

3 IN A SERIES OF 8

3

**Commercial Electric Power
Cost Studies**

Prepared for the U.S. Nuclear
Regulatory Commission and the
U.S. Department of Energy by
United Engineers &
Constructors Inc.

**Capital Cost:
High and Low
Sulfur Coal
Plants—
1200 MWe**

7909640515

700003

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708004

NUREG-0243 COO-2477-7

Capital Cost: High and Low Sulfur Coal Plants- 1200 MWe

Commercial Electric Power Cost Studies

Prepared for the U.S. Nuclear Regulatory Commission under contract No. AT (49-24)-0351 and the U.S. Department of Energy under contract No. EY-76-C-02-2477 by United Engineers & Constructors Inc., 30 South 17th Street, P.O. Box 8223, Philadelphia, Pa.

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- 1 Capital Cost: Pressurized Water Reactor Plant
NUREG-0241, COO-2477-5

- 2 Capital Cost: Boiling Water Reactor Plant
NUREG-0242, COO-2477-6

- 3 **Capital Cost: High and Low Sulfur Coal
Plants—1200 MWe** Volume 2 of 3
NUREG-0243, COO-2477-7

- 4 Capital Cost: Low and High Sulfur Coal
Plants—800 MWe
NUREG-0244, COO-2477-8

- 5 Capital Cost Addendum: Multi-Unit Coal and
Nuclear Stations
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- 6 Fuel Supply Investment Cost: Coal and Nuclear
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Generating Cost Studies
NUREG-0247, COO-2477-11

- 8 Total Generating Costs: Coal and Nuclear Plants
NUREG-0248, COO-2477-12

SECTION 4
DRAWINGS

POOR
ORIGINAL

708007

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SECTION 4

DRAWING LIST

1232 MWe HIGH SULFUR COAL-FIRED PLANT

This section contains the drawings for the 1232 MWe High Sulfur Coal Plant described in Section 2. The drawings include Plot Plan, General Arrangement Drawings, Flow Diagrams, Block Diagrams and One Line Diagrams.

<u>Drawing Number</u>	<u>Title</u>
6509.001-HSC-1	Symbol Legend for Flow and Block Diagrams
6509.001-HSC-2	Plot Plan -
6509.001-HSC-3	General Arrangement Plan "A-A" at Elevation 18'-0"
6509.001-HSC-4	General Arrangement Plans & Section Elevation 43'-0" & 73'-0"
6509.001-HSC-5	Flow Diagram-Forced Draft System
6509.001-HSC-6	Steam Heat Balance Diagram (Max. Guaranteed)
6509.001-HSC-7	Flow Diagram-Main Steam, Hot Reheat and Cold Reheat System
6509.001-HSC-8	Flow Diagram-H.P. & I.P. Extraction Steam System
6509.001-HSC-9	Flow Diagram-L.F. Extraction Steam System
6509.001-HSC-10	Flow Diagram-Condensate and Feedwater System
6509.001-HSC-11	Flow Diagram-Heater Drains and Vents System
6509.001-HSC-12	One Line Diagram-Unit Electrical Distribution
6509.001-HSC-13	One Line Diagram-d-c Distribution System
6509.001-HSC-14	Flow Diagram-Auxiliary Steam System
6509.001-HSC-15	Flow Diagram-Coal Handling System
6509.001-HSC-16	Flow Diagram-Ash Handling System
6509.001-HSC-17	Block Diagram-Plant Fire Protection System
6509.001-HSC-18	Block Diagram-Waste Water Treatment System
6509.001-HSC-19	Block Diagram-Lime SO ₂ Scrubber System
6509.001-HSC-20	General Arrangement-Lime SO ₂ Scrubber Plan
6509.001-HSC-21	General Arrangement-Lime SO ₂ Scrubber Section

708000

VALVE BODIES

OPEN

CLOSED



SLIDING GATE



GATE



GLOBE



BUTTERFLY



THREE WAY



ANGLE



SAFETY OR RELIEF



SWING CHECK



STOP CHECK



SAUNDERS (WEIR)



POWER ASSISTED NON RETURN



POWER ASSISTED PRESSURE RELIEF

VALVE ACTUATOR



HANDWHEEL - MANUAL



GEAR - MANUAL



ELECTRIC MOTOR



SOLENOID (SPRING OPPOSED)



PISTON OR CYLINDER



ELECTRO - HYDRAULIC



DIAPHRAGM (SPRING OPPOSED)

PIPING SYMBOLS



EXPANSION JOINT



ORIFICE



REDUCER

INSTRUMENT



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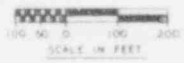
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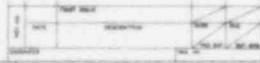
708011

NORTH RIVER

FLOW →



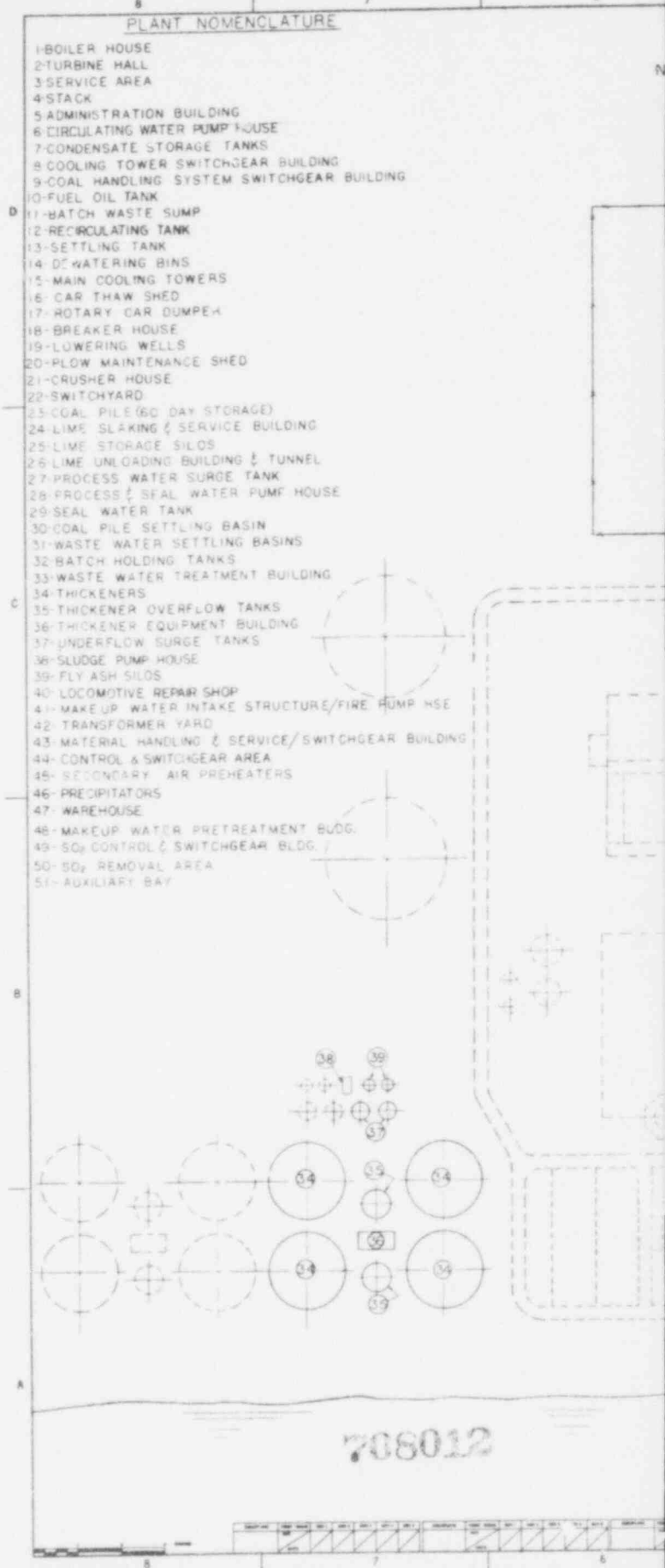
PLOT PLAN
1232 MW FOSSEL PLANT
MIDDLETOWN HYPOTHETICAL SITE
United engineers
6509001-HSC-2

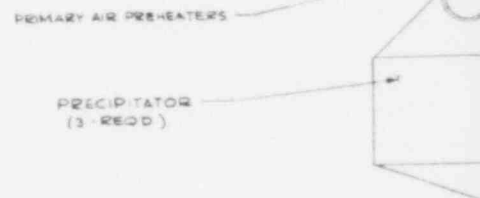
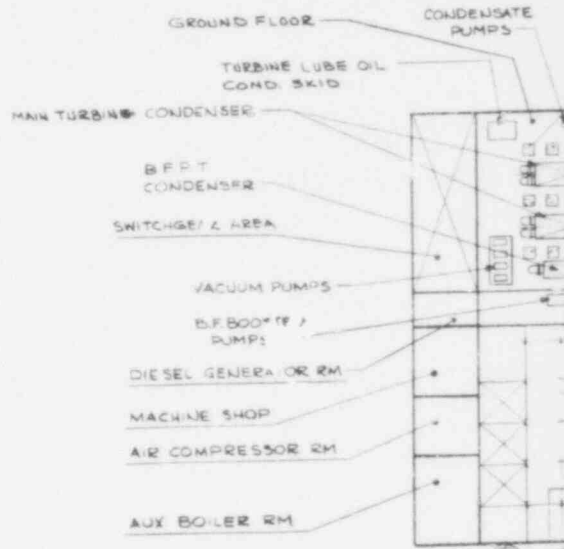


PLANT NOMENCLATURE

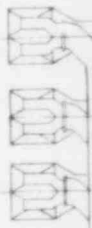
- 1-BOILER HOUSE
- 2-TURBINE HALL
- 3-SERVICE AREA
- 4-STACK
- 5-ADMINISTRATION BUILDING
- 6-CIRCULATING WATER PUMP HOUSE
- 7-CONDENSATE STORAGE TANKS
- 8-COOLING TOWER SWITCHGEAR BUILDING
- 9-COAL HANDLING SYSTEM SWITCHGEAR BUILDING
- 10-FUEL OIL TANK
- D 11-BATCH WASTE SUMP
- 12-RECIRCULATING TANK
- 13-SETTLING TANK
- 14-D WATERING BINS
- 15-MAIN COOLING TOWERS
- 16-CAR THAW SHED
- 17-ROTARY CAR DUMPER
- 18-BREAKER HOUSE
- 19-LOWERING WELLS
- 20-PLOW MAINTENANCE SHED
- 21-CRUSHER HOUSE
- 22-SWITCHYARD
- 23-COAL PILE (60 DAY STORAGE)
- 24-LIME SLAKING & SERVICE BUILDING
- 25-LIME STORAGE SILOS
- 26-LIME UNLOADING BUILDING & TUNNEL
- 27-PROCESS WATER SURGE TANK
- 28-PROCESS & SEAL WATER PUMP HOUSE
- 29-SEAL WATER TANK
- 30-COAL PILE SETTling BASIN
- 31-WASTE WATER SETTling BASINS
- 32-BATCH HOLDING TANKS
- 33-WASTE WATER TREATMENT BUILDING
- C 34-THICKENERS
- 35-THICKENER OVERFLOW TANKS
- 36-THICKENER EQUIPMENT BUILDING
- 37-UNDERFLOW SURGE TANKS
- 38-SLUDGE PUMP HOUSE
- 39-FLY ASH SILOS
- 40-LOCOMOTIVE REPAIR SHOP
- 41-MAKE UP WATER INTAKE STRUCTURE/FIRE PUMP HSE
- 42-TRANSFORMER YARD
- 43-MATERIAL HANDLING & SERVICE/SWITCHGEAR BUILDING
- 44-CONTROL & SWITCHGEAR AREA
- 45-SECONDARY AIR PREHEATERS
- 46-PRECIPITATORS
- 47-WAREHOUSE
- 48-MAKEUP WATER PRETREATMENT BLDG.
- 49-50% CONTROL & SWITCHGEAR BLDG.
- 50-50% REMOVAL AREA
- 51-AUXILIARY BAY

POOR ORIGINAL





SUPPLY BY PASS DU

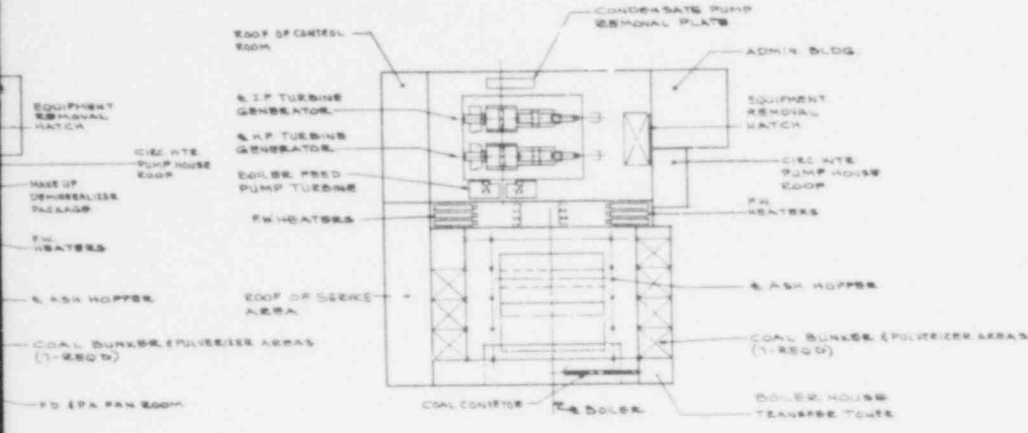


STACK

POOR ORIGINAL

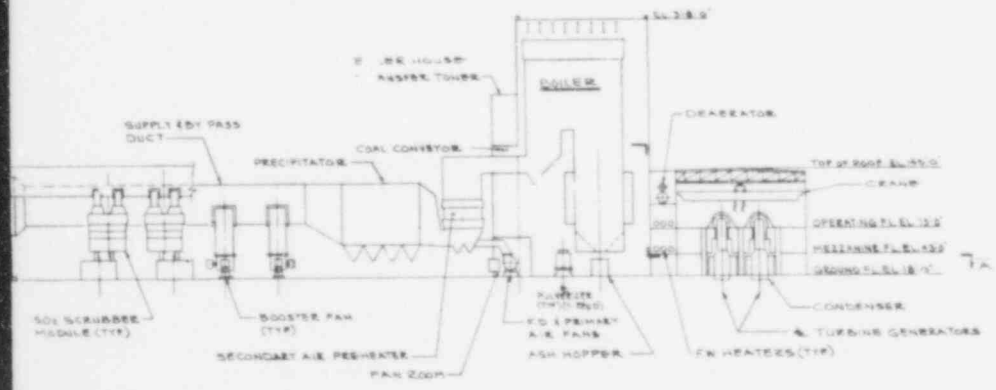
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5 4 3 2 1



PLAN-OPERATING FLOOR-EL. 730'

POOR ORIGINAL



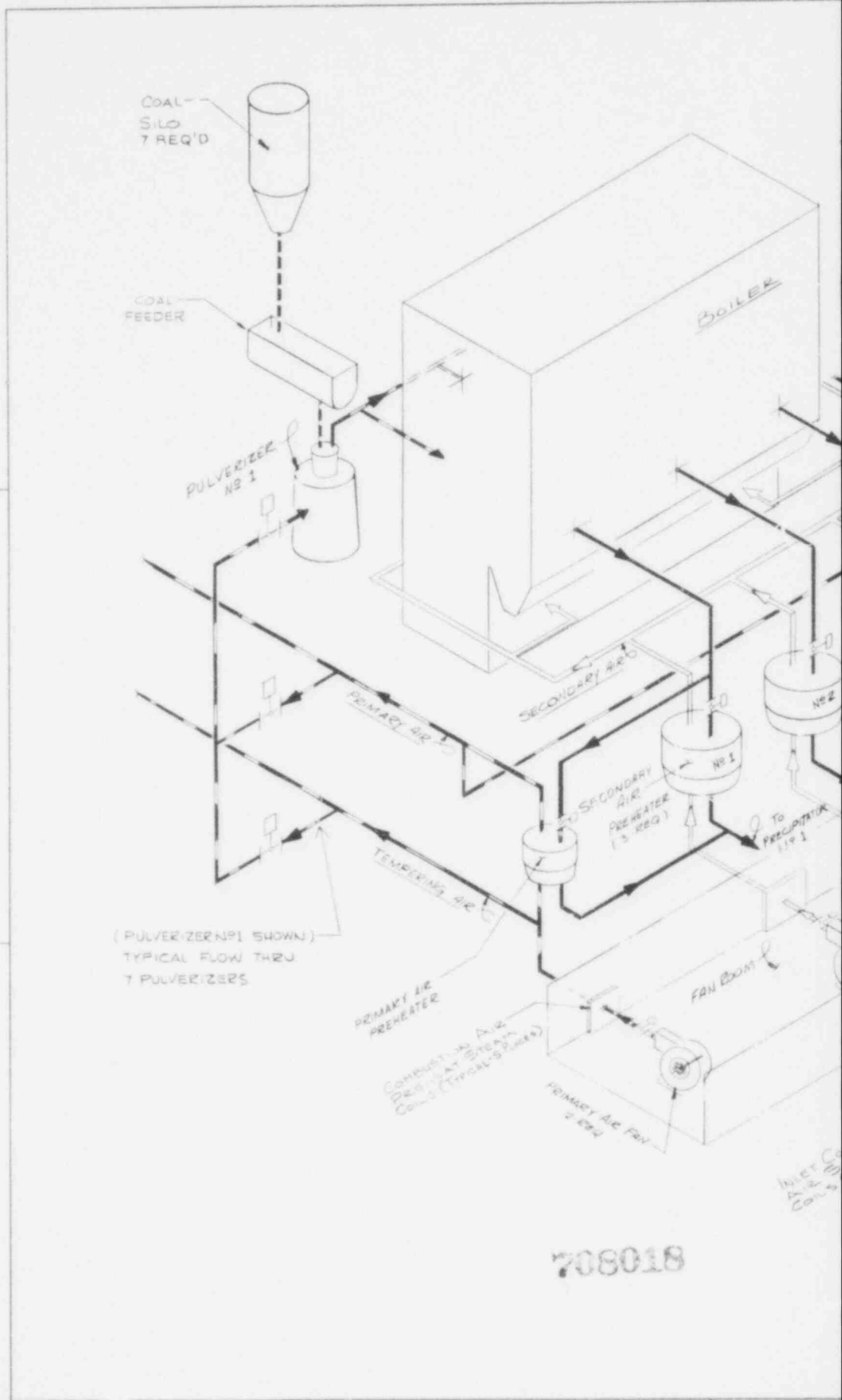
ELEVATION

0 10 20 30
SCALE: 1/4" = 1'-0"
708015

GENERAL ARRANGEMENT
PLANS (EL. 43'-0" & 73'-0")
AND ELEVATION
1232 MW FOSSIL PLANT
MIDTOWN HYPOTHETICAL SITE

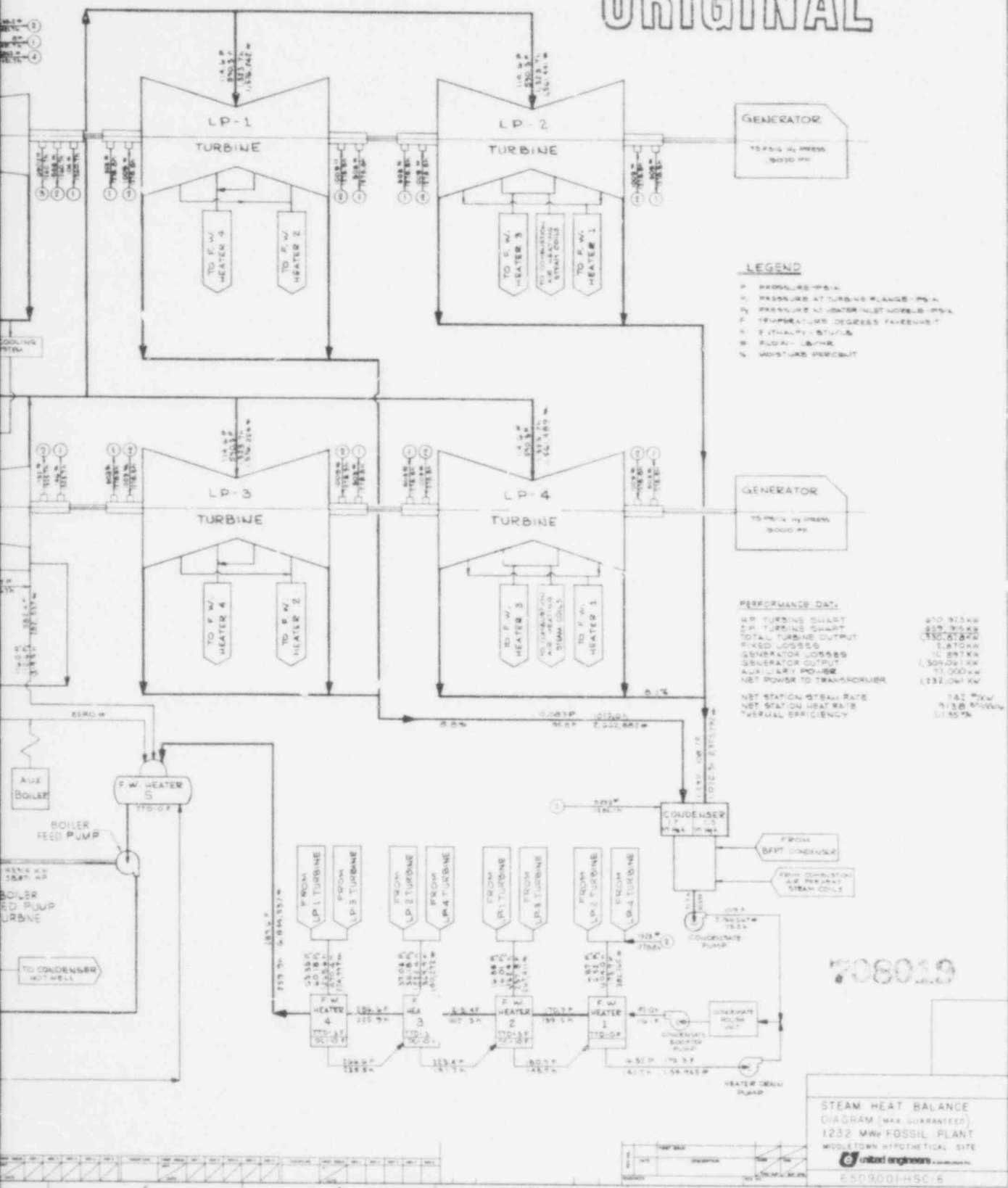
United engineers
6509001-HSC-4



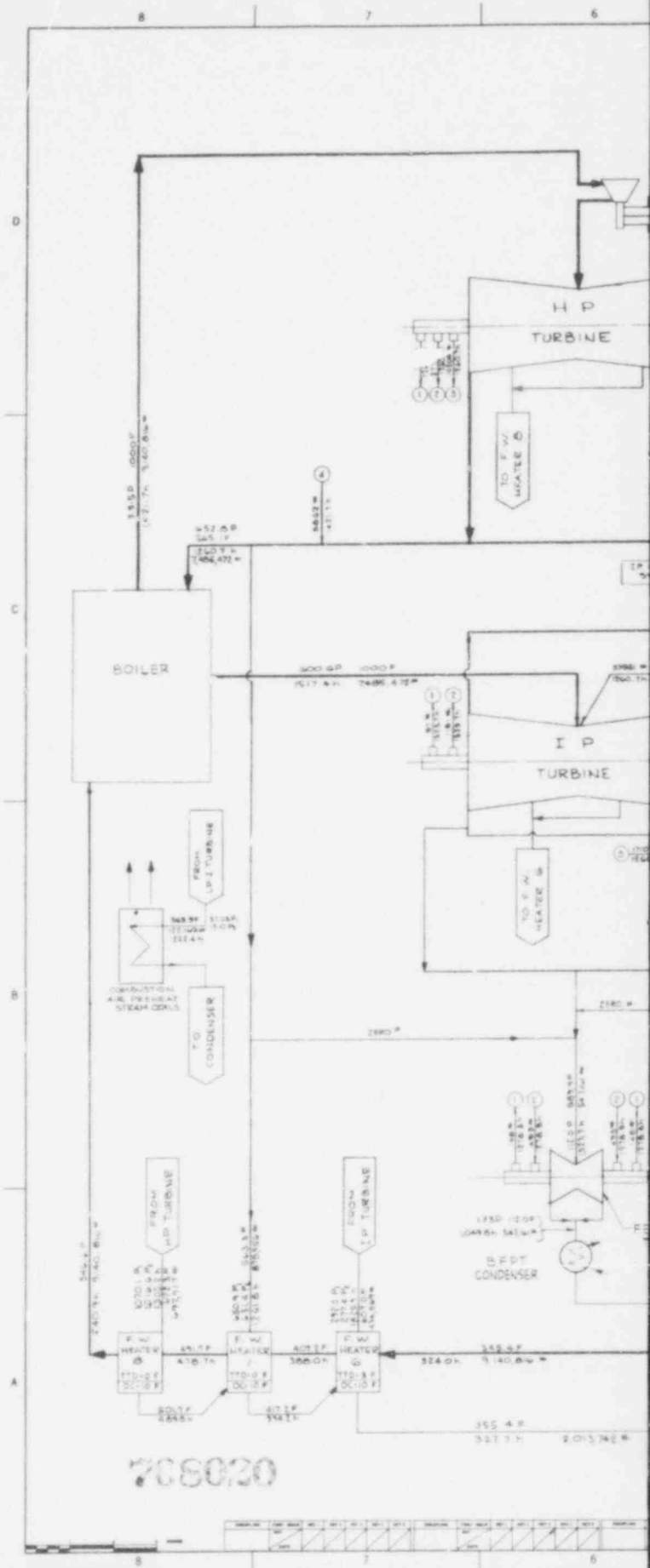


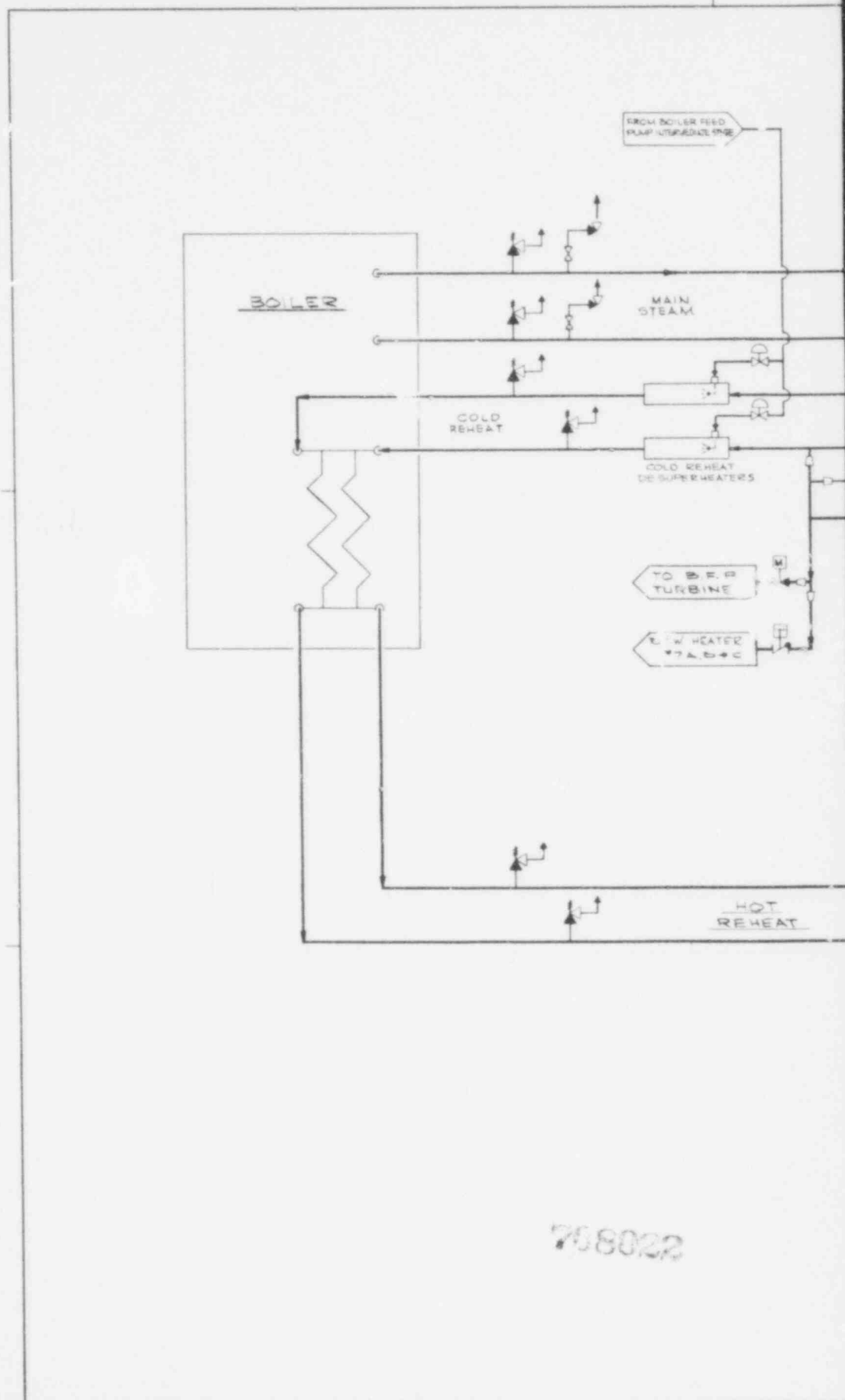
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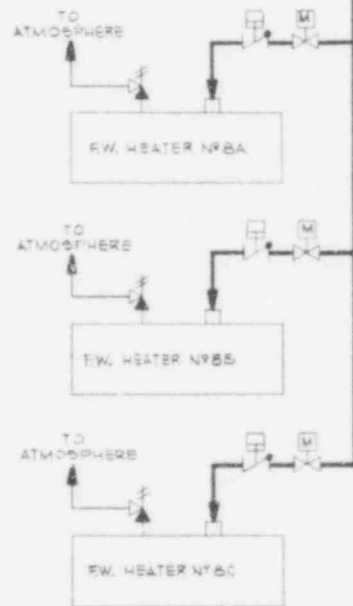


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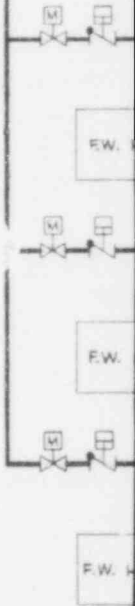




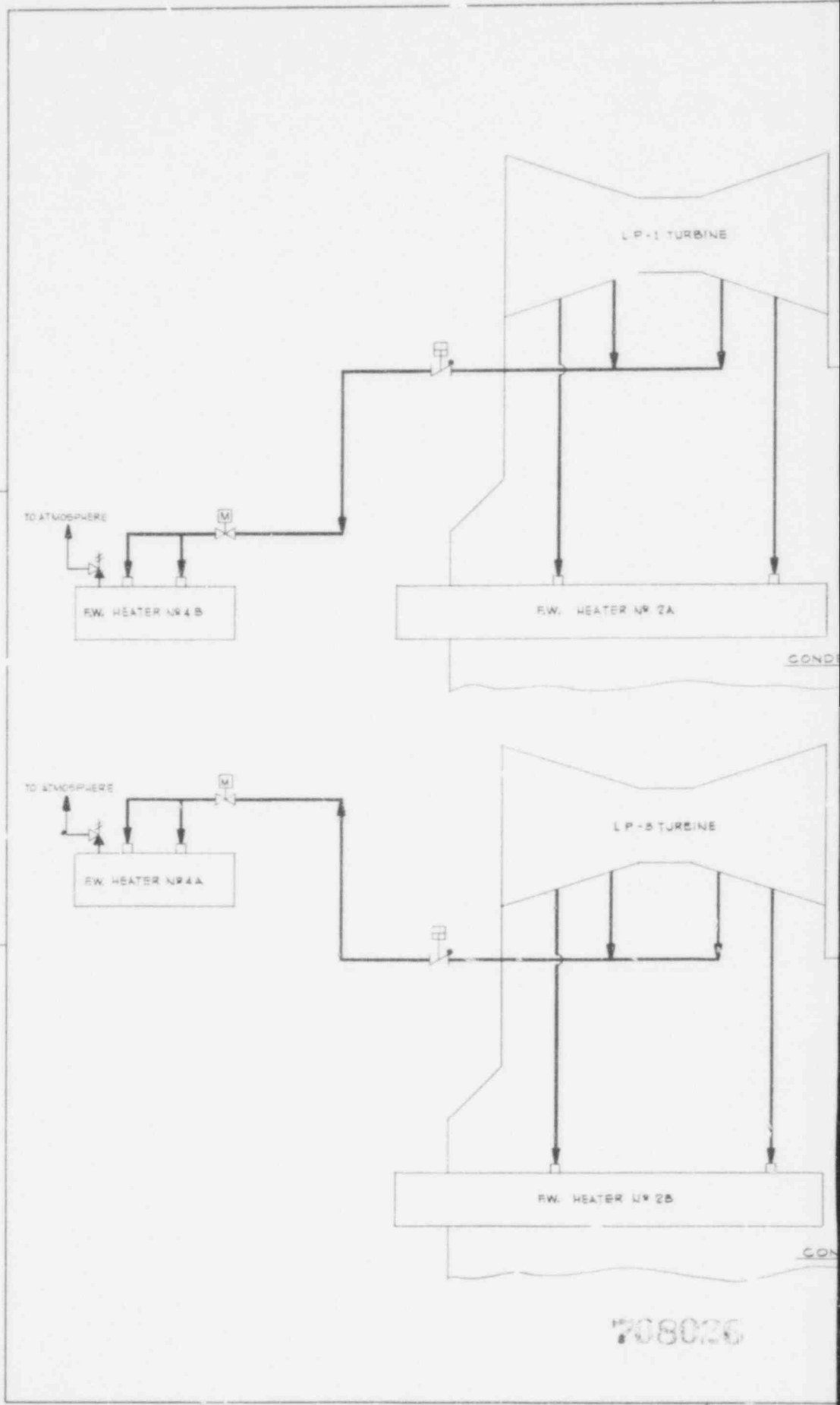
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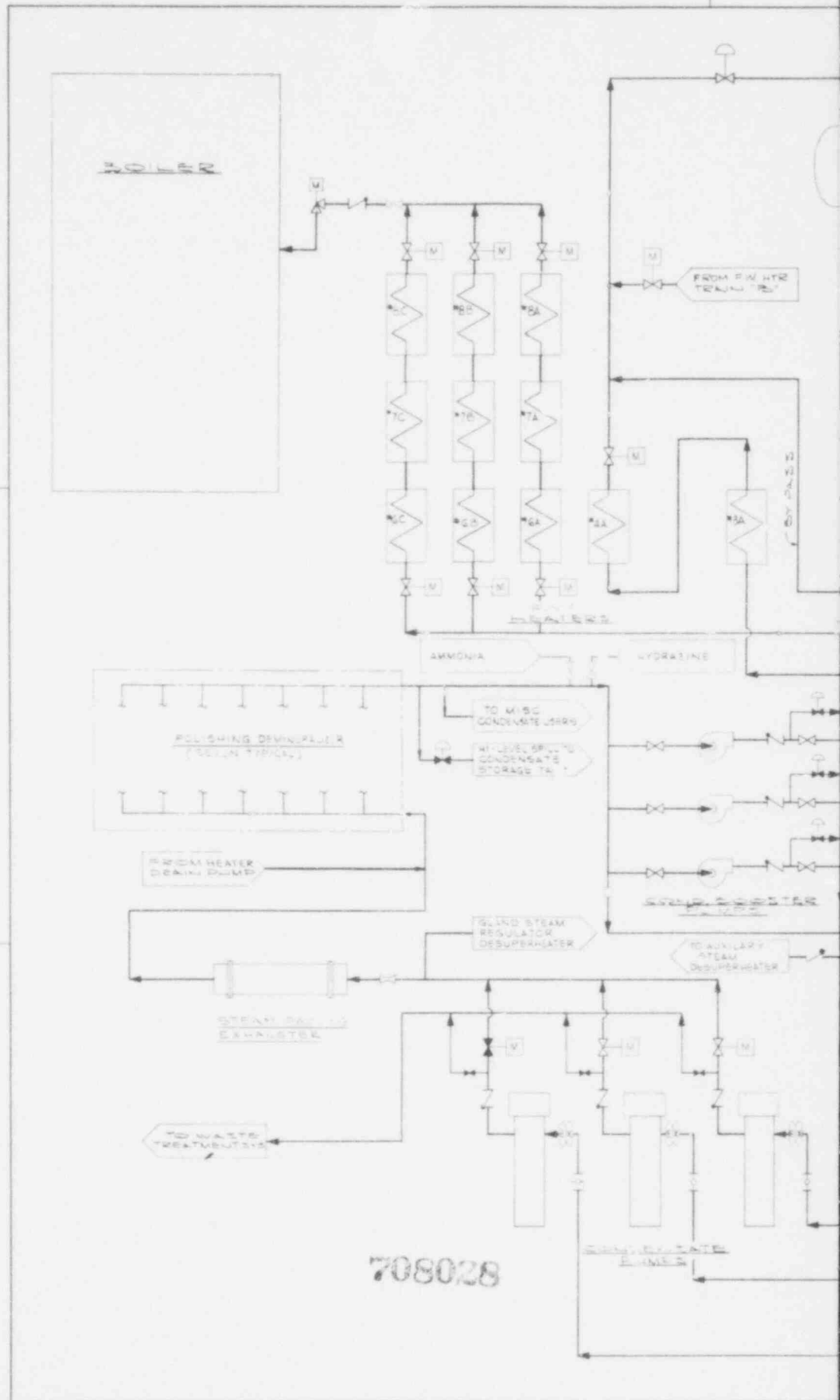
FROM COLD REHEAT

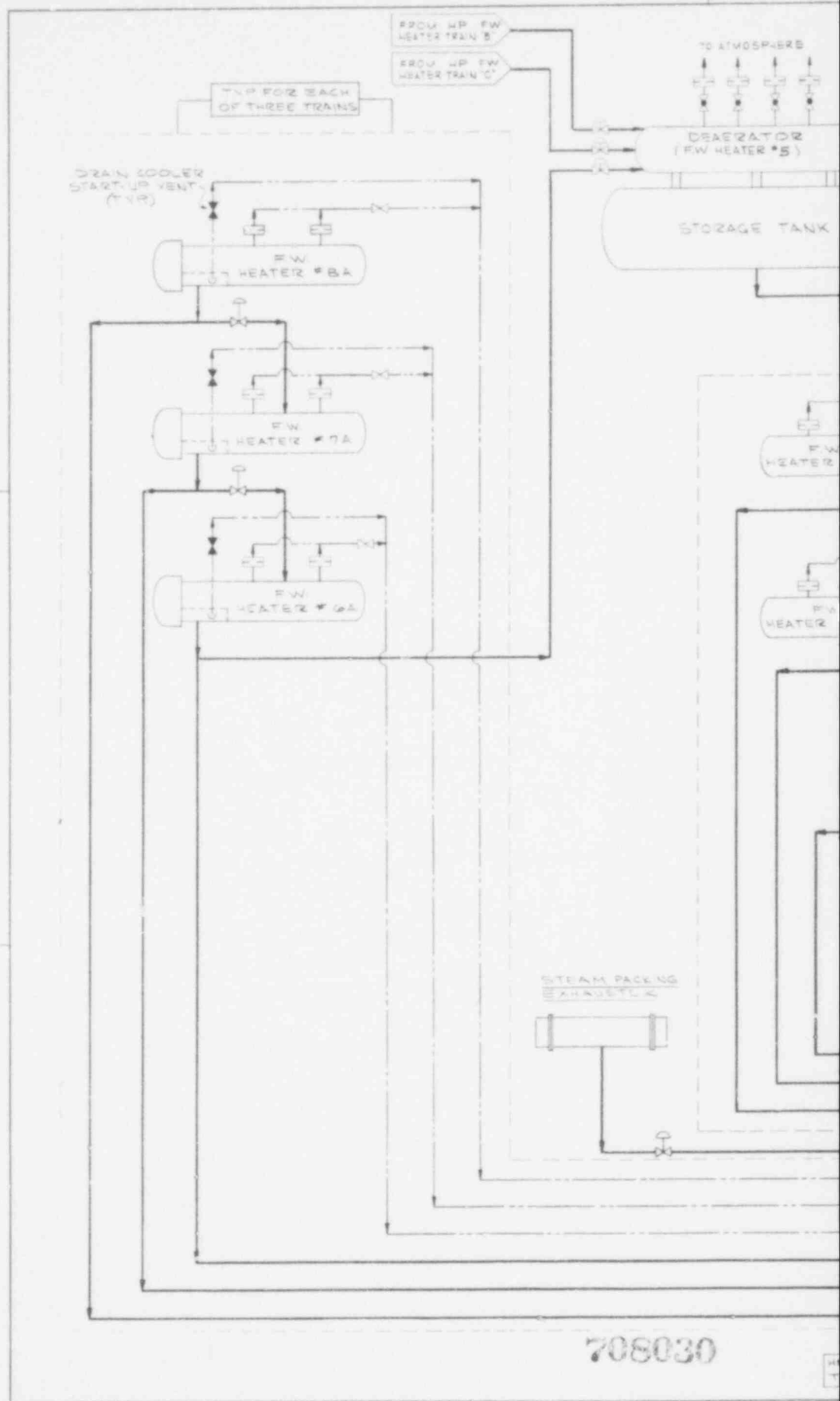


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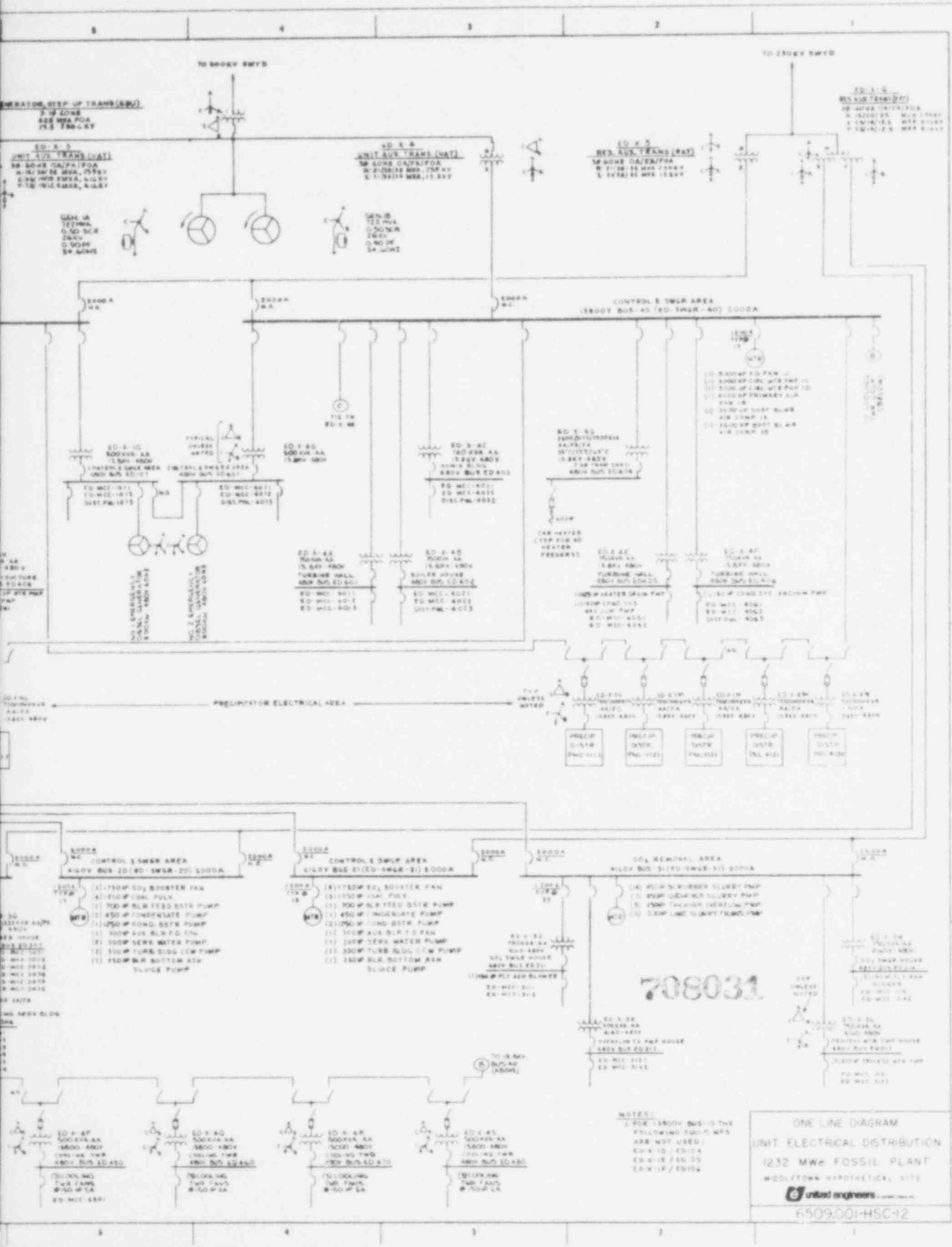


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708030



ED 3-5
 RELAY TRANS (RT)
 3P 500V D/GA/FDA
 4-1200V 25-100A
 4-1200V/15-100A
 4-1200V/15-100A

ED 3-5
 UNIT AUX TRANS (UAT)
 3P 500V D/GA/FDA
 4-1200V 25-100A
 4-1200V/15-100A
 4-1200V/15-100A

ED 3-4
 UNIT AUX TRANS (UAT)
 3P 500V D/GA/FDA
 4-1200V 25-100A
 4-1200V/15-100A
 4-1200V/15-100A

ED 3-3
 RELAY AUX TRANS (RAT)
 3P 500V D/GA/FDA
 4-1200V 25-100A
 4-1200V/15-100A
 4-1200V/15-100A

CONTROL 3 SWGR AREA
 (2500V BUS-40 TO 3WGR-40) 2500V

ED 3-10
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-10

ED 3-11
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-11

ED 3-12
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-12

- (1) 3000W 480V FAN 10
- (1) 3000W 480V FAN 11
- (1) 3000W 480V FAN 12
- (1) 3000W 480V FAN 13
- (1) 3000W 480V FAN 14
- (1) 3000W 480V FAN 15
- (1) 3000W 480V FAN 16
- (1) 3000W 480V FAN 17
- (1) 3000W 480V FAN 18
- (1) 3000W 480V FAN 19
- (1) 3000W 480V FAN 20

ED 3-13
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-13

ED 3-14
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-14

ED 3-15
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-15

ED 3-16
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-16

REMOVAL AREA
 (480V BUS-21 TO 3WGR-21) 480V

ED 3-17
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-17

ED 3-18
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-18

ED 3-19
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-19

ED 3-20
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-20

- (1) 1750W 480V BOOSTER FAN
- (1) 1750W 480V FAN
- (1) 700W 480V FEED SIZR PUMP
- (1) 450W 480V CONDENSATE PUMP
- (1) 450W 480V COND. SSTR PUMP
- (1) 300W 480V BLW F.D. FAN
- (1) 300W 480V SEWE WATER PUMP
- (1) 300W 480V TURB. SIZR. C.W. PUMP
- (1) 450W 480V BLW BOTTOM ASH SLUCE PUMP

- (1) 1750W 480V BOOSTER FAN
- (1) 1750W 480V FAN
- (1) 700W 480V FEED SIZR PUMP
- (1) 450W 480V CONDENSATE PUMP
- (1) 450W 480V COND. SSTR PUMP
- (1) 300W 480V BLW F.D. FAN
- (1) 300W 480V SEWE WATER PUMP
- (1) 300W 480V TURB. SIZR. C.W. PUMP
- (1) 450W 480V BLW BOTTOM ASH SLUCE PUMP

- (1) 450W 480V NUMBER SLUCE PUMP
- (1) 450W 480V SEWE WATER PUMP
- (1) 450W 480V TURB. SIZR. C.W. PUMP
- (1) 450W 480V BLW BOTTOM ASH SLUCE PUMP

- (1) 450W 480V NUMBER SLUCE PUMP
- (1) 450W 480V SEWE WATER PUMP
- (1) 450W 480V TURB. SIZR. C.W. PUMP
- (1) 450W 480V BLW BOTTOM ASH SLUCE PUMP

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ED 3-21
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-21

