>100</u> % LOAD. VALVE TRAVEL AT <u> </u> %, LOAD <u> </u> . LEVER RATIO <u> </u> CALC. GOV. STROKE <u> </u> CALC. REGULATION <u> </u>		
	GOVERNOR ASSEMBLY		"V" In NC Brg. Case
	GOVERNOR DRIVE-RATIO		
	GOVERNOR SPEED CHANGER	Spring	648297
	GOVERNOR SERVO-MOTOR	Pilot	648297-1 655006
	GOVERNOR SPRING ASS'LY.	Spring Std. Weight	648251-1 648271-1
	GOVERNOR VALVE ASS'LY.		NC
	GOVERNOR VALVE PACKING		NC
	VALVE SERVO-MOTOR (60V.VWS)		10" H1 Speed
	10% TRIP		
	10% Speed RISE		

ELLIOTT COMPANY ~ ENGINEERING DEPARTMENT
TURBIN' DESIGN SPECIFICATION FOR S.O:

AUXILIARY EQUIPMENT-FOR EACH UNIT

ITEM	ORDER TO DWG. OR QUOT. NO.	SPECIAL INSTRUCTIONS	PURCHASE ORDER NO.	HOLD FOR CUST. APP.	REL. FOR MFR.
AIR COOLER	75° H ₂ O	S.P.R. (By Highway) 8" L.H. 400° - 750° FT	ENGR 1125/55 176402	✓	
TRIP & THROTTLE VLV.	6" WEL	8" L.H. 400° - 750° FT BUILT-IN STRAINER	ENGR. 1125/55 176403	✓	
NON-RETURN TRIP VLV.					
STEAM STRAINER		BUILT-IN T & T VALVE			
H.S. COUPLING & ADAPT.		#8 Solid Bored 6-1/4"	B/M		
L.S. COUPLING & ADAPT.					
OIL COOLER	Good - gave 1984 will order as 30°	1" B&G OC5-126 75° H ₂ O	Engr. 176407	✓	
AUXILIARY OIL PUMP	NEW STYLE	3/4" I.M.P. ONE INLET 2-250/500 No.	B/M		
AUX. OIL PUMP GOVERNOR	1" - M.N. P.F.T.	1-1/2" Leslie P.T.S. - 3X 400° - 750° FT - 5" G	Engr. 176409		
MAIN OIL PUMP		12-25 gear CENTR. G.	B/M		
OIL STRAINER		See page 6a 3" ELLIPT 1 WIN	ENGR 176408	✓	
OIL THERMOMETERS		See page 6a			
STEAM THERMOMETERS		See page 6a			
GENERATOR AIR THERMOMETER					
SYN. MOTOR & VOLTAGE	Z-633807-1	125 V - DC 120 V AC.	Stock		
GENERATOR AIR TEMP ALARM					
TACHOMETER		0-4500 RPM Model 252 Weston	Engr. 176411	✓	
TACHOMETER THROTTLE Magnet		Stator & Rotor	Engr. 176411		
SENTINEL VALVE	P66A13	1" set at 20"	Stock		
RELIEF VALVE					
INSULATION		Block and Plastic with Blankets on Horiz. joint	Engr. 188869		
FLOW METERS					
EJECTOR	S-644622-2	Pedersen for steam of 400° G- 750° FT - 5" G	Dwg.	✓	
GLAND CONDENSER	S-644655	Thrust Heater B & G U-46-4	Stock ENGR 188873	✓	
SYNCHRONIZER CONTR. SW.					
STEAM GAUGES		See Page 7			
OIL GAUGES		See Page 7			