ED 3-22
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-22

ED 3-23
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-23

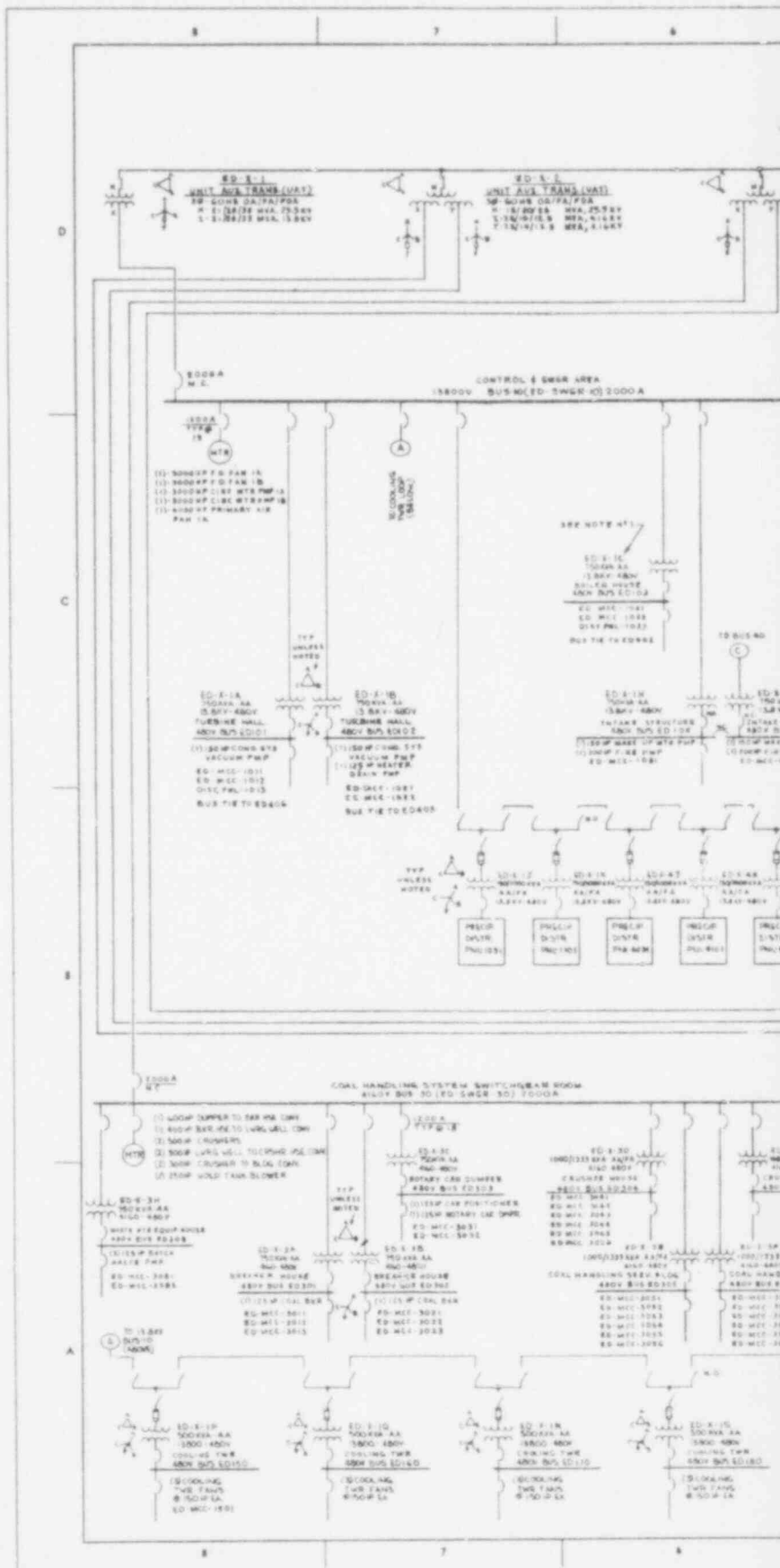
ED 3-24
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-24

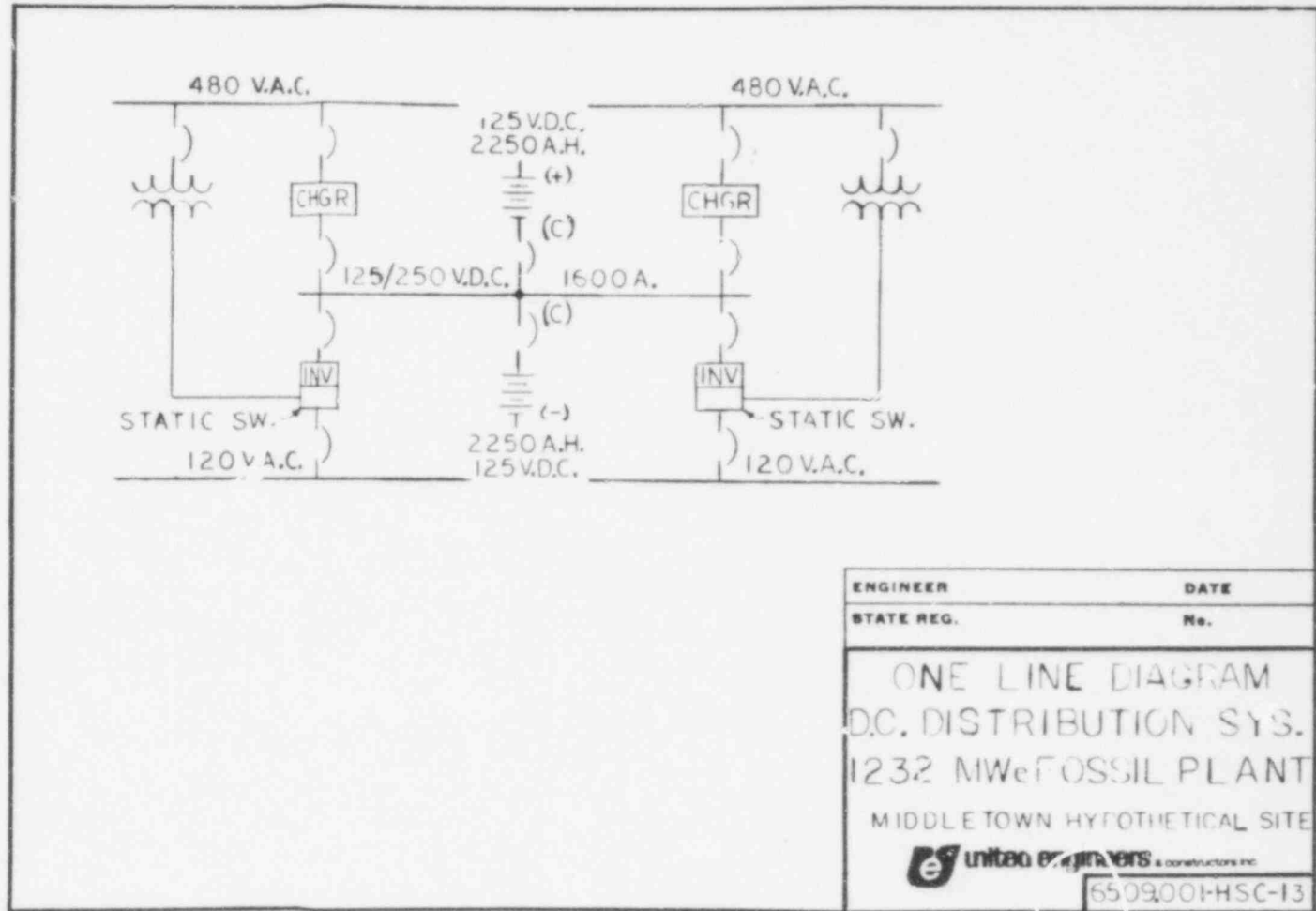
ED 3-25
 3000VA AA
 15.8KV 480V
 CONTROL 3 SWGR AREA
 480V BUS ED 3-25

NOTES:
 1. FOR 2500V BUS IS THE FOLLOWING EQUIP. WFS ARE NOT USED
 ED 3-10 / ED 3-11
 ED 3-12 / ED 3-13
 ED 3-14 / ED 3-15

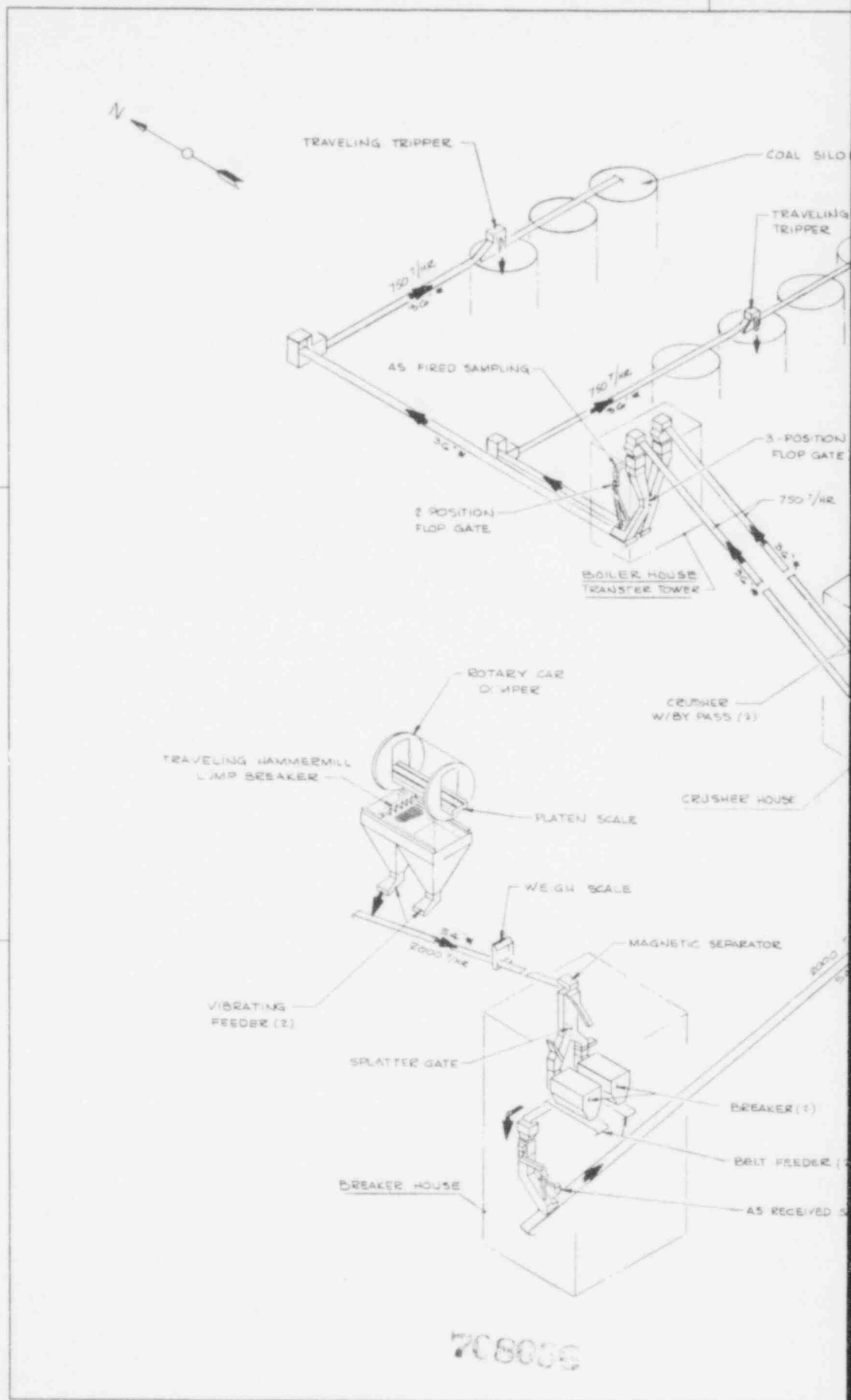
ONE LINE DIAGRAM
 UNIT ELECTRICAL DISTRIBUTION
 1232 MWe FOSSIL PLANT
 WOODFORD HYPOTHEICAL SITE

 6509.001-HSC-12

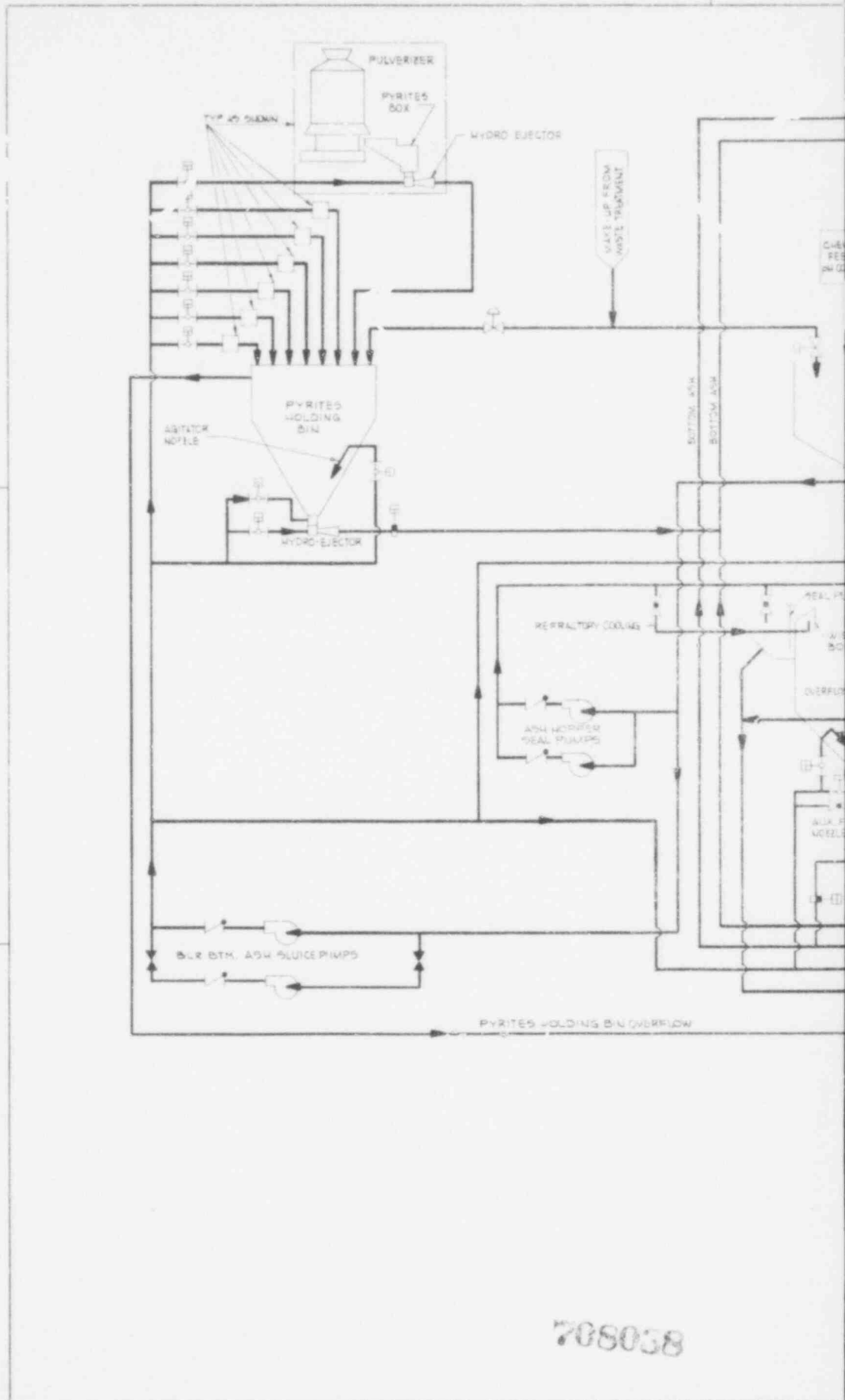




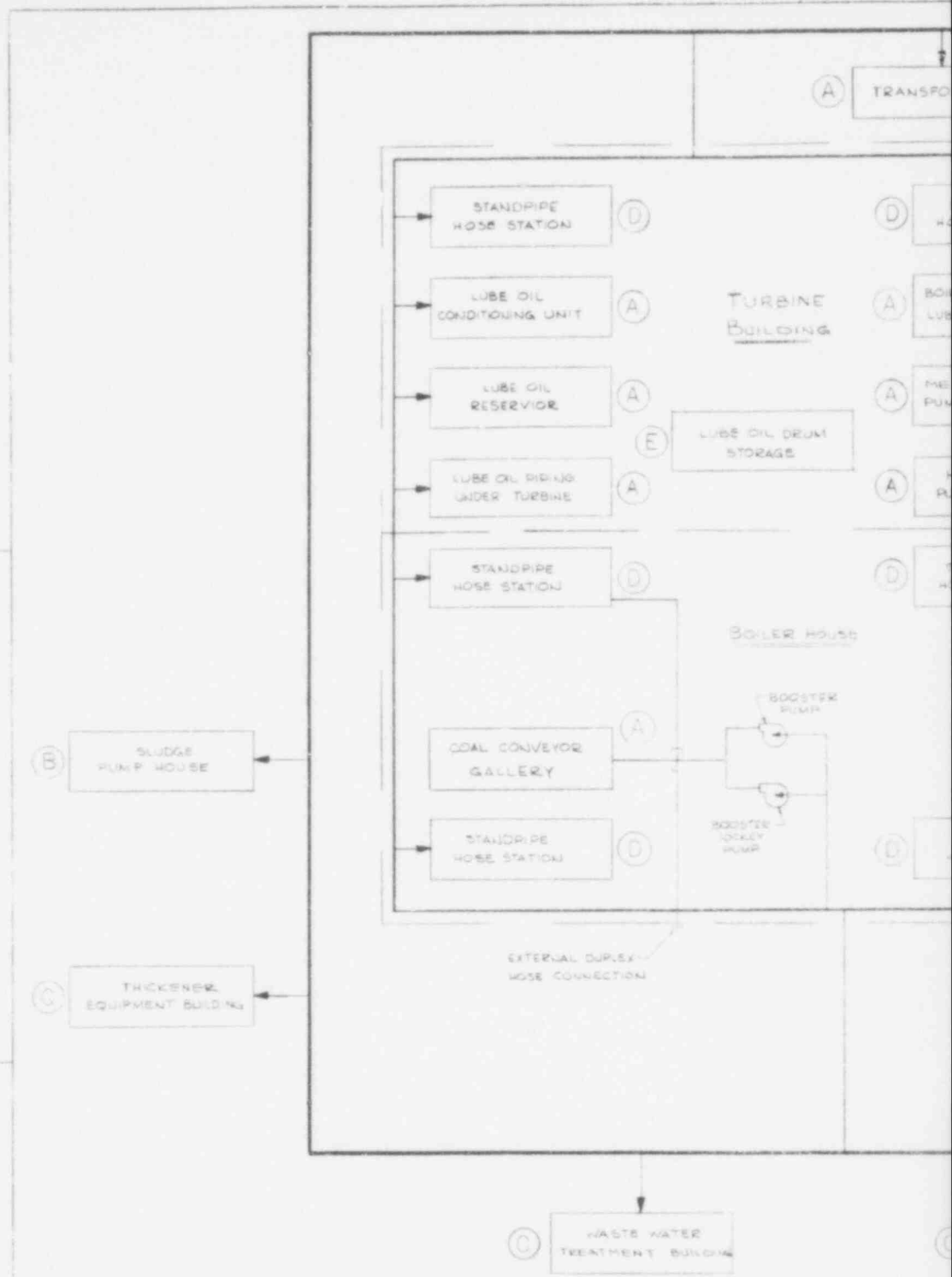
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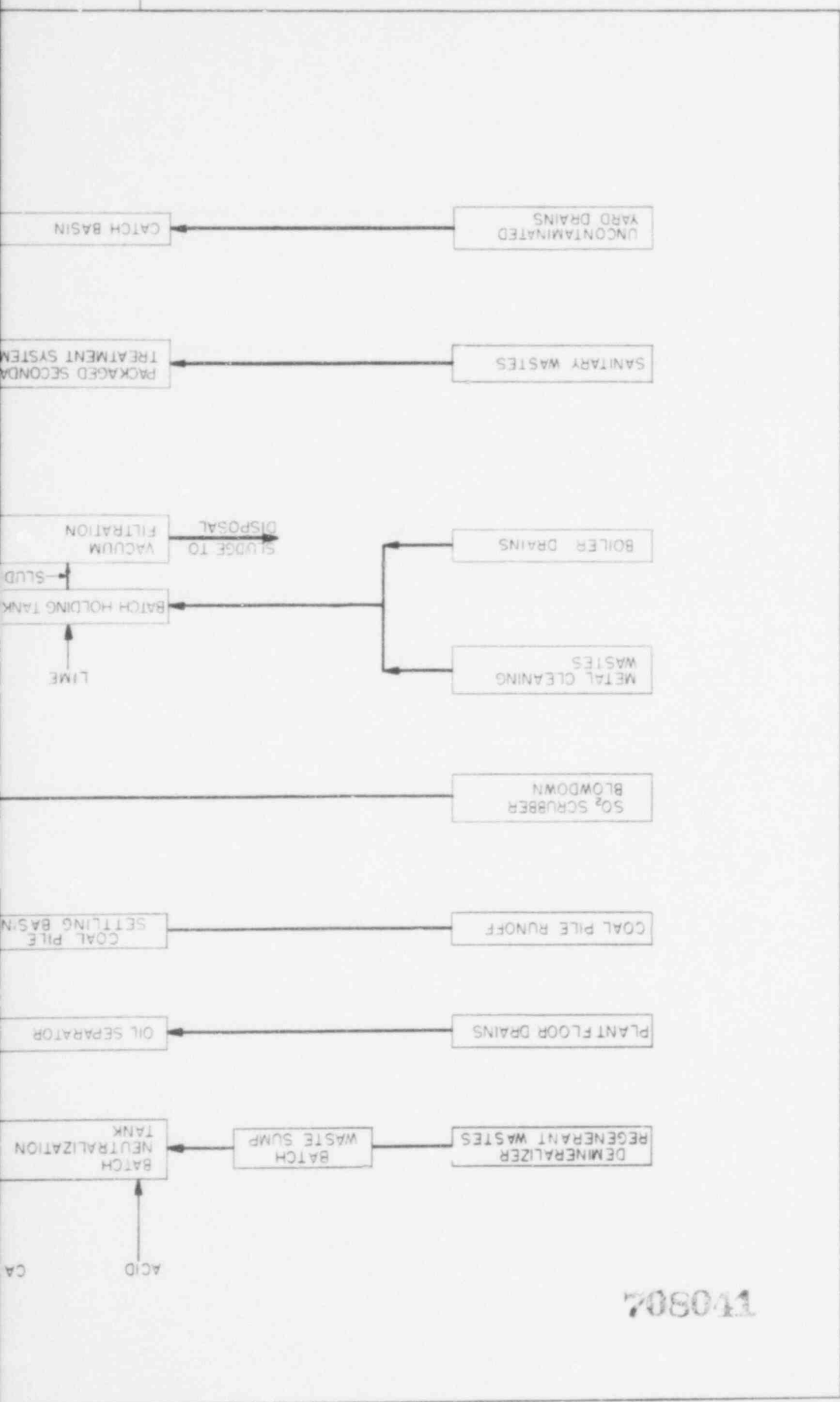
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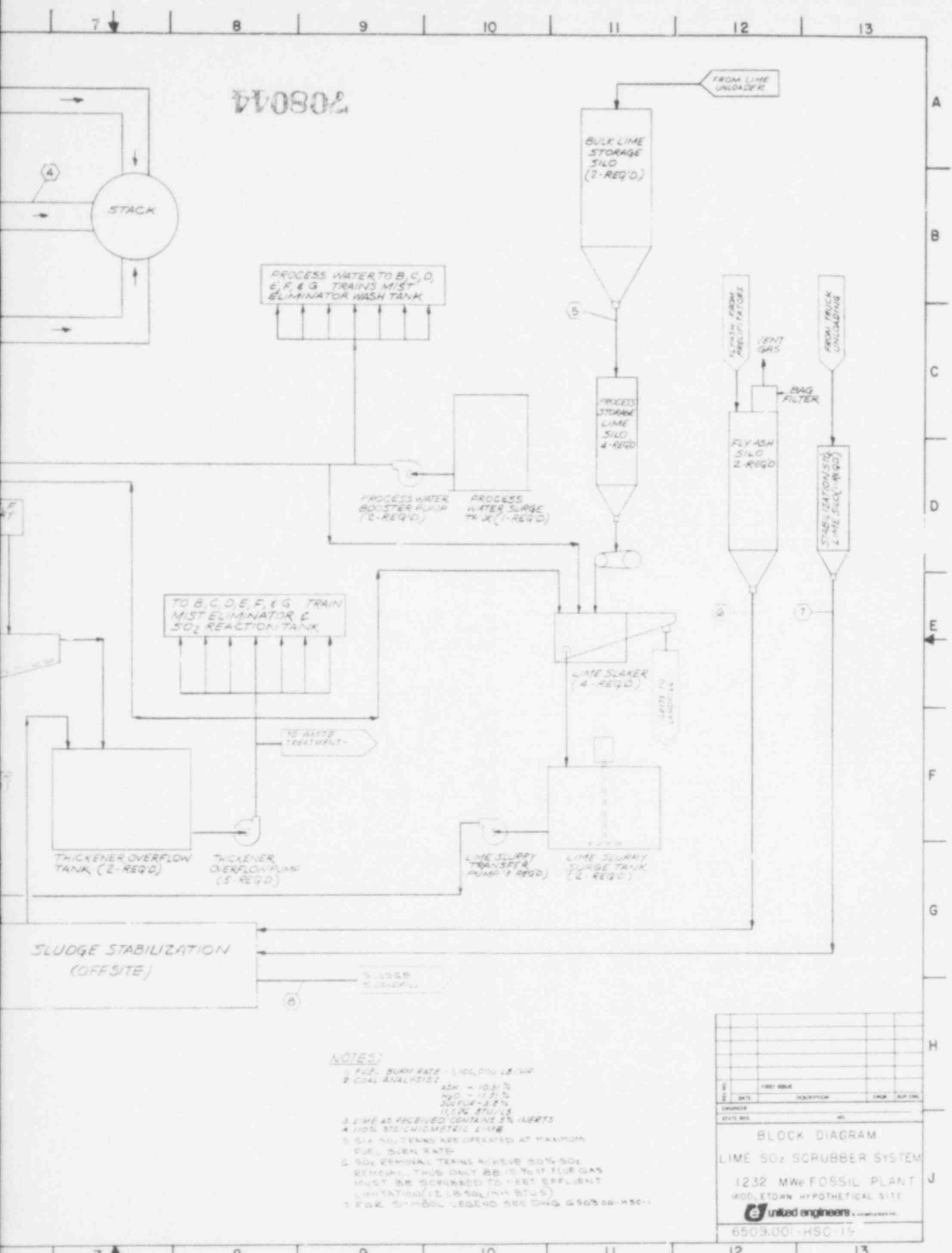
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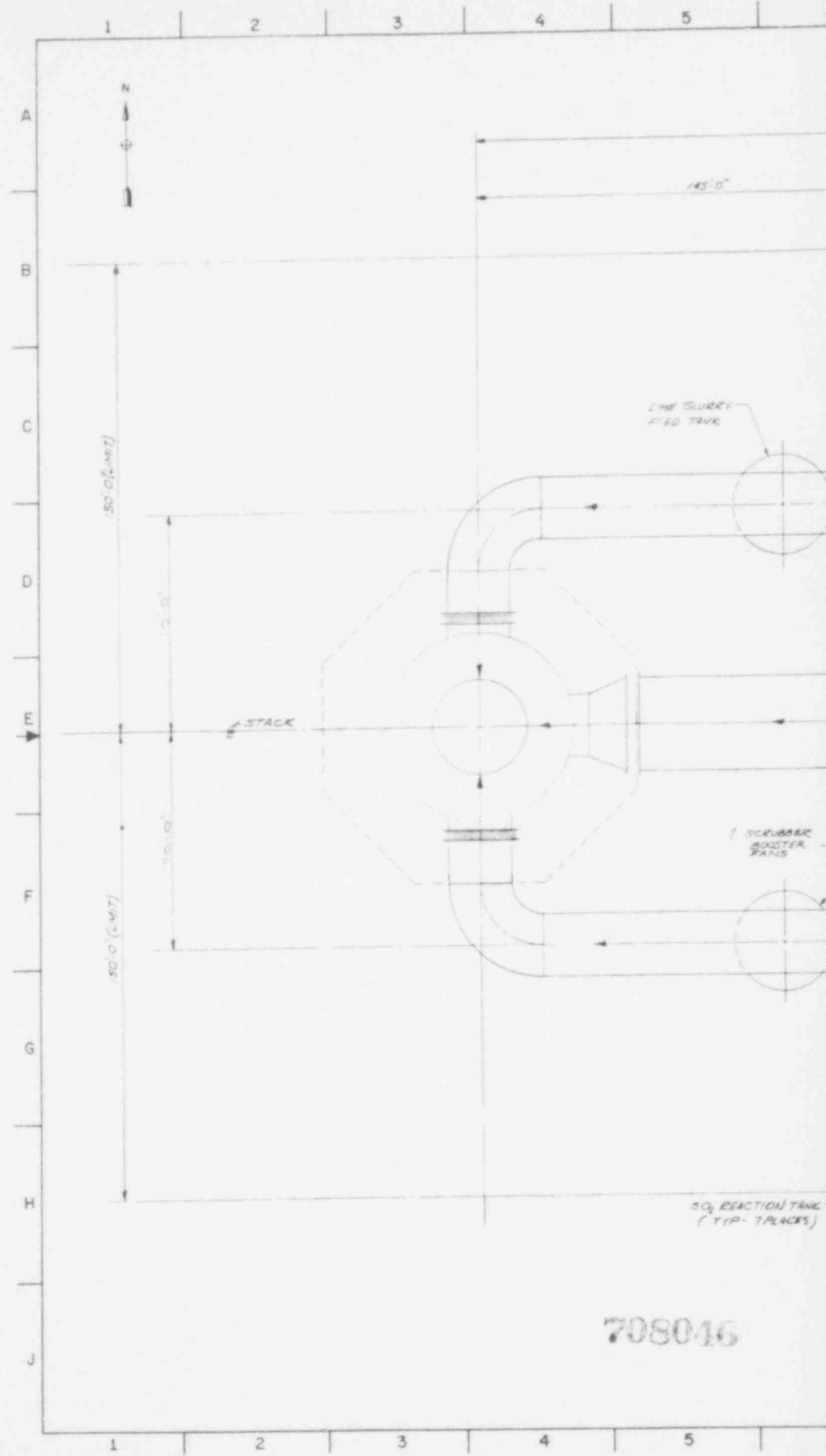


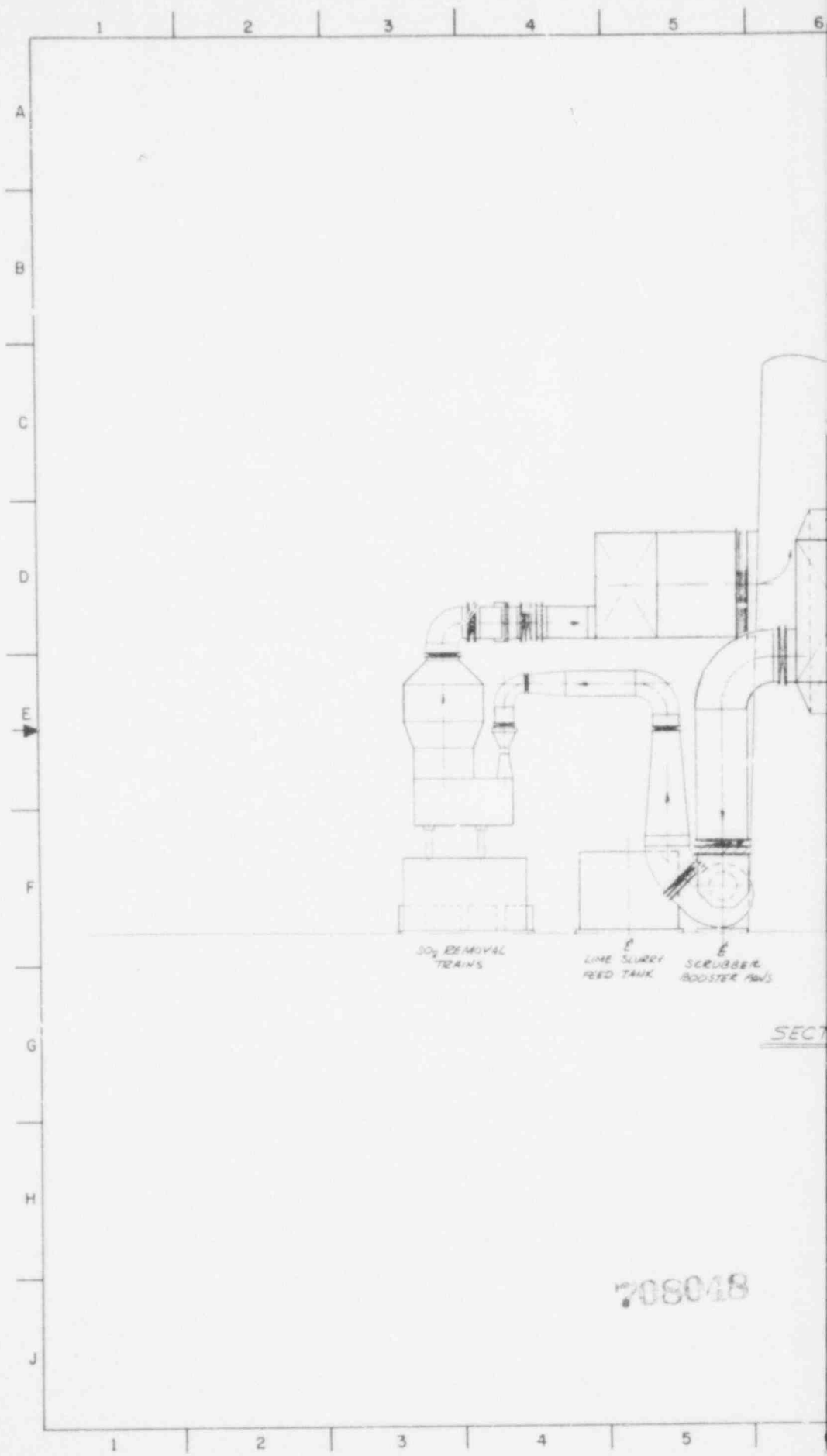
NOTES:

- 1 FUEL BURN RATE = 1,100,000 LB/HR
- 2 COAL ANALYSIS:
 - ASH = 10.2%
 - SULFUR = 1.31%
 - SO₂ FUEL = 0.8%
 - 11.0% STUFFS
- 3 LIME AS RECEIVED CONTAINS 2% INERTS
- 4 100% STOICHIOMETRIC LIME
- 5 SI & SO₂ TRAINS ARE OPERATED AT MAXIMUM FUEL BURN RATE
- 6 SO₂ REMOVAL TRAINS ACHIEVE 80% SO₂ REMOVAL. THIS ONLY MEANS THAT FLUE GAS MUST BE SCRUBBED TO MEET EFFLUENT LIMITATIONS (2.0 LB SO₂/MM BTU)
- 7 FOR 5-MODEL LEGEND SEE DWG 650504-HSC-1

NO.	DATE	DESCRIPTION	CHKD.	APP'D.

BLOCK DIAGRAM
LIME SO₂ SCRUBBER SYSTEM
1232 MWe FOSSIL PLANT
MID-ETOWN HYPOTHETICAL SITE
 united engineers
 6509.001-HSC-15





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SECTION 5
EQUIPMENT LIST

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POOR
ORIGINAL

SECTION 5
EQUIPMENT LIST

5.1 INTRODUCTION

This section describes in detail, the major components of the 1232 MWe HSC Coal-Fired plant design developed for this study. Each of these are described in terms of quantity, type, orientation, capacity or flow, design pressure, design temperature, etc., in sufficient detail to permit preparation of the cost estimate in Section 3, Volume 1 of this report.

As a convenience, the components are listed in accordance with an expanded AEC code-of-accounts (USAEC Report NUS-531), which permits correlation and cross-referencing with the detailed cost estimate.

In order to maintain consistency for the various systems in the equipment list, nine standard sub-account headings are used to group similar items, as follows:

1. Rotating Machinery
2. Heat Transfer Equipment
3. Tanks and Pressure Vessels
4. Purification and Filtration Equipment
5. Piping or Piping and Ductwork
6. Valves or Valves and Dampers
7. Piping - Miscellaneous Items
8. Instrumentation and Control
9. Foundation/Skids

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As a guide for the use of this equipment list, it is important to note that the unit quantities for piping, valves and structural items are excluded and only the code-of-accounts listings are shown. However, the quantities for these items and their associated costs appear in the detailed cost estimate in Section 3 of this report.

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EQUIPMENT LIST - REPORT 1

03/15/77

MODEL 610 - 1232 KWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
20 .	LAND AND LAND RIGHTS	SEE COST ESTIMATE
21 .	STRUCTURES + IMPROVEMENTS	
211.	YARDWORK	SEE COST ESTIMATE FOR STRUCT QUANTITIES
211.1	GENERAL YARDWORK	
211.11	GENERAL CUT + FILL	
211.117	CUT + FILL BEYOND OPEN CUT	
211.112	CLEARING + GRUBBING	
211.113	FINE GRADING	
211.114	LANDSCAPING	
211.12	ROADS, WALKS+PARKING AREA	
211.121	SUBGRADE PREPARATION	
211.122	ON-SITE ROADS+PARKING AREA	
211.1221	ROADS - ASPHALT	
211.1222	PARKING AREAS - ASPHALT	
211.1223	CURBS - CONCRETE	
211.123	WALKS - CONCRETE	
211.14	FENCING + GATES	
211.141	PERMANENT FENCE	
211.142	GATE HOUSE	
211.15	SANITARY SEWER FACILITY	
211.151	SEWAGE TREATMENT FACILITY	
211.152	SANITARY PIPING	
211.1521	2 IN + SMALLER	

708052

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
211.1522	2.5 IN + LARGER	
211.15221	CI BELL + SPIGOT/VNS	
211.153	OIL SEPERATORS	INCLUDED IN ACCOUNTS 212 AND 255
211.16	YARD DRAINAGE STORM SEWERS	
211.161	DRAINS	
211.162	PIPING	
211.1621	2 IN + SMALLER	
211.1622	2.5 IN + LARGER	
211.16221	GALVANIZED/VNS	
211.17	ROADWAY + YARD LIGHTING	
211.19	SETTLING BASINS	INCLUDED IN ACCOUNT 255
211.191	EARTH EXCAVATION	
211.192	ROCK EXCAVATION	
211.193	HACKFILL	
211.194	PUMPING	
211.195	FORMWORK	
211.196	REINFORCING STEEL	
211.197	CONCRETE	
211.198	SHEET PILING	
211.199	RIP-RAP(12 IN. THICK)	
211.4	RAILROADS	
211.41	CUT + FILL	
211.42	GRADING	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
211.43	TRACK(BALLAST,TIES,RAIL)	
211.45	SWITCHES + BUMPERS	
211.451	TURNOUTS(NO. 8)	
211.452	BUMPERS	
211.46	RIP RAP(24 IN. THICK)	
211.7	STRUCTURE ASSOCIATED YDWK.	
211.71	CUT + FILL	
211.711	OPEN CUT	
211.7111	DEWATERING	
211.7112	EARTH EXCAVATION	
211.7113	ROCK EXCAVATION	
211.712	FILL + BK FILL(PLACE/COMP)	
211.7122	EARTH FILL	
211.7123	SAND FILL	
211.7124	CONCRETE FILL	
212.	STEAM GENERATOR BUILDING	SEE COST ESTIMATE FOR STRUCT QUANTITIES
212.1	BUILDING STRUCTURE	
212.11	EXCAVATION WORK	
212.111	EARTH EXCAVATION	
212.112	ROCK EXCAVATION	
212.113	CONCRETE FILL	
212.114	FILL + BACKFILL	
212.115	DEWATERING	

08054

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 1232 PWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWNUSA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
212.13	SUBSTRUCTURE CONCRETE	
212.131	FORMWORK	
212.132	REINFORCING STEEL	
212.133	CONCRETE	
212.134	EMBEDDED STEEL	
212.135	FLOOR FINISH	
212.139	WELDED WIRE FABRIC	
212.14	SUPERSTRUCTURE	
212.141	CONCRETE WORK	
212.1411	FORMWORK	
212.1412	REINFORCING STEEL	
212.1413	CONCRETE	
212.1415	FLOOR FINISH	
212.1416	CONSTRUCTION JOINTS	
212.142	STRUCTURAL + MISC. STEEL	
212.1421	STRUCTURAL STEEL	
212.1422	MISC. FRAMES, ETC.	
212.1423	FLOOR GRATING (GALVANIZED)	
212.1424	STAIR TREADS	
212.1425	HANDRAIL	
212.143	EXTERIOR WALLS	
212.1432	MASONRY WALLS	
212.1433	METAL INSULATED SIDING	

08030*

EQUIPMENT LIST - REPORT 1

MODEL 610 - 1252 MWE/3500 MWI COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
212.144	ROOFING + FLASHING	
212.1441	METAL ROOF DECK	
212.1443	CONCRETE FILL	
212.1444	WELDED WIRE FABRIC	
212.1445	6"O. ROOFING* NO INSULATION	
212.146	INTERIOR WALLS + PARTITION	
212.1462	MASONRY WALLS	
212.1463	METAL PARTITIONS	
212.147	DOORS + WINDOWS	
212.1471	ROLLING STEEL DOORS	
212.1472	PERSONNEL DOORS	
212.1473	SASH + GLAZING	
212.148	SPECIAL FINISHES	
212.1481	VINYL TILE FLOORS	
212.1482	COMPUTER FLO. (S(RAISED))	
212.1485	CERAMIC TILE FLOOR + WALLS	
212.1486	ACOUSTICAL CEILING	
212.149	PAINTING	
212.1492	STEELWORK	
212.1493	HANDRAILS	
212.1494	DOORS + WALLS	
212.2	BUILDING SERVICES	
21	1	PLUMBING + DRAINS

208056

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
212.211	ROOF DRAINS + PIPING	
212.2111	DRAINS	
212.2115	PIPING	
212.212	FLOOR DRAINS + PIPING	
212.2121	DRAINS	
212.2125	PIPING	
212.213	OIL SEPERATOR	
212.22	HEATING VENT + AIR COND	
212.221	BOILER ROOM	
212.2211	ROTATING MACHINERY	
212.22111	BOILER RM ROOF VENT MOTOR	
212.221111	BOILER RM ROOF VENTILATOR	
212.221112	BOILER RM ROOF VENT MOTOR	
212.22112	HEAT TRANSFER EQUIPMENT	
22121	BOILER ROOM UNIT HEATERS	
212.2214	PURIFICATION + FILT EQUIP	
212.22141	BOILER RM VAC CLEAN SYS+MT	
212.221411	BOILER RM VAC CLEAN SYS EQ	
212.221412	BOILER RM VAC CL SYS MOTOR	
212.22142	BUNKER VENTILATION	
212.221421	CYCLONE DUST COLLECTOR	
212.2215	EXHAUST DUCTWORK-BUNKER	

EQUIPMENT COST INCLUDES ALL ITEMS LISTED BELOW

708057

EQUIPMENT LIST - REPORT 1

MODEL 610 - 1232 PWE/5300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
212.2216	VALVES + DAMPERS	
212.22169	SPECIAL VALVES + DAMPERS	
212.221691	BOILER ROOM WALL LOUVERS	
212.222	LUBE OIL DRUM STORAGE	
212.2221	ROTATING MACHINERY	
212.22211	LUBE OIL DM ST EXHST FN+MT	
212.222111	LUBE OIL DM ST EXHAUST FAN	
212.222112	LUBE OIL DM ST EXHST MOTOR	
212.2222	HEAT TRANSFER EQUIPMENT	
212.22221	LUBE OIL DM ST HEATER+MTR	
212.222211	LUBE OIL DM ST UNIT HEATER	
212.222212	LUBE OIL DM ST HEATR MOTOR	
212.2226	VALVES + DAMPERS	
212.22269	SPECIAL VALVES + DAMPERS	
212.222691	LUBE OIL DM ST WALL LOUVER	
212.223	ELEVATOR MACHINE ROOM	
212.2232	HEAT TRANSFER EQUIPMENT	
212.22321	ELEV MACH RM BASEBOARD HTR	
212.2236	VALVES + DAMPERS	
212.22369	SPECIAL VALVES + DAMPERS	
212.223691	ELEV MACH RM WALL LOUVERS	
212.2239	FOUNDATIONS/SKIDS	
212.22391	ELEV MACH RM AIR UNIT+MTR	

708058

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
212.223911	ELEV MACH RM AIR UNIT	
212.223912	ELEV MACH RM AIR UNT MOTOR	
212.224	AUXILIARY BOILER ROOM	
212.2241	ROTATING MACHINERY	
212.22411	AUX BOILER RM EXHST FN+MTR	
212.224111	AUX BOILER RM EXHAUST FAN	
212.224112	AUX BOILER RM EXHST MOTOR	
212.2242	HEAT TRANSFER EQUIPMENT	
212.22421	AUX BOILER RM HEATER+MOTOR	
212.224211	AUX BOILER RM UNIT HEATERS	
212.224212	AUX BOILER RM HEATER MOTOR	
212.2246	VALVES + DAMPERS	
212.22469	SPECIAL VALVES + DAMPERS	
212.224691	AUX BOILER RM WALL LOUVER	
212.225	MACHINE SHOP	
212.2251	ROTATING MACHINERY	
212.22511	MACHINE SHOP EXHST FAN+MTR	
212.225111	MACHINE SHOP EXHAUST FAN	
212.225112	MACHINE SHOP EXHAUST MOTOR	
212.2252	HEAT TRANSFER EQUIPMENT	
212.22521	MACH SHOP UNIT HEATERS+MTR	
212.225211	MACHINE SHOP UNIT HEATERS	
212.225212	MACH SHOP UNIT HEATER MTR	

650602

EQUIPMENT LIST - (POINT 1)

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

08/15/77

ACCOUNT NUMBER	ITEM	DESCRIPTION
212.2256	VALVES + DAMPERS	
212.22569	SPECIAL VALVES + DAMPERS	
212.225691	MACHINE SHDP WALL LOUVERS	
212.226	AIR COMPRESSOR ROOM	
212.2261	ROTATING MACHINERY	
212.22611	AIR COMP RM EXHST FAN+MTR	
212.226111	AIR COMP RM EXHAUST FAN	
212.226112	AIR COMP RM EXHAUST MOTOR	
212.2262	HEAT TRANSFER EQUIPMENT	
212.22621	AIR COMP RM UNIT HEATR+MTR	
212.226211	AIR COMP RM UNIT HEATERS	
212.226212	AIR COMP RM UNIT HEATR MTR	
212.2266	VALVES + DAMPERS	
212.22669	SPECIAL VALVES + DAMPERS	
212.226691	AIR COMP RM WALL LOUVERS	
212.227	COAL TRIPPER GALLERY	
212.2271	ROTATING MACHINERY	
212.22711	COAL TRIP GAL ROOF VENT+MT	
212.227111	COAL TRIP GAL ROOF VENT	
212.227112	COAL TRIP GAL ROOF VENT MT	
212.228	INSTRUMENTATION + CONTROL	
212.24	LIGHTING + SERVICE POWER	
212.25	ELEVATOR	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
212.251	ELEVATOR EQUIPMENT	
212.26	FIRE PROTECTION SYSTEM	
212.261	ROTATING MACHINERY	
212.2611	FIRE PROTECTION PUMP+MOTOR	
212.26111	FIRE PROTECTION PUMP	QUANTITY - 2 X 100 PCT. TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 500 GPM SPEED - TDH - 400 FT BHP - 63 HP NPSH - EFFICIENCY - 60 PCT. DESIGN PRESS - 200 PSI DESIGN TEMP - 100 F MATERIAL - C.S DESIGN CODE - NATIONAL FIRE PROTECTN ASSOCIATION
212.26112	FIRE PROTECTION PUMP MOTOR	QUANTITY - 2 TYPE - HORSEPOWER - 75 SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
212.262	HOSE + SPRAY EQUIPMENT	
212.2621	HOSE REELS	
212.2622	SPRAY HEADS	
212.265	PIPING	
212.2652	2.5 IN + LARGER	
212.26521	CS/NNS	
213.	TURBINE, HEATER, CONTROL BLD	SEE COST ESTIMATE FOR STRUCT QUANTITIES
213.1	BUILDING STRUCTURE	

1008001

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 NWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213.11	EXCAVATION WORK	
213.111	EARTH EXCAVATION	
213.112	ROCK EXCAVATION	
213.113	CONCRETE FILL	
213.114	FILL + BACKFILL	
213.115	DEWATERING	
213.13	SUBSTRUCTURE CONCRETE	
213.131	FORMWORK	
213.132	REINFORCING STEEL	
213.133	CONCRETE	
213.134	EMBEDDED STEEL	
213.135	FLOOR FINISH	
213.136	WATERPROOFING	
213.137	CONSTRUCTION JOINTS	
213.138	RUBBING CONCRETE SURFACE	
213.139	WIRE FABRIC	
213.14	SUPERSTRUCTURE	
213.141	CONCRETE WORK	
213.1411	FORMWORK	
213.14111	FORMWORK - WOOD	
213.14112	FORMWORK - METAL	
213.1412	REINFORCING STEEL	
213.1413	CONCRETE	

206052

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213.1414	EMBEDDED STEEL	
213.1415	FLOOR FINISH	
213.1416	WATERPROOFING	
213.1417	RUBBING CONCRETE SURFACES	
213.1418	CONSTRUCTION JOINTS	
213.142	STRUCTURAL + MISC STEEL	
213.1421	STRUCTURAL STEEL	
213.1422	FLOOR + PLATFORM SUPPORTS	
213.1423	MISC FRAMES, ETC	
213.1424	CHECKERED PLATE	
213.1425	FLOOR GRATING (GALV)	
213.1426	STAIR TREADS	
213.1427	HANDRAIL	
213.143	EXTERIOR WALLS	
213.1431	CONCRETE WALLS	
213.1432	MASONRY WALLS	
213.1433	METAL INSULATED SIDING	
213.144	ROOF DECK	
213.1441	METAL ROOF DECK	
213.1442	CONCRETE PLANK	
213.1443	CONCRETE FILL	
213.1444	REINFORCING STEEL	
213.145	ROOFING + FLASHING	

208063

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 01U - 1232 MWE/3500 MWT COAL - 2,5/1.7 IN HS AV - MIDDLETRMN*USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213.1431	R.V. ROOF INSULATION+FLASH	
213.1432	ELASTOMERIC ROOFING	
213.146	INTERIOR WALLS+PARTITIONS	
213.1461	MASONRY WALLS	
213.1462	CONCRETE BLOCK WALLS	
213.1463	METAL PARTITIONS	
213.147	DOORS + WINDOWS	
213.1471	ROLLING STEEL DOORS	
213.1472	PERSONNEL DOORS	
213.1473	SASH + GLAZING	
213.148	SPECIAL FINISHES	
213.1481	VINYL TILE FLOORS	
213.1484	ACOUSTICAL CEILING	
213.149	PAINTING	
213.1491	CONCRETE	
213.1492	STEELWORK	
213.1493	DOORS + WALLS	
213.1494	HANDRAIL	
213.2	BUILDING SERVICES	
213.21	PLUMBING + DRAINS	
213.211	ROOF DRAINS + PIPING	
213.2111	DRAINS	
213.2115	PIPING	

708064

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 613 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN MG A - MIDDLETONNAUSA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213.21151	2 IN + SMALLER	
213.21152	2.5 IN + LARGER	
213.211521	GALV STEEL/MNS	
213.212	FLOOR DRAINS + PIPING	
213.2121	DRAINS	
213.2125	PIPING	
213.21251	2 IN + SMALLER	
213.21252	2.5 IN + LARGER	
213.212521	CS/MNS	
213.212522	CS/MNS	
213.212523	PVC/MNS	
213.213	PUMPS	
213.2131	DRAIN PUMP + MOTOR	
213.21311	DRAIN PUMP	QUANTITY - 2 TYPE - CENTRIFUGAL ORIENTATION - VERTICAL FLOW RATE - 50 GPM SPEED - TDH - BHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
213.21312	DRAIN PUMP MOTOR	TYPE - AC INDUCTION HORSEPOWER - 3 SPEED - VOLTAGE - 460 V, 3 PHASE, 60 HZ

208065

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1282 PNE/3500 MWT COAL - 2.5/7.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213.214	SANITARY DRAINS + PIPING	
213.2141	SANITARY FIXTURES	
213.2145	PIPING	
213.21451	2 IN + SMALLER	
213.214511	CI/MS	
213.214512	CORNER/MS	
213.21452	2.5 IN + LARGER	
213.214521	CI/MS	
213.22	HEATING, VENT + AIR COND	
213.221	GENERAL BUILDING	
213.2211	ROTATING MACHINERY	
213.22111	ROOF VENTILATOR + MOTOR	
213.221111	ROOF VENTILATOR	
213.221112	ROOF VENTILATOR MOTOR	
213.2212	HEAT TRANSFER EQUIPMENT	
213.22121	STEAM HEATER UNIT + MOTOR	
213.221211	STEAM UNIT HEATER	
213.221212	STEAM UNIT MOTOR	
213.2215	PIPING	
213.22151	2 IN + SMALLER	
213.221511	CS/MS	
213.22152	2.5 IN + LARGER	

EQUIPMENT COST INCLUDES ALL ITEMS LISTED BELOW

08066

EQUIPMENT LIST - REPORT 1

MODEL 610 - 1232 MWE/3300 MMT COAL - 2,571.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

08/15/77

ACCOUNT NUMBER	ITEM	DESCRIPTION
213.221521	CS/NS	
213.2216	VALVES + DAMPERS	
213.22161	GATE	
213.22162	CHECK	
213.22164	SPECIAL VALVES + DAMPERS	
213.221691	INTAKE LCOVERS	
213.2217	PIPING - MISC ITEMS	
213.22171	HANGERS + SUPPORTS	
213.22172	INSULATION	
213.222	HEATER BAY	
213.2221	ROTATING MACHINERY	
213.22211	ROOF VENTILATOR + MOTOR	
213.222111	ROOF VENTILATOR	
213.222112	ROOF VENTILATOR MOTOR	
213.223	LUBE OIL ROOM	
213.2231	ROTATING MACHINERY	
213.22311	LUBE OIL RM EXHST FAN+MTR	
213.223111	LUBE OIL RM EXHST FAN	
213.223112	LUBE OIL RM EXHST FAN MTR	
213.2236	VALVES	
213.22369	SPECIAL VALVES + DAMPERS	
213.223691	DAMPERS	
213.225	CONTROL ROOM	

208067

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213.2251	ROTATING MACHINERY	
213.22511	CHILLER WATER PUMP + MOTOR	
213.225111	CHILLER WATER PUMP	
213.225112	CHILLER WATER PUMP MOTOR	
213.22512	CONTROL RM EXHST FAN+MOTOR	
213.225121	CONTROL RM EXHST FAN	
213.225122	CONTROL RM EXHST FAN MOTOR	
213.2252	HEAT TRANSFER EQUIPMENT	
213.22521	CHILLER + MOTOR	
213.225211	CHILLER	
213.225212	CHILLER MOTOR	
213.22522	MULTIZONE AIR UNIT+MOTOR	
213.225221	MULTIZONE AIR HANDLING UN	
213.225222	MULTIZONE AIR UNIT MOTOR	
213.22523	HEATING+VENT AIR UNIT+MTR	
213.225231	HEATING+VENT AIR UNIT	
213.225232	HEATING+VENT AIR UNIT MTR	
213.2255	PIPING + DUCTWORK	
213.22551	GENERAL DUCTWORK	
213.226	WATER SAMPLING ROOM	
213.2261	ROTATING MACHINERY	
213.22611	WATR SAMP RM EXHST FAN+MTR	
213.226111	WATER SAMP RM EXHST FAN	

208008

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213.226112	WATR SAMP RM EXHST FAN MTR	
213.227	COAL SAMPLING ROOM	
213.2271	ROTATING MACHINERY	
213.22711	COAL SAMP RM EXHST FAN+MTR	
213.227111	COAL SAMP RM EXHST FAN	
213.227112	COAL SAMP RM EXHST FAN MTR	
213.228	BATTERY ROOM	
213.2281	ROTATING MACHINERY	
213.22811	BATTERY ROOM EXHST FAN+MTR	
213.228111	BATTERY ROOM EXHST FAN	
213.228112	BATTERY ROOM EXHST FAN MTR	
213.229	INSTRUMENTATION + CONTROL	
213.23	FIRE PROTECTION SYSTEM	
213.232	HOSE + S-TAY EQUIPMENT	
213.2321	HOSE REELS	
213.2322	SPRAY HEADS	
213.235	PIPING	
213.2352	2.5 IN + LARGER	
213.23521	CS/NNS	
213.236	VALVES	
213.2369	SPECIAL VALVES	
213.23691	DELUGE VALVES	
213.24	LIGHTING + SERVICE POWER	

690902

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
2188.	ADMINISTRATION+SERVICE BLD	SEE COST ESTIMATE FOR STRUCT QUANTITIES
2188.1	BUILDING STRUCTURE	
2188.11	EXCAVATION WORK	
2188.111	EARTH EXCAVATION	
2188.112	ROCK EXCAVATION	
2188.113	CONCRETE FILL	
2188.114	FILL + BACKFILL	
2188.115	DEWATERING	
2188.13	SUBSTRUCTURE CONCRETE	
2188.131	FORMWORK	
2188.132	REINFORCING STEEL	
2188.133	CONCRETE	
2188.134	EMBEDDED STEEL	
2188.135	FLOOR FINISH	
2188.136	WATERPROOFING	
2188.137	CONSTRUCTION JOINTS	
2188.138	RUBBING CONCRETE SURFACES	
2188.139	WELDED WIRE FABRIC	
2188.14	SUPERSTRUCTURE	
2188.141	CONCRETE WORK	
2188.1411	FORMWORK	
2188.14111	FORMWORK-WOOD	
2188.14112	FORMWORK-METAL	

0208070

EQUIPMENT LIST - REPORT 1

06/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
218B.1412	REINFORCING STEEL	
218B.1413	CONCRETE	
218B.1414	EMBEDDED STEEL	
218B.1415	FLOOR FINISH	
218B.1416	WATERPROOFING	
218B.1417	RUBBING CONCRETE SURFACES	
218B.1418	CONSTRUCTION JOINTS	
218B.142	STRUCTURAL + MISC. STEEL	
218B.1421	STRUCTURAL STEEL	
218B.1423	MISC. FRAMES, ETC.	
218B.1425	FLOOR GRATING (GALV.)	
218B.1426	STAIR TREADS	
218B.1427	HANDRAIL	
218B.143	EXTERIOR WALLS	
218B.1431	CONCRETE WALLS	
218B.1432	MASONRY WALLS	
218B.1433	METAL INSULATED SIDING	
218B.1434	WINDOW WALL	
218B.144	ROOF DECK	
218B.1442	PRECAST CONCRETE PANELS	
218B.145	ROOFING + FLASHING	
218B.1451	B.U. ROOF INSUL + FLASHING	
218B.146	INTERIOR WALLS+PARTITIONS	

170807

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 M+E/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
2188.1462	MASONRY WALLS	
2188.1463	METAL PARTITIONS	
2188.147	DOORS + WINDOWS	
2188.1471	ROLLING STEEL DOORS	
2188.1472	PERSONNEL DOORS	
2188.1473	SASH + GLAZING	
2188.148	WALLS + FLOOR + CEILING FINISH	
2188.1481	VINYL FLOOR TILE	
2188.1482	CERAMIC TILE FLOOR	
2188.1483	CARPET	
2188.1484	CERAMIC TILE WALL FINISH	
2188.1485	SUSPENDED CEILING	
2188.149	PAINTING	
2188.1491	CONCRETE	
2188.1492	STEELWORK	
2188.1495	HANDRAIL	
2188.1497	DOORS + WALLS	
2188.2	BUILDING SERVICES	
2188.21	PLUMBING + DRAINS	
2188.211	ROOF DRAINS + PIPING	
2188.2111	DRAINS	
2188.2115	PIPING	
2188.21152	2.5 IN+LARGER (GALV/NNS)	

708072

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
2188.212	FLOOR DRAINS + PIPING	
2138.2121	DRAINS	
2188.2125	PIPING	
2188.21251	2.5 IN+LARGER(CS/NNS)	
2188.21252	2.5 IN+LARGER(CI/NNS)	
2188.213	PLUMBING FIXTURES+PIPING	
2138.2131	FIXTURES	
2188.2132	DOMESTIC WATER HEATERS	
2188.2135	PIPING	
2188.21351	2 IN + SMALLER(CS/NNS)	
2188.21352	2 IN + SMALLER(COPPER/NNS)	
2188.21353	2.5 IN+LARGER(CS/NNS)	
2138.22	HEATING, VENT + AIR COND	EQUIPMENT COST INCLUDES ALL ITEMS LISTED BELOW
2188.221	AIR CONDITIONING SYSTEMS	
2138.2219	FOUNDATIONS/SKIDS	
2188.22191	MULTIZONE AIR UNIT + MOTOR	
2188.222	EXHAUST AIR SYSTEMS	
2188.2225	ROTATING MACHINERY	
2188.22251	TOILET RM EXHAUST FAN+MTR	
2188.22252	FUME HOOD EXHAUST FAN+MTR	
2188.22253	RETURN AIR FANS + MOTORS	
2188.223	REFRIG CHILLED WATER SYS	

E2080

UNITED ENGINEERS & CONSTRUCTORS INC.

EQUIPMENT LIST - REPORT 1

MODEL 613 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213B.2231	ROTATING MACHINERY	
213B.22311	CHILLER + MOTOR	
213B.22322	CHILLED WATER PUMP + MOTOR	
213B.224	BUILDING HEATING SYSTEMS	
213B.2241	HEAT TRANSFER EQUIPMENT	
213B.22411	HEAT+VENT AIR UNIT + MOTOR	
213B.22412	ELECTRIC BASEBOARD HEATERS	
213B.225	PIPING	
213B.2251	2 IN+SMALLER	
213B.22511	CS/MS	
213B.2252	2.5 IN+LARGER	
213B.22521	CS/MS	
213B.226	VALVES	
213B.2261	GATE	
213B.2262	CHECK	
213B.2263	GLOBE	
213B.2265	SAFETY/RELIEF	
213B.2268	PLUG	
213B.2269	SPECIAL VALVES	
213B.227	PIPING-MISC. ITEMS	
213B.2271	HANGERS	
213B.226	DUCTWORK	
213B.229	INSTRUMENTATION+CONTROL	

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 RWE/3300 NWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
2168.23	FIRE PROTECTION	
2168.231	FIRE HOSE CABINETS	
2168.232	SPRINKLERS	
2168.24	LIGHTING+SERVICE POWER	
2168.25	ELEVATOR	
2168.251	ELEVATOR EQUIPMENT	
2130.	FIRE PUMPHOUSE	THE FIRE PUMPHOUSE IS PART OF THE MAKE UP WATER INTAKE STRUCTURE SEE ACCOUNT 261.11 FOR STRUCTURAL QUANT
2181.	ELECTRICAL SWITCHGR BLDGS	SEE COST ESTIMATE FOR STRUCT QUANTITIES QUANTITIES GIVEN REPRESENT TOTALS FOR 3 PREFAB BUILDINGS
2161.1	BUILDING STRUCTURE	
2161.11	EXCAVATION WORK	
2161.111	EXCAVATION-EARTH	
2131.114	BACKFILL-EARTH	
2181.13	SUBSTRUCTURE CONCRETE	
2181.131	FORMWORK	
2161.132	REINFORCING STEEL	
2181.133	CONCRETE	
2181.134	EMBEDDED STEEL	
2181.135	FLOOR FINISH	
2161.139	WIRE FABRIC	
2181.14	SUPENSTRUCTURE	
2181.142	STRUCTURAL + MISC. STEEL	

520802

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
2161.1421	PREFAB BUILDING	
2161.147	DOORS + WINDOWS	
2161.1472	PERSONNEL DOORS	
2161.1475	SASH + GLAZING	
2131.2	BUILDING SERVICES	
2181.21	PLUMBING + DRAINS	
2131.22	HEATING,VENT + AIR COND	
2131.24	LIGHTING + SERVICE POWER	
216M.	COAL CAR TRAW SHED	
213M.1	BUILDING STRUCTURE	
213M.11	EXCAVATION WORK	
216M.111	EXCAVATION-EARTH	
213M.114	BACKFILL-EARTH	
213M.13	SUBSTRUCTURE CONCRETE	
216M.131	FORMWORK	
213M.132	REINFORCING STEEL	
213M.133	CONCRETE	
216M.134	EMBEDDED STEEL	
213M.14	SUPERSTRUCTURE	
216M.24	LIGHTING + SERVICE POWER	
213M.	ROTARY CAR DUMP BLDG+TUNNL	
213M.1	BUILDING STRUCTURE	
216M.11	EXCAVATION WORK	

SEE COST ESTIMATE FOR STRUCT QUANTITIES

INCLUDED IN ACCOUNT 224.13

SEE COST ESTIMATE FOR STRUCT QUANTITIES

708076

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 KWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - CJST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213N.111	EXCAVATION-EARTH	
213N.112	EXCAVATION-ROCK	
213N.114	BACKFILL-EARTH	
213N.115	DEWATERING	
213N.13	SUBSTRUCTURE CONCRETE	
213N.131	FORMWORK	
213N.132	REINFORCING STEEL	
213N.133	CONCRETE	
213N.134	EMBEDDED STEEL	
213N.135	FLOOR FINISH	
213N.139	WIRE FABRIC	
213N.14	SUPERSTRUCTURE	
213N.141	CONCRETE WORK	
213N.142	STRUCTURAL + MISC STEEL	
213N.1421	STRUCTURAL STEEL	
213N.1423	MISC STEEL	
213N.1425	FLOOR GRATING	
213N.1426	STAIR TREADS	
213N.143	EXTERIOR WALLS	
213N.1433	METAL INSULATED SIDING	
213N.1434	METAL UNINSULATED SIDING	
213N.144	ROOF DECK	
213N.1441	METAL ROOF DECK -INSULATED	

42-0802

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 61U - 1252 P&E/3500 M&T COBL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213N.1442	METAL ROOF DECK-UNINSUL	
213N.146	INTERIOR WALLS	
213N.1462	MASONRY	
213N.147	DOORS + WINDOWS	
213N.1472	PERSONNEL DOORS	
213N.1474	WINDOWS - INSULATED GLASS	
213N.2	BUILDING SERVICES	
213N.21	DRAINS + PIPING	
213N.211	ROOF DRAINS + PIPING	
213N.212	FLOOR DRAINS + PIPING	
213N.213	PLUMBING FIXTURES+PIPING	
213N.2131	FIXTURES	
213N.2132	DOMESTIC WATER HEATERS	
213N.215	PIPING	
213N.22	HEAT VENT+AIR CONDITIONING	
213N.23	FIRE PROTECTION	
213N.24	LIGHTING + SERVICE POWER	
2130.	COAL BREAKER HOUSE	
2130.1	BUILDING STRUCTURE	
2130.11	EXCAVATION WORK	
2130.111	EXCAVATION-EARTH	
2130.114	BACKFILL-EARTH	

EQUIPMENT COST INCLUDES ALL ITEMS LISTED BELOW

SEE COST ESTIMATE FOR STRUCT QUANTITIES

708078

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/5300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
2130.13	SUBSTRUCTURE CONCRETE	
2130.131	FORMWORK	
2130.132	REINFORCING STEEL	
2130.133	CONCRETE	
2130.134	EMBEDDED STEEL	
2130.135	FLOOR FINISH	
2130.139	WIRE FABRIC	
2130.14	SUPERSTRUCTURE	
2130.141	CONCRETE WORK	
2130.1411	FORMWORK	
2130.14111	METAL FORMWORK	
2130.1413	CONCRETE	
2130.142	STRUCTURAL + MISC STEEL	
2130.1421	STRUCTURAL STEEL	
2130.143	EXTERIOR WALLS	
2130.1433	METAL INSULATED SIDING	
2130.1434	METAL UNINSULATED SIDING	
2130.144	ROOF DECK	
2130.1441	METAL ROOF DECK	
2130.146	INTERIOR WALLS	
2130.1462	MASONRY WALLS	
2130.147	DOORS + WINDOWS	
2130.1472	PERSONNEL DOORS	

208079

EQUIPMENT LIST - REPORT 1

MODEL 613 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

08/15/77

ACCOUNT NUMBER	ITEM	DESCRIPTION
2130.2	BUILDING SERVICES	
2130.21	DRAINS + PIPING	
2140.211	ROOF DRAINS + PIPING	
2140.212	FLOOR DRAINS + PIPING	
2140.22	HEATING VENT + AIR COND	
2160.24	LIGHTING + SERVICE POWER	
2160.25	ELEVATOR	
2180.251	ELEVATOR EQUIPMENT	
218P.	COAL CRUSHER HOUSE	
218P.1	BUILDING STRUCTURE	
218P.11	EXCAVATION WORK	
218P.111	EXCAVATION-EARTH	
218P.114	BACKFILL-EARTH	
218P.13	SUBSTRUCTURE CONCRETE	
218P.131	FORMWORK	
218P.132	REINFORCING STEEL	
218P.133	CONCRETE	
218P.134	EMBEDDED STEEL	
218P.135	FLOOR FINISH	
218P.139	WIRE FABRIC	
218P.14	SUPERSTRUCTURE	
218P.141	CONCRETE WORK	
218P.1411	FORMWORK	

SEE COST ESTIMATE FOR STRUCT QUANTITIES

708080

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2,571.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213P.1411	METAL FORMWORK	
213P.1413	CONCRETE	
213P.142	STRUCTURAL + MISC STEEL	
213P.1421	STRUCTURAL STEEL	
213P.143	EXTERIOR WALLS	
213P.1434	METAL UNINSULATED SIDING	
213P.144	ROOF DECK	
213P.1442	METAL ROOF DECK-UNINSUL	
213P.146	INTERIOR WALLS	
213P.1462	MASONRY	
213P.147	DOORS + WINDOWS	
213P.1472	PERSONNEL DOORS	
213P.2	BUILDING SERVICES	
213P.21	DRAINS + PIPING	
213P.211	ROOF DRAINS + PIPING	
213P.212	FLOOR DRAINS + PIPING	
213P.22	HEATING, VENT + AIR COND	
213P.24	LIGHTING + WIRING	
213P.25	ELEVATOR	
213P.251	ELEVATOR EQUIPMENT	
213Q.	BOILER HOUSE TRANSFR TOWER	
213Q.1	BUILDING STRUCTURE	
213Q.11	EXCAVATION WORK	

SEE COST ESTIMATE FOR STRUCT QUANTITIES

180804

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
2182.111	EXCAVATION-EARTH	
2182.114	BACKFILL-EARTH	
2182.13	SUBSTRUCTURE CONCRETE	
2182.131	FORMWORK	
2182.132	REINFORCING STEEL	
2182.133	CONCRETE	
2182.134	EMBEDDED STEEL	
2182.14	SUPERSTRUCTURE	
2182.141	CONCRETE WORK	
2182.1411	FORMWORK	
2182.14111	METAL FORMWORK	
2182.1413	CONCRETE	
2182.142	STRUCTURAL + MISC STEEL	
2182.1421	STRUCTURAL STEEL	
2182.143	EXTERIOR WALLS	
2182.1433	METAL INSULATED SIDING	
2182.1434	METAL UNINSULATED SIDING	
2182.144	ROOF DECK	
2182.1441	METAL ROOF DECK	
2182.147	DOORS + WINDOWS	
2182.1472	PERSONNEL DOORS	
2182.2	BUILDING SERVICES	
2182.22	HEATING, VENT + AIR COND	

208082

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 613 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
218R.24	LIGHTING + SERVICE POWER	
218R.	ROTARY FLOW MAINTNCE SHED	INCLUDES QUANTITIES FOR THE RECLAIM TUNNELS SEE COST ESTIMATE FOR STRUCT QUANTITIES
218R.7	BUILDING STRUCTURE	
218R.11	EXCAVATION WORK	
218R.111	EXCAVATION-EARTH	
218R.112	EXCAVATION-ROCK	
218R.114	BACKFILL-EARTH	
218R.115	DEWATERING	
218R.13	SUBSTRUCTURE CONCRETE	
218R.131	FORMWORK	
218R.13	REINFORCING STEEL	
218R.133	CONCRETE	
218R.34	EMBEDDED STEEL	
218R.14	SUPERSTRUCTURE	
218R.141	CONCRETE WORK	
218R.142	STRUCTURAL + MISC STEEL	
218R.1421	STRUCTURAL STEEL	
218R.143	EXTERIOR WALLS	
218R.1434	METAL UNINSULATED SIDING	
218R.144	ROOF DECK	
218R.1442	METAL ROOF DECK-UNINSUL	
218R.145	ROOFING + FINISHING	

408083

MODEL 610 - 1232 NWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETON#USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213A.1454	FLASHING	
213A.147	DOORS + WINDOWS	
213A.1471	ROLLING STEEL DOORS	
213A.1472	PERSONNEL DOORS	
213A.2	BUILDING SERVICES	
213A.22	HEATING/VENT + AIR COND	
213A.24	LIGHTING + SERVICE POWER	
218T.	LOCOMOTIVE REPAIR GARAGE	
218T.1	BUILDING STRUCTURE	
218T.11	EXCAVATION WORK	
218T.111	EXCAVATION-EARTH	
218T.114	BACKFILL-EARTH	
218T.13	SUBSTRUCTURE CONCRETE	
218T.131	FORMWORK	
218T.132	REINFORCING STEEL	
218T.133	CONCRETE	
218T.134	EMBEDDED STEEL	
218T.135	FLOOR FINISH	
218T.139	WIRE FABRIC	
218T.14	SUPERSTRUCTURE	
218T.141	CONCRETE WORK	
218T.142	STRUCTURAL + MISC STEEL	
218T.1421	STRUCTURAL STEEL	

SEE COST ESTIMATE FOR STRUCT QUANTITIES

706084

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213T.143	EXTERIOR WALLS	
213T.1435	METAL INSULATED SIDING	
213T.144	ROOF DECK	
213T.1441	METAL ROOF DECK	
213T.147	DOORS + WINDOWS	
213T.1471	ROLLING STEEL DOORS	
213T.1472	PERSONNEL DOORS	
213T.2	BUILDING SERVICES	
213T.22	HEATING, VENT + AIR COND	
213T.24	LIGHTING + SERVICE POWER	
213J.	MATERIAL HANDL+SERVICE BLD	SEE COST ESTIMATE FOR STRUCT QUANTITIES
218U.1	BUILDING STRUCTURE	
213U.11	EXCAVATION WORK	
218U.111	EXCAVATION-EARTH	
218U.114	BACKFILL-EARTH	
218U.13	SUBSTRUCTURE CONCRETE	
218U.131	FORMWORK	
218U.132	REINFORCING STEEL	
213U.133	CONCRETE	
218U.134	EMBEDDED STEEL	
213U.135	FLOOR FINISH	
218U.139	WIRE FABRIC	
218U.14	SUPERSTRUCTURE	

708085

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
2180.141	CONCRETE WORK	
2180.142	STRUCTURAL + MISC STEEL	
2180.143	EXTERIOR WALLS	
2180.1433	METAL INSULATED SIDING	
2180.1434	METAL UNINSULATED SIDING	
2180.144	ROOF DECK	
2180.1441	METAL ROOF DECK	
2180.145	ROOFING + FLASHING	
2180.1451	B.U. ROOF,INSUL + FLASHING	
2180.146	INTERIOR WALLS	
2180.1462	MASONRY	
2180.1463	TOILET PARTITIONS	
2180.147	DOORS + WINDOWS	
2180.1471	ROLLING STEEL DOORS	
2180.1472	PERSONNEL DOORS	
2180.1473	SASH + GLAZING	
2180.148	WALLS,FLOOR+CEIL FINISH	
2180.1481	VINYL FLOOR TILE	
2180.1482	CERAMIC FLOOR TILE	
2180.1485	SUSPENDED CEILING	
2180.1486	CEMENT PLASTER CEILING	
2180.2	BUILDING SERVICES	
2180.21	DRAINS + PIPING	

980806

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 613 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AY - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
218U.211	ROOF DRAINS + PIPING	
218U.212	FLOOD DRAINS + PIPING	
218U.22	HEATING, VENT + AIR COND	
218U.23	FIRE PROTECTION	
218U.24	LIGHTING + SERVICE POWER	
218V.	WASTE WATER TREATMENT BLDG	SEE COST ESTIMATE FOR STRUCT QUANTITIES
218V.1	WASTE WATER EQUIPMENT BLDG	
218V.11	BUILDING STRUCTURE	
218V.111	EXCAVATION WORK	
218V.1111	EXCAVATION-EARTH	
218V.1114	BACKFILL-EARTH	
218V.113	SUBSTRUCTURE CONCRETE	
218V.1131	FORMWORK	
218V.1132	REINFORCING STEEL	
218V.1133	CONCRETE	
218V.1134	EMBEDDED STEEL	
218V.1135	FLOOR FINISH	
218V.1139	WIRE FABRIC	
218V.114	SUPERSTRUCTURE	
218V.1141	CONCRETE WORK	
218V.1142	STRUCTURAL + MISC STEEL	
218V.1143	EXTERIOR WALLS	
218V.11433	METAL INSULATED SIDING	

480802

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
218V.1145	ROOFING + FLASHING	
218V.11455	METAL ROOF DECK	
218V.1147	DOORS + WINDOWS	
218V.11471	ROOFING STEEL DOORS	
218V.11472	PERSONNEL DOORS	
218V.1144	PAINTING	
218V.11495	DOORS	
218V.12	BUILDING SERVICES	
218V.121	PLUMBING + DRAINS	
218V.1212	FLOOR DRAINS + PIPING	
218V.122	HEATING+VENT + AIR COND	
218V.1221	ROTATING MACHINERY	
218V.12211	POWER ROOF VENTILATOR+MTR	
218V.1222	HEAT TRANSFER EQUIPMENT	
218V.12221	ELECTRIC UNIT HEATERS+MTR	
218V.1226	VALVES + DAMPERS	
218V.12269	WALL LOUVERS	
218V.123	FIRE PROTECTION EQUIPMENT	
218V.1231	PORTABLE FIRE EXTINGUISH	
218V.124	LIGHTING + SERVICE POWER	
218V.2	WASTE WATER SETTLING BASIN	
218V.21	EXCAVATION WORK	
218V.211	EXCAVATION-EARTH	

708088

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 613 - 1232 MWE/3300 MWT COAL - 2,5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213V.214	BACKFILL-EARTH	
213V.23	SUBSTRUCTURE CONCRETE	
213V.231	FORMWORK	
213V.232	REINFORCING STEEL	
213V.233	CONCRETE	
213V.3	APE OIL SEPARATOR	
213V.31	BUILDING STRUCTURE	
216V.311	EXCAVATION WORK	
213V.3111	EXCAVATION-EARTH	
213V.3114	BACKFILL-EARTH	
213V.313	SUBSTRUCTURE CONCRETE	
216V.3131	FORMWORK	
213V.3132	REINFORCING STEEL	
213V.3135	CONCRETE	
213V.314	SUPERSTRUCTURE	
213V.3141	CONCRETE WORK	
213V.3142	STRUCTURAL + MISC STEEL	
213V.31421	CARBON STEEL FLUME	
213W.	MISC COAL HANDLING STRUCT	SEE COST ESTIMATE FOR STRUCT QUANTITIES
213W.1	CONVEYOR GALLERIES	
213W.11	BUILDING STRUCTURE	
213W.111	EXCAVATION WORK	
213W.1111	EXCAVATION-EARTH	

690804

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE73300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, MD - HIGH SULFUR - COST BASIS 07776

ACCOUNT NUMBER	ITEM	DESCRIPTION
213W.1114	BACKFILL-EARTH	
213W.1115	SUBSTRUCTURE CONCRETE	
213W.1131	FORMWORK	
213W.1132	REINFORCING STEEL	
213W.1133	CONCRETE	
213W.1134	EMBEDDED STEEL	
213W.114	SUPERSTRUCTURE	
213W.1141	CONCRETE WORK	
213W.1142	STRUCTURAL + MISC STEEL	
213W.11421	STRUCTURAL STEEL	
213W.11423	MISC. FRAMES, ETC.	
213W.11425	METAL WALKWAYS	
213W.1143	EXTERIOR WALLS	
213W.11433	METAL INSULATED SIDING	
213W.1144	ROOF DECK	
213W.11441	METAL ROOF DECK-INSULATED	
213W.11443	TRANSLUCENT PANELS	
213W.2	ROTARY PLOW ACCESS TUNNEL	INCLUDES QUANTITIES FOR THE VENTILATION HOUSE
213W.21	BUILDING STRUCTURE	
213W.211	EXCAVATION WORK	
213W.2111	EXCAVATION-EARTH	
213W.2112	EXCAVATION-ROCK	

060802

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2,5/1,7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
213w.2114	BACKFILL-EARTH	
213w.2115	DEWATERING	
218w.213	SUBSTRUCTURE CONCRETE	
218w.2131	FORMWORK	
213w.2132	REINFORCING STEEL	
213w.2133	CONCRETE	
213w.214	SUPERSTRUCTURE	
213w.2141	CONCRETE WORK	
213w.2142	STRUCTURAL + MISC STEEL	
213w.21421	STRUCTURAL STEEL	
218w.2144	ROOF DECK	
213w.21441	METAL ROOF DECK-INSULATED	
218w.2146	INTERIOR WALLS	
218w.21462	MASONRY	
218w.2147	DOORS + WINDOWS	
213w.21472	PERSONNEL DOORS	
218w.3	COAL PILE MEMBRANE BARRIER	750,000 SQ FT BARRIER - MEMBRANE MATERIAL IS PVC WITH A THICKNESS OF 0.020 INCHES
218w.31	EARTHWORK	
218w.32	MEMBRANE BARRIER	
218w.4	LOWERING WELLS	
218w.41	BUILDING STRUCTURE	
218w.411	EXCAVATION WORK	

708091

MODEL 010 - 1232 MWE/3300 MMT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
216w.412	SUBSTRUCTURE+SUPERSTRUCTURE	
218w.4121	FORMWORK	
218w.4122	REINFORCING STEEL	
218w.4123	CONCRETE	
219w.4124	STRUCTURAL + MISC. STEEL	
219w.5	BUILDING SERVICES	
219w.54	LIGHTING + SERVICE POWER	
219.	STACK STRUCTURE	STACK STRUCTURE - BRICK LINED 30 FT INNER DIAMETER 600 FT HIGH
219.1	STRUCTURE	SEE COST ESTIMATE FOR STRUCT QUANTITIES
219.11	EXCAVATION WORK	
219.111	EXCAVATION-EARTH	
219.112	EXCAVATION+ROCK	
219.114	BACKFILL-EARTH	
219.115	DEWATERING	
219.13	SUBSTRUCTURE CONCRETE	
219.131	FORMWORK	
219.132	REINFORCING STEEL	
219.133	CONCRETE	
219.14	SUPERSTRUCTURE	
219.141	CONCRETE WORK	
219.1412	REINFORCING STEEL	

708032

MODEL 6TU - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWNAUSA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
219.1413	CONCRETE	
219.1414	BRICK LINER	
219.142	STRUCTURAL + MISC STEEL	
219.1421	STRUCTURAL STEEL	
219.2	CHIMNEY SERVICES	
219.24	AIRCRAFT WARNING LIGHTS	
219.25	ELEVATOR	
219.26	LIGHTNING PROTECTION	
22	BOILER PLANT EQUIPMENT	
22JA.	FOSSIL STEAM SUPPLY SYSTEM	
22JA.1	QUOTED FSSS PRICE	
22JA.2	DISTRIBUTED FSSS COST	
22JA.21	STEAM GENERATING EQUIPMENT	
22JA.211	SUPERCritical PRESS BOILER	
22JA.212	ASSOCIATED BOILER SYSTEMS	
22JA.213	MISC BOILER SYSTEMS	
22JA.214	SOOTBLOWERS	
22JA.22	DRAFT EQUIPMENT	
22JA.221	FORCED DRAFT FAN + MOTOR	
22JA.222	PRIMARY AIR FAN + MOTOR	
22JA.224	REGENERATIVE AIR HTR+MOTOR	
22JA.25	FUEL HANDLING EQUIPMENT	
22JA.251	COAL FEEDER + MOTOR	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
220A.252	COAL PULVERIZER + MOTOR	
221.	STEAM GENERATING SYSTEM	INCLUDED WITH BOILER PACKAGE
221.1	STEAM GENERATING EQUIPMENT	MAX. CONTINUOUS RATING-9,775 MLB/HR PRESSURE - 3845 PSIG SUPERHEAT TEMP - 1010 F REHEAT TEMP - 1000 F
221.11	SUPERCRITICAL PRESS BOILER	BOILER INCLUDES: FURNACE WALL SYSTEM SUPERHEATER REHEATER ECONOMIZER ERECTION OF ABOVE EQUIP
221.12	ASSOCIATED BOILER SYSTEMS	EQUIPMENT INCLUDES: SOOTBLOWER + TEMP PROBES FIRING EQUIPMENT STARTUP SYSTEM SEAL + ASPIRATING AIR SYSTEM BURNER CONTROLS INSTALLATION OF ABOVE EQUIP
221.13	MISC BOILER SYSTEMS	MISC SYSTEMS INCLUDE: PRESSURE PART SUPPORT STEEL CASINGS + BUCKSTAYS DUCTWORK TO/FROM AIR HTRS+BOILER INSULATION + LAGGING VALVES + ACCESSORIES PLATFORMS,STAIRWAYS+STRUCTURAL STEEL INSTALLATION OF ABOVE EQUIP
221.2	STEAM GENERATING ACCESSORY	
221.21	BOILER BYPASS SYSTEM	FLASH TANK AND PIPING TO FLASH TANK FURNISHED WITH BOILER PACKAGE
221.215	PIPING	
221.2152	2.5 IN + LARGER	
221.21521	CS/MNS	

706094

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/5300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
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221.216	VALVES	
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221.2161	GATE	
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221.2162	CHECK	
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221.217	PIPING-MISC ITEMS	
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221.2171	HANGERS + SUPPORTS	
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221.2172	INSULATION	
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221.22	BOILER VENTS AND DRAINS	
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221.225	PIPING	
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221.2251	2 IN + SMALLER	
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221.22511	CS/NNS	
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221.2252	2.5 IN + LARGER	
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221.22521	CS/NNS	
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221.226	VALVES	
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221.2265	RELIEF	
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221.227	PIPING-MISC ITEMS	
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221.2271	HANGERS + SUPPORTS	
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221.3	SOOTBLOWING SYSTEM	
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221.31	ROTATING MACHINERY	
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221.311	SOOTBLOWERS	
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SOOTBLOWERS INCLUDE:
 WALL BLOWERS
 RETRACTABLE BLOWERS
 EXTENDED BLOWERS
 AIR HTR RETRACTABLE BLOWERS
 INCLUDED WITH BOILER PACKAGE

221.312	S.A. COMPRESSOR + MOTOR	
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708035

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
221.3121	S.B. COMPRESSOR	QUANTITY - 2 TYPE - ORIENTATION - FLOW RATE - 10000 SCFM SPEED - 1775 RPM DISCHARGE PRESS - 500 PSIG BHP - EFFICIENCY - DESIGN PRESS - 400 PSIG DESIGN TEMP - 200 F MATERIAL - DESIGN CODE -
221.3122	S.B. COMPRESSOR MOTOR	QUANTITY - 2 TYPE - HORSEPOWER - 3500 HP SPEED - 1800 RPM VOLTAGE - 13.2KV, 3 PHASE, 60 HZ
221.33	TANKS AND PRESSURE VESSELS	
221.331	S.B. AIR RECEIVER	QUANTITY - 1 ORIENTATION - DIMENSIONS - 6 FT D X 16 FT VOLUME - 500 CU FT DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE - ASME SECTION VIII
221.35	PIPING	
221.351	2 IN + SMALLER	
221.3511	CS/NNS	
221.352	2.5 IN + LARGER	
221.3521	CS/NNS	
221.36	VALVES	
221.361	GATE	
221.362	CHECK	

96080%

MODEL 610 - 1232 MWE/3300 HWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,VA - HIGH SULFUR - COST BASIS 07776

ACCOUNT NUMBER	ITEM	DESCRIPTION
221.363	GLOBE	
221.365	RELIEF	
221.37	PIPING-MISC ITEMS	
221.371	HANGERS + SUPPORTS	
221.38	INSTRUMENTATION + CONTROL	PROVIDED WITH SOOTBLOWER PACKAGE - MAIN CONTROL PANEL PROVIDED IN 22717
221.39	FOUNDATIONS/SKIDS	
221.397	COMPRESSORS + AIR RECEIVER	
221.3971	EXCAVATION WORK	
221.3973	SUPERSTRUCTURE CONCRETE	
221.39731	FORMWORK	
221.39732	REINFORCING STEEL	
221.39733	CONCRETE	
221.39734	EMBEDDED STEEL	
222.	DRAFT SYSTEM	
222.1	ROTATING MACHINERY	
222.11	FORCED DRAFT FAN + MOTOR	
222.111	1 - REED DRAFT FAN	INCLUDED WITH BOILER PACKAGE QUANTITY - 3 X 33 1/3 PCT TYPE - CENTRIFUGAL FLOW RATE - 680000 SCFM STATIC PRESS - SPEED - BHP - EFFICIENCY - DESIGN CODE -

708037

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
222.112	FORCED DRAFT FAN MOTOR	QUANTITY - 3 X 33 1/3 PCT TYPE - HORSEPOWER - 9000 HP SPEED - VOLTAGE - 13.2KV, 3 PHASE, 60 HZ INCLUDED WITH BOILER PACKAGE
222.12	PRIMARY AIR FAN + MOTOR	QUANTITY - 2 TYPE - CENTRIFUGAL FLOW RATE - 255000 SCFM STATIC PRESS - SPEED - BHP - EFFICIENCY - DESIGN CODE -
222.121	PRIMARY AIR FAN	QUANTITY - 2 TYPE - HORSEPOWER - 4000 HP SPEED - VOLTAGE - 13.2KV, 3 PHASE, 60 HZ
222.122	PRIMARY AIR FAN MOTOR	QUANTITY - 2 TYPE - CENTRIFUGAL FLOW RATE - 255000 SCFM STATIC PRESS - SPEED - BHP - EFFICIENCY - DESIGN CODE -
222.14	AIR HEATER DRAIN PUMP+STR	QUANTITY - 3 X 50 PCT TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 300 GPM SPEED - 1775 RPM TDH - 60 FT BHP - 6 HP NPSH - EFFICIENCY - 70 PCT DESIGN PRESS - 100 PSIG DESIGN TEMP - 250 F MATERIAL - CAST IRON CASING DESIGN CODE - CHROME STEEL IMPELLER
222.141	AIR HEATER DRAIN PUMP	QUANTITY - 3 TYPE - HORSEPOWER - 7.5 HP SPEED - 1800 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
222.142	AIR HEATER DRAIN PUMP MTR	QUANTITY - 3 TYPE - HORSEPOWER - 7.5 HP SPEED - 1800 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ

208056

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN-USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER ITEM DESCRIPTION

222.2 HEAT TRANSFER EQUIPMENT

222.21 REGENERATIVE AIR HEATERS

222.211 SECONDARY AIR HEATER+MOTOR

222.2111 SECONDARY AIR HEATER

INCLUDED WITH BOILER PACKAGE

QUANTITY - 3 X 33 1/3 PCT

TYPE - REGENERATIVE
 CONCENTRIC

ORIENTATION -

HEAT LOAD -

SURFACE AREA -

FLUE CONDITION:

DES PRESS/TEMP -

TEMP IN/OUT - /304 F

FLOW RATE -

MATERIAL -

AIR CONDITION:

DES PRESS/TEMP -

TEMP IN/OUT - 80/ F

FLOW RATE -

MATERIAL -

222.2112 SECONDARY AIR HEATER MOTOR

QUANTITY - 3

TYPE -

HORSEPOWER - 25 HP

SPEED -

VOLTAGE - 460V, 3 PHASE, 60HZ

222.212 PRIMARY AIR HEATER + MOTOR

INCLUDED WITH BOILER PACKAGE

222.2121 PRIMARY AIR HEATER

QUANTITY - 2 X 50 PCT

TYPE - REGENERATIVE
 CONCENTRIC

ORIENTATION -

HEAT LOAD -

SURFACE AREA -

FLUE CONDITION:

DES PRESS/TEMP -

TEMP IN/OUT - /304 F

FLOW RATE -

MATERIAL -

AIR CONDITION -

DES PRESS/TEMP -

TEMP IN/OUT - 80/ F

FLOW RATE -

MATERIAL -

208039

UNITED ENGINEERS & CONSTRUCTORS INC.

PROG. CM-711 *PEG030*

EQUIPMENT LIST - REPORT 1

MODEL 610 - 1252 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
222.2122	PRIMARY AIR HEATER MOTOR	<p>QUANTITY - 2</p> <p>TYPE -</p> <p>HORSEPOWER - 20 HP</p> <p>SPEED -</p> <p>VOLTAGE - 460V, 3 PHASE, 60HZ</p>
222.22	INLET COMBUST AIR STM COIL	<p>QUANTITY -</p> <p>TYPE - RADIATOR</p> <p>ORIENTATION -</p> <p>HEAT LOAD - 227.7 E+06 BTU/HR</p> <p>SURFACE AREA -</p> <p>SHELL CONDITION:</p> <p>DES.PRESS/TEMP -</p> <p>TEMP IN/OUT - -10/80 F</p> <p>FLOW RATE - 11.5 E+06 LB/HR</p> <p>MATERIAL -</p> <p>DESIGN CODE -</p> <p>TUBE CONDITION:</p> <p>QUANTITY - 126 COILS</p> <p>SIZE - 0.049 IN</p> <p>DES.PRESS/TEMP - 15/400 PSI/F</p> <p>TEMP IN/OUT - 363/120 F</p> <p>FLOW RATE - 24430 LB/HR</p> <p>MATERIAL - 90-10 CU-NI</p> <p>DESIGN CODE -</p>
222.23	COMBUST AIR PREHT STM COILS	<p>QUANTITY -</p> <p>TYPE - DUCT TUBE</p> <p>ORIENTATION -</p> <p>HEAT LOAD -</p> <p>SURFACE AREA -</p> <p>SHELL CONDITION:</p> <p>DES.PRESS/TEMP -</p> <p>TEMP IN/OUT - 80/120 F</p> <p>FLOW RATE - 11.5 E+06 LB/HR</p> <p>MATERIAL -</p> <p>DESIGN CODE -</p> <p>TUBE CONDITION:</p> <p>QUANTITY - 60 COILS</p> <p>SIZE - 0.049 IN</p> <p>DES.PRESS/TEMP - 15/400 PSI/F</p> <p>TEMP IN/OUT - 363/120 F</p> <p>FLOW RATE - 97740 LB/HR</p> <p>MATERIAL - 90-10 CU-NI</p> <p>DESIGN CODE -</p>

708100

EQUIPMENT LIST - REPORT 1

06/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
222.3	TANKS AND PRESSURE VESSELS	
222.31	AIR HEATER DRAIN TANK	QUANTITY - 2 ORIENTATION - DIMENSIONS - 4 FT. D X 6 FT VOLUME - 590 GAL DESIGN PRESS - 15 PSIG DESIGN TEMP - 350 F MATERIAL - CARBON STEEL DESIGN CODE - API
222.4	PURIFICATION+FILTRATION EQ	
222.41	ELECTROSTATIC PRECIPITATOR	QUANTITY - 3 X 33 1/3 PCT TYPE - RIGID FRAME FLOW RATE - 1.3 MACFM OPER TEMP - 304 F EFFICIENCY - 99.7 PCT ASH CAPACITY - 50 TPH DES PRESS - DES TEMP - DESIGN CODE - POWER REQUIRE - MW
222.5	PIPING + DUCTWORK	
222.51	AIR PREHEAT STEAM PIPING	
222.511	2 IN + SMALLER	
222.5111	CS/NNS	
222.512	2.5 IN + LARGER	
222.5121	CS/NNS	
222.52	DUCTWORK	
222.521	AIR DUCTS	
222.5211	FD FAN TO AIR HEATER DUCTS	
222.5212	PRIMARY AIR DUCTWORK	
222.522	GAS DUCTS	

708104

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
222.5221	AIR HTR TO SO2 SUPPLY DUCT	
222.5222	DUCT INSULATION	
222.6	VALVES	
222.61	GATE	
222.62	CHECK	
222.63	GLOBE	
222.7	PIPING-MISC ITEMS	
222.72	INSULATION	
222.73	SPECIALTIES	
222.731	AIR INLET SILENCERS	QUANTITY - 3 X 53 1/3 PCT FLOWRATE - 850,000 SCFM MATERIAL - DESIGN CODE -
222.8	INSTRUMENTATION + CONTROLS	QUANTITY: LOCAL INDICATORS - 16 TEMP ELEMENTS - 62 LEVEL PROBES - 48 PROCESS SWITCH - 52 ANNUNCIATORS - 2
222.9	FOUNDATIONS/SKIDS	
222.91	PRECIPITATOR+DUCT FOUND	
222.911	EXCAVATION WORK	
222.9111	EXCAVATION-EARTH	
222.9114	BACKFILL-EARTH	
222.913	SUBSTRUCTURE CONCRETE	
222.9131	FORMWORK	
222.9132	REINFORCING STEEL	

201804

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
222.9133	CONCRETE	
222.914	SUPERSTRUCTURE	
222.9142	STRUCTURAL + MISC STEEL	
222.91421	STRUCTURAL STEEL	
222.91423	MISCELLANEOUS STEEL	
222.91425	FLOOR GRATING (GALVANIZED)	
222.91426	STAIR TREADS	
222.91427	HANDRAIL	
222.9149	PAINTING	
222.91492	STRUCTURAL STEEL	
222.91494	HANDRAIL	
222.92	PRIMARY AIR+FD FAN FOUND	
222.921	EXCAVATION WORK	
222.9211	EXCAVATION-EARTH	
222.9214	BACKFILL-EARTH	
222.923	SUBSTRUCTURE CONCRETE	
222.9231	FORMWORK	
222.9232	REINFORCING STEEL	
222.9233	CONCRETE	
222.924	SUPERSTRUCTURE	FORCED DRAFT FAN ROOM INCLUDED IN THE STEAM GENERATOR BUILDING (21.
222.93	AIR HEATER FOUNDATIONS	
222.931	EXCAVATION WORK	

801802

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
222.9311	EXCAVATION-EARTH	
222.9314	BACKFILL-EARTH	
222.933	SUBSTRUCTURE CONCRETE	
222.9331	FORMWORK	
222.9332	REINFORCING STEEL	
222.9333	CONCRETE	
222.9334	EMBEDDED STEEL	
222.934	SUPERSTRUCTURE	
222.9342	STRUCTURAL + MISC STEEL	
222.93421	STRUCTURAL STEEL	
222.93423	MISCELLANEOUS STEEL	
222.93425	FLOOR GRATING/CHECKER PLT	
222.93426	STAIR TREADS	
222.93427	HANDRAIL	
222.9349	PAINTING	
222.93492	STRUCTURAL STEEL	
222.93494	HANDRAIL	
223.	ASH + DUST HANDLING SYSTEM	
223.1	ASH + DUST HANDLING EQUIP	

208104

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/\$300 MWT COAL - 2.5/1.7 IN HJ AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
223.11	FLY ASH EQUIPMENT	<p>FLY ASH SYSTEM-TWO 100 PCT DRY POSITIVE DISPLACEMENT PRESSURIZED TEMS DESIGNED TO HANDLE 45 TONS PER HOUR EA. FLY ASH MIXED WITH SULFUR DIOXIDE SLUDGE WITH OPTIONAL TRUCK DISPOSAL</p> <p>EQUIPMENT INCLUDES: AIR LOCKS WITH GATES AND COUPLINGS POSITIVE DISPLACEMENT BLOWERS 3 - 150 HP EACH CYCLONE COLLECTORS STORAGE SILOS 2 - 15000 CU FT EACH DUST TRANSPORT PIPING INSTALLATION OF ABOVE EQUIPMENT</p>
223.11/14	BACKFILL-EARTH	
223.12	BOTTOM ASH + PYRITES EQUIP	<p>BOTTOM ASH AND PYRITES SYSTEM - ONE MET HYDRAULIC ASH SYSTEM DESIGNED TO HANDLE 20 TONS PER HOUR. ASH AND PYRITES IS TRUCK DISPOSED</p> <p>EQUIPMENT INCLUDES: ASH HOPPER - 1 - 7500 CU FT DISCHARGE GATES CLINKER GRINDERS - 2 - 25 HP EACH HYDRO-EJECTORS ASH SLUICE PUMPS - 2 - 1200 GPM 200 PSI 250 HP</p> <p>ASH TRANSPORT PIPING, VALVES+FITTINGS Dewatering Bins - 2 - 27500 CU FT EA PYRITES HOPPERS PYRITES HOLDING BIN - 1 - 1500 CU FT SETTLING TANK -1 - 40000 CU FT RECIRCULATING TANK -1 - 45000 CU FT MISC FANS AND SLUDE PUMPS - 150 HP INSTALLATION OF ABOVE EQUIPMENT</p>
223.18	INSTRUMENTATION + CONTROL	<p>PROVIDED WITH ASH AND DUST HANDLING PACKAGE</p>
223.19	FOUNDATIONS/SKIDS	

708105

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MMT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
223.191	DEWATERING BIN FOUNDATIONS	
223.1911	EXCAVATION WORK	
223.19111	EXCAVATION-EARTH	
223.19114	BACKFILL-EARTH	
223.1913	SUBSTRUCTURE CONCRETE	
223.19131	FORMWORK	
223.19132	REINFORCING STEEL	
223.19133	CONCRETE	
223.19134	EMBEDDED STEEL	
223.1914		
223.192	FLY ASH SILO FOUNDATIONS	
223.1921	EXCAVATION WORK	
223.19211	EXCAVATION-EARTH	
223.19214	BACKFILL-EARTH	
223.1923	SUBSTRUCTURE CONCRETE	
223.19231	FORMWORK	
223.19232	REINFORCING STEEL	
223.19233	CONCRETE	
223.19234	EMBEDDED STEEL	
223.193	PYRITES HOLDING BIN FOUND	
223.1931	EXCAVATION WORK	
223.1933	SUBSTRUCTURE CONCRETE	
223.19331	FORMWORK	

708106

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 NWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
223.19332	REINFORCING STEEL	
223.19333	CONCRETE	
223.19334	EMBEDDED STEEL	
223.194	SETTLING TANK FOUNDATION	
223.1941	EXCAVATION WORK	
223.19411	EXCAVATION-EARTH	
223.19414	BACKFILL-EARTH	
223.1943	SUBSTRUCTURE CONCRETE	
223.19431	FORMWORK	
223.19432	REINFORCING STEEL	
223.19433	CONCRETE	
223.19434	EMBEDDED STEEL	
223.195	RECIRCULATING TANK FOUND	
223.1951	EXCAVATION WORK	
223.19511	EXCAVATION-EARTH	
223.19514	BACKFILL-EARTH	
223.1953	SUBSTRUCTURE CONCRETE	
223.19531	FORMWORK	
223.19532	REINFORCING STEEL	
223.19533	CONCRETE	
223.19534	EMBEDDED STEEL	
223.2	MISC ASH+DUST HANDLING EQ	
223.21	ROTATING MACHINERY	

607804

EQUIPMENT LIST - REPORT

08/15/77

MODEL 610 - 232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
223.211	ASH HOPPER SEAL PUMP MOTOR	
223.211	ASH HOPPER SEAL PUMP	QUANTITY - 2 X 100 PCT TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 900 GPM SPEED - TDH - 250 FT BHP - 80 HP NPSH - EFFICIENCY - 70 PCT DESIGN PRESS - 200 PSI DESIGN TEMP - 150 F MATERIAL - CAST IRON CASING DESIGN CODE - STAINLESS STEEL IMPELLER
223.212	ASH HOPPER SEAL PUMP MOTOR	
223.25	PIPING	QUANTITY - 2 TYPE - HORSEPOWER - 100 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
223.251	RECIRCULATION+SEAL WATER	
223.2511	2 IN + SMALLER	
223.2512	2.5 IN + LARGER	
223.25121	VALVES	
223.261	GATE	
223.262	CHECK	
223.263	GLOBE	

801807

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 NWE/3500 MMT COAL - 2.5/1.7 IN HG AV - MIDDLETON*USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
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224.	FUEL HANDLING SYSTEMS	COAL HANDLING SYSTEM DESIGNED FOR A STOCKING OUT RATE OF 2000 TONS PER HOUR AND TWO RECLAIM SYSTEMS RATED AT 750 TONS PER HOUR.
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IGNITION OIL SYSTEM DESIGNED TO SUPPLY NO. 2 FUEL OIL TO THE MAIN BOILER AND AUXILIARY BOILER AT 120 GPM MAXIMUM.

224.1	COAL UNLOADING EQUIPMENT	
224.11	RAILROAD CAR POSITIONER	CAR POSITIONER - 125 HP TRANSVERSE DRIVE - 25 HP

224.12	ROTARY CAR DUMPER	EQUIPMENT INCLUDES: CAR DUMPER TRAVELING HAMMERMILL LUMP BREAKER PLATEN SCALE HOPPERS
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GRIZZLY FEEDERS
POWER REQUIREMENTS:
ROTARY CAR DUMPLY - 125 HP
FROZEN COAL CRUSHER - 50 HP
TRANSVERSE DRIVE - 25 HP

224.13	COAL CAR THAWING EQUIPMENT	EQUIPMENT INCLUDES 3500 KW HEATERS AND STRUCTURE
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224.2	CONVEYING EQUIPMENT	
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224.21	BELT CONVEYORS	BELT SIZE LINEAR FEET ----- 36 IN 5050 54 IN 1210 60 IN 90
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POWER REQUIREMENTS - 2425 HP

224.3	BREAKER*CRUSHER EQUIPMENT	
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224.31	BRADFORD BREAKER + MOTOR	
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224.311	BRADFORD BREAKER	
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224.312	BRADFORD BREAKER MOTOR	TWO BREAKERS AT 125 HP EACH
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01802

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
224.32	MAGNETIC SEPARATORS	
224.33	ROTARY PLOW	TWO ROTARY PLOWS AT 30 HP EACH
224.34	COAL CRUSHER + MOTOR	
224.341	COAL CRUSHER	
224.342	COAL CRUSHER MOTOR	TWO COAL CRUSHERS AT 500 HP EACH
224.4	PULVERIZING SYSTEMS	INCLUDED WITH BOILER PACKAGE (EXCEPT FOR FOUNDATIONS/SKIDS)
224.41	COAL FEEDER + MOTOR	
224.411	COAL FEEDER	QUANTITY - 7 (INCLUDING 1 SPARE) TYPE - VIBRATING FEEDER
224.412	COAL FEEDER MOTOR	TYPE - HORSEPOWER - 5 HP SPEED - 1800 RPM VOLTAGE - 460 V, 3 PH, 60 HZ
224.42	PULVERIZER + MOTOR	SEVEN PULVERIZERS AT 1250 HP EACH
224.421	PULVERIZER	QUANTITY - 7 (INCLUDING 1 SPARE) COAL CAPACITY - 183,200 LB/HR
224.422	PULVERIZER MOTOR	TYPE - HORSEPOWER - 1250 HP SPEED - 1200 RPM VOLTAGE - 4 KV, 3 PH, 60 HZ
224.45	PIPING + DUCTWORK	
224.49	FOUNDATIONS/SKIDS	
224.491	PULVERIZER FOUNDATIONS	
224.4911	FORMWORK	
224.4912	REINFORCING STEEL	
224.4913	CONCRETE	

01867

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
224.4914	EMBEDDED STEEL	
224.5	STORAGE EQUIPMENT	
224.51	LOWERING WELL EQUIP+ MOTOR	EQUIPMENT INCL FOR 2 LOWERING WELLS: DOWN CHAINS REVERSIBLE SHUTTLES SLIDE GATES FLOP GATES VIBRATING BIN BOTTOMS+CONES+MOTORS CONTROL EQUIPMENT
224.511	LOWERING WELL EQUIPMENT	
224.512	LOWERING WELL EQUIP MOTOR	
224.52	COAL SILO	
224.521	COAL SILO A283, 3/8IN PLATE	QUANTITY - 7 CAPACITY - 23,000 CU FT EACH DIMENSIONS - 25 FT DIA X 44 FT STR SIDE WITH 20 FT HOPPER
224.522	COAL SILO A304, 3/8IN PLATE	
224.523	COAL SILO A 36 STIFFENERS	
224.6	OTHER COAL HANDLING EQUIP	
224.61	SLIDEGATE + MOTOR	
224.611	SLIDEGATE	
224.612	SLIDEGATE MOTOR	
224.62	WEIGHT SCALES	
224.63	MISC VIBRATING FEEDERS+MTR	
224.631	MISC VIBRATING FEEDERS	
224.632	MISC VIBRATING FEEDER MTR	
224.64	COAL SAMPLING SYSTEMS	

708111

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2,571.7 IN HG AV - MIDDLETON,USA - HIGH SUFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
224.65	DUST SUPPRESSION SYSTEMS	
224.66	FIRE PROTECTION SYSTEM	
224.67	SUMP DRAIN SYSTEM	
224.671	ROTATING MACHINERY	
224.6711	SUMP PUMPS + MOTORS	
224.67111	SUMP PUMPS	
224.67112	SUMP PUMP MOTORS	
224.675	PIPING	
224.7	IGNITION OIL SYSTEM	
224.71	ROTATING MACHINERY	
224.711	IGNITION OIL PUMP + MOTOR	QUANTITY - 2 X 100 PCT TYPE - POSITIVE DISPLACEMENT ORIENTATION - HORIZONTAL FLOW RATE - 120 GPM SPEED - TCH - BHP - 17 HP NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE -
224.7111	IGNITION OIL PUMP	QUANTITY - 2 TYPE - HORSEPOWER - 20 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
224.75	PIPING	
224.751	2 IN + SMALLER	

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08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
224.7511	CS/NN5	
224.752	2.5 IN + LARGER	
224.7521	CS/NN5	
224.76	VALVES	
224.762	CHECK	
224.768	PLUG	
224.8	INSTRUMENTATION + CONTROL	INCLUDED IN ACCOUNT 224 COST
225.	FLUE GAS DESULFUR STRUCT	
225.1	LIME SLAKING BUILDING	
225.11	BUILDING STRUCTURE	
225.111	EXCAVATION WORK	
225.1111	EXCAVATION-EARTH	
225.1114	BACKFILL-EARTH	
225.115	SUBSTRUCTURE CONCRETE	
225.1131	FORMWORK	
225.1132	REINFORCING STEEL	
225.1133	CONCRETE	
225.1134	EMBEDDED STEEL	
225.1135	FLOOR FINISH	
225.114	SUPERSTRUCTURE	
225.1141	CONCRETE WORK	
225.11411	FORMWORK	
225.114111	FORMWORK-WOOD	

225.11411

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MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.114112	FORMWORK-METAL	
225.11412	REINFORCING STEEL	
225.11413	CONCRETE	
225.1142	STRUCTURAL + MISC STEEL	
225.11421	STRUCTURAL STEEL	
225.11423	MISC. FRAMES, ETC.	
225.11425	FLOOR GRATING (GALV)	
225.11426	STAIR TREADS	
225.11427	HANDRAIL	
225.1143	EXTERIOR WALLS	
225.11433	METAL INSULATED SIDING	
225.1144	ROOF DECK	
225.11441	METAL ROOF DECK	
225.1145	ROOFING + FLASHING	
225.11451	B.U. ROOF INSUL. + FLASH	
225.1147	DOORS + WINDOWS	
225.11471	ROLLING STEEL DOORS	
225.11472	PERSONNEL DOORS	
225.1149	PAINTING	
225.11492	STEELWORK	
225.11493	DOORS	
225.11494	HANDRAIL	

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08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.12	BUILDING SERVICES	EQUIPMENT COST INCLUDES ALL ITEMS LISTED BELOW
225.121	PLUMBING + DRAINS	
225.122	HEATING+VENT + AIR COND	
225.1221	ROTATING MACHINERY	
225.12211	ROOF VENTILATOR + MOTOR	
225.122111	ROOF VENTILATOR	
225.122112	ROOF VENTILATOR MOTOR	
225.12212	WALL EXHAUST FAN + MOTOR	
225.122121	WALL EXHAUST FAN	
225.122122	WALL EXHAUST FAN MOTOR	
225.1222	HEAT TRANSFER EQUIPMENT	
225.12221	ELECTRIC UNIT HEATER+MOTOR	
225.122211	ELECTRIC UNIT HEATERS	
225.122212	ELECTRIC UNIT HEATER MOTOR	
225.12222	ELECTRIC BASEBOARD HEATERS	
225.12223	AIR CONDITIONING UNIT+MTR	
225.122231	AIR CONDITIONING UNIT	
225.122232	AIR CONDITIONING UNIT MTR	
225.12224	HEATING+VENT AIR UNIT+MTR	
225.122241	HEATING+VENT AIR UNIT	
225.122242	HEATING+VENT AIR UNIT MTR	
225.12225	AIR COOLED COMPRESSOR COND	

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08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.1226	VALVES + DAMPERS	
225.12269	SPECIAL VALVES + DAMPERS	
225.122691	WALL LOUVERS	
225.124	LIGHTING + SERVICE POWER	
225.2	LIME SLAKING SERVICE BLDG	
225.21	BUILDING STRUCTURE	
225.211	EXCAVATION WORK	
225.2111	EXCAVATION-EARTH	
225.2114	BACKFILL-EARTH	
225.213	SUBSTRUCTURE CONCRETE	
225.2131	FORMWORK	
225.2132	REINFORCING STEEL	
225.2133	CONCRETE	
225.2134	EMBEDDED STEEL	
225.2135	FLOOR FINISH	
225.2139	WIRE FABRIC	
225.214	SUPERSTRUCTURE	
225.2141	CONCRETE WORK	
225.2142	STRUCTURAL + MISC STEEL	
225.21421	STRUCTURAL STEEL	
225.21423	MISC. FRAMES, ETC.	
225.2143	EXTERIOR WALLS	
225.21433	METAL INSULATE SIDING	

911802

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MODEL 610 - 121 1173500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.2144	ROOF CHECK	
225.21442	PRECAST CONCRETE PANELS	
225.2145	ROOFING + FLASHING	
225.21451	B.U. ROOF INSUL. + FLASH	
225.2147	DOORS + WINDOWS	
225.21472	PERSONNEL DOORS	
225.2149	PAINTING	
225.21492	STEELWORK	
225.21493	DOORS	
225.22	BUILDING SERVICES	IN ACCOUNT 2251
225.3	DESULFUR CTRL+SMTCGR PLDU	
225.31	BUILDING STRUCTURE	
225.311	EXCAVATION WORK	
225.3111	EXCAVATION-EART,	
225.3114	BACKFILL-EARTH	
225.313	SUBSTRUCTURE CONCRETE	
225.3131	FORMWORK	
225.3132	REINFORCING STEEL	
225.3133	CONCRETE	
225.3134	EMBEDDED STEEL	
225.3135	FLOOR FINISH	
225.3139	WIRE FABRIC	
225.314	SUPERSTRUCTURE	

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MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.3141	CONCRETE WORK	
225.31411	FORMWORK	
225.314112	FORMWORK-METAL	
225.31412	REINFORCING STEEL	
225.31413	CONCRETE	
225.31415	FLOOR FINISH	
225.3142	STRUCTURAL + MISC STEEL	
225.31421	STRUCTURAL STEEL	
225.31423	MISC. FRAMES, ETC.	
225.31426	STAIR THREADS	
225.31427	HANDRAIL	
225.3143	EXTERIOR WALLS	
225.31432	MASONRY	
225.31435	METAL INSULATED SIDING	
225.3144	ROOF DECK	
225.31442	PRECAST CONCRETE PANELS	
225.3145	ROOFING + FLASHING	
225.31451	B.U. ROOF INSUL. + FLASH	
225.3147	DOORS + WINDOWS	
225.31472	PERSONNEL DOORS	
225.3148	WALLS, FLOOR + CEIL FINISHS	
225.31481	VINYL FLOOR TILE	
225.31486	ACOUSTICAL CEILING	

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MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.3149	PAINTING	
225.31492	STEELWORK	
225.31494	HANDRAIL	
225.31495	METAL DECK	
225.32	BUILDING SERVICES	EQUIPMENT COST INCLUDES ALL ITEMS LISTED BELOW
225.321	PLUMBING + DRAINS	
225.322	HEATING+VENT + AIR COND	
225.3222	HEAT TRANSFER EQUIPMENT	
225.32221	ELECTRIC UNIT HEATER+MOTOR	
225.322211	ELECTRIC UNIT HEATERS	
225.322212	ELECTRIC UNIT HEATER MOTOR	
225.32222	ELECTRIC BASEBOARD HEATER	
225.32223	HEATING+VENT AIR UNIT+MTR	
225.322232	HEATING+VENT AIR UNIT MTR	
225.32224	AIR CONDITIONING UNIT+MTR	
225.322241	AIR CONDITIONING UNIT	
225.322242	AIR CONDITIONING UNIT MTR	
225.3226	VALVES + DAMPERS	
225.32269	SPECIAL VALVES + DAMPERS	
225.322691	WALL LOUVERS	
225.324	LIGHTING + SERVICE POWER	

671802

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08/15/77

MODEL 613 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDJLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.5	PROCESS+SEAL WATER PUMPHSE	PREFAB - 20 X 40 X 16 FT H
225.51	BUILDING STRUCTURE	
225.511	EXCAVATION WORK	
225.5111	EXCAVATION-EARTH	
225.5114	BACKFILL-EARTH	
225.513	SUBSTRUCTURE CONCRETE	
225.5131	FORMWORK	
225.5132	REINFORCING STEEL	
225.5133	CONCRETE	
225.5134	EMBEDDED STEEL	
225.5135	FLOOR FINISH	
225.5139	WIRE FABRIC	
225.514	SUPERSTRUCTURE	INCLUDES ITEMS LISTED BELOW
225.5141	CONCRETE WORK	
225.5142	STRUCTURAL + MISC STEEL	
225.5143	EXTERIOR WALLS	
225.51433	PREFAB METAL INSUL. SIDING	
225.5145	ROOFING + FLASHING	
225.51455	PREFAB STANDING RIB & INSL	
225.5147	DOORS + WINDOWS	
225.51472	PERSONNEL DOORS	
225.52	BUILDING SERVICES	EQUIPMENT COST INCLUDES ALL ITEMS LISTED BELOW

200170

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MODEL 913 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.521	PLUMBING + DRAINS	
225.522	HEATING VENT + AIR COND	
225.523	ROTATING MACHINERY	
225.52211	WALL EXHAUST FAN + MOTOR	
225.522111	WALL EXHAUST FAN	
225.52212	WALL EXHAUST FAN MOTOR	
225.5222	HEAT TRANSFER EQUIPMENT	
225.52221	ELECTRIC UNIT HEATER + MOTOR	
225.522211	ELECTRIC UNIT HEATERS	
225.522212	ELECTRIC UNIT HEATER MOTOR	
225.5226	VALVES	
225.52264	SPECIAL VALVES + DAMPERS	
225.522641	WALL LOUVERS	
225.524	LIGHTING + SERVICE POWER	
225.6	THICKENER EQUIPMENT BLDG	
225.61	BUILDING STRUCTURE	
225.611	EXCAVATION WORK	
225.6111	EXCAVATION-EARTH	
225.6114	BACKFILL-EARTH	
225.613	SUBSTRUCTURE CONCRETE	
225.6131	FORMWORK	
225.6132	REINFORCING STEEL	
225.6133	CONCRETE	

706124

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 PWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.6134	EMBEDDED STEEL	INCLUDES ITEMS LISTED BELOW
225.6135	FLOOR FINISH	
225.6139	WIRE FABRIC	
225.614	SUPERSTRUCTURE	
225.6141	CONCRETE WORK	
225.6142	STRUCTURAL + MISC STEEL	
225.6143	EXTERIOR WALLS	
225.61433	METAL INSULATED SIDING	
225.6145	ROOFING + FLASHING	
225.61455	STANDING RID + INSUL	
225.6146	INTERIOR WALLS + PARTITION	
225.61462	MASONRY	
225.6147	DOORS + WINDOWS	
225.61471	ROLLING STEEL DOORS	
225.61472	PERSONNEL DOORS	
225.62	BUILDING SERVICES	EQUIPMENT COST INCLUDES ALL ITEMS LISTED BELOW
225.621	PLUMBING + DRAINS	
225.622	HEATING VENT + AIR COND	
225.6221	ROTATING MACHINERY	
225.62211	WALL EXHAUST FAN + MOTOR	
225.622111	WALL EXHAUST FAN	
225.622112	WALL EXHAUST FAN MOTOR	

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08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.6222	HEAT TRANSFER EQUIPMENT	
225.62221	ELECTRIC UNIT HEATER+MOTOR	
225.622211	ELECTRIC UNIT HEATERS	
225.622212	ELECTRIC UNIT HEATER MOTOR	
225.62226	VALVES	
225.62226*	SPECIAL VALVES + DAMPERS	
225.622691	WALL LOUVERS	
225.624	LIGHTING + SERVICE POWER	
225.7	SLUDGE STABILIZATION BLDG	
225.71	HANGERS AND SUPPORTS	
225.711	EXCAVATION WORK	
225.7111	EXCAVATION-EARTH	
225.7114	BACKFILL-EARTH	
225.713	SUBSTRUCTURE CONCRETE	
225.7131	FORMWORK	
225.7132	REINFORCING STEEL	
225.7133	CONCRETE	
225.7134	EMBEDDED STEEL	
225.7135	FLOOR FINISH	
225.7139	WIRE FABRIC	
225.714	SUPERSTRUCTURE	
225.7141	CONCRETE WORK	
225.7142	STRUCTURAL + MISC STEEL	

708127

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.71421	STRUCTURAL STEEL	
225.71423	MISC. FRAMES, ETC.	
225.71426	STAIR TREADS	
225.71427	HANDRAIL	
225.7143	EXTERIOR WALLS	
225.71435	METAL INSULATED SIDING	
225.7144	ROOF DECK	
225.71441	METAL ROOF DECK	
225.71443	CONCRETE FILL	
225.71444	REINFORCING STEEL	
225.7145	ROOFING + FLASHING	
225.71451	B.U. ROOF INSUL + FLASH	
225.7146	INTERIOR WALLS + PARTITION	
225.71462	MASONRY	
225.71463	METAL PARTITIONS	
225.7147	DOORS + WINDOWS	
225.71471	ROLLING STEEL DOORS	
225.71472	PERSONNEL DOORS	
225.71473	SASH + GLAZING	
225.7148	WALLS, FLOOR+CEIL FINISHS	
225.71481	VINYL FLOOR TILE	
225.71486	ACOUSTICAL CEILING	
225.7149	PAINTING	

7008124

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MODEL 610 - 1232 AWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07776

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.71492	STEELWORK	
225.71493	DOORS+WALLS	
225.71494	HANDRAIL	
225.72	BUILDING SERVICES	EQUIPMENT COST INCLUDES ALL ITEMS LISTED BELOW
225.721	PLUMBING + DRAINS	
225.7211	ROOF DRAINS + PIPING	
225.7212	FLOOR DRAINS + PIPING	
225.7213	PLUMBING FIXTURES + PIPING	
225.72131	FIXTURES	
225.72135	PIPING	
225.722	HEATING+VENT + AIR COND	
225.7221	ROTATING MACHINERY	
225.72211	POWER ROOF VENTILATORS*MTA	
225.722111	POWER ROOF VENTILATORS	
225.722112	POWER ROOF VENT MOTORS	
225.72212	WALL EXHAUST FANS+MOTORS	
225.722121	WALL EXHAUST FANS	
225.722122	WALL EXHAUST FAN MOTORS	
225.72213	RETURN AIR FANS + MOTORS	
225.722131	RETURN AIR FANS	
225.722132	RETURN AIR FAN MOTORS	
225.7222	HEAT TRANSFER EQUIPMENT	

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08/15/77

MODEL 6TD - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA .6GH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.72221	ELECTRIC UNIT HEATER+MOTOR	
225.722211	ELECTRIC UNIT HEATERS	
225.722212	ELECTRIC UNIT HEATER MOTOR	
225.72222	HEATING+VENT AIR UNIT+ATR	
225.722221	HEATING+VENT AIR UNIT	
225.722222	HEATING+VENT AIR UNIT MTR	
225.72223	AIR CONDITIONING UNIT+MTR	
225.722231	AIR CONDITIONING UNIT	
225.722232	AIR CONDITIONING UNIT MTR	
225.7226	VALVES	
225.72269	SPECIAL VALVES + DAMPERS	
225.722691	WALL LOJVERS	
225.724	LIGHTING + SERVICE POWER	
225.8	SLUDGE PUMP HOUSE	
225.81	BUILDING STRUCTURE	
225.811	EXCAVATION WORK	
225.8111	EXCAVATION-EARTH	
225.8114	BACKFILL-EARTH	
225.813	SUBSTRUCTURE CONCRETE	
225.8131	FORMWORK	
225.8132	REINFORCING STEEL	
225.8133	CONCRETE	
225.8134	EMBEDDED STEEL	

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08/15/77

MODEL 810 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.8135	FLOOR FINISH	
225.8139	WIRE FABRIC	
225.814	SUPERSTRUCTURE	
225.8141	CONCRETE WORK	
225.8142	STRUCTURAL + MISC STEEL	
225.81421	STRUCTURAL STEEL	
225.8143	EXTERIOR WALLS	
225.81433	METAL INSULATED SIDING	
225.8144	ROOF DECK	
225.81442	PRECAST CONCRETE PANELS	
225.8145	ROOFING + FLASHING	
225.81451	B.U. ROOF INSUL + FLASH	
225.8147	DOORS + WINDOWS	
225.81471	ROLLING STEEL DOORS	
225.81472	PERSONNEL DOORS	
225.81473	SASH + GLAZING	
225.8149	PAINTING	
225.81492	STEELWORK	
225.82	BUILDING SERVICES	
225.821	PLUMBING + DRAINS	
225.822	HEATING, VENT + AIR COND	
225.8221	ROTATING MACHINERY	
225.82211	WALL EXHAUST FAN + MOTOR	

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MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.822111	WALL EXHAUST FAN	
225.822112	WALL EXHAUST FAN MOTOR	
225.8222	HEAT TRANSFER EQUIPMENT	
225.82221	ELECTRIC UNIT HEATER+MOTOR	
225.822211	ELECTRIC UNIT HEATER	
225.822212	ELECTRIC UNIT HEATER MOTOR	
225.8226	VALVES	
225.82269	SPECIAL VALVES + DAMPERS	
225.822691	INTAKE LOUVERS	
225.824	LIGHTING + SERVICE POWER	
225.9	LIME UNLOADING BLDG+TUNNEL	
225.91	BUILDING STRUCTURE	
225.911	EXCAVATION WORK	
225.9111	EXCAVATION-EARTH	
225.9112	EXCAVATION-ROCK	
225.9114	BACKFILL-EARTH	
225.9115	DEWATERING	
225.913	SUBSTRUCTURE CONCRETE	
225.9131	FORMWORK	
225.9132	REINFORCING STEEL	
225.9133	CONCRETE	
225.9134	EMBEDDED STEEL	
225.914	SUPERSTRUCTURE	

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MODEL 610 - 1232 MRE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.9141	CONCRETE WORK	
225.9142	STRUCTURAL + MISC STEEL	
225.91421	STRUCTURAL STEEL	
225.91425	MISC. FRAMES, ETC.	
225.91425	FLOOR GRATING (GALV)	
225.91426	STAIR TREADS	
225.91427	HANDRAIL	
225.9143	EXTERIOR WALLS	
225.9144	METAL UNINSULATED SIDING	
225.9144	ROOF DECK	
225.91441	METAL ROOF DECK	
225.9147	DOORS + WINDOWS	
225.91471	ROLLING STEEL DOORS	
225.91472	PERSONNEL DOORS	
225.9149	PAINTING	
225.91492	STEELWORK	
225.92	BUILDING SERVICES	
225.921	FLOOR DRAINS	
225.924	LIGHTING + SERVICE POWER	
226.	DESULFURIZATION EQUIPMENT	
226.1	LIME HANDLING SYSTEM	
226.11	ROTATING MACHINERY	

EQUIPMENT COST INCLUDES ALL ITEMS LISTED THROUGH ACCOUNT 226.1622

071802

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 #WE/3300 M/T COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.111	SILO VIBRATORY FEEDER+MTR	
226.1111	SILO VIBRATORY FEEDER	QUANTITY - 12 CAPACITY - 55 TPH MATERIAL - 3/8 IN - #450 BHW STEEL
226.1112	SILO VIBRATORY FEED MOTOR	QUANTITY - 12 TYPE - HORSEPOWER - SPEED - VOLTAGE -
226.112	SILO LOAD/BYPASS CONVEY+MTR	
226.1121	SILO LOAD/BYPASS CONVEYOR	QUANTITY - 2 TYPE - ENCLOSED IDLER CAPACITY - 150 TPH BELT: LENGTH - 68 FT WIDTH - 30 IN SPEED - 225 FPM MATERIAL - PLYLON #3150 MESA-SRB SKIRT PLATE - 11 FT
226.1122	SILO LOAD/BYPASS CONVEY MTR	QUANTITY - 2 TYPE - HORSEPOWER - 10 HP SPEED - 54 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
226.113	RECLAIM CONVEYOR + MOTOR	
226.1131	RECLAIM CONVEYOR	QUANTITY - 1 TYPE - ENCLOSED IDLER CAPACITY - 150 TPH BELT: LENGTH - 160 FT WIDTH - SPEED - 250 FPM MATERIAL - PLYLON #3150 ME-A-SRB SKIRT PLATE - 200 FT

708130

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.1132	RECLAIM CONVEYOR MOTOR	QUANTITY - 1 TYPE - HORSEPOWER - 40 HP SPEED - 38 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
226.1114	FD SILO DIST BELT CONV+MTR	QUANTITY - 1 TYPE - ENCLOSED IDLER CAPACITY - 150 TPH BELT: LENGTH - 20 FT WIDTH - 30 IN SPEED - 250 FPM MATERIAL - PLYLON #3150 MESA-SRB SKIRT PLATE - 11 FT
226.1141	FEED SILO DIST BELT CONV	QUANTITY - 1 TYPE - HORSEPOWER - 5 HP SPEED - 57 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
226.1152	HOP TRAN+SILO UNLD CON MTR	QUANTITY - 2 TYPE - ENCLOSED IDLER CAPACITY - 150 TPH BELT: LENGTH - 36 FT WIDTH - 30 IN SPEED - 225 FPM MATERIAL - PLYLON #3150 MESA-SRB SKIRT PLATE - 11 FT
226.1151	HOP TRAN+SILO UNLD CONV	QUANTITY - 2 TYPE - HORSEPOWER - 10 HP SPEED - 54 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
226.116	FEED BIN BUCKET ELE+TR+MTR	

708131

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/5300 MWT COAL - 2.5/1.7 IN HG AV - RIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.1161	FEED BIN BUCKET ELEVATOR	QUANTITY - 1 CAPACITY - 150 TPH BELT: LENGTH - 40 FT WIDTH - 20 IN SPEED - 400 FPM MATERIAL - SCANDILON #8050 BUCKET: SIZE - 18 IN X 10 IN MATERIAL - MALLEABLE IRON STYLE AA
226.1162	FEED BIN BUCKET ELEVTR MTR	QUANTITY - 1 TYPE - HORSEPOWER - 60 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.1171	SILC BUCKET ELEVATOR* MOTOR	
226.1171	SILC BUCKET ELEVATOR	QUANTITY - 1 CAPACITY - 150 TPH BELT: LENGTH - 180 FT WIDTH - 20 IN SPEED - 400 FPM MATERIAL - SCANDILON #8050 BUCKET: SIZE - 18 IN X 10 IN MATERIAL - MALLEABLE IRON STYLE AA
226.1172	SILC BUCKET ELEVATOR MOTOR	QUANTITY - 1 TYPE - HORSEPOWER - 50 HP SPEED - 1750 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
226.1181	RAIL UNLD HOP VIB FEEDER* MTR	
226.1181	RAIL UNLD HOP VIB FEEDER	QUANTITY - 1 CAPACITY - 150 TPH MATERIAL - 3/8 IN - #450 BHN STEEL

25780

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.1102	RL UNLD HOP VIB FEEDER MTR	QUANTITY - 1 TYPE - HORSEPOWER - SPEED - VOLTAGE -
226.13	TANKS AND PRESSURE VESSELS	
226.131	SILO WITHDRAWAL HOPPER	QUANTITY - 12 MATERIAL - 3/8 IN - ABRALLOY 450 VOLUME -
226.132	RAIL UNLOADING HOPPER	QUANTITY - 1 MATERIAL - 3/8 IN - ABRALLOY 450 VOLUME -
226.14	PURIFICATION+FILTRATION EG	
226.141	FEED+RECLM DUST COLLECT+MTR	
226.1411	FEED+RECLM DUST COLLECTOR	QUANTITY - 5 FLOWRATE - FILTER - 16 OZ DACRON
226.1412	FEED+RECLM DUST COLLECT MTR	QUANTITY - 5 TYPE - HORSEPOWER - 2 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.142	RAIL UNLOAD DUST COLCT+MTR	
226.1421	RAIL UNLOAD DUST COLLECTOR	QUANTITY - FLOWRATE - FILTER -
226.1422	RAIL UNLOAD DUST COLCT MTR	QUANTITY - TYPE - HORSEPOWER - 75 HP SPEED - 1800 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
226.15	CHUTES + SKIRTS	
226.151	FEEDER CHUTES + SKIRTS	

708133

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.152	ELEV CHRG+DISCHRG CHUTES	
226.153	CONVEYOR CHUTES	
226.154	B14 CHUTES	
226.16	GATES + DIVERTERS	
226.161	SLIDE GATES	
226.162	DIVERTERS	
226.1621	TWO WAY DIVERTER	
226.1622	THREE WAY DIVERTER	
226.19	FOUNDATIONS/SKIDS	
226.191	LIME STORAGE SILO	
226.1911	EXCAVATION WORK	
226.19111	EXCAVATION-EARTH	
226.19112	EXCAVATION-ROCK	
226.19114	BACKFILL-EARTH	
226.19115	DEWATERING	
226.1913	SUBSTRUCTURE CONCRETE	
226.19131	FORMWORK	
226.19132	REINFORCING STEEL	
226.19133	CONCRETE	
226.19134	EMBEDDED STEEL	
226.19135	FLOOR FINISH	
226.1914	SUPERSTRUCTURE	
226.19141	CONCRETE WORK	

708134

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLESTOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.191411	FORMWORK	
226.191412	REINFORCING STEEL	
226.191413	CONCRETE	
226.19145	FLOOR FINISH	
226.1915	STRUCTURAL + MISC STEEL	
226.19153	MISCELLANEOUS STEEL	
226.2	FEED PREPARATION SYSTEM	
226.21	ROTATING MACHINERY	
226.211	LIME SLRY TNK AGITATOR+MTR	
226.2111	LIME SLURRY TANK AGITATOR	QUANTITY - 2 TYPE - AXIAL FLOW IMPELLER MATERIAL -
226.2112	LIME SLRY TNK AGITATOR MTR	QUANTITY - 2 TYPE - HORSEPOWER - 50 HP SPEED - VOLTAGE - 480V, 3 PHASE, 60 HZ
226.212	LIME SLURRY TRANS PUMP+MTR	
226.2121	LIME SLURRY TRANSFER PUMP	QUANTITY - 3 TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 1800 GPM SPEED - TDH - 100 FT BHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - RUBBER LINED DESIGN CODE -

708135

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 KWE/3300 MWT COAL - 2,571.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.2122	LIME SLURRY TRANS PUMP MTR	QUANTITY - 3 TYPE - HORSEPOWER - 300 HP SPEED - VOLTAGE - 4KV, 3 PHASE, 60 HZ
226.213	VOLUMETRIC BELT FEEDER+MTR	
226.2131	VOLUMETRIC BELT FEEDER	QUANTITY - 4 CAPACITY - 15000 LB/HR MATERIAL -
226.2132	VOLUMETRIC BELT FEEDER MTR	QUANTITY - 4 TYPE - HORSEPOWER - 1 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.214	LIME SLAKER AND MOTOR	
226.2141	LIME SLAKER	QUANTITY - 4 CAPACITY - 15000 LB/HR MATERIAL -
226.2142	LIME MIXER MOTOR	QUANTITY - 4 TYPE - HORSEPOWER - 7.5 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.2143	LIME DEGRITTER MOTOR	QUANTITY - 4 TYPE - HORSEPOWER - 2 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.22	TANKS AND PRESSURE VESSELS	

208136

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 P&E/3100 HMT COAL - 2,5/1.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.221	GRIT BIN	QUANTITY - 2 ORIENTATION - DIMENSIONS - 12 FT X 12 FT X 12 FT VOLUME - 1800 CU FT DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE - 1/4 IN CARBON STEEL
226.222	LIME SLURRY SURGE TANK	QUANTITY - 2 ORIENTATION - VERTICAL DIMENSIONS - 30 FT D X 20 FT H VOLUME - 100000 GAL DESIGN PRESS - ATM DESIGN TEMP - 180 F MATERIAL - 1/4 CARBON STEEL DESIGN CODE -
226.223	LIME FEED SILO/HOPPER	QUANTITY - 4 ORIENTATION - VERTICAL DIMENSIONS - 14 FT D X 60 FT H VOLUME - DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
226.25	PIPING	
226.252	2.5 IN + LARGER	
226.2521	CS/WNS	
226.26	VALVES	
226.261	GATE	
226.27	PIPING-MISC ITEMS	
226.271	HANGERS + SUPPORTS	
226.29	FOUNDATIONS/SKIDS	
226.291	LIME SLRY TRANS PUMP FOUND	

708137

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2,5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.2911	EXCAVATION WORK	
226.2913	SUBSTRUCTURE CONCRETE	
226.29131	FORMWORK	
226.29132	REINFORCING STEEL	
226.29133	CONCRETE	
226.29134	EMBEDDED STEEL	
226.29135	FLOOR FINISH	
226.292	LIME SLURRY TANK FOUND	
226.2921	EXCAVATION WORK	
226.29214	BACKFILL-SAND	
226.2923	SUBSTRUCTURE CONCRETE	
226.29231	FORMWORK	
226.29232	REINFORCING STEEL	
226.29233	CONCRETE	
226.3	SUL DIOXIDE SCRUBBING SYS	SEVEN INDEPEDANT SCRUBBING TRAINS EACH CONSISTING OF PERFORATED TRAY ABSORBERS, VENTURI QUENCHERS, RELATED TANKS+PUMPS. ONE TRAIN IS PROVIDED AS A SPARE AS SIX TRAINS ARE DESIGNED TO REMOVE 90 PCT. OF SO2 FROM FLUE GAS AT MAX BOILER LOAD. TOTAL SYSTEM PRESSURE DROP IS 11 IN H2O
226.31	ROTATING MACHINERY	
226.311	QUENCH RECIRCULAT PUMP+MTR	

208138

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 613 - 1232 PWE/3300 HWT COAL - 2.5/1.7 IN H₂O AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07776

ACCOUNT NUMBER	ITFM	DESCRIPTION
226.3111		QUENCH RECIRCULATION PUMP
		QUANTITY - 7
		TYPE - CENTRIFUGAL
		ORIENTATION - HORIZONTAL
		FLOW RATE - 8500 GPM
		SPEED -
		TDM - 126 FT
		BHP -
		NPSH -
		EFFICIENCY -
		DESIGN PRESS -
		DESIGN TEMP -
		MATERIAL -
		DESIGN CODE -
226.3112		QUENCH RECIRCULAT PUMP MTR
		QUANTITY - 7
		TYPE -
		HORSEPOWER - 450 HP
		SPEED -
		VOLTAGE - 4KV, 3 PHASE, 60 HZ
226.312		ABSORB RECIRCULAT PUMP MTR
		QUANTITY - 14
		TYPE - CENTRIFUGAL
		ORIENTATION - HORIZONTAL
		FLOW RATE - 8000 GPM
		SPEED -
		TDM - 126 FT
		BHP -
		NPSH -
		EFFICIENCY -
		DESIGN PRESS -
		DESIGN TEMP -
		MATERIAL -
		DESIGN CODE -
226.3122		ABSORB RECIRCULAT PUMP MTR
		QUANTITY - 14
		TYPE -
		HORSEPOWER - 450 HP
		SPEED -
		VOLTAGE - 4KV, 3 PHASE, 60 HZ
226.313		FEED SLURRY PUMP + MOTOR

708139

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN*USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.3131	FEED SLURRY PUMP	QUANTITY - 4 TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 1500 GPM SPEED - TDH - 80 FT BHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE -
226.3132	FEED SLURRY PUMP MOTOR	QUANTITY - 4 TYPE - HORSEPOWER - 60 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.314	RECIRCULATION TANK MIX*MTR	
226.3141	RECIRCULATION TANK MIXER	QUANTITY - 7 TYPE - MATERIAL -
226.3142	RECIRCULATION TANK MIX MTR	QUANTITY - 7 TYPE - HORSEPOWER - 75 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.315	FEED SLURRY TANK MIXER*MTR	
226.3151	FEED SLURRY TANK MIXER	QUANTITY - 2 TYPE - MATERIAL -
226.3152	FEED SLURRY TANK MIXER MTR	QUANTITY - 2 TYPE - HORSEPOWER - 40 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.316	MOIST WASH TANK AGITAT*MTR	

20814

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 KWE/3500 MWY COAL - 2,571.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.3161	MOIST WASH TANK AGITATOR	QUANTITY - 7 TYPE - MATERIAL -
225.3162	MOIST WASH TANK AGITAT MTR	QUANTITY - 7 TYPE - HORSEPOWER - 5 HP SPEED - VOLTAGE - 400V, 3 PHASE, 50 HZ
225.33	TANKS AND PRESSURE VESSELS	QUANTITY - 7 ORIENTATION - VERTICAL DIMENSIONS - 40 FT X 32 FT X 15 FT H VOLUME - 19200 CU FT
225.331	LOW VELOCITY SUMP TANK	DESIGN PRESS - DESIGN TEMP - MATERIAL - 1/4 IN CARBON STEEL DESIGN CODE - RUBBER LINED
225.332	RECIRCULATION TANK	QUANTITY - 7 ORIENTATION - VERTICAL DIMENSIONS - 42 FT D X 26 FT H VOLUME - 36000 CU FT DESIGN PRESS - DESIGN TEMP - MATERIAL - 1/4 IN CARBON STEEL DESIGN CODE - RUBBER LINED
225.333	SLURRY FEED TANK	QUANTITY - 2 ORIENTATION - VERTICAL DIMENSIONS - 30 FT D X 26 FT H VOLUME - 18400 CU FT DESIGN PRESS - DESIGN TEMP - MATERIAL - 1/4 IN CARBON STEEL DESIGN CODE -

708141

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.36	VALVES	
226.361	GATE	INCLUDED WITH SCRUBBING SYSTEM PACKAGE
226.37	PIPING - MISC ITEMS	
226.373	SPECIALTIES	
226.3731	HEAT TRACING	
226.38	INSTRUMENTATION + CONTROL	
226.39	FOUNDATIONS/SKIDS	
226.391	FEED SLURRY PUMP FOUND	
226.3911	EXCAVATION WORK	
226.39111	EXCAVATION-EARTH	
226.39114	BACKFILL-EARTH	
226.3913	SUBSTRUCTURE CONCRETE	
226.39131	FORMWORK	
226.39132	REINFORCING STEEL	
226.39135	CONCRETE	
226.39134	EMBEDDED STEEL	
226.392	SLURRY FEED TANK FOUND	
226.3921	EXCAVATION WORK	
226.39211	EXCAVATION-EARTH	
226.39214	BACKFILL-EARTH	
226.3923	SUBSTRUCTURE CONCRETE	
226.39231	FORMWORK	
226.39232	REINFORCING STEEL	

00104

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.334	MOIST SEPARATOR WASH TANK	QUANTITY - 7 ORIENTATION - VERTICAL DIMENSIONS - VOLUME - DESIGN PRESS - DESIGN TEMP - MATERIAL - 1/4 IN CARBON STEEL DESIGN CODE -
226.34	PURIFICATION+FILTRATION RW	
226.341	WJENCHER	QUANTITY - 7 TYPE - VENTURI FLOW RATE - MATERIAL - 316 SS / CARBON STEEL DIMENSIONS - 37 FT L X 50 IN WIDE
226.342	ABSORBER	QUANTITY - 7 TYPE - SINGLE TRAY FLOW RATE - MATERIAL - 316 L / CARBON STEEL RUBBER LINED DIMENSIONS - 20 FT X 46 FT X 28 FT H
226.343	MOISTURE SEPARATOR	QUANTITY - 14 TYPE - CHEVRON FLOW RATE - MATERIAL - 316 SS
226.344	CYCLONE SEPARATOR	QUANTITY - 7 TYPE - HYDRO CYCLONE FLOW RATE - MATERIAL - CARBON STEEL RUBBER/REFRAX CERAMIC LINED
226.35	PIPING	
226.351	2 IN + SMALLER	
226.3511	316L SS/NNS	INCLUDED WITH SCRUBBING SYSTEM PACKAGE
226.352	2.5 IN + LARGER	
226.3521	CS/NNS	INCLUDED WITH SCRUBBING SYSTEM PACKAGE

7081A2

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07770

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.39233	CONCRETE	
226.393	SUL DIOXIDE SCRUBBER FOUND	
226.3931	EXCAVATION WORK	
226.39311	EXCAVATION-EARTH	
226.39314	JACKFILL-EARTH	
226.3933	SUBSTRUCTURE CONCRETE	
226.39331	FORMWORK	
226.39332	REINFORCING STEEL	
226.39333	CONCRETE	
226.39334	EMBEDDED STEEL	
226.39335	FLOOR FINISH	
226.3934	SUPERSTRUCTURE	
226.39341	CONCRETE WORK	
226.393411	FORMWORK-METAL	
226.393412	REINFORCING STEEL	
226.393413	CONCRETE	
226.393415	FLOOR FINISH	
226.39342	STRUCTURAL + MISC STEEL	
226.393421	STRUCTURAL STEEL	
226.393423	MISC. FRAMES, ETC.	
226.393425	FLOOR GRATING	
226.393426	STAIR TREADS	
226.393427	HANDRAIL	

708114

EQUIPMENT LIST - REPORT 1

06/15/77

MODEL 61J - 1232 MWE/3500 MWT COAL - 2.5X1.7 IN HG AV - MIDDLETOWN*USA - HIGH SULFUR - CUST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.39349	PAINTING	
226.393492	STEELWORK	
226.393494	HANDRAIL	
226.3935	S02 STRUCTURE MISC EQUIP	
226.39354	LIGHTING + SERVICE POWER	
226.39355	ELEVATOR	
226.393551	ELEVATOR EQUIPMENT	
226.4	GAS HANDLING SYSTEM	
226.41	ROTATING MACHINERY	
226.4.1	SUL DIOXIDE BOOSTER FAN*MTR	QUANTITY - 7 TYPE - FORCED DRAFT FLOW RATE - 58000 ACFM STATIC PRESS - 15 IN WATER SPEED - 600 RPM BHP - 1580 HP EFFICIENCY - DESIGN CODE -
226.4.111	SUL DIOXIDE BOOSTER FAN	
226.4.112	SUL DIOXIDE BOOSTER FAN MTR	QUANTITY - 7 TYPE - HORSEPOWER - 1750 HP SPEED - VOLTAGE - 4KV, 3 PHASE, 60 HZ
226.4.12	DAMPER BLOWER AND MOTOR	
226.4.121	DAMPER BLOWER	QUANTITY - 14 TYPE - FLOW RATE - STATIC PRESS - 15 IN WATER SPEED - BHP - 50 HP EFFICIENCY - DESIGN CODE -

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETON,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.4122	DAMPER BLOWER MOTOR	QUANTITY - 14 TYPE - HORSEPOWER - 50 HP SPEED - VOLTAGE - 460V, 3 PH, 60 HZ
225.45	PIPING, DUCTS, EXPANSION JTS	
225.451	PIPING	
225.4511	2 IN + SMALLER	
225.45111	CS/MNS	
225.452	DUCTS AND EXPANSION JOINTS	
225.4522	S02 SUPPLY BYPASS DUCTS	
225.4523	DUCT INSULATION	
225.453	HANGERS	
225.46	VALVES + DAMPERS	
225.461	ISOLATION DAMPER AND MOTOR	
225.4611	ISOLATION DAMPER	QUANTITY - 14 TYPE - DOUBLE LOUVER/SEAL AIR DIMENSIONS - IN- 16 FT X 17 FT OUT- 11 FT X 15 FT FLOWRATE - MATERIAL - CARBON STEEL / 316L SS VELOCITY -
225.4612	ISOLATION DAMPER MOTOR	QUANTITY - 14 TYPE - HORSEPOWER - 1.25 HP SPEED - VOLTAGE - 115V, 3 PHASE, 60 HZ
225.49	FOUNDATIONS/SKIDS	
225.491	SUL DIOXID BOOST FAN FOUND	

706146

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.4911	EXCAVATION WORK	
226.49111	EXCAVATION-EARTH	
226.49114	BACKFILL-EARTH	
226.4913	SUBSTRUCTURE CONCRETE	
226.49131	FORMWORK	
226.49132	REINFORCING STEEL	
226.49133	CONCRETE	
226.49134	EMBEDDED STEEL	
226.492	DUCTWORK FOUND + SUPPORT	
226.4921	EXCAVATION WORK	
226.49211	EXCAVATION-EARTH	
226.4923	SUBSTRUCTURE CONCRETE	
226.49231	FORMWORK	
226.49232	REINFORCING STEEL	
226.49233	CONCRETE	
226.49234	EMBEDDED STEEL	
226.4924	SUPERSTRUCTURE	
226.49241	CONCRETE WORK	
226.49242	STRUCTURAL + MISC STEEL	
226.492421	STRUCTURAL STEEL	
226.492423	MISC. FRAMES, ETC.	
226.492425	FLOOR GRATING (GALV)	
226.492426	STAIR TREADS	

08/15/77

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 KWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.492427	HANDRAIL	
226.49249	PAINTING	
226.492492	STEELWORK	
226.492493	HANDRAIL	
226.5	SLUDGE HANDLING SYSTEM	
226.51	ROTATING MACHINERY	
226.511	AGITATORS + MOTORS	
226.5111	THICK SURGE TNK AGITAT+MTR	
226.5111	THICK SURGE TANK AGITATOR	QUANTITY - 2 TYPE - AXIAL FLOW IMPELLER MATERIAL -
226.51112	THICK SURGE TNK AGITAT MTR	QUANTITY - 2 TYPE - HORSEPOWER - 40 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.512	PUMPS + MOTORS	
226.5121	THICK UNDERFLOW PUMP+MOTOR	
226.51211	THICKENER UNDERFLOW PUMP	QUANTITY - 5 TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 600 GPM SPEED - TDH - 50 FT BHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE -

08/15/77

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 N#E/3300 MMT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN*USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.51212	THICK UNDERFLOW PUMP MOTOR	QUANTITY - 6 TYPE - HORSEPOWER - 40 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.5122	SLUDGE TRANSFER PUMP+MOTOR	
226.51221	SLUDGE TRANSFER PUMP	QUANTITY - 3 TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 600 GPM SPEED - TDH - 50 FT BHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE -
226.51222	SLUDGE TRANSFER PUMP MOTOR	QUANTITY - 3 TYPE - HORSEPOWER - 40 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.5123	THICK OVERFLOW PUMP+MOTOR	
226.51231	THICKENER OVERFLOW PUMP	QUANTITY - 5 TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 2900 GPM SPEED - 1800 RPM TDH - 250 FT BHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE -

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 PHE/3300 MAT COAL - 2.571,7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.51232	THICK OVERFLOW PUMP MOTOR	QUANTITY - 5 TYPE - HORSEPOWER - 250 HP SPEED - 1800 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
226.5124	THICK OVFLOW SUMP PUMP+MTR	QUANTITY - 2 TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 700 GPM SPEED - TDH - 50 FT DHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE -
226.51241	THICK OVERFLOW SUMP PUMP	QUANTITY - 2 TYPE - CENTRIFUGAL HORIZONTAL FLOW RATE - 450 GPM SPEED - 1800 RPM TDH - 176 FT BHP - 55 HP NPSH - 13 FT EFFICIENCY - 47 PCT DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE -
226.51242	THICK OVFLOW SUMP PUMP MTR	QUANTITY - 2 TYPE - HORSEPOWER - 50 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.5125	SLDG DISPOS TRANS PUMP+MTR	
226.51251	SLDG DISPOSAL TRANS PUMP	

07802

EQUIPMENT LIST - REPORT 1

08/11/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5% S₂ IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.51252	SLUG DISPOS TRANS PUMP MTR	QUANTITY - 2 TYPE - HORSEPOWER - 60 HP SPEED - 1800 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
226.5126	FILTRATE RETURN PUMP+MOTOR	
226.51261	FILTRATE RETURN PUMP	QUANTITY - 2 TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 350 GPM SPEED - 1800 RPM TDH - 87 FT BHP - 11 HP NPSH - 8 FT EFFICIENCY - 88 PCT DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE -
226.51262	FILTRATE RETURN PUMP MOTOR	QUANTITY - 2 TYPE - HORSEPOWER - 15 HP SPEED - 1800 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
226.513	SLUDGE PROCESSING EQUIP	
226.5131	ROT DRUM VAC FILT PUMP+MTR	
226.51311	ROTARY DRUM VACUUM PUMP	QUANTITY - 3 TYPE - SCRAPER DISCHARGE FILTER AREA - 600 SQ FT MATERIAL - CARBON STEEL FLOW RATE -
226.51312	ROTARY DRUM MOTOR	QUANTITY - 3 TYPE - HORSEPOWER - 10 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ

208151

EQUIPMENT LIST - REPORT 1

06/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN#USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.51313	VACUUM PUMP MOTOR	QUANTITY - 3 TYPE - HORSEPOWER - 150 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.51314	FILTRATE PUMP MOTOR	QUANTITY - 3 TYPE - HORSEPOWER - 10 SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.5132	SLUDGE MIXER AND MOTOR	QUANTITY - 2 TYPE - MULLER MIXER
226.51321	SLUDGE MIXER	MATERIAL - CAPACITY - 95 TPH
226.51322	SLUDGE MIXER MOTOR	QUANTITY - 2 TYPE - HORSEPOWER - 200 HP SPEED - 1200 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
226.514	MATERIAL HANDLING EQUIP	QUANTITY - 3
226.5141	BELT FEEDER + MOTOR	TYPE - CAPACITY - 75 TPH
226.51411	BELT FEELER	BELT: LENGTH - 22 FT WIDTH - 24 IN SPEED - MATERIAL -
226.51412	BELT FEEDER MOTOR	QUANTITY - 3 TYPE - HORSEPOWER - 2 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.5142	BELT CONVEYOR/SCALE + MTR	

208152

MODEL 610 - 1252 M&E/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.51421	BELT CONVEYOR/SCALE	QUANTITY - 2 TYPE - CAPACITY - 75 TPH BELT: LENGTH - 75 FT WIDTH - 24 IN SPEED - MATERIAL -
225.51422	BELT CONVEYOR/SCALE MOTOR	QUANTITY - 2 TYPE - HORSEPOWER - 5 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
225.5143	BELT CONVEYOR + MOTOR	QUANTITY - 1 TYPE - CAPACITY - 150 TPH BELT: LENGTH - 40 FT WIDTH - 24 IN SPEED - MATERIAL -
225.51431	BELT CON. MOTOR	QUANTITY - 1 TYPE - HORSEPOWER - 5 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
225.51432	BELT CONVEYOR MOTOR	QUANTITY - 1 TYPE - HORSEPOWER - 5 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
225.5144	RADIAL BELT STACKER + MTR	QUANTITY - 1 TYPE - CAPACITY - 150 TPH BELT: LENGTH - 60 FT WIDTH - 24 IN SPEED - MATERIAL -
225.51441	RADIAL BELT STACKER	QUANTITY - 1 TYPE - CAPACITY - 150 TPH BELT: LENGTH - 60 FT WIDTH - 24 IN SPEED - MATERIAL -

708153

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 KWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - ALUM SULFUR - COST BASIS 07776

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.51442	RADIAL BELT STACKER MOTOR	QUANTITY - 1 TYPE - HORSEPOWER - 10 HP SPEED - VOLTAGE - 480V, 3 PHASE, 60 HZ
226.5145	LIME SCREW FEEDER MOTOR	QUANTITY - 2 TYPE - CAPACITY - 2500 LB/HR DIMENSIONS - 9 IN D X 50 . . . SPEED - MATERIAL -
226.51451	LIME SCREW FEEDER	QUANTITY - 2 TYPE - HORSEPOWER - SPEED - VOLTAGE -
226.51452	LIME SCREW FEEDER MOTOR	QUANTITY - 2 TYPE - HORSEPOWER - SPEED - VOLTAGE -
226.53	TANKS AND PRESSURE VESSELS	QUANTITY - 4 ORIENTATION - VERTICAL DIMENSIONS - 175 FT D X 10 FT H VOLUME - DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL/EPOXY LINE DESIGN CODE - RAKE:
226.531	THICKENER TANK/RAKE+MOTOR	QUANTITY - 8 DIMENSIONS - 12 IN DEEP X 1/4 IN TH MATERIAL - 316 STAINLESS STEEL
226.5311	THICKENER TANK/RAKE	QUANTITY - 8 TYPE - HORSEPOWER - 7.5 HP SPEED - VOLTAGE - 480V, 3 PHASE, 60 HZ
226.5312	THICKENER TANK/RAKE MOTOR	QUANTITY - 8 TYPE - HORSEPOWER - 7.5 HP SPEED - VOLTAGE - 480V, 3 PHASE, 60 HZ

708154

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MHE/5300 M/T COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.533	PAKE LIFT MOTOR	QUANTITY - 4 TYPE - HORSEPOWER - 2 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
226.532	SLUDGE SURGE TANK	QUANTITY - 2 ORIENTATION - VERTICAL DIMENSIONS - 36 FT D X 20 FT H VOLUME - 22000 CU FT DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
226.533	THICKENER OVERFLOW TANK	QUANTITY - 2 ORIENTATION - VERTICAL DIMENSIONS - 70 FT D X 20 FT H VOLUME - 70,000 CU FT DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
226.534	LIME SILO	QUANTITY - 1 ORIENTATION - VERTICAL DIMENSIONS - 20 FT D X 20 FT H VOLUME - 21600 CU FT DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
226.535	SLUDGE DISPOSAL SURGE TANK	QUANTITY - 1 ORIENTATION - VERTICAL DIMENSIONS - 38 FT D X 20 FT H VOLUME - 22000 CU FT DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -

708155

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 PWT COAL - 2.5X1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.536	FILTRATE SURGE TANK	
226.535	PIPING	QUANTITY - 1 ORIENTATION - VERTICAL DIMENSIONS - 38 FT D X 20 FT H VOLUME - 22000 CU FT
226.552	2.5 IN + LARGER	
226.5521	CS/ANS	
226.55211	CS/ANS	DESIGN PRESS -
226.55212	CS/ANS	DESIGN TEMP -
226.55213	CS/ANS	MATERIAL - CARBON STEEL DESIGN CODE -
226.56	VALVES	
226.561	GATE	
226.57	PIPING-MISC ITEMS	
226.571	SLUDGE PIPE SUPPORT SYSTEM	
226.5711	TREATED RR TIE SUPPORTS	
226.5712	SUPPORT BALLAST	
226.5713	CLEARING/GRUB PIPE ROUTE	
226.5714	STEP FASTENERS - SS TNS	
226.59	FOUNDATIONS/SKIDS	
226.591	THICKENER FOUNDATION	
226.5911	EXCAVATION WORK	
226.59111	EXCAVATION-EARTH	

908156

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 810 - 1232 HAE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.59112	EXCAVATION-ROCK	
226.59114	BACKFILL-EARTH	
226.59115	DEWATERING	
226.5913	SUBSTRUCTURE CONCRETE	
226.59131	FORMWORK	
226.59132	REINFORCING STEEL	
226.59133	CONCRETE	
226.592	SLUDGE SURGE TANK FOUND	
226.5921	EXCAVATION WORK	
226.59211	EXCAVATION-EARTH	
226.59214	BACKFILL-SAND	
226.5923	SUBSTRUCTURE CONCRETE	
226.59231	FORMWORK	
226.59232	REINFORCING STEEL	
226.59233	CONCRETE	
226.593	THICKENER PIPE BRIDGE	
226.5931	EXCAVATION WORK	
226.59311	EXCAVATION-EARTH	
226.59314	BACKFILL-EARTH	
226.5933	SUBSTRUCTURE CONCRETE	
226.59331	FORMWORK	
226.59332	REINFORCING STEEL	
226.59333	CONCRETE	

200157

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 MWE/3300 MWT COAL - 2.5/1.7 IN HJ AV - MIDDLETON,USA - HIGH SULFUR - COST BASIS 07:76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.5934	SUPERSTRUCTURE	
225.59341	STRUCTURAL * MISC STEEL	
226.593411	STRUCTURAL STEEL	
226.593413	MISCELLANEOUS STEEL	
226.593415	FLOOR GRATING (GALV.)	
226.593416	STAIR TREADS	
226.593417	HANDRAIL	
226.59342	PAINTING	
226.593422	STEELWORK	
226.593494	HANDRAIL	
225.594	THICK OVERFLOW TANK FOUND	
226.5941	EXCAVATION WORK	
226.59411	EXCAVATION-EARTH	
226.59414	BACKFILL-SAND	
226.5943	SUBSTRUCTURE CONCRETE	
226.59431	FORMWORK	
226.59432	REINFORCING STEEL	
226.59433	CONCRETE	
226.595	SLUDGE TRANSFER PUMP FOUND	
226.5951	EXCAVATION WORK	
226.59511	EXCAVATION-EARTH	
226.59514	BACKFILL-EARTH	
226.5953	SUBSTRUCTURE CONCRETE	

708158

EQUIPMENT LIST - REPORT 1

08/11/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.59531	FORMWORK	
226.59532	REINFORCING STEEL	
226.59533	CONCRETE	
226.59534	EMBEDDED STEEL	
226.596	SLDG DISPOSL SRG TK FOUND	
226.5961	EXCAVATION WORK	
226.59611	EXCAVATION-EARTH	
226.59614	BACKFILL-SAND	
226.5963	SUBSTRUCTURE CONCRETE	
226.59631	FORMWORK	
226.59632	REINFORCING STEEL	
226.59633	CONCRETE	
226.597	EMERGENCY SLURRY STRG POND	
226.5971	EXCAVATION WORK	
226.59711	EXCAVATION-EARTH	
226.59714	BACKFILL-EARTH	
226.5973	SUBSTRUCTURE CONCRETE	
226.59753	POND LINER	
226.6	MISC DESULFURIZATION EQUIP	ONE FOOT OF STABILIZED SLUDGE
226.61	ROTATING MACHINERY	
226.611	PROCESS WATER PUMP + MOTOR	

706159

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETONNAUSA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER

ITEM

DESCRIPTION

225.6111 PROCESS WATER PUMP

QUANTITY - 2
 TYPE - CENTRIFUGAL
 ORIENTATION - HORIZONTAL
 FLOW RATE - 2000 GPM
 SPEED - 1800 RPM
 TDH - 250 FT
 BHP -
 NPSH -
 EFFICIENCY -
 DESIGN PRESS -
 DESIGN TEMP -
 MATERIAL -
 DESIGN CODE -

225.6112 PROCESS WATER PUMP MOTOR

QUANTITY - 2
 TYPE -
 HORSEPOWER - 200 HP
 SPEED - 1800 RPM
 VOLTAGE - 480V, 3 PHASE, 60 HZ

225.612 SEAL WATER PUMP + MOTOR

QUANTITY - 2
 TYPE - CENTRIFUGAL
 ORIENTATION - HORIZONTAL
 FLOW RATE - 450 GPM
 SPEED - 3600 RPM
 TDH - 400 FT
 BHP -
 NPSH -
 EFFICIENCY -
 DESIGN PRESS -
 DESIGN TEMP -
 MATERIAL -
 DESIGN CODE -

225.6121 SEAL WATER PUMP

225.6122 SEAL WATER PUMP MOTOR

QUANTITY - 2
 TYPE -
 HORSEPOWER - 75 HP
 SPEED -
 VOLTAGE - 480V, 3 PHASE, 60 HZ

225.63 TANKS AND PRESSURE VESSELS

208150

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 MWEZ3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.631	PROCESS WATER SURGE TANK	QUANTITY - 1 ORIENTATION - VERTICAL DIMENSIONS - 26 FT D X 16 FT H VOLUME - 63500 GAL DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
226.632	SEAL WATER TANK	QUANTITY - 1 ORIENTATION - VERTICAL DIMENSIONS - 12 FT D X 16 FT H VOLUME - 13500 GAL DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
226.64	PURIFICATION+FILTRATION EQ	
226.641	SEAL WATER FILTER	QUANTITY - 1 TYPE - FLOWRATE - RATING - 125 MICRON MATERIAL -
226.65	PIPING	
226.651	2 IN + SMALLER	
226.6511	CS/NNS	
226.652	2.5 IN + LARGER	
226.6521	CS/NNS	
226.66	VALVES	
226.663	GLOBE	
226.67	PIPING - MISC. ITEMS	
226.671	HANGERS + SUPPORTS	
226.69	FOUNDATIONS/SKIPS	

708101

UNITED ENGINEERS & CONSTRUCTORS INC.

PROG. CM-711 - PEG030*

EQUIPMENT LIST - REPORT 1

MODEL 610 - 1232 M&E P3500 M&T COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

DESCRIPTION

ACCOUNT NUMBER ITEM

226.691	PROCESS WATER PUMP FOUND
226.6911	EXCAVATION WORK
226.6 11.	EXCAVATION-EARTH
226.69114	BACKFILL-EARTH
226.6913	SUBSTRUCTURE CONCRETE
226.69131	FORMWORK
226.69132	REINFORCING STEEL
226.69133	CONCRETE
226.69134	EMBEDDED STEEL
226.69135	FLOOR FINISH
226.692	SEAL WATER PUMP FOUNDATION
226.6921	EXCAVATION WORK
226.69211	EXCAVATION-EARTH
226.69214	BACKFILL-EARTH
226.6923	SUBSTRUCTURE CONCRETE
226.69231	FORMWORK
226.69232	REINFORCING STEEL
226.69233	CONCRETE
226.69234	EMBEDDED STEEL
226.693	PRCS WATER SURGE TNK FOUND
226.6931	EXCAVATION WORK
226.69311	EXCAVATION-EARTH
226.69314	BACKFILL-SAND

708162

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 MWE/3500 MWI COAL - 2.5/1.7 IN HG AV - MIDDLETON NAJSA - HIGH SULFUR - COST BASIS U7/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.6933	SUBSTRUCTURE CONCRETE	
226.69331	FORMWORK	
226.69332	REINFORCING STEEL	
226.69333	CONCRETE	
226.694	SEAL WATER TANK FOUNDATION	
226.6941	EXCAVATION WORK	
226.69411	EXCAVATION-EARTH	
226.69414	BACKFILL-EARTH	
226.6943	SUBSTRUCTURE CONCRETE	
226.69431	FORMWORK	
226.69432	REINFORCING STEEL	
226.69433	CONCRETE	
226.7	INSTRUMENTATION+CONTROL	
		EQUIPMENT INCLUDES:
		TRANSMITTERS - 68
		BOARD MOUNTED INDICATORS - 45
		TEMP ELEMENTS - 100
		VIBRATION DETECTORS - 14
		PROCESS SWITCH - 55
		ANALYTICAL INSTR - 50
		FLOW ELEMENTS - 37
		LOCAL INDICATORS - 79
		ANNUNCIATORS - 160
		RECORDERS - 19
		CONTROLLERS - 23
		MISC DEVICES - 122
		LOCAL PANELS - 31 FT
226.62	BUILDING SERVICES	
227.	INSTRUMENTATION + CONTROL	
227.1	BENCHMARK, PANELS + RACKS	

PROCESS INSTRUMENTATION AND CONTROLS ARE LISTED IN THEIR RESPECTIVE SYSTEMS

708163

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
227.11	BOILER - TG CONTROL PANEL	WALK IN TUNNEL TYPE BENCHBOARD - 34 FT
227.12	AUXILIARY PANELS+CABINETS	<p>QUANTITIES:</p> <p>SOOTBLOWER CENTRAL PANAL - 8 FT</p> <p>COAL SILO MEASURING PANEL - 1 FT</p> <p>COAL HANDLING PANAL - 8 FT</p> <p>SULFER DIOXIDE CONTROL PANAL - 4 FT</p> <p>ANNUNCIATOR PANAL 4 FT</p>
227.18	INSTRUMENT RACKS	
227.2	PLANT COMPUTER SYSTEM	<p>EQUIPMENT INCLUDES:</p> <p>DATA ACQUISITION COMPUTER WITH COPE AND DISK WITHOUT INTERFACE</p> <p>OPERATOR CONSOLE - 1</p> <p>(NT DISPLAYS(ALARM + OPERATOR) - 2</p> <p>PRINTERS(ALARM,UTILITY,LOGGER) - 3</p> <p>TREND RECORDER PENS - 0</p> <p>PROGRAM EQPT: TYPEWRITERS,PAPER,TAPE, AND PUNCH</p> <p>UNINTERRUPTIBLE POWER SUPPLY SOFTWARE</p>
227.3	STACK GAS MONITORING SYS	SEE ACCOUNT 254.56
227.4	PLANT CONTROL SYSTEM	
227.41	COORDINATED CONTROL SYSTEM	<p>EQUIPMENT INCLUDES:</p> <p>BOILER TURBINE MASTER CONTROL</p> <p>FEEDWATER CONTROL</p> <p>S/H STEAM TEMPERATURE CONTROL</p> <p>FUEL FLOW CONTROL</p> <p>AIR FLOW CONTROL</p> <p>R/H STEAM TEMPERATURE CONTROL</p> <p>PRIMARY AIR CONTROL</p> <p>SPRAY VALVE CONTROL</p> <p>FIRING RATE CONTROL</p> <p>PULVERIZER CONTROL</p> <p>START-UP VALVE CONTROL</p>
227.42	BURNER CONTROL SYSTEM	PROVIDED WITH BOILER PACKAGE
227.5	INSTRUMENT TUBING+FITTINGS	1/2 INCH DIA- - 0.083 IN THICKNESS 40,000 LF

708164

EQUIPMENT LIST - REPORT 1

06/15/77

MODEL 610 - 1232 N4E/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWNUSA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
228.	BOILER PLANT MISC ITEMS	
228.1	MISC SUSPENSE ITEMS	
228.11	FINAL ALIGNMENT + CHECKING	
228.12	FIELD PAINTING	
228.13	QUALIFICATION OF WELDERS	
228.3	BOILER PLANT INSULATION	
228.31	PIPE INSULATION	
228.32	EQUIPMENT INSULATION	
228.4	SAMPLING EQUIPMENT	EQUIPMENT INCLUDES: SAMPLE CONDITIONERS ANALYZERS CONTROL AND DISPLAY AUX BOILER SAMPLE PANAL
228.7	MISC PIPE BRIDGE	
228.71	EXCAVATION WORK	
228.711	EXCAVATION-EARTH	
228.73	SUBSTRUCTURE CONCRETE	
228.731	FORMWORK	
228.733	CONCRETE	
228.734	EMBEDDED STEEL	
23 .	TURBINE PLANT EQUIPMENT	
231.	TURBINE GENERATOR	
231.1	TURBINE GENERATOR *ACCSRY	

208165

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 MWE/5100 HMT COAL - 2,571.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	TURBINE FACTORY COST	DESCRIPTION
231.11			QUANTITY - 1 TYPE - CCRF-30 IN LSB RATING - 1300MWE AT 2.5IN HG ABS SPEED - 3600 RPM TURBINE DESIGN STEAM FLOW - 9*140*816 LB/HR THROTTLE PRES - 5515 PSIA THROTTLE TEMP - 1000 F MOISTURE - SUPERHEATED REHEAT - SINGLE STAGE SHAFT SEAL SYS-125 F GENERATOR DESIGN RATING - 722MVA, 26*000V, 3 PH, 60 HZ POWER FACTOR - 0.90 SHORT CIR RAT - 0.58 ROTOR COOLING - 75 PSI HYDROGEN STATOR COOLING - 100 F WATER ACCESSORIES: ONE(1) GLAND STEAM SEAL SYSTEM
231.12	OTHER TURBINE COSTS		
231.13	LACIER & VOLTAGE REGULATOR		TYPE - AC ROTATING RATING RESPONSE RATIO 1.5 COOLER BLOWER DRIVER AIR
231.2	FOUNDATIONS		
231.21	T-G PEDESTAL		
231.211	EXCAVATION WORK		
231.2111	EXCAVATION - EARTH		INCLUDED WITH STRUCTURE ASSOCIATED YARDWORK
231.2112	EXCAVATION - ROCK		
231.2114	BACKFILL - EARTH		
231.2115	DEMATERING		

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
231.213	SUBSTRUCTURE CONCRETE	
231.2131	FORMWORK	
231.2132	REINFORCING STEEL	
231.2133	CONCRETE	
231.2134	EMBEDDED STEEL	
231.2137	RUBBING CONCRETE SURFACE	
231.2138	EXPANSION JOINT	
231.214	SUPERSTRUCTURE	
231.2141	CONCRETE WORK	
231.21411	FORMWORK	
231.21412	REINFORCING STEEL	
231.21413	CONCRETE	
231.21414	EMBEDDED STEEL	
231.21417	RUBBING CONCRETE SURFACES	
231.21418	EXPANSION JOINT	
231.2142	STRUCTURAL + MISC STEEL	
231.21421	STRUCTURAL STEEL	
231.21425	GRATING	
231.4	LUBRICATING OIL SYSTEM	
231.43	TANKS + PRESSURE VESSELS	

08107

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
231.431	LUBE OIL STORAGE TANK	QUANTITY 1 ORIENTATION HORIZONTAL DIMENSIONS 18,000 GAL VOLUME 15 PSIG DESIGN PRES. 100 F DESIGN TEMP. A-283, GR C, CARBON-ZINC MATERIAL LINING DESIGN CODE API
231.45	PIPING	
231.451	2IN. + SMALLER	
231.4511	CS/WNS	
231.452	2.5IN. + LARGER	
231.4521	CS/WNS	
231.46	VALVES	
231.461	GATE	
231.47	PIPING-MISC. ITEMS	
231.471	HANGERS + SUPPORTS	
231.472	INSULATION	
231.473	SPECIALTIES	
231.48	INSTRUMENTATION + CONTROL	LOCAL INDICATOR 35 TEMPERATURE ELEMENT 2 PROCESS SWITCH 20 ANNUNCIATOR 12
231.49	SKIDS / FOUNDATIONS	

ALLOWANCE

208168

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
231.491	LUBE OIL CONDING EQPT SKID	LUBE OIL PURIFIER: QUANTITY 1 TYPE CENTRIFUGAL CAPACITY: MAIN TURBINE 1,570 GPH BFP TURBINE 450 GPH TRANSFER PUMPS + MOTORS: QUANTITY 2 X 100 PCT. FLOW RATE 100 GPM TDH 50 FT
231.492	FIRE PROTECTION EQPT.	TYPE AUTOMATIC DELUGE WATER SPRAY FLOW 1,000 GPM
231.5	GAS SYSTEMS	
231.51	HYDROGEN STORAGE SYSTEM	
231.51	TANKS + PRESSURE VESSELS	
231.51	HYDROGEN STORAGE BOTTLES	PERMANENT STORAGE TANK CAPACITY FOR 70,000 SCF
231.515	PIPEWORK	
231.5151	2 IN + SMALLER	
231.5152	2.5 IN + LARGER	
231.51521	CS/NNS	
231.516	VALVES	
231.5163	GLOBE	
231.517	PIPING-MISC ITEMS	
231.5171	HANGERS + SUPPORTS	
231.5172	INSULATION	
231.5173	SPECIALTIES	
231.52	CARBON DIOXIDE STORAGE SYS	

708100

EQUIPMENT LIST - REPORT 1

06/15/77

MODEL 610 - 1232 M+E/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
231.523	TANKS + PRESSURE VESSELS	
231.5231	CARBON DIOXIDE TANKS	PERMANENT STORAGE TANK CAPACITY FOR 26,000 SCF
231.525	PIPING	
231.5251	2 IN + SMALLER	
231.5252	2.5 IN + LARGER	
231.52521	CS/NMS	
231.526	VALVES	
231.5263	GLOBES	
231.527	PIPING-MISC ITEMS	
231.5271	HANGER + SUPPORT	
233.	CONDENSING SYSTEMS	
233.1	CONDENSER EQUIPMENT	
233.12	HEAT TRANSFER EQUIPMENT	

708170

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
233.121	CONDENSERS	<p>QUANTITY 2 X 50 PCT. CONDENSERS WITH 2 SHELLS EACH</p> <p>TYPE 1 PASS, MULTI-PRESSURE</p> <p>ORIENTATION LONGITUDINAL</p> <p>SURFACE AREA 407000 SQ FT</p> <p>DESIGN EXHAUST :</p> <p>FIRST SHELL 2.72 IN HG ABS</p> <p>SECOND SHELL 3.61 IN HG ABS</p> <p>HEAT LOAD: TOTAL 5.18 E+09 BTU/HR</p> <p>TEMP RISE: TOTAL 26 F</p> <p>SHELL CONDITION:</p> <p>DES. PRESS/TEMP 80 PSIG/150 F</p> <p>FLOW RATE :</p> <p>FIRST SHELL 2.80 E+06 LB/HR</p> <p>SECOND SHELL 2.67 E+06 LB/HR</p> <p>MATERIAL CARBON STEEL</p> <p>TUBE CONDITION:</p> <p>QUANTITY 29,602</p> <p>SIZE 0.75 IN DIA., 16 BWG</p> <p>LENGTH 70 FT</p> <p>DES. PRESS/TEMP</p> <p>MATERIAL 90 - 10 CU - NI</p> <p>DESIGN CODE ASME SECTION VIII, DIV 1</p> <p>FLOW RATE 221,750 GPM</p> <p>INLET WATER: DES. 92 F</p> <p>MAX. 93 F</p> <p>VELOCITY 6.5 FPS</p> <p>MATERIAL 90-10 CU-NI</p> <p>DESIGN CODE ASME SECTION VIII, DIV 1</p>
233.2	CONDENSATE SYSTEM	
233.21	ROTATING MACHINERY	
233.211	CONDENSATE PUMP + MOTOR	

20817A

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
233.2111	COND PUMP	QUANTITY - 3 X 50 PCT. TYPE - CENTRIFUGAL, MULTISTAGE ORIENTATION - VERTICAL FLOW RATE - 7,800 GPM SPEED - 1,750 RPM TDH - 180 FT AT DESIGN CAP. BHP - 427 HP NPSH - 16 FT EFFICIENCY - 83 PCT. DESIGN PRESS - 125 PSIG DESIGN TEMP - 150 F MATERIAL - CASING: C.I., IMPELLER: 1ST STG CAGNM SHAFT: 401 SS DESIGN CODE -
233.2112	COND PUMP MOTOR	QUANTITY - TYPE - T.E.F.C. HORSEPOWER - 450 HP SPEED - 1,750 RPM VOLTAGE - 4 KV, 3 PH, 60 HZ
233.212	CONDENSATE BOOSTER PUMP*MT	
233.2121	CONDENSATE BOOSTER PUMP	QUANTITY - 3 X 50 PCT. TYPE - CENTRIFUGAL, TWO STAGE ORIENTATION - HORIZONTAL FLOW RATE - 6,200 GPM SPEED - 3,500 RPM TDH - 600 FT AT DESIGN CAP. BHP - 1,092 HP NPSH - 50 FT EFFICIENCY - 86 PCT. DESIGN PRESS - 650 PSIA DESIGN TEMP - 120 F MATERIAL - CASING, IMPELLER AND SHAFT - CHROME STEEL DESIGN CODE -
233.2122	CONDENSATE BOOSTER PUMP MT	QUANTITY - TYPE - T.E.F.C. HORSEPOWER - 1,250 HP SPEED - 3,600 RPM VOLTAGE - 4 KV, 3 PH, 60 HZ

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EQUIPMENT LIST - REPORT 1

03/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
233.213	TRANSFER PUMP + MOTOR	
233.2131	TRANS PUMP	QUANTITY - 2 X 100 PCT. TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 1,200 GPM SPEED - 3,600 RPM TDH - 40 FT D - 15 HP NPSH - 15 FT EFFICIENCY - 80 PCT. DESIGN PRESS - 50 PSI DESIGN TEMP - 100F MATERIAL - CASING, IMPELLER AND SHAFT -- CHROME STEEL DESIGN CODE
233.2132	TRANS PUMP MOTOR	TYPE - T.E.F.C. HORSEPOWER - 20 HP SPEED - 3,600 RPM VOLTAGE - 480 V, 3 PH, 60 HZ
233.221	COND. STORAGE TK HEATER	QUANTITY - 1 TYPE - STEAM INJECTION MATERIAL - SFS SIZE - 1 INCH TUBING
233.23	TANKS & PRESSURE VESSELS	
233.231	CONDENSATE STORAGE TANK	QUANTITY - 2 ORIENTATION - VERTICAL DIMENSIONS - VOLUME - 500,000 GAL DESIGN PRESS - ATMOS. DESIGN TEMP - 100 F MATERIAL - ALUMINUM DESIGN CODE -
233.25	PIPING	
233.251	2 IN. + SMALLER	
233.2511	CS/NNS	
233.252	2.5 IN. + LARGER	

208173

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2,571.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
233.2521	CS/NS	
233.26	VALVES	
233.261	GATE VALVES	
233.262	CHECK VALVES	
233.263	GLOBE VALVES	
233.266	BUTTERFLY	
233.267	BALL VALVES	
233.27	PIPING-MISC. ITEMS	
233.271	HANGERS + SUPPORTS	
233.272	INSULATION	
233.273	SPECIALTIES	
233.28	INSTRUMENTATION + CONTROL	TRANSMITTER LOCAL INDICATOR 36 BOARD MOUNTED INDICATOR 28 RECORDER 2 FLOW ELEMENT 1 CONDUCTIVE ELEMENT 4 TEMP ELEMENT 53 TEMP TRANSMITTER 31 PROCESS SWITCH 17 CONTROLLER 7 ANNUNCIATOR 12 MISC. DEVICES 10
233.29	FOUNDATIONS	
233.291	CONDENSATE TANK FDN	
233.2911	FORMWORK	
233.2912	REINFORCING STEEL	
233.2913	CONCRETE	

08174

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 613 - 1252 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
233.292	CONDENSATE PUMP FDN	INCLUDED WITH TURBINE ROOM AND HEATER BAY SUBSTRUCTURE CONCRETE
233.2921	FORMWORK	
233.2922	REINF. STEEL	
233.2923	CONCRETE	
233.2924	EMBEDDED IRON	
233.2925	STRUCTURAL STEEL	
233.2926	MISC. STEEL	
233.293	BOOSTER PUMP FDN	INCLUDED WITH TURBINE ROOM AND HEATER BAY SUBSTRUCTURE CONCRETE
233.2931	FORMWORK	
233.2932	REINF. STEEL	
233.2933	CONCRETE	
233.2934	EMBEDDED IRON	
233.2935	STRUCTURAL STEEL	
233.2936	MISC. STEEL	
233.3	GAS REMOVAL SYSTEM	
233.31	CONDENSER GAS REMOVAL SYS.	
233.311	ROTATING MACHINERY	
233.3111	MECH VACUUM PUMP & MOTOR	

208176

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 613 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
233.31111	MECH VAC PUMP	QUANTITY 4 X 50 PCT. TYPE ROTARY ORIENTATION HORIZONTAL FLOW RATE 48 SCFM AT 1.5 IN SPEED 435 RPM BHP EFFICIENCY DESIGN PRES 150 PSIG DESIGN TEMP 150 F MATERIAL C.I. SHAFT - C.S. DESIGN CODE
233.31112	MECH VAC PUMP MOTOR	TYPE T.E.F.C. HORSEPOWER 150 HP SPEED 1,800 RPM VOLTAGE 460V, 3 PH, 60 HZ
233.315	PIPING	
233.3151	2 IN. + SMALLER	
233.31511	CS/MS	
233.3152	2.5 IN. + LARGER	
233.31521	CS/MS	
233.316	VALVES	
233.3161	GATE	
233.3165	GLOBE	
233.317	PIPING-MISC. ITEMS	
233.3171	HANGERS + SUPPORTS	
233.3172	INSULATION	
233.3173	SPECIALTIES	
233.318	INSTRUMENTATION + CONTROL	
233.319	FOUNDATIONS/SKIDS	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWF/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
233.5191	VACUUM PUMP FOTN.	INCLUDED WITH TURBINE ROOM AND HEATER BAY SUBSTRUCTURE CONCRETE
233.51911	FORMWORK	
233.51912	REINFORCING STEEL	
233.51913	CONCRETE	
233.51914	EMBEDDED STEEL	
233.4193		
233.5	CONDENSATE POLISHING	
233.51	ROTATING MACHINERY	
233.511	ACID REGEN PUMP + MOTOR	
233.5111	ACID REGEN PUMP	QUANTITY 2 X 100 PCT. TYPE POSITIVE DISPLACEMENT ORIENTATION HORIZONTAL FLOW RATE 0 - 200 GPM SPEED - TDH 100 FT GHP 0.75 HP NPSH 10 FT EFFICIENCY - DESIGN PRES 150 PSIG DESIGN TEMP 150 F MATERIAL ALLOY 20 DESIGN CODE
233.5112	ACID REGEN PUMP MOTOR	TYPE HORSEPOWER 3/4 HP SPEED 1,750 RPM VOLTAGE 460V, 3 PH, 60 HZ
233.512	CAUSTIC REGEN PUMP + MOTOR	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 013 - 3232 M4E/330U MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
233.5121	CAUSTIC REGEN PUMP	<p>QUANTITY 2 X 100 PCT. TYPE POSITIVE DISPLACEMENT ORIENTATION HORIZONTAL FLOW RATE 0-150 GPM SPEED - TDH 100 FT BHP 0.75 HP NPSH 10 FT EFFICIENCY - DESIGN PRES 150 PSIG DESIGN TEMP 150 F MATERIAL S.S. DESIGN CODE</p>
233.5122	CAUSTIC REGEN PUMP MOTOR	<p>TYPE 3/4 HP HORSEPOWER 1.750 RPM SPEED 460V, 3 PH, 60 HZ</p>
233.513	AMMONIA REGEN PUMP + MOTOR	
233.5131	AMMONIA REGEN PUMP	<p>QUANTITY 2 X 100 PCT. TYPE CENTRIFUGAL ORIENTATION HORIZONTAL FLOW RATE 5 GPM SPEED 1,800 RPM TDH 100 FT BHP 1 HP NPSH 10 FT EFFICIENCY - DESIGN PRES 150 PSIG DESIGN TEMP 150 F MATERIAL S.S. DESIGN CODE</p>
233.5132	AMMONIA REGEN PUMP MOTOR	<p>TYPE 1 HP HORSEPOWER 1800 RPM SPEED 460V, 3 PH, 60 HZ</p>
233.514	SLUDGE WATER REGEN P+M	

708178

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL DTJ - 1282 Pw6/3300 MWI COAL - 2,571.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
233.5141	SLUDGE WATER REGEN PUMP	<p>QUANTITY 2 X 100 PCT. TYPE CENTRIFUGAL ORIENTATION HORIZONTAL FLOW RATE 250 GPM SPEED 1,800 RPM TDH 100 FT BHP 15 HP NPSH 10 FT EFFICIENCY 150 PSIG DESIGN PRES 150 F DESIGN TEMP 150 F MATERIAL S.S. DESIGN CODE</p>
233.5142	SLUDGE WATER REGEN P MOTOR	<p>TYPE T.E.F.C. HORSEPOWER 15 HP SPEED 1800 RPM VOLTAGE 460V, 3 PH, 60 HZ</p>
233.515	RECYCLE PUMP + MOTOR	
233.5151	RECYCLE PUMP	<p>QUANTITY 2 X 100 PCT. TYPE CENTRIFUGAL ORIENTATION HORIZONTAL FLOW RATE 800 GPM SPEED 1,800 RPM TDH 50 FT BHP 15 HP NPSH 10 FT EFFICIENCY 150 PSIG DESIGN PRES 150 F DESIGN TEMP 150 F MATERIAL S.S. DESIGN CODE</p>
233.5152	RECYCLE PUMP MOTOR	<p>TYPE T.E.F.C. HORSEPOWER 15 HP SPEED 1800 RPM VOLTAGE 460V, 3 PH, 60 HZ</p>
233.516	AIR BLOWER + MOTOR	
233.5161	AIR BLOWER	<p>QUANTITY 1 TYPE POSITIVE DISPLACEMENT</p>

ACCOUNT NUMBER	ITEM	DESCRIPTION
255-5102	AIR BLOWER MOTOR	T.E.F.C. 15 HP 1,800 RPM 460V, 3 PH, 60 HZ
233-53	TANKS + PRESSURE VESSELS	
233-531	RESIN SEPRTRICATION RUN TK	1 VERT. W/STRUC. STEEL LEGS 5 FT DIA. X 12 FT STR. SIDE, SKID MOUNTED 260 CU FT 75 PSIG 130 F C.S. RUBBER LINED W/S.S. INTERNALS ASME SECTION VIII
233-532	ANION REGEN TANK	1 VERT. W/STRUC. STEEL LEGS 4 FT DIA. X 10 FT STR. SIDE, SKID MOUNTED 135 CU FT 75 PSIG 130 F C.S. RUBBER LINED W/S.S. INTERNALS ASME SECTION VIII
233-533	RESIN STORAGE TANK	1 VERT. W/STRUC. STEEL LEGS 5 FT DIA. X 12 FT STR. SIDE, SKID MOUNTED 260 CU FT 75 PSIG 130 F C.S. RUBBER LINED W/S.S. INTERNALS ASME SECTION VIII

MODEL 610 - 1232 MWE/3300 MWT COAL - 2,5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
233.534	HOT WATER HEATING TANK	QUANTITY 1 ORIENTATION VERTICAL DIMENSION 6 FT DIA X 8 FT ST SIDE VOLUME 225 CU FT DESIGN PRES. 75 PSIG DESIGN TEMP. 300 F MATERIAL C.S. DESIGN CODE ASME SECTION VIII, DIV 1
233.535	BULK ACID STORAGE TANK	QUANTITY 1 ORIENTATION HORIZONTAL DIMENSIONS 8FT DIA X 14FT ST. SIDE VOLUME 700 CU FT DESIGN PRES. 75 PSIG DESIGN TEMP. 150 F MATERIAL C.S. - LINED DESIG CODE ASME SECTION VIII, DIV 1
233.536	BULK CAUSTIC STORAGE TANK	QUANTITY 1 ORIENTATION HORIZONTAL DIMENSIONS 8FT DIA X 14FT ST. SIDE VOLUME 700 CU FT DESIGN PRES. 75 PSIG DESIGN TEMP. 150 F MATERIAL C.S. - LINED DESIGN CODE ASME SECTION VIII, DIV 1
233.537	BULK AMMONIA STORAGE TANK	QUANTITY 1 ORIENTATION HORIZONTAL DIMENSIONS 8FT DIA X 14FT ST. SIDE VOLUME 700 CU FT DESIGN PRES. 75 PSIG DESIGN TEMP. 150 F MATERIAL C.S. DESIGN CODE ASME SECTION VIII, DIV 1
233.54	PURIFICATION EQUIPMENT	

208181

UNITED ENGINEERS & CONSTRUCTORS INC.

PROG. CM-711 *PEG030*

EQUIPMENT LIST - REPORT

MODEL 610 - 1232 M&E/3500 M&T COAL - 2.5/1.7 IN H3 AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07776

ACCOUNT NUMBER	ITEM	DESCRIPTION	QUANTITY	ORIENTATION	RESIN TYPE	RESIN VOLUME	FLOW RATE	FREBOARD	BED DEPTH	DESIGN PRES.	DESIGN TEMP.	MATERIAL	DESIGN CODE
233.541	MIXED BED DEMINERALIZERS	7 (INCLUDING 1 SPARE) VERT. W/DISHED HEADS AND STRUCT. STEEL LEGS CATION AND ANION 8 FT DIA. X 5 FT STR. SIDE CATION = 100 CU FT ANION -- 50 CU FT 2500 GPM AT 48 GPM/SQFT TOTAL FOR 6 -15,000 GPM 2 FT 3.0 FT SKID MOUNTED 200 PSIG 130 F C.S. RUBBER LINED W/S.S. INTERNALS ASME SECTION VIII, DIV 1											

233.58	INSTRUMENTATION + CONTROL												
234.	FEED HEATING SYSTEM												
234.1	FEEDWATER HEATERS												
234.12	HEAT TRANSFER EQUIPMENT												

708182

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
234.121	NO.1 LP HEATERS	QUANTITY 2 X 50 PCT. TYPE SHELL AND TUBE PASS 2 ORIENTATION HORIZONTAL APPROACH 10 F TERM. DIFF. 3 F HEAT LOAD SURFACE AREA SHELL CONDITION: DES.PRESS/TEMP 50 PSIA/200 F STEAM FLOW 108,000 LB/HR DRAIN FLOW 554,218 LB/HR MATERIAL TUBE CONDITION: QUANTITY SIZE DES.PRESS/TEMP 400 PSIA/250 F FLOW RATE 4,000,000 LB/HR MATERIAL 304 S/S DESIGN CODE ASME VIII, DIV 1
234.122	NO.2 LP HEATERS	QUANTITY 2 X 50 PCT. TYPE SHELL AND TUBE PASS 2 ORIENTATION HORIZONTAL APPROACH 10 F TERM. DIFF. 3 F HEAT LOAD SURFACE AREA SHELL CONDITION: DES.PRESS/TEMP 50 PSIA/275 F STEAM FLOW 134,000 LB/HR DRAIN FLOW 387,000 LB/HR MATERIAL TUBE CONDITION: QUANTITY SIZE DES.PRESS/TEMP 400 PSIA/250 F FLOW RATE 4,000,000 LB/HR MATERIAL S/S DESIGN CODE ASME VIII, DIV 1

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UNITED ENGINEERS & CONSTRUCTORS INC.

MODEL 613 - 1232 M&E/3300 MWT COAL - 2.1/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
234.123	NO. 3 LP HEATERS	<p>QUANTITY 2 X 50 PCT. SHELL AND TUBE 2 PASS 2 ORIENTATION HORIZONTAL APPROACH 10 F TERM. DIFF. 3 F HEAT LOAD SURFACE AREA SHELL CONDITION: DES. PRESS/TEMP 50 PSIA/400 F STEAM FLOW 140,140 LB/HR DRAIN FLOW 253,000 LB/HR MATERIAL TUBE CONDITION: QUANTITY SIZE DES. PRESS/TEMP 400 PSIA/275 F FLOW RATE 4,000,000 LB/HR MATERIAL C.S. DESIGN CODE ASME VIII, DIV 1</p>
234.124	NO. 4 LP HEATER	<p>QUANTITY 2 X 50 PCT. SHELL AND TUBE 2 PASS 2 ORIENTATION HORIZONTAL APPROACH 10 F TERM. DIFF. 3 F HEAT LOAD SURFACE AREA SHELL CONDITION: DES. PRESS/TEMP 75 PSIA/500 F STEAM FLOW 112,500 LB/HR DRAIN FLOW 112,500 LB/HR MATERIAL TUBE CONDITION: QUANTITY SIZE DES. PRESS/TEMP 400 PSIA/315 F FLOW RATE 4,000,000 LB/HR MATERIAL 304 S/S DESIGN CODE ASME VIII, DIV 1</p>
234.125	NO. 5 LP HEATER/DEGENERATOR	

708184

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
234.1251	DEAERATOR	QUANTITY 1 X 100 PCT. TYPE TRAY ORIENTATION HORIZONTAL APPROACH TERM. DIFF. HEAT LOAD DIMENSIONS VOLUME SHELL CONDITION: DES. PRESS/TEMP 200 PSIA/400 F STEAM FLOW 262,537 Lb/HR DRAIN FLOW 9,140,816 Lb/HR MATERIAL TRAY CONDITION: QUANTITY MATERIAL DESIGN CODE
234.1252	DEAERATOR STORAGE TANK	QUANTITY 1 X 100 PCT. ORIENTATION HORIZONTAL DIMENSION 14 FT DIA X 100 FT L VOLUME 115,000 GAL STORAGE BASIS- 5 MIN STG W/2FT FREE BRD DESIGN PRESS. 200 PSIA DESIGN TEMP. 400 F MATERIAL DESIGN CODE ASME VIII, DIV 1

708155

MODEL 61J - 1232 HWE/3300 MWT COAL - 2,541.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
234,126	NO 6 HP HEATER	QUANTITY 3 X 33 1/3 PCT TYPE SHELL AND TUBE PASS 2 ORIENTATION HORIZONTAL APPROACH 10 F TERM. DIFF. 3 F HEAT LOAD SURFACE AREA SHELL CONDITION: DES. PRESS/TEMP 315 PSIA/525 F STEAM FLOW 150,000 LB/HR DRAIN FLOW 672,000 LB/HR MATERIAL TUBE CONDITION: QUANTITY SIZE DES. PRESS/TEMP 4500 PSIA/425 F FLOW RATE 3,100,000 LB/HR MATERIAL 304 S/S DESIGN CODE ASME VIII, DIV 1
234,127	NO 7 HP HEATER	QUANTITY 3 X 33 1/3 PCT TYPE SHELL AND TUBE PASS 2 ORIENTATION HORIZONTAL APPROACH 10 F TERM. DIFF. 0 F HEAT LOAD SURFACE AREA SHELL CONDITION: DES. PRESS/TEMP 675 PSIA/580 F STEAM FLOW 293,500 LB/HR DRAIN FLOW 526,500 LB/HR MATERIAL TUBE CONDITION: QUANTITY SIZE DES. PRESS/TEMP 4,500 PSIA/525 F FLOW RATE 4,000,000 LB/HR MATERIAL 304 S/S DESIGN CODE ASME VIII, DIV 1

708186

MODEL 613 - 1232 KWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
234.128	NO 8 HP HEATER	<p>QUANTITY 3 X 33 1/3 PCT TYPE SHELL AND TUBE PASS 2 ORIENTATION HORIZONTAL APPROACH 10 F TERM. DIFF. 3 F HEAT LOAD SURFACE AREA SHELL CONDITION: DES. PRESS/TEMP 1,100 PSIA/700F STEAM FLOW 233,500 LB/HR DRAIN FLOW 233,500 LB/HR MATERIAL TUBE CONDITION: QUANTITY SIZE DES. PRESS/TEMP 4,500 PSIA/500 F FLOW RATE 4,000,000 LB/HR MATERIAL 304 SFS DESIGN CODE ASME VIII, DIV 1</p>
234.2	FEEDWATER SYSTEM	
234.21	ROTATING MACHINERY	
234.211	MAIN GULEY FEED PUMP-MBFP	<p>QUANTITY 2X50 PCT TYPE CENTRIFUGAL, 4 STAGES ORIENTATION HORIZONTAL FLOW RATE 13,500 GPM SPEED 5,800 RPM TDM 11,500 FT BHP 43,660 HP NPSH 150 FT EFFICIENCY 80 PCT DESIGN PRESS 5,000 PSIA DESIGN TEMP 360 F MATERIAL CHROME STEEL DESIGN CODE</p>

708187

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 013 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
234.212	MBFP TURBINE DRIVES	QUANTITY - 2 X 50 PCT. TYPE - MULTI-STAGE STEAM CONDENSER HORSEPOWER - 44,000 HP SPEED - 5,800 RPM VOLTAGE - ACCESSORIES - LUBE OIL SYSTEM GLAND SEAL SYSTEM
234.210	MAIN OF BOOSTER PUMP * MTR	
234.2161	MAIN OF BOOSTER PUMP	QUANTITY - 2 X 50 PCT TYPE - ORIENTATION - FLOW RATE - 13,500 GPM SPEED - 1,750 RPM TDH - 150 FT DES. CAPACITY BHP - 639 HP NPSH - 70 FT EFFICIENCY - DESIGN PRESS - 250 PSI DESIGN TEMP - 360 F MATERIAL - DESIGN CODE -
234.2162	MAIN OF BOOSTER PUMP MTR.	
234.22	HEAT TRANSFER EQUIPMENT	QUANTITY - TYPE - HORSEPOWER - 700 HP SPEED - 1,750 RPM VOLTAGE - 4 KV, 3 PH, 60 HZ

708188

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 010 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
234.221	MAIN BOILER FP CONDENSER	QUANTITY 2X50PCT TYPE 1 PASS-SINGLE PRESS ORIENTATION LONGITUDINAL SURFACE AREA 75,000 SQ FT DESIGN EXHAUST 3.45IN HG ABS INLET TEMP DES. 120 F MAX: 95F HEAT LOAD 5.8 E08 BTU/HR TEMP RISE 23 F SHELL CONDITION: DES. PRESS/TEMP .9PSIG/120F FLOW RATE 570,500 LB/HR MATERIAL CS TUBE CONDITION: QUANTITY 7165 SIZE 0.75 IN OD - 18 DWG LENGTH 53.3 FT DES. PRESS/TEMP FLOW RATE 48,480 GPM VELOCITY 6.5 FPS MATERIAL 90-10 CU-NI DESIGN CODE ASME SECTION VIII, DIV 1
234.25	PIPING	
234.251	2 IN + SMALLER	
234.2511	CS/PC	
234.2512	CS/BC	
234.252	2.5IN + LARGER	
234.2521	CS/PC	
234.25211	CS/PC	
234.25212	CS/PC	
234.2522	CS/BC	
234.26	VALVES	
234.261	GATE	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
234.262	CHECK	
234.263	GLOBE	
234.27	PIPING-MISC. ITEMS	
234.271	HANGERS & SUPPORTS	
234.272	INSULATION	
234.273	SPECIALTIES	
234.28	INSTRUMENTATION + CONTROL	TRANSMITTER 34 LOCAL INDICATOR 28 BOARD MOUNTED INDICATOR 86 RECORDER 2 FLOW ELEMENT 13 TEMP ELEMENT 20 TEMP TRANSMITTER 14 PROCESS SWITCH 4 CONTROLLER 5 ANNUNCIATOR 2 MISC. DEVICES 22
234.29	SKIDS/FOUNDATIONS	
234.291	MBFP	INCLUDED WITH TURBINE ROOM AND HEATER BAY SUBSTRUCTURE CONCRETE
234.2911	FORMWORK	
234.2912	REINFORCING STEEL	
234.2913	CONCRETE	
234.2914	EMBEDDED STEEL	
234.3	EXTRACTION STEAM SYSTEM	
234.35	PIPING	
234.351	2 IN + SMALLER	
234.3511	CS/NNS	

708130

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 #WE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
234.352	2.5IN * LARGER	
234.3521	CS/WNS	
234.36	VALVES	
234.361	GATE	
234.362	CHECK	
234.365	GLOBE	
234.37	PIPING-MISCELLANEOUS	
234.371	HANGER * SUPPORTS	
234.372	INSULATION	
234.373	SPECIALTIES	
234.38	INSTRUMENTATION * CONTRDL	TRANSMITTER 21 LOCAL INDICATOR 4 BOARD MOUNTED INDICATOR 32 FLOW ELEMENT 10 PROCESS SWITCH 17 CONTROLLER 1 ANNUNCIATOR 20 MISC. DEVICES 11
234.4	FWH VENT * DRAIN SYSTEM	
234.41	ROTATING MACHINERY	
234.411	HEATER DRAIN PUMP * MOTOR	

708191

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
234.4111	HEATER DRAIN PUMP	QUANTITY 2 X 50 PCT. TYPE CENTRIFUGAL ORIENTATION VERTICAL FLOW RATE - 1,600 GPM SPEED 1,780 RPM TDH 180 FT BHP - 91 HP NPSH 17.4 FT EFFICIENCY 80 PCT. DESIGN PRESS. 350 PSIG DESIGN TEMP. 350 F MATERIAL CASING : C.S. IMPELLER: CHN. 11 DESIGN CODE
234.4112	HEATER DRAIN PUMP MOTOR	TYPE TEWC HORSEPOWER - 100 HP SPEED 1,800 RPM VOLTAGE 460 V 3 PH 60 HZ COOLING FLOW 4 GPM
234.43	TANKS + PRESSURE VESSELS	
234.431	HEATER DRAIN TANK	QUANTITY - 1 ORIENTATION - VERTICAL DIMENSIONS - 7 FT DIA X 11 FT STR VOLUME - 3150 GAL DESIGN PRESS - 50 PSIG DESIGN TEMP - 200 F MATERIAL - 304 SS DESIGN CODE - ASME SECTION VIII
234.45	PIPING	
234.451	2 IN + SMALLER	
234.4511	CS/PC	
234.452	2.5IN + LARGER	
234.4521	CS/PC	
234.4522	CR-MO/PC	
234.46	VALVES	

208192

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION																
234.461	GATE																	
234.462	CHECK																	
234.463	GLOBE																	
234.47	PIPING-MISC. ITEMS																	
234.471	HANGERS & SUPPORTS																	
234.472	INSULATION																	
234.473	SPECIALTIES																	
234.48	INSTRUMENTATION + CONTROL	<table border="0"> <tr> <td>TRANSMITTER</td> <td>27</td> </tr> <tr> <td>LOCAL INDICATOR</td> <td>25</td> </tr> <tr> <td>BOARD MOUNTED INDICATOR</td> <td>4</td> </tr> <tr> <td>FLOW ELEMENT</td> <td>3</td> </tr> <tr> <td>TEMP ELEMENT</td> <td>20</td> </tr> <tr> <td>PROCESS SWITCH</td> <td>29</td> </tr> <tr> <td>CONTROLLER</td> <td>22</td> </tr> <tr> <td>ANNUNCIATOR</td> <td>28</td> </tr> </table>	TRANSMITTER	27	LOCAL INDICATOR	25	BOARD MOUNTED INDICATOR	4	FLOW ELEMENT	3	TEMP ELEMENT	20	PROCESS SWITCH	29	CONTROLLER	22	ANNUNCIATOR	28
TRANSMITTER	27																	
LOCAL INDICATOR	25																	
BOARD MOUNTED INDICATOR	4																	
FLOW ELEMENT	3																	
TEMP ELEMENT	20																	
PROCESS SWITCH	29																	
CONTROLLER	22																	
ANNUNCIATOR	28																	
235.	OTHER TURBINE PLANT EQUIP.																	
235.1	MAIN VAPOR PIPING SYSTEM																	
235.11	MAIN STEAM SYSTEM																	
235.115	PIPING																	
235.1151	2 IN + SMALLER																	
235.11511	CR-MO/NNS																	
235.11512	CR-MO/PC																	
235.1152	2.5 IN + LARGER																	
235.11521	CR-MO/BC																	
235.115211	CR-MO/BC																	
235.115212	CR-MO/BC																	

081577

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 613 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, US - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.11522	CR-MO/NNS	
235.116	VALVES	
235.1161	GATE	
235.1162	CHECK	
235.1163	GLOBE	
235.1165	RELIEF	
235.117	PIPING-MISC ITEMS	
235.1171	HANGERS + SUPPORTS	
235.1172	INSULATION	
235.1173	SPECIALTIES	
235.11732	STEAM TRAPS + STRAINERS	
235.118	INSTRUMENTATION+CONTROL	TRANSMITTER 9 LOCAL INDICATOR 4 BOARD MOUNTED INDICATOR 4 RECORDER 3 TEMPERATURE ELEMENT 24 CONTROLLER 1 ANNUNCIATOR 1 MISCELLANEOUS DEVICES 2
235.12	HOT REHEAT SYSTEM	
235.125	PIPING	
235.1251	2 IN + SMALLER	
235.12511	CR-MO/PC	
235.1252	2.5IN + LARGER	
235.12521	CR-MO/PC	
235.125211	CR-MO/PC	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.125212	CR-MO/PC	
235.126	VALVES	
235.1261	GATE	
235.1263	GLOBE	
235.1265	SAFETY/RELIEF	
235.127	PIPING-MISC. ITEMS	
235.1271	HANGERS + SUPPORTS	
235.1272	INSULATION	
235.1273	SPECIALTIES	
235.12732	TRAPS + STRAINERS	
235.128	INSTRUMENTATION + CONTROL	TRANSMITTER 5 LOCAL INDICATOR 7 RECORDER 1 TEMPERATURE ELEMENT 24 ANNUNCIATOR 1 MISCELLANEOUS DEVICES 1
235.13	COLD REHEAT SYSTEM	
235.135	PIPING	
235.1351	2 IN + SMALLER	
235.13511	CS/PC	
235.1352	2.5 IN + LARGER	
235.13521	CS/PC	
235.136	VALVES	
235.1361	GATE	
235.1362	CHECK	

708195

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.1363	GLOBE	
235.1365	RELIEF	
235.137	PIPING-MISC. ITEMS	
235.1371	HANGERS + SUPPORTS	
235.1372	INSULATION	
235.1373	SPECIALTIES	
235.13732	TRAPS + STRAINERS	
235.138	INSTRUMENTATION + CONTROL	TRANSMITTER 5 LOCAL INDICATOR 2 TEMPERATURE ELEMENT 18 PROCESS SWITCH 4 CONTROLLER 2 ANNUNCIATOR 1
235.15	ATTEMPERATING SYSTEM	FOR COLD REHEAT, SUPERHEAT DND AUXILIARY STEAM
235.155	PIPING	
235.1551	2 IN + SMALLER	
235.15511	CS/PC	
235.1552	2.5 IN + LARGER	
235.15521	CS/PC	
235.156	VALVES	
235.1561	GATE	
235.1562	CHECK	
235.157	PIPING-MISC ITEMS	
235.1571	HANGERS + SUPPORTS	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 PWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.1572	INSULATION	
235.1573	SPECIALTIES	
235.15732	STEAM TRAPS + STRAINERS	
235.158	INSTRUMENTATION + CONTROL	
235.173	SPECIALTIES	
235.2	TURBINE AUXILIARIES	
235.21	MAIN STM/RHT VENTS & DRAIN	
235.215	PIPING	
235.2151	2 IN + SMALLER	
235.21511	CS/PC	
235.21512	CR-MO/PC	
235.2152	2.5 IN + LARGER	
235.21521	CS/PC	
235.21522	CR-MO/PC	
235.216	VALVES	
235.2163	GLOBE	
235.217	PIPING-MISC. ITEMS	
235.2171	HANGERS + SUPPORTS	
235.2172	INSULATION	
235.2173	SPECIALTIES	
235.218	INSTRUMENTATION + CONTROL	ALLOWANCE
235.3	TB CLOSED CLG WATER SYS	
235.31	ROTATING MACHINERY	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 670 - 1232 MWE/1300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.311	TB CLOSED CLS WTR PUMP	<p>QUANTITY 3 X 50 PCT. TYPE CENTRIFUGAL ORIENTATION HORIZONTAL FLOW RATE 6,000 GPM SPEED 1,775 RPM TDH 120 FT BHP 225 HP NPSH 15 FT EFFICIENCY 80 PCT. DESIGN PRESS 250 PSIG DESIGN TEMP 150 F MATERIAL CAST IRON CASING CHROME STEEL IMPELLER DESIGN CODE</p>
235.3111	TB CCW PUMP	<p>QUANTITY 2 X 50 PCT. TYPE SHELL AND TUBE TEMA TYPE AFL ORIENTATION HORIZONTAL HEAT LOAD 3.99 E07 BTU/HR SURFACE AREA 14,000 SQ FT SHELL CONDITION 150 PSIG / 150 F DES.PRES/TEMP 108 F / 95 F TEMP IN/OUT 6,000 GPM FLOW RATE CARBON STEEL MATERIAL TUBE CONDITION 3,565 - 20 FT LONG QUANTITY 3/4 IN O.D. 18 BWG SIZE 150 PSIG / 100 F DES.PRES/TEMP 85 F / 95 F TEMP IN/OUT 8,000 GPM FLOW RATE 90:10 CU-IN MATERIAL DESIGN CODE ASME SECTION VIII</p>
235.312	TB CCW PUMP MOTOR	<p>TYPE AC INDUCTION HORSEPOWER 300 HP SPEED 1,800 RPM VOLTAGE 460 V, 3 PH, 60 HZ</p>
235.32	HEAT TRANSFER EQUIPMENT	
235.321	HEAT EXCHANGERS	
235.33	TANKS + PRESSURE VESSELS	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.331	HEAD TANK	QUANTITY 1 ORIENTATION HORIZONTAL DIMENSION 4.5 FT DIA X 7 FT LONG 3/8 INCH WALL VOLUME 900 GAL DESIGN PRES. 15 PSIG DESIGN TEMP. 100 F MATERIAL ASTM A283 GRC DESIGN CODE API
235.35	PIPING	
235.351	2 IN. + SMALLER	
235.3511	CS/MNS	
235.352	2.5 IN + LARGER	
235.3521	CS/MNS	
235.36	VALVES	
235.361	GATE	
235.362	CHECK	
235.363	GLOBE	
235.365	RELIEF	
235.366	BUTTERFLY	
235.368	PLUG	
235.37	PIPING-MISC. ITEMS	
235.371	HANGERS + SUPPORTS	
235.372	INSULATION	
235.373	SPECIALTIES	

708159

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 FWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.38	INSTRUMENTATION + CONTROL	TRANSMITTER 1 LOCAL INDICATOR 74 TEMPERATURE ELEMENT 100 ANNUNCIATOR 2 MISCELLANEOUS DEVICES 2
235.4	DEMIN. WATER MAKE-UP SYSTEM	TYPE - ACTIVATED CARBON PREFILTERS, FOLLOWED BY CATION-ANION MIXED BED DEMINERALIZERS, ARRANGED IN TWO TRAINS WITH COMMON VACUUM DEGASIFIER. FLOW RATE - 432,000 GPD DESIGN CODE ASME SECTION VIII
235.45	PIPING	
235.451	2 IN + SMALLER	
235.4511	CS/MS	
235.452	2.5 IN + LARGER	
235.4521	CS/MS	
235.46	VALVES	
235.47	PIPING-MISC ITEMS	
235.48	INSTRUMENTATION + CONTROL	ALLOWANCE
235.49	SKIDS / FOUNDATIONS	
235.491	DEMINERALIZER PACKAGE	
235.4911	ROTATING MACHINERY	
235.49111	ACID REGENERANT P+M	

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EQUIPMENT LIST - REPORT 1

08/15/72

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.49111	ACID REGENERANT PUMP	<p>QUANTITY 2 X 100 PCT. TYPE POSITIVE DISPLACEMENT ORIENTATION HORIZONTAL FLOW RATE 0 - 200 GPH SPEED VARIABLE TDH 100 PSIG BHP 3/4 HP NPSH 10 FT EFFICIENCY DESIGN PRES. 150 PSIG DESIGN TEMP. 100 F MATERIAL ALLOY 20 DESIGN CODE ASME VIII, DIV 1</p>
235.49112	ACID REGENERANT PUMP MOTOR	<p>TYPE T.E.F.C. HORSEPOWER 3/4 HP SPEED VARIABLE VOLTAGE 460V, 3 PH, 60 HZ</p>
235.49112	CAUSTIC REGENERANT P+M	
235.49112	CAUSTIC REGEN PUMP	<p>QUANTITY 2 X 100 PCT. TYPE POSITIVE DISPLACEMENT ORIENTATION HORIZONTAL FLOW RATE 0 - 85 GPH SPEED VARIABLE TDH 100 PSIG BHP 3/4 HP NPSH 10 FT EFFICIENCY DESIGN PRESS 150 PSIG DESIGN TEMP 100 F MATERIAL 316 S.S. DESIGN CODE ASME VIII, DIV 1</p>
235.49112	CAUSTIC REGEN PUMP MOTOR	<p>TYPE T.E.F.C. HORSEPOWER 3/4 HP SPEED VARIABLE VOLTAGE 460 V, 3 PH, 60 HZ</p>
235.49113	DEGASIFIER EVACUATING P+M	

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07776

ACCOUNT NUMBER

ITEM

DESCRIPTION

235.491131 DEGASIFIER EVAC PUMP

QUANTITY 3 X 50 PCT.
 TYPE ROTARY - WATER SEALED
 ORIENTATION
 FLOW RATE 260 ACFM AT 20 MM HG.A
 SPEED
 TDH
 BHP 3/4 HP
 NPSH
 EFFICIENCY
 DESIGN PRES.
 DESIGN TEMP.
 MATERIAL
 DESIGN CODE S/S
 ASME VIII, DIV 1

235.491132 DEGASIFIER EVAC PUMP MOTOR

TYPE
 HORSEPOWER 3/4 HP
 SPEED
 VOLTAGE 460 V, 3 PH, 60 HZ

235.49114 DEGASIFIER BOOSTER PUMP

QUANTITY 2 X 100 PCT
 TYPE CENTRIFUGAL
 ORIENTATION HORIZONTAL
 FLOW RATE 300 GPM
 SPEED 1,800 RPM
 TDH 200 FT
 BHP 17 HP
 EFFICIENCY 80

08202

235.491141 DEGASIFIER BOOSTER PUMP

EFFICIENCY
 DESIGN PRES. 150 PSIG
 DESIGN TEMP. 100 F
 MATERIAL 316 S.S.
 DESIGN CODE

235.491142 DEGASIFIER BOOSTER P MOTOR

TYPE T.F.F.C.
 HORSEPOWER 17 HP
 SPEED 1,800 RPM
 VOLTAGE 460V, 3 PH, 60 HZ

235.49121 DILUTE CAUSTIC WATER MTR.

235.4913 TANKS + PRESSURE VESSELS

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 010 - 1232 MWE/3300 MMT COAL - 2.5/1.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.49131	VACUUM DEGASIFIER	8 FT DIA. BY 7 FT HIGH STORAGE SECTION WITH 4 FT DIA. BY 18 FT HIGH TWO STAGE DEGASIFIER
235.49132	ACID REGENERANT DAY TANK	QUANTITY 1 ORIENTATION VERTICAL DIMENSIONS 2.5 FT DIA X 3 FT HIGH VOLUME 135 GAL DESIGN PRES. ATMOSPHERIC DESIGN TEMP. 100 F MATERIAL 10 GAUGE C.S. WITH 1/8 IN PLASTISOL LINER DESIGN CODE API
235.49133	CAUSTIC REGENERANT DAY TK	QUANTITY 1 ORIENTATION VERTICAL DIMENSIONS 2.5 FT DIA X 3.5 FT HIGH VOLUME 215 GAL DESIGN PRES. ATMOSPHERIC DESIGN TEMP. 100 F MATERIAL 10 GAUGE C.S. WITH 1/8 IN PLASTISOL LINER DESIGN CODE API
235.49134	MT WTR CAUSTIC DILUTION TK	QUANTITY 1 ORIENTATION VERTICAL W STEEL LEGS DIMENSIONS 4 FT DIA X 5 FT STR VOLUME 600 GAL DESIGN PRES. 75 PSIG DESIGN TEMP. 200 F MATERIAL STEEL WITH RUBBER LINER DESIGN CODE ASME VIII, DIV 1
235.4914	PURIFICATION FILTRATION EQ	

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/5800 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.49141	FILTERS	QUANTITY - 3 X 50 PCT. TYPE - CHARCOAL FILTER MEDIA - 200 CU FT CARBON VESSEL SIZE - 6.5 FT DIA. FLOW RATE - 300 GPM DESIGN PRESS - 100 PSIG DESIGN TEMP - 100 F DIFF. PRESS - CLEAN/DIRTY - RATING/SIZE - MATERIAL - CS DIRT CAPACITY - 17 Lb DESIGN CODE - ASME VIII, DIV 1
235.49142	CATION ION EXCHANGE BEDS	QUANTITY - 2 X 100 PERCENT ORIENTATION - VERTICAL RESIN TYPE - IR-230 STRONG ACID RESIN SIZE - 6.5 FT DIA RESIN VOLUME - 135 CU FT FLOW RATE - 300 GPM FREBOARD - 4FT BED DEPTH - 4FT DESIGN PRESS - 100 PSIG DESIGN TEMP - 100 F MATERIAL - CS W RUBBER LINER SS INTERNALS
235.49143	ANION ION EXCHANGE BEDS	QUANTITY - 2 X 100 PERCENT ORIENTATION - VERTICAL FREBOARD - 1RA-402 STRONG BASE SIZE - 6 FT DIA RESIN VOLUME - 90 CU FT FLOW RATE - 300 GPM FREBOARD - 3.25FT BED DEPTH - 3.25FT DESIGN PRESS - 100 PSIG DESIGN TEMP - 100 F MATERIAL - CS W RUBBER LINER SS INTERNALS

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.49144	MIXED-BED ION EXCHANGE BED	<p>QUANTITY - 2 X 100 PERCENT</p> <p>VERTICAL</p> <p>IR-120, STRONG ACID RES</p> <p>IRA-402, STRONG BASE RES</p> <p>6 FT DIA</p> <p>30 CU FT; IR-120</p> <p>40 CU FT; IRA-402</p> <p>FLOW RATE 300 GPM</p> <p>FREBOARD - 2.5 FT</p> <p>BED DEPTH - 2.5 FT</p> <p>DESIGN PRESS - 100 PSIG</p> <p>DESIGN TEMP - 100 F</p> <p>MATERIAL - CS W RUBBER LINER</p> <p>SS INTERNALS</p>
235.5	CHEMICAL TREATMENT SYSTEM	
235.51	ROTATING MACHINERY	
235.511	AMMONIA FEED PUMP + MOTOR	
235.5111	AMMONIA FEED PUMP	<p>QUANTITY 2 X 100 PCT.</p> <p>TYPE POSITIVE DISPLACEMENT</p> <p>ORIENTATION HORIZONTAL</p> <p>FLOW RATE 0 - 5 GPH</p> <p>SPEED VARIABLE</p> <p>TDM 900 PSIG</p> <p>BHP 3/4 HP</p> <p>NPSH 10 FT</p> <p>EFFICIENCY 1000 PSIG</p> <p>DESIGN PRES. 100 F</p> <p>DESIGN TEMP. WETTED PARTS 316 SS</p> <p>MATERIAL AUTOMATIC ON CHEMICAL DEMAND</p> <p>CONTROL</p>
235.5112	AMMONIA FEED PUMP MOTOR	<p>TYPE T.E.F.C.</p> <p>HORSEPOWER 3/4 HP</p> <p>SPEED VARIABLE</p> <p>VOLTAGE 460V, 3 PH, 60 Hz</p>
235.512	HYDRAZINE FEED PUMP+MOTOR	

208205

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MMT COAL - 2.5/1.7 IN HG AV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.5121	HYDRAZINE FEED PUMP	<p>QUANTITY 2 X 100 PCT. POSITIVE DISPLACEMENT HORIZONTAL FLOW RATE 0 - 5 GPM SPEED VARIABLE TDH 900 PSIG BHP 3/4 HP NPSH 10FT EFFICIENCY 1000 PSIG DESIGN PRES. 100 F DESIGN TEMP. WETTED PARTS 316 SS MATERIAL ASME VIII, DIV 1 DESIGN CODE AUTOMATIC ON CHEMICAL CONTROL DEMAND</p>
235.5122	HYDRAZINE FEED PUMP MOTOR	<p>TYPE T.E.F.C. HORSEPOWER 3/4 HP SPEED VARIABLE VOLTAGE 480V, 3 PH, 60 HZ</p>
235.53	TANKS + PRESSURE VESSELS	
235.531	AMMONIA STORAGE TANK	<p>QUANTITY 1 ORIENTATION VERTICAL DIMENSION 3 FT DIA X 4 FT HIGH VOLUME 100 DESIGN PRES. ATMOSPHERIC DESIGN TEMP. 100 F MATERIAL 304 S.S. DESIGN CODE NONE</p>
235.532	HYDRAZINE STORAGE TANK	<p>QUANTITY 1 ORIENTATION VERTICAL DIMENSION 3 FT DIA X 4 FT HIGH VOLUME 100 DESIGN PRES. ATMOSPHERIC DESIGN TEMP. 100 F MATERIAL 304 S.S. DESIGN CODE NONE</p>
235.55	PIPING	
235.551	2 IN + SMALLER	

708206

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.5511	SS/NNS	
235.552	2.5 IN + LARGER	
235.56	VALVES	
235.563	GLOBE	
235.57	PIPE-MISC. ITEMS	
235.571	HANGERS + SUPPORTS	
235.572	INSULATION	
235.573	SPECIALTIES	
235.58	INSTRUMENTATION + CONTROL	LOCAL INDICATOR 4 PROCESS SWITCH 4 MISC. 2
235.6	NEUTRALIZATION SYSTEM	
235.61	ROTATING MACHINERY	
235.611	OVERBOARD/RECIR PUMP+MOTOR	
235.6111	OVERBOARD/RECIR PUMP	QUANTITY 2 X 100 PERCENT TYPE IN-LINE CENTRIFUGAL ORIENTATION VERTICAL FLOW RATE 300 GPM SPEED 1750 RPM TDH 40 FT BHP 4.1 HP NPSH 10 FT EFFICIENCY 74 PERCENT DESIGN PRES. 100 PSIG DESIGN TEMP. 100 F MATERIAL 316 SS DESIGN CODE
235.6112	OVERBOARD/RECIR PUMP MOTOR	TYPE OPEN DRIP PROOF HORSEPOWER 5 HP SPEED 1800 RPM VOLTAGE 460V, 3 PH, 60 HZ

208204

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.612	BLOWER + MOTOR	2 X 100 PERCENT ROOTS BLOWER 1600 CFM AT 5 PSIG CS
235.6121	BLOWER	T.E.F.C. 10 HP
235.6122	BLOWER MOTOR	460 V, 3 PH, 60 HZ
235.63	TANKS AND PRESSURE VESSELS	
235.631	NEUTRALIZATION TANK	QUANTITY 2 ORIENTATION HORIZONTAL DIMENSIONS 12 FT DIA X 34 FT LONG VOLUME 30,000 GAL DESIGN PRES. ATMOSPHERIC DESIGN TEMP. 100 F MATERIAL FIBERGLASS TANK INTERNALS AIR DISTRIBUTER HEADERS LATERALS AND SPARGERS OF PVC MATERIAL
235.65	PIPING	
235.651	2 IN & SMALLER	
235.6511	CS/NNS	
235.652	2.5 IN & LARGER	
235.6521	CS/NNS	
235.66	VALVES	
235.67	PIPING - MISC ITEMS	
235.671	HANGERS + SUPPORTS	
235.672	INSULATION	
235.673	SPECIALTIES	

708208

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 613 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.68	INSTRUMENTATION + CONTROL	LOCAL INDICATOR 10 RECORDER 1 FLOW ELEMENT 4 TEMPERATURE ELEMENT 3 CONTROLLER 6 LOCAL PANEL 1 ANALYTICAL ELEMENT 4
236.	INSTRUMENTATION + CONTROL	
236.1	PROCESS IC EQUIPMENT	
236.11	BENCHBOARD, PANELS + RACKS	
236.111	TURBINE PLT MAIN CONTRL BD	MAIN STEAM FEEDWATER HEATER VENTS AND DRAINS TURBINE CIRCULATING WATER CONDENSATE PANEL INCLUDED IN 227.11 SEE 243.11 FOR ELECTRICAL SECTION OF MCB (MAIN CONTROL BOARD)
236.112	TURBINE PANELS	
236.1121	TURBINE SUPERVISORY PANELS	FURNISHED w/231.1
236.1122	MHC CONTROL CABINET	FURNISHED w/231.1
236.1123	TURBINE ACCESSORY PANELS	INCLUDED WITH ACCOUNT 231.1 TG CONTROL PANELS HYDROGEN AND COOLING WATER CABINET TURING GEAR MOTOR PANEL PRESSURE TRANSDUCER PANEL EXCITATION CONTROL CUBICLE REHEATER PROTECTION PIPING CTL PANEL TURBINE SUPERVISORY INSTRUMENT CABINET ALL FURNISHED w/231.1
236.113	TURBINE PLANT HVAC PANELS	TURBINE BUILDING AIR HANDLING INTAKE STRUCTURE VENTILATION ADMINISTRATION BUILDING HVAC
236.115	INSTRUMENT RACK-TURB PLANT	LOCAL INSTRUMENT RACKS - 57

602802

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 010 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
235.116	TURBINE + UNIT MISC PANEL	VERTICAL PANEL FOR STARTING UP SYSTEM, EXTRACTION STEAM NON RETURN VALVES, AUX STEAM SYSTEM, CIRC. WATER
235.2	PROCESS COMPUTER	INCLUDED IN ACCOUNT 227.2
235.3	TURB PLT 1+C TUBING	INCLUDED WITH ACCOUNT 227.5 LINEAR FEET OF TUBING LINEAR FEET OF TUBING - 28,300
237.	TURBINE PLANT MISC ITEMS	
237.1	MISC SUSPENSE ITEMS	
237.11	PIPE	
237.12	FIELD PAINTING	ALLOWANCE FOR PAINTING OF ALL TURBINE PLANT EQUIPMENT AND PIPING.
237.13	QUALIFICATION OF WELDERS	ALLOWANCE FOR QUALIFYING WELDERS AND WELDING PROCEDURES.
237.3	TURBINE PLANT INSULATION	
237.31	PIPE INSULATION	TOTAL COST OF TURBINE PLANT PIPE INSULATION.
237.32	EQUIPMENT INSULATION	TOTAL COST OF TURBINE PLANT EQUIPMENT INSULATION.
24.	ELECTRIC PLANT EQUIPMENT	
241.	SWITCGEAR	
241.1	GEN EMPT SWITCHGEAR	
241.11	GEN LOAD BREAK SWITCH	

0128810

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
241.12	GEN NEUTRAL GROUNDING EQPT	TWO GENERATOR NEUTRAL GROUNDING CUBICLES EACH CONSISTING OF : TRANSFORMER-- 50 KVA, SINGLE PHASE 22900-120/240 VOLTS VENTILATED, DRY-TYPE SELF-COOLED, 150 KV BIL RESISTOR--INDOOR, 0.24 OHMS RESISTANCE 600 VOLTS
241.13	GEN CURRENT+POTENTIAL XFMR	
241.131	GEN.CURRENT TRANSFORMERS	EACH GENERATOR PROVIDED WITH 3 CT'S PER BUSHING RATED AT 20 KA
241.132	GEN.POTENTIAL TRANSFORMERS	GENERATOR BUS PROVIDED WITH 6 PT'S RATED AT 26400-120/120 VOLTS
241.14	GEN SURGE PROTECTION EQPT	EACH GENERATOR PROVIDED WITH ONE 30 KV LIGHTNING ARRESTER AND ONE 0.125 MICRO FARAD CAPACITOR PER PHASE
241.15	GEN EXCITATION SWITCHGEAR	EACH GENERATOR PROVIDED WITH EXCITATION SWITCHGEAR CONSISTING OF EXCITER FIELD CIRCUIT BREAKER AND VOLTAGE REGULATOR
241.2	STATION SERVICE SWITCHGEAR	
241.21	MEDIUM VOLTAGE METAL CLAD	

708211

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
241.211	13.8 KV	<p>TWO 13.8 KV BUSES CONSISTING OF INDOOR METAL CLAD SWITCHGEAR :</p> <p>NOMINAL VOLTAGE : 15 KV NOMINAL MVA CLASS : 750 MVA CONTINUOUS CURRENT - INCOMING LINE ACB : 2000 A FEEDER ACB : 1200 A BUS : 2000 A RATED SHORT CIRCUIT CURRENT: 28000 A RMS@15 KV</p> <p>INTERRUPTING TIME : 5 CYCLES CLOSING AND LATCHING CAPABILITY : 58000 A, RMS</p> <p>QUANTITIES - INCOMING LINES : 4 FEEDER : 30 PT COMPTS : 6 SPACE : 2</p> <p>EACH BUS IS COMPLETE WITH METERING, PROTECTIVE RELAYING, AND CONTROL LOGIC</p>
241.212	6.9 KV	
241.213	4.16 KV	<p>FOUR 4.16 KV BUSES CONSISTING OF INDOOR METAL CLAD SWITCHGEAR :</p> <p>NOMINAL VOLTAGE : 5 KV NOMINAL MVA CLASS: 350 MVA CONTINUOUS CURRENT - INCOMING LINE ACB : 2000 A FEEDER ACB : 1200 A BUS : 2000 A RATED SHORT CIRCUIT CURRENT: 41000 A, RMS@4.76 KV</p> <p>INTERRUPTING TIME : 5 CYCLES CLOSING AND LATCHING CAPABILITY : 78000 A, RMS</p> <p>QUANTITIES - INCOMING LINE : 8 FEED : 83 SPACE : 4 PT COMPTS : 12</p> <p>EACH BUS IS COMPLETE WITH METERING, PROTECTIVE RELAYING, AND CONTROL LOGIC</p>
241.22	STATION MOTOR CONTROL CNTR	

08212

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
241.221	GENERAL PLANT	<p>SIXTY-SEVEN MOTOR CONTROL CENTERS OF STANDARD NEMA CLASS 1 CONSTRUCTION WITH TYPE B WIRING, DRAWOUT TYPE, A 600A HORIZONTAL BUS, A 300A VERTICAL BUS AND BRACED FOR 42000A, RMS, SYMMETRICAL :</p> <p>MOTOR FEEDERS (COMBINATION STARTERS) CONTACTOR : 3 POLE, 600V, FULL VOLTAGE MAGNETIC, SIZE 1 TO SIZE 4 CIRCUIT BREAKERS : 600V, 25000 AIC, ADJUSTABLE INSTANTANEOUS MAGNETIC TRIP, MOLDED CASE TYPE THERMAL OVERLOAD UNIT : ONE PER PHASE CONTROL TRANSFORMER : ONE PER STARTER 480-120 v.</p> <p>MISC. FEEDERS (COMBINATION CONTACTORS) SIMILAR TO MOTOR FEEDERS EXCEPT SIZE 1, SIZE 2 AND SIZE 4 ONLY, THERMAL MAGNETIC CIRCUIT BREAKERS AND NO THERMAL OVERLOAD UNITS</p> <p>LIGHTING AND MISC LOADS CIRCUIT BREAKER : 600V, 25000 AIC, THERMAL, MAGNETIC, MOLDED CASE TYPE SPACE HEATER LOAD (SHL) PACKAGE MAIN CIRCUIT BREAKER : 600V, 25000 AIC THERMAL, MAGNETIC, MOLDED CASE TYPE TRANSFORMER : 7.5 OR 15 KVA SINGLE PHASE, 480-120/240V, 60 HZ, DRY TYPE DISTRIBUTION PANEL : 12 OR 24 SINGLE POLE, 20A, E FRAME ACB; 120/240 v, 3 WIRE</p> <p>QUANTITIES -- FULL VOLTAGE, SINGLE SPEED, NONREVERSING COMBINATION STARTERS NEMA SIZE 1 - 436, NEMA SIZE 2 - 84 NEMA SIZE 3 - 80, NEMA SIZE 4 - 67 FULL VOLTAGE, SINGLE SPEED, REVERSING COMBINATION STARTERS NEMA SIZE 1 - 204, NEMA SIZE 2 - 23 FULL VOLTAGE, NON-REVERSING COMBINATION CONTACTORS NEMA SIZE 1 - 31, NEMA SIZE 2 - 6 CIRCUIT BREAKERS 100A FRAME -- 430, 225A FRAME -- 46 SHL PACKAGES 24 CIRCUIT -- 67</p>

708213

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 MWE/5300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN*USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
242.	STATION SERVICE EQUIPMENT	
242.1	STATION SERV&STARTUP KFMH	
242.11	UNIT AUXILIARY TRANSFORMER	
242.111	13.8 KV TRANSFORMERS	<p>TWO TRANSFORMERS: TYPE - OUTDOOR, OIL INSULATED, THREE PHASE, TWO WINDING COOLING - OA/FA/FOA TEMP. RISE - 55 C RATING - H WINDING - 21/28/35 MVA VOLTAGE - H WINDING - 25.5 KV X WINDING - 13.8 KV CONNECTIONS - H WINDING - DELTA X WINDING - WYE, HIGH RESISTANCE GROUNDED TAPS - TWO 2-1/2 PCT FULL CAPACITY TAPS ABOVE AND BELOW NORMAL DE-ENERGIZED OPERATION H WINDING X WINDING BIL - H WINDING AND BUSHINGS - 150 KV X WINDING AND BUSHINGS - 110 KV IMPEDANCE - H-X: 4.04 PCT (@ 21 MVA) NOISE LEVEL - 63/65 DB(A) (O/FA)</p>

708214

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
242.112	4.16 KV TRANSFORMERS	<p>TWO TRANSFORMERS: TYPE - OUTDOOR, OIL INSULATED, THREE PHASE, THREE WINDING COOLING - OA/FA/FOA TEMP. RISE - 55 C RATING - H WINDING - 15/20/25 MVA X WINDING - 7.5/10/12.5 MVA Y WINDING - 7.5/10/12.5 MVA VOLTAGE - H WINDING - 25.5 KV X WINDING - 4.16 KV Y WINDING - 4.16 KV CONNECTIONS - H WINDING - DELTA X WINDING - WYE, HIGH RESISTANCE GROUNDED Y WINDING - WYE, HIGH RESISTANCE GROUNDED TAPS - TWO 2-1/2 PCT FULL CAPACITY TAPS ABOVE AND BELOW NORMAL DE-ENERGIZED OPERATION ON H WINDING BIL - H WINDING AND BUSHINGS - 150 KV X WINDING AND BUSHINGS - 75 KV Y WINDING AND BUSHINGS - 75 KV IMPEDANCE - H-X : 0.32 PCT (@ 15 MVA) H-Y : 0.32 PCT (@ 15 MVA) NOISE LEVEL - 63/65 DB(A) (OA/FA)</p>
242.12	RESERVE AUXILIARY XFMR	

708215

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
242.121	13.8 KV TRANSFORMER	<p>ONE TRANSFORMER :</p> <p>TYPE - OUTDOOR, OIL INSULATED, THREE PHASE, TWO WINDING</p> <p>COOLING - OIL/FA/FOA</p> <p>TEMP. RISE - 55 C</p> <p>RATING - H WINDING - 21/28/35 MVA</p> <p>VOLTAGE - H WINDING - 230 KV</p> <p>X WINDING - 13.8 KV</p> <p>CONNECTIONS -</p> <p>H WINDING - WYE, SOLID GROUND</p> <p>X WINDING - WYE, HIGH RESISTANCE GROUND</p> <p>TAPS - TWO 2-1/2 PCT, FULL CAPACITY TAPS ABOVE AND BELOW NORMAL DE-ENERGIZED OPERATION ON H WINDING</p> <p>BIL - H WINDING AND BUSHINGS - 900 KV</p> <p>H WINDING NEUTRAL - 150 KV</p> <p>X WINDING AND BUSHINGS - 110 KV</p> <p>IMPEDANCE - H-X: 4.07 PCT (ON 21 MVA)</p> <p>NOISE LEVEL - 68/70 DB(A) (OA/FA)</p> <p>NOISE LEVEL - 66/68 DB(A) (OA/FA)</p>

708216

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1282 MWE/5300 MWI COAL - 2.5/1.7 IN HU KV - MIDDLETON, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
242.122	4.16 KV TRANSFORMER	<p>ONE TRANSFORMER 2</p> <p>TYPE - OUTDOOR, OIL-INSULATED, THREE PHASE, THREE WINDING</p> <p>COOLING - OA/FA/FOA</p> <p>TEMP. RISE - 55 C</p> <p>RATING - H WINDING - 15/20/25 MVA</p> <p>X WINDING - 7.5/10/12.5 MVA</p> <p>Y WINDING - 7.5/10/12.5 MVA</p> <p>VOLTAGE - H WINDING - 230 KV</p> <p>X WINDING - 4.16 KV</p> <p>Y WINDING - 4.16 KV</p> <p>CONNECTIONS - H WINDING - WYE, SOLID GROUND</p> <p>X WINDING - WYE, HIGH RESISTANCE GROUNDED</p> <p>Y WINDING - WYE, HIGH RESISTANCE GROUNDED</p> <p>TAPS - TWO 2-1/2 PCT FULL CAPACITY TAPS ABOVE AND BELOW NORMAL, DE-ENERGIZED OPERATION ON H WINDING</p> <p>BIL - H WINDING AND BUSHINGS - 900 KV</p> <p>H WINDING NEUTRAL - 150 KV</p> <p>X WINDING AND BUSHINGS - 75 KV</p> <p>Y WINDING AND BUSHINGS - 75 KV</p> <p>IMPEDANCE - H-X: 6.34 PCT (@ 15 MVA)</p> <p>H-Y: 6.34 PCT (@ 15 MVA)</p> <p>NOISE LEVEL - 68/70 DB(A) (OA/FA)</p>
242.13	FOUNDATIONS FOR KEMRS	
242.131	EXCAVATION WORK	
242.1311	EARTH EXCAVATION	INCLUDED WITH STRUCTURE ASSOCIATED YARDWORK
242.1312	ROCK EXCAVATION	NONE
242.1313	CONCRETE FILL	NONE
242.1314	FILL + BACKFILL	INCLUDED WITH STRUCTURE ASSOCIATED YARDWORK
242.1315	DEWATERING	INCLUDED WITH STRUCTURE ASSOCIATED YARDWORK

708217

08/15/77

EQUIPMENT LIST - REPORT 1

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
242.132	SUBSTRUCTURE CONCRETE	
242.1321	FORMWORK	
242.1322	REINFORCING STEEL	
242.1323	CONCRETE	
242.1324	EMBEDDED STEEL	
242.1325	FLOOR FINISH	NONE
242.1326	WATERPROOFING	NONE
242.1327	CONSTRUCTION JOINTS	
242.1328	RUBBING CONCRETE SURFACES	
242.133	CRUSHED STONE FILL	
242.2	UNIT SUBSTATIONS	
242.21	LOAD CENTER SWITCHGEAR	
242.211	GENERAL PLANT SWITCHGEAR	
242.2111	COOLING TOWER	

EIGHT 480V LOAD CENTER BUSES CONSISTING OF INDOOR DEAD FRONT METAL-ENCLOSED SWITCHGEAR :

- TYPE - ELECTRIC OR MANUAL OPERATION
- STORED ENERGY DRAW-OUT THREE-POLE
- SINGLE THROW WITH DIRECT ACTING OVER-CURRENT TRIPPING DEVICE.
- VOLTAGE - 600V
- MAIN BUS RATING - 1600A
- FRAME SIZE - INCOMING LINE - 1600A
- LOAD FEEDER - 600A
- MOTOR FEEDER - 600A

INTERRUPTING RATING

- 1600A FRAME - 50000A@480V
- 600A FRAME - 30000A@480V WITH L-I TRIP

QUANTITIES - 1600A FRAME - 8
600A FRAME - 26

708218

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
242.2112	BALANCE OF PLANT-NO CT	<p>TWENTY FOUR 480V LOAD CENTER BUSES CONSISTING OF INDOOR DEAD FRONT METAL- ENCLOSED SWITCHGEAR :</p> <p>TYPE - ELECTRIC OR MANUAL OPERATION, STORED ENERGY DRAW-OUT, THREE POLE, SINGLE THROW WITH DIRECT ACTING OVER CURRENT TRIPPING DEVICE</p> <p>VOLTAGE - 600 V</p> <p>MAIN BUS RATING - 1600 A OR 2000 A</p> <p>FRAME SIZE-INCOMING LINE-1600 OR 2000</p> <p>MCC FEEDER - 1600 A</p> <p>MOTOR FEEDER - 600 A</p> <p>INTERRUPTING RATING</p> <p>2000A FRAME - 50000A @480V</p> <p>1600A FRAME - 50000A @480V</p> <p>600A FRAME - 30000A @480V WITH L&I TRIP</p> <p>QUANTITIES - 2000A FRAME - 4</p> <p>1600A FRAME - 95</p> <p>600A FRAME - 28</p>
242.212	PRECIPITATOR SWITCHGEAR	<p>TEN 480 V POWER BUSES CONSISTING OF OUTDOOR DEADFRONT METAL ENCLOSED SWITCHBOARDS :</p> <p>TYPE - MANUAL OPERATION STORED ENERGY DRAWOUT, THREE-POLE, SINGLE THROW MAIN DEVICE WITH DIRECT ACTING OVERCURRENT TRIPPING DEVICE AND 600 V, 25000 AIC ADJUSTABLE INSTANTANEOUS MAGNETIC TRIP, MOLDED CASE INDIVIDUALLY MOUNTED DEVICES</p> <p>VOLTAGE - 600 V</p> <p>MAIN BUS RATING - 1600 A</p> <p>FRAME SIZE - INCOMING LINE - 1600 A</p> <p>LOAD FEEDER - 400 A</p> <p>INTERRUPTING RATING</p> <p>1600A FRAME - 50000A @480V</p> <p>400A FRAME - 30000A @480V</p> <p>QUANTITIES - 1600A FRAME - 10</p> <p>400A FRAME - 50</p>
242.22	LOAD CENTER TRANSFORMERS	
242.221	GENERAL PLANT LD CTR XFMRs	

708219

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
242.2211	COOLING TOWER	INDOOR VENTILATED DRY TYPE TRANSFORMERS COMPLETE WITH CONTROL AND PROTECTION EQUIPMENT : RATING -- 500 KVA COOLING -- AA VOLTAGE -- 13800 - 480 VOLTS TEMP. RISE -- 150 C CONNECTION -- DELTA - WYE IMPEDANCE -- 3.9 PCT @ 500 KVA QUANTITY -- 8
242.2212	BALANCE OF PLY 13800-480V	INDOOR VENTILATED DRY TYPE TRANSFORMERS COMPLETE WITH CONTROL AND PROTECTION EQUIPMENT : RATING -- 500 KVA OR 750 KVA COOLING -- AA VOLTAGE -- 13800-480V TEMP. RISE -- 150 C CONNECTION -- DELTA - WYE IMPEDANCE -- 3.2 PCT @ 500 KV - 3.9 PCT @ 750 KVA QUANTITY -- 500 KVA - 2 750 KVA - 10
242.2213	BALANCE OF PLY 4160-480V	INDOOR VENTILATED DRY TYPE TRANSFORMERS COMPLETE WITH CONTROL AND PROTECTION EQUIPMENT : RATING -- 500,750 OR 1000/1333 KVA COOLING -- AA OR AA/FA VOLTAGE -- 4160-480 VOLTS TEMP. RISE -- 150 C CONNECTION -- DELTA - WYE IMPEDANCE -- STANDARD QUANTITY -- 500 KVA - 1 750 KVA - 7 1000/1333 KVA - 4

02807

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 FWE/3300 MWT COAL - 2,5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
242.222	PRECIPITATOR LD CTR XFMR	<p>OUTDOOR VENTILATED DRY TYPE TRANSFORMERS COMPLETE WITH CONTROL AND PROTECTION EQUIPMENT 1</p> <p>RATING -- 750/1000 KVA</p> <p>COOLING -- AA/FA</p> <p>VOLTAGE -- 13800-480 VOLTS</p> <p>TEMP. RISE -- 150 C</p> <p>CONNECTION -- DELTA-WYE</p> <p>IMPEDANCE -- 3.9 PCT @ 750 KVA</p> <p>QUANTITY -- 10</p> <p>ALLOWANCE</p>
242.223	MISCELLANEOUS XFMR	
242.3	AUXILIARY POWER SOURCES	
242.31	BATTERY SYSTEMS	
242.311	STATION BATTERIES	
242.3111	BATTERIES	<p>TWO 125V BATTERIES CONFIGURED AS ONE</p> <p>125/250 VOLTS 3 WIRE BATTERY</p> <p>TYPE -- LEAD ANTIMONY</p> <p>NO. OF CELLS -- 60 EACH</p> <p>NOMINAL CAPACITY</p> <p>(AT 8 HR DISCHARGE RATE)-2250 AH EACH</p> <p>COMPLETE WITH BATTERY RACKS</p>
242.312	BATTERY CHARGERS	
242.3121	CHARGERS	<p>THREE BATTERY CHARGERS (TWO INSTALLED AND ONE STORED SPARE) TO SUPPLY THE 125/250 VDC BUS:</p> <p>NOMINAL RATING -- 37.5 KW</p> <p>INPUT -- 480 VAC, 3 PHASE, 60 HZ</p> <p>OUTPUT -- 125 TO 140 VDC ADJUSTABLE</p> <p>OUTPUT CURRENT -- 300 A</p>
242.32	EMERGENCY DIESEL GEN SYS	

708221

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWF/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETON*USA - HIGH SULFUR COST BASIS 07776

ACCOUNT NUMBER	ITEM	DESCRIPTION
242.321	DIESEL GENERATOR UNITS	TWO REDUNDANT 500 KW SKID MOUNTED DIESEL GENERATORS 1 GENERATOR - NOMINAL RATING - 625 KVA NOMINAL VOLTAGE - 480 V POLES -- 4 POWER FACTOR -- 0.8 PHASE -- 3 PHASE, 3 WIRE CONNECTION - WYE ELECTRIC AUXILIARIES - STATIC EXCITER VOLTAGE REGULATOR, CONTROL PROTECTION, SURVEILLANCE ENGINE - NO. CYLINDERS - 16 SPEED -- 1800 MECHANICAL AUXILIARIES : FUEL OIL SYSTEM LUBE OIL SYSTEM RADIATOR COOLING SYSTEM AIR INTAKE, EXHAUST AND CRANKCASE VACUUM SYSTEM ELECTRIC STARTING SYSTEM HYDRAULIC GOVERNOR AND ENGINE CONTROL PANEL
242.322	DIESEL OIL SUBSYSTEMS	INCLUDES: FUEL OIL TRANSFER PUMPS AND MOTORS, FILTERS, STRAINERS, PIPING, VALVES, HANGERS, SUPPORTS, INSULATION AND SPECIALTIES
242.34	INVERTERS	TWO DUAL INPUT INVERTERS WITH STATIC TRANSFER SWITCHES, ONE AT 30 KVA DEDICATED TO COMPUTER USE AND ONE AT 20 KVA FOR AUXILIARY POWER; INPUTS - 480 VAC, 3 PHASE, OR 125 VAC OUTPUT - 118 VAC, SING. PHASE, 60 HZ
242.341	GENERAL PLANT INVERTERS	
243.	SWITCHBOARDS	
243.1	CONTROL PANELS	

708222

EQUIPMENT LIST - REPORT 1

MODEL 610 - 1232 MAE/3300 MWt COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

08/15/77

ACCOUNT NUMBER	ITEM	DESCRIPTION
243.11	GEN+AUX POWER SYS CTRL PNL	TWENTY FEET OF CONTROL DUPLEX BENCH-BOARD CONTAINING SWITCHES, ANNUNCIATORS AND RECORDING AND INDICATING INSTRUMENTS FOR CONTROL AND DATA ACQUISITION OF THE MAIN GENERATOR, AND AUXILIARY ELECTRIC POWER SYSTEM
243.12	CONSOLES	
243.13	VERTICAL PANELS	
243.14	GEN PROTECTIVE RELAY PANEL	ONE ELECTRIC SYSTEM RELAY PANEL* COMPOSED OF FOUR GENERATOR* TWO UNIT AUXILIARY* AND TWO RESERVE AUXILIARY TRANSFORMER SUBPANELS* IS PROVIDED* IT CONTAINS ALL OF THE GENERATOR AND AUXILIARY TRANSFORMER PROTECTIVE FUNCTION CONTROL CIRCUITS* FUSES* AUXILIARY RELAYS AND AUXILIARY INSTRUMENT TRANSFORMERS
243.2	AUX. POWER & SIGNAL BOARDS	
243.21	POWER DISTRIBUTION PANELS	
243.211	AC PANELS	TWO 120/240 VOLT 225 AMPERE* SINGLE PHASE* 3 WIRE WALL MOUNTED PANELBOARDS WITH 36 MOLDED CASE CIRCUIT BREAKER BRANCH CIRCUITS
243.22	BATTERY CTRL+DC DIST PNL	
243.221	DC PANELS	ONE 125/250 VOLT D-C* 1600 AMPERE* THREE WIRE METAL ENCLOSED SWITCHGEAR ASSEMBLY WITH MOLDED CASE AIR CIRCUIT BREAKERS IN THE MAINS AND BRANCH CIRCUITS
243.223	MISC. PUSHBUTTONS*PNLS*FUSE	ALLOWANCE
243.224	BATTERY FUSES	
244.	PROTECTIVE EQUIPMENT	
244.1	GENRL STATION GROUND SYS	

708223

MODEL 613 - 1232 MWE/330 MWT COAL - 2,5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
244.11	EQUIPMENT GROUNDING SYSTEM	A COMPLETE GROUNDING SYSTEM IS PROVIDED FOR EQUIPMENT AND RACEWAYS CONSISTING OF JUMPERS FROM CONDUIT TO GRID, A BARE COPPER WIRE IN AND BONDED TO TRAYS, A GROUND BUS MOUNTED IN ALL METAL ENCLOSURES, PIGTAILS FROM EQUIPMENT FRAMES TO GROUND GRID AND AN INSTRUMENT GROUNDING SYSTEM.
244.12	YARD + STRUCTURE GROUNDING	A COMPLETE YARD GROUNDING SYSTEM IS PROVIDED AS THE PLANT GROUNDING GRID CONSISTING OF BUILDING GROUND GRIDS AND INTERCONNECTIONS COMPOSED OF BARE COPPER CONDUCTORS, GROUND ROUS AND GROUNDING WELLS.
244.2	FIRE DETECTION + SUPPRESSION	DRY-PIPE DELUGE SPRAY AND FIRE DETECTION SYSTEMS ARE PROVIDED FOR THE MAIN AIR AUXILIARY TRANSFORMERS AND THE DIESEL-GENERATOR UNIT FUEL OIL STORAGE AND TRANSFER SYSTEM.
244.3	LIGHTNING PROTECTION	UNDERWRITERS LABORATORIES APPROVED LIGHTNING PROTECTION SCHEMS ARE PROVIDED FOR THE BOILER HOUSE, TURBINE HALL AND SELECTED HIGH STRUCTURES SUCH AS COAL CONVEYOR TOWERS
244.4	CATHODIC PROTECTION	A COMPLETE SYSTEM WITH TRANSFORMER, RECTIFIERS, ANODES, COKE BREEZE BEDS, SPECIAL WIRE AND TERMINATORS
244.5	HEAT TRACING + FREEZE PROT	A COMPLETE SYSTEM WITH HEAT TRACING WIRE, THERMAL CEMENT, THERMOSTATS, CONTROL AND ALARM PANELS AND INTERCONNECTING POWER AND CONTROL WIRE AND RACEWAYS IS PROVIDED FOR DIESEL-GENERATOR UNIT FUEL OIL PIPING AND SELECTED WATER PIPING LOCATED OUTDOORS
245.	ELECT. STRUC + WIRING CONTR	
445.1	UNDERGROUND P	S

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 613 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
245.11	DUCT BANKS	POLYVINYL CHLORIDE TYPE DUCTS IN REINFORCED AND UNREINFORCED CONCRETE ENVELOPE WITH 16 REINFORCED CONCRETE MANHOLES
245.111	PVC DUCT	
245.112	STEEL CONDUIT	
245.113	STRUCTURAL WORK	
245.1131	EXCAVATION WORK	INCLUDED WITH STRUCTURE ASSOCIATED YARDWORK
245.1132	SUBSTRUCTURE CONCRETE	
245.11321	FORMWORK	
245.11322	REINFORCING STEEL	
245.11323	CONCRETE	
245.2	CABLE TRAY	A COMPLETE CABLE TRAY RACEWAY SYSTEM IS PROVIDED COMPRISING LADDER TYPE TRAY FOR POWER CABLES AND CONTROL CABLES AND LADDER TRAY WITH SOLID COVERS AND BOTTOM PLATES FOR LOW-SIGNAL-LEVEL CABLES. ALL TRAYS AND FITTINGS ARE HOT-DIPPED GALVANIZED AFTER FABRICATION : SIZE 24 IN. x 12 IN. QUANTITY 80000 LF
245.3	CONDUIT	A COMPLETE CONDUIT RACEWAY SYSTEM IS PROVIDED : TYPE GALVANIZED RIGID STEEL AND FLEXIBLE STEEL, INCLUDING PULL BOXES, FITTINGS AND HANGERS. QUANTITY 435000 LF
246.	POWER & CONTROL WIRING	
246.1	GENERATOR CIRCUITS WIRING	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
246.11	MAIN GENERATOR BUS DUCT	ISOLATED PHASE DUCT : NOMINAL/MAX VOLTAGE 26/27.5 KV BIL 150 KW CONTINUOUS CURRENT MAIN BUS 34000A TAPS TO BUS 20000A TAPS TO GEN'S 17000A TAPS TO BAT'S 3000A COOLING MAIN BUS FORCED COOLED TAPL TO BAT'S SELF COOLED SHORT CIRCUIT CURRENT (SYMM.) MAIN BUS 230KA TAPS TO BAT'S & GEN'S 337KA TAPS TO PT'S 340KA SHORT CIRCUIT CURRENT (ASYMM. PEAK) MAIN BUS 309KA TAPS TO BAT'S & GEN'S 536KA TAPS TO PT'S 544KA TEMP. RISE 65 C LENGTH (INCL. ELBOW EQUIV.) MAIN BUS - 760- SINGLE PHASE FT TAPS TO BAT'S - 500- SINGLE PHASE FT
246.12	DG UNIT BUS DUCT	
246.2	STATION SERVICE PWR WIRING	
246.21	HIGH VOLTAGE BUS+CABLE	
246.211	BUS DUCT	
246.2111	15 KV BUS DUCT	
246.2112	3 KV BUS DUCT	
246.2113	5 KV BUS DUCT	
246.212	CABLE	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 010 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
246.2121	15 KV CABLE	VOLTAGE 15 KV TYPE SINGLE CONDUCTOR WITH STRAND SHIELD, PRIMARY INSULATION SHIELD, AND OUTER JACKET, TRIPLEXED FOR THREE-CONDUCTOR CONFIGURATION CONDUCTOR MATERIAL COATED, ANNEALED COPPER, CLASS B STRANDED PER ASTM B-8 TEMP. 90 C INSULATION PRIMARY ETHYLENE-PROPYLENE RUBBER JACKET HYPALON CABLE SIZE AND LENGTH IN THREE (TRIPLEXED)-CONDUCTOR (FEET) 750 KCMIL 3000 LF 350 KCMIL 2800 LF NO. 270 AWG 17000 LF
246.2122	8 KV CABLE	
246.2123	5 KV CABLE	VOLTAGE 5 KV TYPE SINGLE CONDUCTOR WITH STRAND SHIELD, PRIMARY INSULATION SHIELD, AND OUTER JACKET, TRIPLEXED FOR THREE CONDUCTOR CONFIGURATION CONDUCTOR MATERIAL COATED, ANNEALED COPPER, CLASS B STRANDED PER ASTM B-8 TEMP. 90 C INSULATION PRIMARY ETHYLENE-PROPYLENE RUBBER JACKET HYPALON CABLE SIZE AND LENGTH IN THREE (TRIPLEXED) CONDUCTOR FEET: 750 KCMIL 35000 LF 350 KCMIL 2200 LF NO. 470 AWG 39000 LF
246.22	LOW VOLTAGE BUS+CABLE	
246.221	BUS DUCT	
246.222	CABLE	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITER	DESCRIPTION
246.2221		LOW VOLTAGE POWER CABLE
		VOLTAGE 600V
		TYPE SINGLE CONDUCTOR WITH PRIMARY INSULATION AND OUTER JACKET, TRIPLEXED FOR THREE-CONDUCTOR CONFIGURATION
		CONDUCTOR MATERIAL COATED, ANNEALED COPPER, CLASS B STRANDED PER ASTM B-8
		TEMP. 90 C
		INSULATION PRIMARY ETHYLENE-PROPYLENE RUBBER
		JACKET HYPALON
		CABLE SIZE AND LENGTH IN THREE (TRIPLEXED)-CONDUCTOR (FEET)
		500 KCMIL 8100 LF
		250 KCMIL 17000 LF
		NO. 2/0 AWG 13800 LF
		NO. 2 AWG 20100 LF
		NO. 4 AWG 153000 LF
		NO. 8 AWG 235000 LF
		NO. 12 AWG 241000 LF
246.5		CONTROL CABLE
		TYPE -INDIVIDUALLY INSULATED CONDUCTORS CABLED TOGETHER WITH FILLERS AND BINDER, AN OVERALL TAPE SHIELD AND AN OVERALL JACKET
		CONDUCTOR MATERIAL COATED, ANNEALED COPPER, CLASS C STRANDED PER ASTM B-8
		TEMP. 90 C
		INSULATION PRIMARY ETHYLENE-PROPYLENE RUBBER
		JACKET HYPALON
		CABLE SIZE: NO. 12 AWG
		CABLE LENGTH IN 5/C FEET - 2.3 E06 FT
246.4		INSTRUMENT WIRE
25 .		MISCELLANEOUS PLANT EQUIPT
251.		TRANSPORTATION & LIFT EGPT
251.1		CRANES & MOISTS
251.11		TURBINE BUILDING CRANE

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
251.111	TG OVERHEAD TRAVELING CRAN	QUANTITY - 1 TYPE - OVERHEAD TRAVELING BRIDGE CAPACITY: MAIN HOIST - 100 TONS AUX. HOIST - 30 TONS BRIDGE SPAN - 144 FT (RAIL TO RAIL) HOOK TRAVEL: MAIN HOIST - 75 FT AUX. HOIST - 100 FT MAX. SPEEDS: BRIDGE - 50 FPM TROLLEY - 50 FPM MAIN HOIST - 8 FPM AUX. HOIST - 28 FPM
251.112	HEATER BAY CRANE	NONE REQUIRED
251.14	INTAKE STRUCTURE CRANE	NONE
251.15	CIRC WATER PUMPHOUSE CRANE	NONE
251.16	MISC. CRANES, HOISTS, MONORLS	
251.161	10 TON CRANE	QUANTITY - 1 TYPE - MONORAIL CAPACITY - 10 TONS LIFT - 30 FT INDUSTRY STANDARD SPEEDS, SINGLE SPEED PENDANT CONTROL
251.162	5 TON CRANES	QUANTITY - 9 TYPE - MONORAIL CAPACITY - 5 TONS LIFT - 30 FT INDUSTRY STANDARD SPEEDS, SINGLE SPEED PENDANT CONTROL
251.17	DIESEL BUILDING CRANES	NONE REQUIRED
		QUANTITY - TYPE - OVERHEAD TRAVELING BRIDGE CAPACITY - 5 TONS SPAN - 24 FT
251.2	RAILWAY EQUIPMENT	

620907

MODEL 610 - 1232 #4E/\$300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN#USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
251.21	DIESEL LOCOMOTIVE	ONE LOCOMOTIVE IS PROVIDED FOR ONSITE MOVING OF LIME CARS AND COAL UNIT TRAINS
251.3	ROADWAY EQUIPMENT	
251.34	BULLDOZERS	TWO BULLDOZERS ARE PROVIDED FOR USE WITH THE COAL HANDLING SYSTEM
252.	AIR*WATER*STEAM SERVICE SY	
252.1	AIR SYSTEMS	
252.11	COMPRESSED AIR SYSTEM	
252.111	ROTATING MACHINERY	
252.1111	AIR COMPRESSORS * MOTORS	
252.11111	AIR COMPRESSORS	QUANTITY - 3 X 50 PCT TYPE - RECIPROCATING, OIL-FREE ORIENTATION - VERTICAL CAPACITY - 350 CFM @ 100 PSIG SPEED - 450 RPM COOLING FLOW - 7.5 GPM @ 20 F RISE INTAKE FILTER - DRY TYPE AFTER COOLER: TYPE - SHELL AND TUBE SURF. AREA - 33.4 SQ FT COOLING FLOW - 12.4 GPM @ 20 F RISE DESIGN PRES - 150 PSIG DESIGN TEMP - DESIGN CODE -
252.11112	AIR COMPRESSOR MOTOR	QUANTITY - 3 TYPE - HORSEPOWER - 100 HP SPEED - 1750 RPM VOLTAGE - 460 V, 3 PHASE, 60 HZ FRAME - 404 T
252.113	TANKS AND PRESSURE VESSELS	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.1131	AIR RECEIVERS	QUANTITY - 2 ORIENTATION - VERTICAL DIMENSIONS - VOLUME - 96 CU FT DESIGN PRESS - 135 PSIG DESIGN TEMP - MATERIAL - C.S. DESIGN CODE - ASME VIII
252.1132	AIR DRYERS	QUANTITY - 2 TYPE - REGENERANT DESSICANT FLOW RATE - 700 CFM AIR PRESS - 100 PSIG DES. PRESS - 135 PSIG DES. TEMP. - TEMP. IN/OUT - 105 F / -40 F DEWPOINT COOLING FLOW - 15 GPM @ 95 F
252.115	PIPING	
252.1151	2IN + SMALLER	
252.11511	CS/INS	
252.1152	2.5IN + LARGER	
252.11521	CS/INS	
252.116	VALVES	
252.1161	GATE	
252.1162	CHECK	
252.1163	GLOBE	
252.1165	RELIEF	
252.117	PIPING - MISC ITEMS	
252.1171	HANGERS + SUPPORTS	
252.1172	INSULATION	
252.1173	SPECIALTIES	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.118	INSTRUMENTATION+CONTROL	QUANTITY - TRANSMITTER - 4 LOCAL INDICATOR - 39 BOARD MOUNTED INDICATOR - 2 TEMP TRANSMITTER - 6 PROCESS SWITCH - 26 ANNUNCIATOR - 24 MISC. - 4
252.2	WATER SYSTEMS	
252.21	SERVICE WATER SYSTEM	
252.211	ROTATING MACHINERY	
252.2111	SERVICE WATER PUMP & MOTOR	
252.21111	SERVICE WATER PUMP	QUANTITY - 3 x 50 PCT. TYPE - MIXED FLOW ORIENTATION - VERTICAL FLOW RATE - 9000 GPM SPEED - 880 RPM TDH - 90 FT BHP - 253 HP NPSH - 20 FT EFFICIENCY - 80 PCT DESIGN PRESS - 100 PSI DESIGN TEMP - 100 F MATERIAL - N1-RESIST COLUMN AND BOWL, S.S. IMPELLER DESIGN CODE -
252.21112	SERVICE WATER PUMP MOTOR	QUANTITY - 3 TYPE - HORSEPOWER - 300 HP SPEED - VOLTAGE - 4 KV, 3 PHASE, 60 HZ
252.215	PIPING	
252.2151	2IN & SMALLER	
252.21511	CS/NNS	
252.2152	2.5IN & LARGER	

208232

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.21521	CS/INCS	
252.216	VALVES	
252.2161	GATE	
252.2162	CHECK	
252.2163	GLOBE	
252.2166	BUTTERFLY	
252.217	PIPING-MISC ITEMS	
252.2171	HANGERS AND SUPPORTS	
252.2172	INSULATION	
252.2173	SPECIALTIES	
252.2174	PIPE TRENCHING	INCLUDED WITH STRUCTURE ASSOCIATED YARDWORK
252.218	INSTRUMENTATION & CONTROL	TRANSMITTERS - 2 LOCAL IND - 7 BOARD MTD IND - 1 FLOW ELEMENTS - 1 TEMP ELEMENTS - 1 PROCESS SWITCH - 11 CONTROLLERS - 4 ANNUNCIATORS - 3
252.22	YARD FIRE PROTECTION	
252.221	ROTATING MACHINERY	

708233

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.2211	DIESEL ENGINE FIRE PUMPS	QUANTITY - 1 TYPE - CENTRIFUGAL ORIENTATION - VERTICAL FLOW RATE - 1500 GPM SPEED - 1750 RPM TDH - 125 PSI BHP - 148 HP NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE - NATIONAL FIRE PROTECTION ASSOCIATION COMPLETE WITH ALL ACCESSORIES AND CONTROLS
252.2212	MOTOR DRIVEN FIRE PUMPS	QUANTITY - 2 1000 PCT. TYPE - CENTRIFUGAL ORIENTATION - VERTICAL FLOW RATE - 1500 GPM SPEED - 1720 RPM TDH - 125 PSI BHP - 145 HP NPSH - EFFICIENCY - 74 PCT. DESIGN PRESS - 200 PSIG DESIGN TEMP - 100 F MATERIAL - C.S. SAFETY CLASS - NNS SEISMIC CAT. - NONE DESIGN CODE - NATIONAL FIRE PROTECTION ASSOCIATION COMPLETE WITH ALL ACCESSORIES AND CONTROLS
252.2212	FIRE PUMP MOTOR	TYPE - TENV HORSEPOWER - 200 HP SPEED - 1770 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
252.2213	JOCKEY PUMP + MOTOR	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.22131	JOCKEY PUMP	QUANTITY - 1 X100 PCT. TYPE - CENTRIFUGAL ORIENTATION - VERTICAL FLOW RATE - 50 GPM SPEED - 1770 RPM TDH - 125 PSI BHP - 8.1 HP NPSH - EFFICIENCY - 45 PCT. DESIGN PRESS - 200 PSIG DESIGN TEMP - 100 F MATERIAL - C.S. DESIGN CODE - NATIONAL FIRE PROTECTION ASSOCIATION
252.22132	JOCKEY PUMP MOTOR	TYPE - HORSEPOWER - 10 HP SPEED - 1770 RPM VOLTAGE - 480V, 3 PHASE, 60 HZ
252.225	PIPING	
252.2252	2.5 IN + LARGER	
252.22521	CS/MS	
252.22522	CS/MS	
252.226	VALVES	
252.2261	STANDARD VALVES	
252.2262	E-RATED VALVES	
252.22621	GATE	
252.22622	CHECK	
252.22625	RELIEF	
252.22629	SPECIAL VALVES	
252.226291	POST INDICATOR GATE	
252.226292	DELUGE	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION	QUANTITY
252.227	PIPING + MISC ITEMS		
252.2271	HANGERS + SUPPORTS		
252.2272	INSULATION		
252.2273	SPECIALTIES		
252.22731	HOSE HOUSES		
252.22732	FIRE HYDRANTS		
252.228	INSTRUMENTATION+CONTROL		
		LOCAL INDICATOR -	18
		BOARD MOUNTED INDICATOR -	6
		PROCESS SWITCH -	6
		CONTROLLERS -	4
252.24	POTABLE WATER SYSTEM		
252.245	PIPING		
252.2451	2IN + SMALLER		
252.24511	GALV/NNS		
252.24512	CU/NNS		
252.2452	2.5IN + LARGER		
252.24521	GALV/NNS		
252.246	VALVES		
252.2461	GATE		
252.2462	CHECK		
252.2463	GLOBE		
252.2465	SAFETY/RELIEF		
252.2469	SPECIAL VALVES		

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.24691	SAFETY SHOWER	
252.24692	EYE WASH	
252.24693	HOSE BIBBS	
252.247	PIPING-MISC ITEMS	
252.2471	HANGERS + SUPPORTS	
252.2472	INSULATION	
252.2473	SPECIALTIPS	
252.248	INSTRUMENTATION + CONTROL	ALLOWANCE
252.3	AUXILIARY STEAM SYSTEM	
252.31	AUXILIARY BOILER SYSTEM	
252.312	HEAT TRANSFER EQUIPMENT	
252.3121	AUXILIARY BOILERS	QUANTITY - 2 x 100 PCT. TYPE - PRESSURIZED FURN., W.T. RATING - 150,000 LB/HK SUPERHEAT STEAM AT 600F, 160 PSIG HEAT RELEASE - HEAT ABSORP. - FURN. SURFACE - HEATING SURF. - DES. PRESS. - DES. TEMP. - BURNER TYPE - AIR/STEAM ATOMIZING IGNITOR TYPE - ELEC. ARC
252.315	PIPING	
252.3151	2IN + SMALLER	
252.31511	CS/NNS	
252.3152	2.5IN + LARGER	
252.31521	CS/NNS	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MW. COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.316	VALVES	
252.3161	GATE	
252.3162	CHECK	
252.3163	GLOBE	
252.317	PIPING - MISC ITEMS	
252.3171	HANGERS + SUPPORTS	
252.3172	INSULATION	
252.3173	SPECIALTIES	
252.32	AUX BOILER FEEDWATER SYS	
252.321	ROTATING MACHINERY	
252.3211	AUX FW PUMPS + MOTORS	INCLUDED WITH AUXILIARY BOILER PACKAGE
252.32111	AUX FW PUMPS	QUANTITY - 3 X 50 PCT. TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 340 GPM SPEED - 1775 RPM TDH - 560 FT BHP - 80 HP NPSH - 11 FT EFFICIENCY - 57 PCT. DESIGN PRESS - 275 PSI DESIGN TEMP - 300 F MATERIAL - IMP. CHROME STEEL DESIGN CODE -
252.32112	AUX FW MOTORS	QUANTITY - 3 TYPE - IENV HORSEPOWER - 100 HP SPEED - 1800 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
252.325	PIPING	
252.3251	2 IN + SMALLER	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 NWE73300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
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252.32511	CS/NNS	
252.3252	2.5 IN + LARGER	
252.32521	CS/NNS	
252.326	VALVES	
252.3261	GATE	
252.3262	CHECK	
252.3263	GLOBE	
252.327	PIPING - MISC. ITEMS	
252.3271	HANGERS + SUPPORTS	
252.3272	INSULATION	
252.3273	SPECIALTIES	
252.33	AUX FUEL OIL SYSTEM	
252.331	ROTATING MACHINERY	
252.3311	FUEL OIL PUMPS + MOTORS	
252.33111	FUEL OIL PUMP	

QUANTITY -	3 X 50 PCT.
TYPE -	CENTRIFUGAL
ORIENTATION -	HORIZONTAL
FLOW RATE -	35 GPM
SPEED -	1800 RPM
TDH -	350 FT
BHP -	3.8 HP
NPSH -	10 FT
EFFICIENCY -	70 PCT.
DESIGN PRESS -	200 PSIG
DESIGN TEMP -	125 F
MATERIAL -	CAST IRON CASING
DESIGN CODE -	

602807

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.33112	FUEL OIL PUMP MOTOR	QUANTITY - 3 TYPE - HORSEPOWER - 10 HP SPEED - 1800 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
252.335	PIPING	
252.3351	2IN * SMALLER	
252.33511	CS/NNS	
252.3352	2.5IN * LARGER	
252.33521	CS/NNS	
252.336	VALVES	
252.3362	CHECK	
252.3368	PLUG	
252.337	PIPING - MISC ITEMS	
252.3371	HANGERS + SUPPORTS	
252.3372	INSULATION	
252.3373	SPECIALTIES	
252.34	AUX DEAR + MAKEUP SYSTEM	
252.341	ROTATING MACHINERY	
252.3411	CONDENSATE RETURN PUMP+MT	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.34111	CONDENSATE RETURN PUMPS	QUANTITY - 3 TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 200 GPM SPEED - 1775 RPM TDH - 100 FT BHP - 7.1 FT NPSH - 10 FT EFFICIENCY - 70 PCT. DESIGN PRESS - 100 PSIG DESIGN TEMP - 130 F MATERIAL - CAST IRON CASING DESIGN CODE -
252.34112	CONDENSATE RETURN PUMP MT	QUANTITY - 3 TYPE - HORSEPOWER - 10 HP SPEED - 1800 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
252.343	TANKS AND PRESSURE VESSELS	
252.3431	DEAERATOR	INCLUDED WITH AUXILIARY BOILER PACKAGE TYPE - TRAY QUANTITY - 1 TYPE - TRAY CAPACITY - 300,000 LB/HR STR. TANK CAP'Y - 273 CU FT OPER PRESS - 5 PSIG DES. PRESS - 30 PSIG STM. INLET TEMP - 307 F WATER INLET TEMP - 65 F (MIN.) WATER OUTLET TEMP - 228 F
252.345	PIPING	
252.3451	2 IN + SMALLER	
252.34511	CS/NNS	
252.3452	2.5 IN + LARGER	
252.34521	CS/NNS	
252.346	VALVES	

708214

EQUIPMENT LIST - REPORT 1

06/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07776

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.3461	GATE	
252.3462	CHECK	
252.3463	GLOBE	
252.347	PIPING - MISC. ITEMS	
252.3471	HANGERS + SUPPORTS	
252.3472	INSULATION	
252.3473	SPECIALTIES	
252.35	AUX CHEM FEED SYSTEM	
252.351	ROTATING MACHINERY	
252.3511	CHEM FEED PUMPS + MOTORS	
252.35111	CHEM FEED PUMP	QUANTITY - 4 TYPE - POSITIVE DISPLACEMENT ORIENTATION - HORIZONTAL FLOW RATE - 7 GPH SPEED - 1750 RPM TUN - 250 PSIG BHP - NPSH - 3 FT EFFICIENCY - DESIGN PRESS - 300 PSIG DESIGN TEMP - 300 PSIG MATERIAL - C.S. CASING, 316 SS WETTED PARTS DESIGN CODE -
252.35112	CHEM FEED PUMP MOTOR	TYPE - TENV HORSEPOWER - 1 HP SPEED - 1750 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
252.355	TANKS AND PRESSURE VESSELS	

708242

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2,5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.3531	CHEM FEED TANKS	QUANTITY - 2 ORIENTATION - VERTICAL DIMENSIONS - VOLUME - 300 GAL DESIGN PRESS - ATMOS DESIGN TEMP. - 90 F MATERIAL - 304 SS DESIGN CODE - AGITATOR: MATERIAL - 316 SS SHAFT AND PROP. MOTOR HP - 1/8 HP
252.355	PIPING	
252.3551	2 IN + SMALLER	
252.35511	SS/WNS	
252.3552	2.5 IN + LARGER	
252.356	VALVES	
252.3561	GATE	
252.3562	CHECK	
252.3563	GLOBE	
252.3569	SPECIAL VALVES	
252.35691	NEEDLE	
252.357	PIPING - MISC ITEMS	
252.3571	HANGERS + SUPPORTS	
252.3572	INSULATION	NONE
252.3573	SPECIALTIES	
252.36	AUX. STEAM + CONDENSATE RETRN	
252.361	ROTATING MACHINERY	
252.3611	HEATING DRAIN TANK PUMP + MT	

708213

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.36111	HEATING DRAIN TANK PUMP	QUANTITY - 2 X 50 PCT. TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 340 GPM SPEED - 1775 RPM TDH - 75 FT BHP - 9 HP NPSH - 10 FT EFFICIENCY - 70 PCT. DESIGN PRESS - 100 PSIG DESIGN TEMP - 250 F MATERIAL - CAST IRON CASING CHROME STEEL IMPELLER DESIGN CODE -
252.36112	HEATING DRAIN TANK PUMP MT	QUANTITY - 2 TYPE - HORSEPOWER - 10 HP SPEED - 1800 RPM VOLTAGE - 460V, 3 PHASE, 60 HZ
252.363	TANKS AND PRESSURE VESSELS	
252.3631	HEATING DRAIN TANK	QUANTITY - 1 ORIENTATION - HORIZONTAL DIMENSIONS - 6 FT D X 10 FT VOLUME - 273 CU FT DESIGN PRESS - 15 PSIG DESIGN TEMP - 250 F MATERIAL - CARBON STEEL DESIGN CODE -
252.365	PIPING	
252.3651	2 IN + SMALLER	
252.36511	CS/WNS	
252.3652	2.5 IN + LARGER	
252.36521	CS/WNS	
252.366	VALVES	
252.3661	GATE	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.3662	CHECK	
252.3663	GLOBE	
252.367	PIPING - MISC. ITEMS	
252.3671	HANGERS + SUPPORTS	
252.3672	INSULATION	
252.3673	SPECIALTIES	
252.37	AUX BOILER STACKS + DUCT	INCLUDED WITH AUXILIARY BOILER PACKAGE
252.38	AUX BOILER BLOWDOWN	
252.383	TANKS AND PRESSURE VESSELS	
252.3831	AUX BOILER BLOWDOWN TANK	QUANTITY - 1 ORIENTATION - VERTICAL DIMENSIONS - 3 FT 0 X 5 FT VOLUME - 40 CU FT DESIGN PRESS - 25 PSIG DESIGN TEMP - 275 F MATERIAL - CARBON STEEL DESIGN CODE -
252.385	PIPING	
252.3851	2 IN + SMALLER	
252.38511	CS/NNS	
252.3852	2.5 IN + LARGER	
252.386	VALVES	
252.3861	GATE	
252.3862	CHECK	
252.3869	SPECIAL VALVES	
252.38691	BLOWDOWN	

208245

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.387	PIPING - MISC ITEMS	
252.3871	HANGERS + SUPPORTS	
252.3872	INSULATION	
252.3873	SPECIALTITS	
252.39	AUX STEAM SYS COMPLETE I+C	
252.4	PLANT FUEL OIL SYSTEM	
252.41	ROTATING MACHINERY	
252.411	FUEL OIL UNLOAD PUMP+MOTOR	
252.4111	FUEL OIL UNLOADING PUMP	QUANTITY - 1 TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 200 GPM SPEED - TDH - BHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - CAST IRON CASING DESIGN CODE -
252.4112	FUEL OIL UNLOAD PUMP MOTOR	
252.43	TANKS AND PRESSURE VESSELS	
252.431	PLANT FUEL OIL STORAGE TK	QUANTITY - 1 ORIENTATION - VERTICAL DIMENSIONS - 42 FT D x 15 FT VOLUME - 150,000 GAL DESIGN PRESS - ATMOS DESIGN TEMP - 100 F MATERIAL - CARBON STEEL DESIGN CODE -
252.45	PIPING	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1252 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
252.451	2 IN + SMALLER	
252.4511	CS/NNS	
252.452	2.5 IN + LARGER	
252.4521	CS/NNS	
252.46	VALVES	
252.466	PLUG	
252.47	PIPING-MISC ITEMS	
252.471	HANGERS + SUPPORTS	
252.472	INSULATION	
252.473	SPECIALTIES	
252.49	FOUNDATIONS/SKIDS	
252.491	PLANT FUEL OIL STG TK FNDT	
252.4911	EXCAVATION WORK	
252.49111	EARTH EXCAVATION	
252.49112	BACKFILL	
252.4912	CONCRETE WORK	
252.49121	FORMWORK	
252.49122	REINFORCING STEEL	
252.49123	CONCRETE	
252.4913	COMPACTED SAND BED	
252.4914	DIKE	
253.	COMMUNICATIONS EQUIPMENT	
253.1	LOCAL COMMUNICATIONS SYS	

10802

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
254.52	METEOROLOGICAL MONIT. EQUIP	QUANTITY: MET TOWER - 1 WIND SPEED AND DIR. SENSORS - 2 TEMP. AND DEN POINT SENSORS - 2 DIFF. TEMP SENSORS - 1 BAROMETRIC PRESS SENSORS - 1 RAIN GAGES - 1 RELATIVE HUMIDITY SENSORS - 2 SIGNAL TRANSMITTERS - 9 STRIP CHART RECORDERS - 5
254.53	WATER QUALITY MONITORING	WATER QUALITY ANALYZER EQUIPMENT
254.54	THERMAL EFFLUENT MONITOR	TEMPERATURE DETECTORS
254.56	AIR QUALITY MONITORING	QUANTITY: SULFUR DIOXIDE MONITORS - 1 NO X MONITORS - 1 PARTICULATE MONITORS - 1 OXYGEN MONITORS - 1
254.6	DINING FACILITIES	
254.61	CAFETERIA EQUIPMENT	ALLOWANCE
255.	WASTE WATER TREATMENT EQPT	
255.1	ROTATING MACHINERY	
255.11	GROUP I -	
255.111	BATCH WASTE TRANS PUMP+MTR	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
253.11	GEN. PURPOSE TELEPHONE SYS	A COMPLETE DIAL AUTOMATIC TELEPHONE SYSTEM CONSISTING OF AN AUTOMATIC SWITCHBOARD AND DIAL TELEPHONES IS PROVIDED
253.12	SOUND POW TELEPHONE SYS	PORTABLE SOUND POWERED PHONE HAND-SETS AND JACKS LOCATED THROUGHOUT THE PLANT ARE PROVIDED
253.15	PA + INTERCOM SYS.	A PA SYSTEM IS PROVIDED COMPRISED OF HANDSETS, AMPLIFIERS AND LOUDSPEAKERS
253.2	SIGNAL SYSTEMS	
253.21	FIRE DETECTION SYSTEM	ALLOWANCE
253.211		
253.212		
254.	FURNISHINGS + FIXTURES	
254.1	SAFETY EQUIPMENT	
254.11	PORTABLE FIRE EXTINGUISHERS	ALLOWANCE
254.2	CHEMICAL LAB + INSTR SHOP	
254.223	INSTRUMENT SHOP APPARATUS	ALLOWANCE
254.23	SPEC LAB FURNITURE+FIXTURE	ALLOWANCE
254.3	OFFICE EQUIP+FURNISHINGS	
254.31	OFFICE FURNITURE	
254.4	CHANGE ROOM EQUIPMENT	
254.41	LOCKERS+BENCHES	ALLOWANCE
254.5	ENVIRONMENT MONIT EQUIP	

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MODEL 61J - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
255.1111	BATCH WASTE TRANSFER PUMP	QUANTITY - 2 TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 1100 GPM SPEED - TDH - 150 FT BHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE -
255.1112	BATCH WASTE TRANS PUMP MTR	QUANTITY - 2 TYPE - HORSEPOWER - 125 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
255.112	SLUDGE FEED PUMP + MOTOR	
255.1121	SLUDGE FEED PUMP	QUANTITY - 2 TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 75 GPM SPEED - TDH - 150 FT BHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE -
255.1122	SLUDGE FEED PUMP MOTOR	QUANTITY - 2 TYPE - HORSEPOWER - 15 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
255.113	FILTRATE SUPP PUMP + MOTOR	

708250

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER

ITEM

DESCRIPTION

255.1131 FILTRATE SUMP PUMP

QUANTITY - 2
 TYPE - CENTRIFUGAL
 ORIENTATION - HORIZONTAL
 FLOW RATE - 75 GPM
 SPEED -
 TDH - 75 FT
 BHP -
 NPSH -
 EFFICIENCY -
 DESIGN PRESS -
 DESIGN TEMP -
 MATERIAL -
 DESIGN CODE -

255.1132 FILTRATE SUMP PUMP MOTOR

QUANTITY - 2
 TYPE -
 HORSEPOWER - 7.5 HP
 SPEED -
 VOLTAGE - 460V, 3 PHASE, 60 HZ

255.114 LIME SLURRY PUMP + MOTOR

QUANTITY - 1
 TYPE - CENTRIFUGAL
 ORIENTATION - HORIZONTAL
 FLOW RATE - 25 GPM
 SPEED -
 TDH - 75 FT
 BHP -
 NPSH -
 EFFICIENCY -
 DESIGN PRESS -
 DESIGN TEMP -
 MATERIAL -
 DESIGN CODE -

255.1141 LIME SLURRY PUMP

255.1142 LIME SLURRY PUMP MOTOR

QUANTITY - 1
 TYPE -
 HORSEPOWER - 1 HP
 SPEED -
 VOLTAGE - 460V, 3 PHASE, 60 HZ

255.115 REGENERATIO, WASTE PMP+MTR

708251

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 HMT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
255.1151	REGENERATION WASTE PUMP	QUANTITY - 2 TYPE - CENTRIFUGAL ORIENTATION - HORIZONTAL FLOW RATE - 75 GPM SPEED - HEAD - 75 FT PUMP - V/SH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - DESIGN CODE -
255.1152	REGENERATION WASTE PMP MTR	QUANTITY - 2 TYPE - HORSEPOWER - 7.5 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
255.116	HOLDING TANK BLOWER MOTOR	
255.1161	HOLDING TANK BLOWER	QUANTITY - 2 TYPE - FLOW RATE - 2000 SCFM STATIC PRESS - 20 PSIG SPEED - BHP - EFFICIENCY - DESIGN CODE -
255.1162	HOLDING TANK BLOWER MOTOR	QUANTITY - 2 TYPE - HORSEPOWER - 250 HP SPEED - VOLTAGE - 4KV, 3 PHASE, 60 HZ
255.117	ROT DRUM VAC FILT PUMP+MTR	

708252

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 010 - 1232 NWE/3500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETON+USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
255.1171	ROTARY DRUM VACUUM PUMP	QUANTITY - 2 TYPE - ORIENTATION - FLOW RATE - 600 SQ FT SPEED - TDH - BHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
255.1172	ROTARY DRUM MOT	QUANTITY - 2 TYPE - HORSEPOWER - 100 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
255.1173	VACUUM PUMP MOTUM	QUANTITY - 2 TYPE - HORSEPOWER - 10 HP SPEED - VOLTAGE - 460V, 3 PHASE, 60 HZ
255.12	GROUP II	
255.121	SULFURIC ACID FEED PMP+MTR	QUANTITY - 2 TYPE - GEAR ORIENTATION - HORIZONTAL FLOW RATE - 7.5 GPM SPEED - TDH - BHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
255.1211	SULFURIC ACID FEED PUMP	

208253

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 010 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
255.1212	SULFURIC ACID FEED PMP MTR	QUANTITY - 2 TYPE - HORSEPOWER - 1 HP SPEED - VOLTAGE - 480V, 3 PHASE, 60 HZ
255.122	CAUSTIC FEED PUMP + MOTOR	
255.1221	CAUSTIC FEED PUMP	QUANTITY - 2 GEAR - TYPE - ORIENTATION - HORIZONTAL FLOW RATE - 7.5 GPM SPEED - TQM - BHP - NPSH - EFFICIENCY - DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
255.1222	CAUSTIC FEED PUMP MOTOR	QUANTITY - 2 TYPE - HORSEPOWER - 1 HP SPEED - VOLTAGE - 480V, 3 PHASE, 60 HZ
255.123	LIME SLRY TANK AGITATOR+MTR	
255.1231	LIME SLRY TANK AGITATOR	
255.1232	LIME SLRY TANK AGITATOR MTR	
255.124	REGENER TANK AGITATOR+MTR	
255.1241	REGENERATION TANK AGITATOR	
255.1242	REGENER TANK AGITATOR MTR	
255.125	PH ADJUST TANK AGITATOR+MTR	
255.1251	PH ADJUST TANK AGITATOR	
255.1252	PH ADJUST TANK AGITATOR MTR	

08254

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/5300 MWT COAL - 2.5/1.7 IN HS AV - MIDDLETON,USA - HIGH SULFUR - COST BASIS 07776

ACCOUNT NUMBER	ITEM	DESCRIPTION
255.126	SLUDGE CONVEYOR + MOTOR	QUANTITY - 2 ORIENTATION - DIMENSIONS - 90 FT D X 42 FT H VOLUME - 2,000,000 GAL DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
255.1261	SLUDGE CONVEYOR	
255.1262	SLUDGE CONVEYOR MOTOR	
255.3	TANKS AND PRESSURE VESSELS	
255.31	BATCH HOLDING TANK	
255.32	LIME SLURRY HOLDING TANK	QUANTITY - 1 ORIENTATION - DIMENSIONS - 9 FT D X 12 FT H VOLUME - 5000 GAL DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
255.33	API SEPARATOR TANK	QUANTITY - 1 ORIENTATION - DIMENSIONS - 3 FT X 0 FT X 46 FT H VOLUME - DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
255.34	CAUSTIC STORAGE TANK	QUANTITY - 1 ORIENTATION - DIMENSIONS - 8.5 FT D X 14 FT H VOLUME - 6000 GAL DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -

708255

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
255.35	SULFURIC ACID STORAGE TANK	QUANTITY - 1 ORIENTATION - DIMENSIONS - 8.5 FT D X 14 FT H VOLUME - 6000 GAL DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL DESIGN CODE -
255.36	REGENERANT HOLDING TANK	QUANTITY - 1 ORIENTATION - DIMENSIONS - 11 FT D X 15 FT H VOLUME - 40000 GAL DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL-EPOXY COAT DESIGN CODE -
255.37	PH ADJUSTMENT TANK	QUANTITY - 1 ORIENTATION - DIMENSIONS - 9 FT D X 12 FT H VOLUME - 5000 GAL DESIGN PRESS - DESIGN TEMP - MATERIAL - CARBON STEEL-EPOXY COAT DESIGN CODE -
255.5	PIPING	
255.51	2 IN + SMALLER	
255.511	CS/NNS	
255.52	2.5 IN + LARGER	
255.521	CS/NNS	
255.6	VALVES	
255.61	GATE	
255.7	PIPING-MISC ITEMS	
255.71	HANGERS AND SUPPORTS	

208256

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2,5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
255.8	WASTE WATER I + C	TEMP ELEMENT 5 CONTROLLER 4 ANALYTICAL INSTR 5 FLOW ELEMENT 2 PROCESS SWITCH 15 INDICATOR 15 ANNUNCIATOR 40 MISC DEVICE 20
255.91	BATCH WASTE HOLD TANK FOUND	
255.911	EXCAVATION WORK	
255.9111	EXCAVATION-EARTH	
255.915	SUBSTRUCTURE CONCRETE	
255.9131	FORMWORK	
255.9132	REINFORCING STEEL	
255.9133	CONCRETE	
255.92	LIME SLURRY HOLD TANK FOUND	
255.921	EXCAVATION WORK	
255.923	SUBSTRUCTURE CONCRETE	
255.9231	FORMWORK	
255.9232	REINFORCING STEEL	
255.9233	CONCRETE	
255.93	PH ADJUSTMENT TANK FOUND	
255.931	EXCAVATION WORK	
255.933	SUBSTRUCTURE CONCRETE	
255.9331	FORMWORK	
255.9332	REINFORCING STEEL	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
255.9333	CONCRETE	
255.94	DEWATERING MACHINE FOUND	
255.941	EXCAVATION WORK	
255.9411	EXCAVATION-EARTH	
255.9414	BACKFILL-EARTH	
255.943	SUBSTRUCTURE CONCRETE	
255.9431	FORMWORK	
255.9432	REINFORCING STEEL	
255.9433	CONCRETE	
255.95	CAUSTIC + ACID TANKS FOUND	
255.951	EXCAVATION WORK	
255.9511	EXCAVATION-EARTH	
255.9514	BACKFILL-EARTH	
255.953	SUBSTRUCTURE CONCRETE	
255.9531	FORMWORK	
255.9532	REINFORCING STEEL	
255.9533	CONCRETE	
255.96	MISC PUMP FOUNDATIONS	FOUNDATIONS INCLUDED FOR :
		2 CAUSTIC PUMPS
		2 SULFURIC ACID PUMPS
		1 LIME SLURRY PUMP
		2 FILTRATE PUMPS
		2 SLUDGE TRANSFER PUMPS
255.961	EXCAVATION WORK	
255.9611	EXCAVATION-EARTH	

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
255.9614	BACKFILL-EARTH	
255.963	SUBSTRUCTURE CONCRETE	
255.9631	FORMWORK	
255.9632	REINFORCING STEEL	
255.9633	CONCRETE	
255.9634	EMBEDDED STEEL	
255.97	BATCH WASTE TANK BLOW FOUND	
255.971	EXCAVATION WORK	
255.9711	EXCAVATION-EARTH	
255.9714	BACKFILL-EARTH	
255.973	SUBSTRUCTURE CONCRETE	
255.9731	FORMWORK	
255.9732	REINFORCING STEEL	
255.9733	CONCRETE	
255.98	REGENERAT WASTE TANK FOUND	
255.981	EXCAVATION WORK	
255.9811	EXCAVATION-EARTH	
255.9814	BACKFILL-EARTH	
255.983	SUBSTRUCTURE CONCRETE	
255.9831	FORMWORK	
255.9832	REINFORCING STEEL	
255.9833	CONCRETE	
255.99	BATCH WST TRANS PUMP FOUND	

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MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
255.991	EXCAVATION WORK	
255.9911	EXCAVATION-EARTH	
255.9914	BACKFILL-EARTH	
255.993	SUBSTRUCTURE CONCRETE	
255.9931	FORMWORK	
255.9932	REINFORCING STEEL	
255.9933	CONCRETE	
261.	MAIN COND HEAT REJECT SYS	
261.	STRUCTURES	
261.1	MAKEUP WTR INT + DISCH STR	SEE COST ESTIMATE FOR STRUCT QUANTITIES
261.11	INTAKE STRUCTURE	
261.111	EXCAVATION WORK	
261.1111	EARTH EXCAVATION	
261.1112	ROCK EXCAVATION	
261.1113	SHEETING (TEMP COFFERDAM)	
261.1114	STRUCT STL (TEMP COFFERDAM)	
261.1115	PUMPING	
261.112	BEARING PILES (STEEL)	
261.113	SUBSTRUCTURE CONCRETE	
261.1131	FORMWORK	
261.1132	REINFORCING STEEL	
261.1133	CONCRETE	
261.1134	EMBEDDED STEEL	

708260

EQUIPMENT LIST - REPORT 1

06/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2,571.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
261.1135	CONCRETE FINISH	
261.1136	WATERPROOFING	
261.1137	CONSTRUCTION JOINTS	
261.1138	RUBBING CONCRETE SURFACES	
261.114	SUPERSTRUCTURE	
261.1141	CONCRETE WORK	
261.1142	STRUCTURAL + MISC. STEEL	
261.11421	STRUCTURAL STEEL	
261.11422	GRATING (GALV)	
261.11423	HANDRAIL	
261.1143	EXTERIOR WALLS	
261.11431	CONCRETE	
261.11432	MASONRY	
261.1144	ROOF DECK	
261.11441	METAL ROOF DECK	
261.1145	ROOFING + FLASHING	
261.11451	B.U. ROOFING INSULTN + FLA	
261.1146	INTERIOR WALLS	
261.11461	CONCRETE WALLS	
261.11462	MASONRY WALLS	
261.11463	PARTITIONS	
261.1147	DOORS + WINDOWS	
261.11471	ROLLING STEEL DOORS	

708281

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/5500 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
261.11472	PERSONNEL DOORS	
261.11475	SASH + GLAZING	
261.1149	PAINTING	
261.11491	CONCRETE	
261.11492	STEELWORK	
261.11493	METAL DECK	
261.11494	HANDRAIL	
261.117	BULKHEAD	
261.1171	STEEL SHEETING	
261.1172	STRUCTURAL STEEL	
261.1173	GRAVEL FILL	
261.1174	DREDGING	
261.1175	RIP-RAP (12 IN. THICK)	
261.1176	CHAIN LINK FENCE(7FT HIGH)	
261.118	PROTECTIVE DOLPHINS	
261.1181	WOOD PILES	
261.119	BUILDING SERVICES	
261.1191	FLOOR DRAINS + PIPING	
261.1192	HEATING + VENTILATING	
261.11921	AXIAL WALL FANS	
261.11922	ELECTRIC UNIT HEATERS	
261.11923	INSTRUMENTATION + CONTROL	ALLOWANCE
261.12	DISCHARGE STRUCTURE	

206262

MODEL 610 - 1232 MWE/300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
261.121	EXCAVATION WORK	
261.1211	EARTH EXCAVATION	
261.1212	JACKFILL	
261.1213	DREDGING	
261.122	BEARING PILES (STEEL)	
261.127	PIP-RAP (12 IN. THICK)	
261.128	MARKER PILES (WOOD)	
261.2	CIRC WATER PUMP HOUSE	
261.21	BUILDING STRUCTURE	
261.211	EXCAVATION WORK	
261.2111	EARTH EXCAVATION	
261.2112	ROCK EXCAVATION	
261.2113	CONCRETE FILL	
261.2114	BACKFILL	
261.2115	PUMPING	
261.213	5'-4" STRUCTURE CONCRETE	
261.2131	FORMWORK	
261.2132	REINFORCING STEEL	
261.2133	CONCRETE	
261.2134	EMBEDDED STEEL	
261.2135	FLOOR FINISH	
261.2136	WATERPROOFING	
261.2.37	CONSTRUCTION JOINTS	

SEE COST ESTIMATE FOR STRUCT QUANTITIES

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
261.2138	RUBBING CONCRETE SURFACES	
261.2139	WIRE FABRIC	
261.214	SUPERSTRUCTURE	
261.2141	CONCRETE WORK	
261.21411	FORMWORK	
261.214111	FORMWORK-WOOD	
261.214112	FORMWORK-METAL	
261.21412	REINF. STEEL	
261.21413	CONCRETE	
261.21414	EMBEDDED STEEL	
261.21415	FLOOR FINISH	
261.21416	WATERPROOFING	
261.21417	RUBBING CONCRETE SURFACES	
261.21418	CONSTRUCTION JOINTS	
261.2142	STRUCT + MISC. STEEL	
261.21421	STRUCT. STEEL	
261.21423	MISC. FRAMES, ETC.	
261.21425	FLOOR GRATING (GALV.)	
261.21426	STAIR TREADS	
261.21427	HANDRAILS	
261.2143	EXTERIOR WALLS	
261.21431	CONCRETE WALLS	
261.21432	METAL SIDING(INSULATED)	

708264

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 613 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION	QUANTITY -	SIZE -
261.2144	ROOF DECK		8	6 IN
261.21441	METAL ROOF DECK			
261.2145	ROOFING + FLASHING			
261.21451	B.U. ROOFING, FLASHING+INS			
26.2146	INTERIOR WALLS + PARTIT.			
261.21461	CONCRETE WALLS			
261.21462	MASONRY WALLS			
261.21463	PARTITIONS			
261.2147	DOORS + WINDOWS			
261.21471	ROLLING STEEL DOORS			
261.21472	PERSONNEL DOORS			
261.21473	SASH + GLAZING			
261.2149	PAINTING			
261.21491	CONCRETE			
261.21492	STEELWORK			
261.21493	METAL DECK			
261.21494	HANDRAIL			
261.22	BUILDING SERVICE			
261.221	PLUMBING + DRAINS			
261.2211	ROOF DRAINS & PIPING			
261.22111	DRAINS			
261.22115	PIPING (ALL 2.5 IN + LGR)			

708265

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
261.221151	GALV STEEL/NNS	
261.2212	FLOOR DRAINS & PIPING	
261.22121	DRAINS	QUANTITY - 6 SIZE - 4 IN MATERIAL - PVC QUANTITY - 24 SIZE - 4 IN MATERIAL - STEEL
261.22125	PIPING (ALL 2.5 IN + LGR)	
261.221251	CI/NNS	
261.221252	PVC/NNS	
261.222	HEATING, VENT, + AIR COND.	
261.2221	ROTATING MACHINERY	
261.22211	PROPELLER FAN + MOTOR	
261.2221 1	PROPELLER FAN	QUANTITY - 3 X 13 1/3 PCT TYPE - WITH GUARD AND AUTO OUTLET DAMPERS FLOW RATE - 1.22 EOS CFM S.P. - 0.5 IN SAFETY CLASS - NNS SEISMIC CAT - NONE DESIGN CODE -
261.222112	PROPELLER FAN MOTOR	TYPE - HORSEPOWER - 25 HP SPEED - VOLTAGE - 460 V, 3 PHASE, 60 HZ
261.2222	HEAT TRANSFER EQUIPMENT	
261.22221	ELECTRIC UNIT HEATERS+MTR	

08200

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 61J - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
261.222211	ELECTRIC UNIT HEATERS	QUANTITY - 4 HEAT ELEMENTS: NUMBER - POWER - 30 KW VOLTAGE - 460 V, 3 PHASE, 60 HZ FAN: FLOW - 2,200 CFM S.P. - SAFETY CLASS - SEISMIC CAT - DESIGN CODE -
261.222212	ELECTRIC UNIT HTR MOTORS	TYPE - HORSEPOWER - 0.25 HP SPEED - VOLTAGE - 115 V, 1 PH, 60 HZ
261.22226	VALVES + DAMPERS	
261.222267	SPECIAL VALVES + DAMPERS	
261.2222691	INTAKE LOUVERS	QUANTITY - 3 TYPE - MANUAL OP INTAKE LOUVER FLOW - 1.2 EOS CFM SIZE - 44 FT W X 8 FT H MATERIAL - SAFETY CLASS - SEISMIC CAT -
261.224	LIGHTING & SERVICE POWER	
261.228	INSTRUMENTATION + CONTROL	ALLOWANCE
261.3	MAKEUP WTR PRETREATMNT BLG	SEE COST ESTIMATE FOR STRUCT QUANTITIES
261.31	BUILDING STRUCTURE	
261.311	EXCAVATION WORK	
261.3111	EARTH EXCAVATION	
261.3112	ROCK EXCAVATION	
261.3113	CONCRETE FILL	

708267

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
261.3114	FILL + BACKFILL	
261.3115	DEWATERING	
261.3113	SUBSTRUCTURE CONCRETE	
261.3131	FORMWORK	
261.3132	REINFORCING STEEL	
261.3133	CONCRETE	
261.3134	EMBEDDED STEEL	
261.3135	FLOOR FINISH	
261.3136	WATERPROOFING	
2 1.3137	CONSTRUCTION JOINTS	
261.3138	RUBBING CONCRETE SURFACES	
261.314	SUPERSTRUCTURE	
261.3141	CONCRETE WORK	
261.31411	FORMWORK	
261.314111	FORMWORK-WOOD	
261.314112	FORMWORK-METAL	
261.31412	REINFORCING STEEL	
261.31413	CONCRETE	
261.31414	EMBEDDED STEEL	
261.31415	FLOOR FINISH	
261.31416	WATERPROOFING	
261.31417	RUBBING CONCRETE SURFACES	
261.31418	CONSTRUCTION JOINTS	

708268

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
261.3142	STRUCTURAL + MISC STEEL	
261.31421	STRUCTURAL STEEL	
261.31423	MISCELLANEOUS FRAMES, ETC.	
261.31425	FLOOR GRATING (GALV.)	
261.31426	STAIR TREADS	
261.31427	HANDRAIL	
261.3143	EXTERIOR WALLS	
261.31431	CONCRETE WALLS	
261.31432	MASONRY WALLS	
261.31433	METAL INSULATED SIDING	
261.31434	WINDOW WALL	
261.3144	ROOF DECK	
261.31441	METAL ROOF DECK	
261.31442	PRECAST CONCRETE PANELS	
261.31443	CONCRETE FILL	
261.31444	REINFORCING STEEL	
261.3145	ROOFING + FLASHING	
261.31451	B.U. ROOFING + INSUL. + FLASH.	
261.31452	B.U. ROOF + FLASH (NO INSUL)	
261.3146	INTERIOR WALLS + PARTITION	
261.31461	CONCRETE WALLS	
261.31462	CONCRETE BLOCK	
261.31463	METAL PARTITIONS	

708209

UNITFO ENGINEERS & CNSTRUCTORS INC.

MODEL 610 - 1232 MWE/5300 HWY COAL - 2.5/1.7 IN HG AV - MIDDLETON,W,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION	QUANTITY -	SIZE -
261.31404	PLASTER BD PARTITIONS			
261.3147	DOORS + WINDOWS			
261.31471	ROOLING STEEL DOORS			
261.31472	PERSONNEL DOORS			
261.31473	SASH + GLAZING			
261.3148	WALLS,FLOORS+CEILG FINISHS			
261.3149	PAINTING			
261.31491	CONCRETE			
261.31497	STEELWORK			
261.31493	METAL DECK			
261.31494	SPECIAL METALLIC PAINT			
261.31493	HANDBRAIL			
261.31496	EPOXY			
261.32	BUILDING SERVICES			
261.321	PLUMBING + DRAINS			
261.3211	ROOF DRAINS + PIPING			
261.32111	DRAINS		4	6 IN
261.32115	PIPING (ALL 2.5 IN+LARGER)			
261.321151	GALV STEEL/WNS			
261.3212	FLOOR DRAINS + PIPING			
261.32121	DRAINS		4	4 IN
261.32125	PIPING (ALL 2.5 IN+LARGER)			

208270

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWF/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
261.321251	CS/ANS	QUANTITY - 3 X 33 1/3 PCT TYPE - AXIAL FAN FLOW RATE - 25,000 CFM S.P. - 0.5 IN SAFETY CLASS - NNS SEISMIC CAT. - NONE DESIGN CODE -
261.321252	CI/NNS	TYPE - AC INDUCTION HORSEPOWER - 5 HP SPEED - VOLTAGE - 460 V, 3 PH, 60 HZ
261.322	HEATING, VENT, + AIR COND	
261.3221	ROTATING MACHINERY	
261.32211	ROOF VENTILATORS + MOTORS	
261.322111	ROOF VENTILATORS	
261.322112	ROOF VENTILATORS MOTORS	QUANTITY - 3 X 33 1/3 PCT HEATER: TYPE - ELECTRIC KW - 4.2 KW VOLTAGE - 460 V, 3 PH, 60 HZ FAN: TYPE - CENTRIFUGAL FLOW RATE - 3,700 CFM STATIC PRESS -
261.3222	HEAT TRANSFER EQUIPMENT	
261.32221	ELECTRIC UNIT HEATER+MOTOR	
261.322211	ELECTRIC UNIT HEATER	TYPE - AC INDUCTION HORSEPOWER - 0.5 HP SPEED - VOLTAGE - 115 V, 1 PH, 60 HZ
261.3226	VALVES + DAMPERS	
261.32269	SPECIAL VALVES	

708271

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
261.322691	INTAKE LOUVERS	QUANTITY - 5 X 33 1/3 PCT TYPE - FLOW - 25,000 CFM SIZE - 122 IN W X 60 IN H MATERIAL - EXTRUDED ALUMINUM SAFETY CLASS - NNS SEISMIC CAT. - NONE
261.3226	INSTRUMENTATION + CONTROL	
261.324	LIGHTING + SERVICE POWER	
261.4	CHLORINATION BUILDING	
261.41	BUILDING STRUCTURE	
261.411	EXCAVATION WORK	
261.4111	EARTH EXCAVATION	
261.4114	BACKFILL	
261.413	SUBSTRUCTURE CONCRETE	
261.4131	FORMWORK	
261.4132	REINF. STEEL	
261.4133	CONCRETE	
261.4134	EMBEDDED STEEL	
261.4135	FLOOR FINISH	
261.4136	WATERPROOFING	
261.4137	CONSTRUCTION JOINTS	
261.4138	RUBBING CONCRETE SURFACES	
261.4139	WIRE FABRIC	
261.414	SUPERSTRUCTURE	
261.4141	CONCRETE WORK	

SEE COST ESTIMATE FOR STRUCT QUANTITIES

708272

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG A/F - WDETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
261.4142	STRUCT. + MISC. STEEL	
261.41421	STRUCT. STEEL	
261.41423	MISC. FRAMES, ETC.	
261.4143	EXTERIOR WALLS	
261.41432	MASONRY	
261.4144	ROOF DECK	
261.41441	METAL ROOF DECK	
261.4145	ROOFING + FLASHING	
261.41451	B.V. ROOFING FLASHING+INSUL	
261.4147	DOORS + WINDOWS	
261.41472	PERSONNEL DOORS	
261.41473	SASH + GLAZING	
261.4149	PAINTING	
261.41492	STEELWORK	
261.41493	METAL DECK	
261.424	LIGHTING + SERVICE POWER	
262.	MECHANICAL EQUIPMENT	
262.1	HEAT REJECTION SYSTEM	
262.11	WATER INTAKE EQUIPMENT	
262.111	ROTATING MACHINERY	
262.1111	SCREEN WASH PUMP+MOTOR	

708273

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2-5/1.7 IN HG AV - MIDDLETOWN*USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
262.11111	SCREEN WASH PUMP	<p>QUANTITY 2 X 100 PCT. TYPE CENTRIFUGAL ORIENTATION VERTICAL FLOW RATE 110 GPM SPEED 3600 RPM TDH 100 FT BHP 4 HP NPJM EFFICIENCY 75 PCT. DESIGN PRES 100 PSI DESIGN TEMP 100 F MATERIAL NI-RESIST COL. AND BOWL S.S. IMPELLER SAFETY CLASS NNS SEISMIC CAT. NONE DESIGN CODE</p>
262.11112	SCREEN WASH PUMP MOTOR	<p>TYPE RATING 5 HP SPEED 3600 RPM VOLTAGE 460V, 3 PHASE, 60 HZ</p>
262.1114	PURIFICATION*FILTRATION EQ	
262.1111	TRAVELING SCREENS	<p>QUANTITY 2 X 50 PERCENT SCREEN SIZE 6 FT WIDE X 31 FT HIGH BASKET SIZE 5FT-6IN WIDE X 30IN HI. 3/8 IN. S.S. MESH SCREEN SPEED HIGH - LOW - FLOW VEL. 1/2 FPS APPROACH SCREEN 1 FPS THROUGH MESH DESIGN FLOW 14000 GPM</p>
262.1142	TRASH RACK	<p>TYPE VERTICAL BARS DIMENSION 0.5 IN WIDE BY 3.5 IN DEEP BY 23 FT HIGH; BAR SPACING 3.5 IN APART MATERIAL CARBON STEEL</p>
262.1143	TRASH RAKE	<p>MOTORIZED, FULLY AUTOMATIC RAKING TYPE, SIZED TO CLEAN RACK IN FRONT OF EACH SCREEN IN SINGLE PASS</p>

788274

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
262.1144	STOP LOGS	REINFORCED CONCRETE PLANKS, 6 IN THICK BY 18 IN HIGH BY 7.5 FT LONG, AS REQ'D
262.1145	SCREEN WASH STRAINER	QUANTITY 1 TYPE AUTOMATIC-SELF CLEANING FLOW RATE 110 GPM DESIGN PRES. 50 PSIG DESIGN TEMP 100 F DIFF. PRES. CLEAN/DIRTY RATING SIZE MATERIAL C.S. BODY, S.S. MESH DIRT CAPACITY SAFETY CLASS NNS SEISMIC CAT. NONE DESIGN CODE
262.115	PIPING-SCREEN WASH	
262.1151	2 IN. + SMALLER	
262.1152	2.5 IN. + LARGER	
262.11521	CS/NNS	
262.116	VALVES-SCREEN WASH	
262.1162	CHECK	
262.1166	BUTTERFLY	
262.117	PIPING-MISC ITEMS	
262.1171	HANGERS + SUPPORTS	
262.1172	INSULATION	
262.1173	SPECIALTIES	
262.12	CIRCULATING WATER SYSTEM	
262.121	ROTATING MACHINERY	
262.1211	CIRCULATING WATER PUMP+MTR	

08075

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07776

ACCOUNT NUMBER	ITEM	DESCRIPTION
262.12111	CIRC WATER PUMP	QUANTITY 4 X 25 PCT TYPE MIXED FLOW ORIENTATION VERTICAL FLOW RATE 111,000 GPM SPEED 391 RPM TDH 90 FT BHP 2764 HP NPSH 30 FT EFFICIENCY 89 PCT DESIGN PRESS 150 PSIA DESIGN TEMP 100 F MATERIAL NI-RESIST COLL AND BOWL S.S. IMPELLER SAFETY CLASS NNS SEISMIC CAT. NONE DESIGN CODE
262.12112	CIRC WATER PUMP MOTOR	TYPE HORSEPOWER 3000 HP. SPEED 400 RPM VOLTAGE
262.125	PIPE	
262.1251	2 IN + SMALLER	
262.1252	2.5 IN + LARGER	
262.12521	CONCRETE/NNS	
262.12522	CS/NNS	
262.126	VALVES	
262.1266	BUTTERFLY	
262.127	PIPING / MISC. ITEMS	
262.1271	HANGERS + SUPPORTS	NONE
262.1272	INSULATION	
262.1273	SPECIALTIES	
262.1274	PIPE TRENCHING	

08276

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
262.12741	EXCAVATION	
262.127411	EARTH EXCAVATION	
262.127412	ROCK EXCAVATION	
262.12742	BACKFILL	
262.12743	COMPACTED SAND BED	
262.12744	SUBSTRUCTURE CONCRETE	
262.127441	FORMWORK	
262.127442	REINF STEEL	
262.127443	CONCRETE	
262.128	INSTRUMENTATION + CONTROL	TRANSMITTER 1 LOCAL INDICATOR 3 BOARD MOUNTED INDICATOR 15 FLOW ELEMENT 1 TEMP ELEMENT 11 TEMP TRANSMITTER 3 PROCESS SWITCH 4 MISC DEV 1
262.129	SKIDS / FOUNDATIONS	
262.1291	CHLORINATION SYSTEM	8,000 LB PER DAY CHLORINATOR USING LIQUID CHLORINE STORED IN ONE TON CYLINDERS. CHLORINATOR IS COMPLETE WITH REGULATOR, WATER DILUTION STATION AND EVAPORATOR.
262.292	SULPHURIC ACID FEED SYSTEM	
262.12921	ROTATING MACHINERY	

110827

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN+USA - HIGH SULFUR - COST BASI. 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
262.129211	SULFURIC ACID FEED PUMP+MT	QUANTITY 2 X 100 PCT. TYPE POSITIVE DISPLACEMENT ORIENTATION HORIZONTAL FLOW RATE 0 - 50 GPM SPEED TDH BHP NPSH EFFICIENCY DESIGN PRES DESIGN TEMP MATERIAL ALLOY 20 SAFETY CLASS NNS SEISMIC CAT. NONE DESIGN CODE
262.129212	SULF ACID FEED PUMP MOTOR	TYPE HORSEPOWER 0.5 HP SPEED VOLTAGE 480V, 3 PH, 60 HZ
262.12923	TANKS AND PRESSURE VESSELS	
262.12925	PIPING	
262.129251	2 IN + SMALLER-C/S/MS	
262.129252	2.5 IN + LARGER	
262.12926	VALVES	
262.13	COOLING TOWERS	
262.132	HEAT XFER EQUIPMENT	

ALLOWANCE

708278

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,UL - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
262.1321	COOLING TOWERS(CT)-MAIN	QUANTITY 2 X 50 PCT. TYPE CIRCULAR MECH. DRAFT CONCRETE SHELL WIDTH 275 FT HEIGHT TO FAN DECK 49 FT VOLUME OF BASIN 375,000 CF EACH NO. OF FANS 15 EACH DESIGN FLOW 230,000 GPM EACH DIAMETER OF FAN 33 FT POWER OF FAN 150 HP DESIGN FLOW 230000 GPM DESIGN WET BULB 74 F DESIGN APPROACH 18 F DESIGN RANGE 26 F SAFETY CLASS NNS SEISMIC NONE DESIGN CODE
262.13P	INSTRUMENTATION + CONTROL	TRANSMITTERS 9 LOCAL INDICATORS 6 BOARD MOUNTED INDICATOR 10 FLOW ELEMENT 7 RECORDER 8 TEMP ELEMENT 32 TEMP TRANSMITTER 20 CONTROLLER 5 ANALYTICAL INSTRUMENT 3 PROCESS SWITCH 1 ANNUNCIATOR 21 MISC. DEVICES 29
262.15	MAIN CT.MAKEUP+BLOWDN SYS.	
262.151	MAKE-UP WATER SYSTEM	
262.1511	ROTATING MACHINERY	
262.15111	MAKE-UP PUMP + MOTOR	

622802

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/5300 MWT COAL - 2.5/1.7 IN HG 4V - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
262.15111	MAKE-UP PUMP	QUANTITY 2 X 100 PCL. TYPE CENTRIFUGAL ORIENTATION VERTICAL FLOW RATE 13000 GPM SPEED 695 RPM TDH 35 FT. BHP 135 HP NPSH 20 FT EFFICIENCY 85 PCT. DESIGN PRES 150 PSI DESIGN TEMP 100 F MATERIAL NI-RESIST COL. AND BOWL S.S. IMPELLER SAFETY CLASS NWS SEISMIC CAT. NONE DESIGN CODE NONE
262.15112	MAKE-UP PUMP MOTOR	TYPE RATING 150 HP SPEED VOLTAGE 720 RPM
262.1515	PIPING	
262.15151	2 IN. + SMALLER	
262.15152	2.5 IN + LARGER	
262.151521	CONCRETE/MS	
262.1516	VALVES	
262.15162	CHECK VALVES	
262.15163	GLOBE VALVES	
262.15166	BUTTERFLY VALVES	
262.1517	PIPING - MISC. ITEMS	
262.15171	HANGERS + SUPPORTS	
262.15172	INSULATION	NONE
262.15173	SPECIALTIES	

708280

EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 613 - 1232 MWE/5300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
262.15174	PIPE TRENCHING	
262.151741	EXCAVATION	
262.151742	BACKFILL	
262.151743	COMPACTED SAND BED	
262.1518	INSTRUMENTATION + CONTROL	INCLUDED WITH ACCOUNT 262.168
262.152	BLOWDN SYSTEM	
262.1525	PIPING	
262.15251	2 IN. + SMALLER	
262.15252	2.5 IN. + LARGER	
262.152521	CONCRETE/MS	
262.1526	VALVES	
262.15266	BUTTERFLY	
262.1527	PIPING-MISC ITEMS	
262.15271	HANGERS + SUPPORTS	
262.15272	INSULATION	
262.15273	SPECIALTIES	
262.15274	PIPE TRENCHING	INCLUDED IN ACCOUNT 262.15174
262.1528	INSTRUMENTATION & CONTROL	INCLUDED WITH ACCOUNT 262.168

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EQUIPMENT LIST - REPORT 1

08/15/77

MODEL 610 - 1232 MWE/3300 MWT COAL - 2,571.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
262.153	MAKEUP WTR PRETREATMENT SYS	TYPE - HORIZONTAL CLARIFIERS INCLUDING ALL PIPING, VALVES AND ACCESSORIES AS REQUIRED FOR A COMPLETE SYSTEM. FLOW RATE - 13,000 GPM SAFETY CLASS - NNS SEISMIC CAT. - NONE DESIGN CODE -
911	CONSTRUCTION SERVICES	EQUIPMENT SUMMARY: HORIZONTAL CLARIFIERS - 3 X 33.3 PCT SAND FILTERS - 3 X 50 PCT CARBON FILTERS - 3 X 50 PCT CHEMICAL FEEDS - 1 LOT SLUDGE DEWATERING SYS - 1 LOT
911.1	TEMPORARY CONSTRUCTION FAC	
911.1.1	TEMPORARY BUILDINGS	
911.1.1.1	FIELD OFFICE, SHOPS, WHSE.	
911.1.2	JANITOR SERVICES	
911.1.3	GUARDS - SECURITY	
911.2	TEMPORARY FACILITIES	
911.2.1	ROADS, PARKING, LAYDOWN AREA	
911.2.2	TEMPORARY ELECTRICAL SUCE	
911.2.3	TEMPORARY MECH. & PIPING	
911.2.4	TEMPORARY HEAT	
911.2.5	BARGE UNLOAD, FAC. - NONE	
911.2.6	GENERAL CLEANUP	
911.2.7	SNOW REMOVAL-INCL. IN 911.2.1	
912.	CONSTRUCTION TOOLS & EQUIP	

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EQUIPMENT LIST - REPORT 1

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MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN,USA - HIGH SULFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
912.1	MAJOR EQUIPMENT	
912.11	PURCHASE MAJOR EQUIPMENT	
912.12	RENTAL INCL. IN 912.11	
912.13	EQUIPMENT MAINTENANCE	
912.14	FUEL + LUBRICANTS	
912.2	MISCELLANEOUS VEHICLES	
912.21	PURCHASE INCL. IN 912.11	
912.22	RENTAL-INCL. IN 912.12	
912.23	MAINTENANCE-INCL. IN 912.13	
912.24	FUELS&LUB.-INCL. IN 912.14	
912.3	PURCHASE OF SMALL TOOLS	
912.4	EXPENDABLE SUPPLIES	
913.	PAYROLL INSURANCE & TAXES	
913.1	SOCIAL SECUR. TAX .055 X L	
913.2	STATE+FED.UNEMPLOY.035 X L	
913.3	WORKMENS COMP.INS .040 X L	
913.4	P.L.+P.D. INS. .005 X L	
914.	PERMITS,INS. & LOCAL TAXES	
914.1	BUILDERS ALL RISK INS	
914.2	FEES & PERMITS	
914.3	STATE & LOCAL SALES TAXES	
915.	TRANSPORTATION	
92 .	HOME OFFICE ENGRG.&SERVICE	

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EQUIPMENT LIST - REPORT 1

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MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH S'LFUR - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
921.	HOME OFFICE SERVICES	
921.1	SALARIES	
921.11	ENGINEERING AND DESIGN	
921.13	PURCHASING & EXPEDITING	
921.14	ESTIMATING & COST CONTROL	
921.16	PLANNING AND SCHEDULING	
921.17	REPRODUCTION	
921.2	EXPENSES	
921.3	DIRECT PAYROLL COST	
921.4	OVERHEAD LOADING	
921.5	OUTSIDE CONSULTANTS SVCS.	
921.6	FEE FOR H/D SERVICES	
922.	HOME OFFICE Q/A	
923.	HOME OFFICE CONSTRUCTN MGMT	
923.1	SALARIES	
923.2	DIRECT PAYROLL COST	
923.3	OVERHEAD LOADING	
923.4	EXPENSES	
93 .	FIELD OFFICE ENGRG&SERVICE	
931.	FIELD OFFICE EXPENSES	
931.1	OFFICE FURNITURE & E. QIP.	
931.2	TELEPHONE & COMMUNICATIONS	
931.3	OFFICE SUPPLIES	

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EQUIPMENT LIST - REPORT 1

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MODEL 610 - 1232 MWE/3300 MWT COAL - 2.5/1.7 IN HG AV - MIDDLETOWN, USA - HIGH SULFUR - COST BASIS 07/76

ACC .NT NUMBER	ITEM	DESCRIPTION
931.4	FIRST AID & MEDICAL EXP.	
932.	FIELD JOB SUPERVISION	
932.1	SALARIES	
932.3	DIRECT PAYROLL COST	
932.4	OVERHEAD LOADING	
932.5	RELOCATION EXPENSE-ALLWNC	
932.6	FEE FOR CONSTR SRVCS	
932.61	HOME OFFICE	
932.62	FIELD	
933.	FIELD QA/WC	
933.1	SALARIES	
933.2	DIRECT PAYROLL COST	
933.3	OVERHEAD LOADING	
933.4	EXPENSES	
934.	PLANT STARTUP & TEST	
934.1	SALARIES	
934.2	DIRECT PAYROLL COST	
934.3	OVERHEAD LOADING	
934.4	EXPENSES	

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SECTION 6
SITE DESCRIPTION

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POOR
ORIGINAL

SECTION 6

SITE DESCRIPTION

6.1 GENERAL

This section provides the site and environmental data as derived from Appendix A of "Guide for Economic Evaluation of Nuclear Reactor Plant Designs", USAEC Report NUS-531, and modified to reflect Coal Plant Siting. These data form the bases of the criteria used for designing the facility and for evaluating the release of liquids and gases to the environment.

6.2 TOPOGRAPHY AND GENERAL SITE CHARACTERISTICS

The site is located on the east bank of the North River at a distance of approximately twenty-five miles south of Middletown, the nearest large city. The North River flows from north to south and is one-half mile (2600 ft) wide adjacent to the plant site. A flood plain extends from both river banks an average distance of one-half mile, ending with hilltops generally 150 to 250 ft above the river level. Beyond this area, the topography is gently rolling, with no major critical topographical features. The plant site itself extends from river level to elevations to 50 ft above river level. The primary structures and the switchyard are located on level ground at an elevation of 18 ft above the mean river level. This elevation is ten feet above the 100 year maximum river level, according to U. S. Army Corps of Engineers studies of the area.

In order to optimize land area requirements for the coal fueled plant site, maximum use of the river location is employed. The primary structure

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is located 1200 ft from the east bank of the river. The site land area is approximately 500 acres. An additional 2,000 acres, approximately six miles from the plant site, are available for solid waste disposal.

6.3 SITE ACCESS

Highway access is provided to the hypothetical site by five miles of secondary road connecting to a State highway. This road is in good condition and needs no additional improvements. Railroad access is provided by constructing a railroad spur which intersects the B&M Railroad. The length of the required spur from the main line to the plant site is assumed to be five miles in length. The North River is navigable throughout the year with a 40 ft wide by 12 ft deep channel. The distance from the shoreline to the center of the ship channel is 2,000 ft. All plant shipments are assumed to be made overland except that heavy equipment may be transported by barge. The Middletown Municipal Airport is located three miles west of the State highway, 15 miles south of Middletown, and ten miles north of the site.

6.4 POPULATION DENSITY AND LAND USE

The hypothetical site is near a large city (Middletown, of 250,000 population) but in an area of low population density. Variation in population with distance from the site boundary is:

<u>Miles</u>	<u>Cumulative Population</u>
0.5	0
1.0	310
2.0	1,370
5.0	5,020
10.0	28,600
20.0	133,000
30.0	1,010,000

There are five industrial manufacturing plants within 15 miles of the hypothetical site. Four are small plants employing less than 100 people each. The fifth, near the airport, employs 2,500 people. Closely populated areas are found only in the centers of the small towns, so the total land area used for housing is small. The remaining land, including that across the river, is used as forest or cultivated crop land, except for railroads and highways.

6.5 NEARBY FACILITIES

Utilities are available as follows:

- o Natural gas service is available two miles from the site boundary on the same side of the river.
- o Communication lines will be furnished to the project boundaries at no cost.
- o Power and water for construction activities are available at the southwest corner of the site boundary.
- o Two connections to the utility grid (one at 500 kv for the generator connection and one at 230 kv for the reserve auxiliary transformer connection) are available at the switchyard.

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6.6 METEOROLOGY AND CLIMATOLOGY

6.6.1 Ambient Temperatures

The winters in the Middletown area are moderately cold, with average temperatures in the low 30's. The summers are fairly humid with average temperatures in the low 70's, and with high temperatures averaging around 82 F. The historic maximum wet bulb and dry bulb temperatures are 78 F and 99 F respectively.

The year-round temperature duration curves for the dry bulb temperatures and coincident wet bulb temperatures are shown in Figure 6-1.

6.6.2 Prevailing Wind

According to Weather Bureau records at the Middletown Airport, located ten miles North of the site on a low plateau just east of the North River, surface winds are predominantly southwesterly 4-10 knots during the warm months of the year, and westerly 6-13 knots during the cool months.

There are no large diurnal variations in wind speed or direction.

Observations of wind velocities at altitudes indicate a gradual increase in mean velocity and a gradual veering of the prevailing wind direction from southwest and west near the surface to westerly and northwesterly aloft.

In addition to the above, studies of the area indicate that there is a significant channeling of the winds below the surrounding hills into the north-south orientation of the North River. It is estimated that these winds within the river valley blow approximately parallel to the valley orientation in excess of 50 percent of the time.

6.6.3 Atmospheric Diffusion Properties

The transport and dilution of materials in the form of aerosols, vapors, or gases released into the atmosphere from the Middletown coal power station are a function of the state of the atmosphere along the plume path, the topography of the region, and the characteristics of the effluents themselves. For a routine airborne release, the concentration of materials in the surrounding region depends on the amount of effluent released, the height of the release, the windspeed, atmospheric stability, and airflow patterns of the site, and various effluent removal mechanisms. Geographic features such as hills and valleys influence diffusion and airflow patterns. Of the diffusion models that have been developed, the straight line trajectory model is utilized to calculate the atmospheric diffusion from the Middletown site.

The straight-line trajectory model assumes that the airflow transports and diffuses effluents along a straight line through the entire region of interest in the airflow direction at the release point. The version of this model which is used is the Gaussian straight-line trajectory model. In this model, the windspeed and atmospheric stability at the release point are assumed to determine the atmospheric diffusion characteristics in the direction of airflow.

6.6.4 Severe Meteorological Phenomena

A maximum instantaneous wind velocity of 100 mph has been recorded at the site. During the past 50 years, three tropical storms, all of them in

the final dissipation stages, have passed within 50 miles of the site. Some heavy precipitation and winds in excess of 40 miles/hr were recorded, but no significant damage other than to crops resulted.

The area near the site experiences an average of 35 thunderstorms a year, with maximum frequency in early summer. High winds near 60 mph, heavy precipitation, and hail are recorded about once every four years.

In forty years of record, there have been twenty tornadoes reported within fifty miles of the site. Maximum tornado frequency occurs during the months of May and June.

During the past forty years, there have been ten storms in which freezing rain has caused power transmission line disruptions. Most of these storms have occurred early in December.

6.6.5 Ambient Background Concentrations

Background concentrations of SO₂, NO_x and particulates are typical of a rural area approximately 30 miles from a major industrial metropolitan center. They are considered when determining the plant's adherence to the guidelines.

6.6.6 Air Quality Estimation

Ambient pollutant levels are estimated through the application of atmospheric diffusion models. The estimates are based primarily upon the pollutant emissions, meteorology, topography, and background concentration as previously described. Modeling techniques described in the Turner Atmospheric Dispersion Workbook are used for concentration estimates.*

6.7 HYDROLOGY

The North River provides an adequate source of raw makeup water for the station. The average maximum temperature is 75 F and the average minimum is 39 F. The mean annual temperature is 57 F.

U.S. Army Corps of Engineers' studies indicate that the 100 year maximum flood level rose to eight feet above the mean river level. There are no dams near the site whose failure could cause the river to rise above the eight foot level.

6.8 GEOLOGY AND SEISMOLOGY

6.8.1 Soil Profiles and Load Bearing Characteristics

Soil profiles for the site show alluvial soil and rock fill to a depth of eight feet; Brassfield limestone to a depth of 30 ft; blue weathered shale and fossiliferous Richmond limestone to a depth of 50 ft; and bedrock over a depth of 50 ft. Allowable soil bearing is 6,000 psf and rock bearing characteristics are 18,000 psf and 15,000 psf for Brassfield and Richmond strata, respectively. No underground cavities exist in the limestone.

* Turner, D. B., "Workbook of Atmospheric Dispersion Estimates", Public Health Service Publication No. 999-AP-26, U.S. Department of Health, Education, and Welfare, Public Health Service, Consumer Protection and Environmental Health Service, National Air Pollution Control Administration, Cincinnati, Ohio Revised 1969.

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6.8.2 Seismology

The site is located in a generally seismically inactive region. Historical records show three earthquakes have occurred in the region between 1870 and 1975.

6.9 SEWAGE AND LIQUID EFFLUENTS

All sewage receives primary and secondary treatment prior to discharge into the North River. Other wastewater is discharged in compliance with EPA effluent standards as promulgated in 40 CFR 423.

7.0 AIR EMISSIONS

Air emissions comply with EPA New Source Performance Standards as promulgated in 40 CFR 60. Discharge of SO₂ does not exceed 1.2 lb per million Btu heat input; NO_x does not exceed 0.70 lb per million Btu heat input; and particulate does not exceed 0.1 lb per million Btu heat input.

The plant air emissions do not cause air quality levels to exceed national primary and secondary air quality standards as defined in 42 CFR 410.

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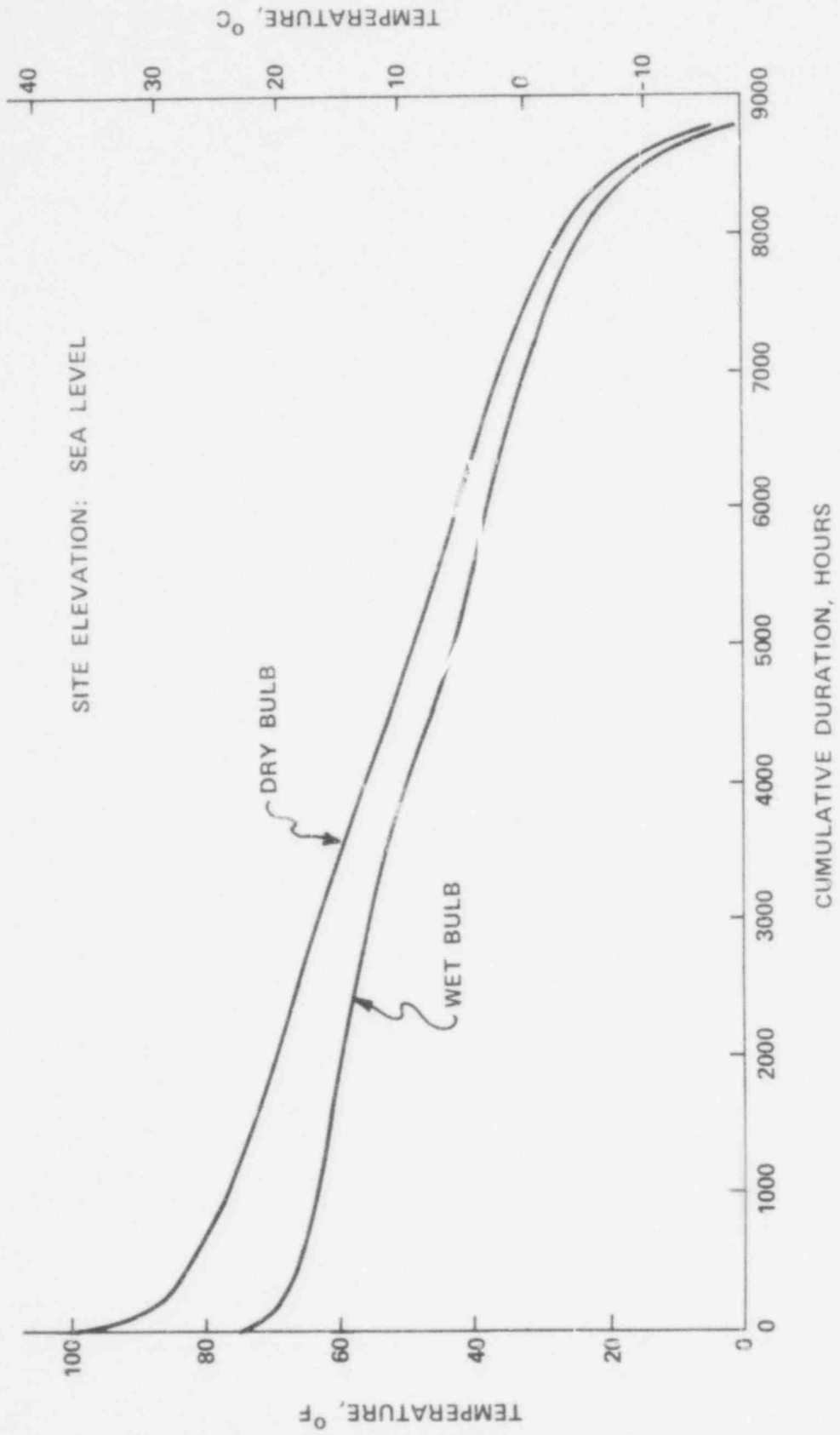


FIGURE 6-1 TEMPERATURE DURATION CURVES: MIDDLETOWN, U.S.A.

152902

SECTION 7
MAGNESIUM OXIDE SULFUR REMOVAL SYSTEM
(ALTERNATE SYSTEM)

706256

POOR
ORIGINAL

SECTION 7

MAGNESIUM OXIDE (MgO) FLUE GAS DESULFURIZATION SYSTEM

7.1 INTRODUCTION

This system serves as an alternate to the lime flue gas desulfurization system described as Accounts 225 and 226 in Section 2, Plant Description; Section 3, Detailed Cost Estimate; and Section 5, Equipment List. In order to distinguish between the systems, the MgO system is described as Accounts 225A and 226A in this section. This section includes a description of the MgO flue gas desulfurization system, the drawings for the MgO system (Process Block Diagram, Magnesium Oxide SO₂ Scrubber System, Sheets 1 & 2) and the base cost estimates for this alternate system.

7.2 SYSTEM DESIGN DESCRIPTIONS

Following are the system design descriptions for the MgO flue gas desulfurization system structures and equipment.

ACCOUNT 225A MgO Flue Gas Desulfurization System Structures

The MgO Slaking Building is approximately 50 percent larger than the Lime Slaking Building in the Reference Design. Construction is identical to that described in Section 2, Account 225.1, and costs are adjusted to reflect the larger structure. (Ref. Accounts 225.1 and 225.2)

The Desulfurization Control and Switchgear Building, the MgO Slaking Service Building, the Thickener Equipment Building and the Process and Seal Water Pump House are identical in construction and costs to those for the lime system. (Ref. Accounts 225.3 and 225.5)

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ACCOUNT 226A MgO Flue Gas Desulfurization Systems and Equipment

This system consists of makeup magnesium oxide handling and slaking facilities, stack gas scrubbing equipment; slurry dewatering; drying and calcining systems; and a contact acid plant. Flue gas reheat is provided by a flue gas bypass.

MgO Handling and Feed Preparation

MgO is pneumatically conveyed from bulk trucks to a concrete storage silo. Makeup MgO is conveyed from the storage silo to the process storage MgO silos located above the MgO slaking building. MgO recovered in the calcining system is also fed to the process silos. MgO is slaked with a combination of recycle liquor from slurry processing and fresh process water. MgO slurry is fed to the SO₂ scrubbing system.

SO₂ Scrubbing System

This system is designed to remove sulfur dioxide from the flue gas discharged from the electrostatic precipitators, MgSO₃ dryers and sulfuric acid plant off-gas. Booster fans direct flue gas from a bypass duct to SO₂ scrubbing modules. The bypass duct is capable of handling 100 percent of the flue gas. Seven 15 percent booster fans and SO₂ modules are provided. Each module is designed to remove 90 percent of the SO₂ contained in the entering flue gas. At the maximum coal burn rate, only six modules scrubbing 88.9 percent of the total flue gas are required to operate in order to comply with the SO₂ emission standard of 1.2 lbs SO₂ per million Btu's and four lbs SO₂ per ton of acid.

After leaving the booster fan, the flue gas is directed to a down-flow quencher. At this point, a slurry of MgO, reaction products and water is sprayed into the hot flue gas saturating it at the quencher throat and providing the first stage of SO₂ removal. The slurry is pumped from a reaction tank and introduced to the quencher throat through a series of spray nozzles. Some of the recirculation slurry is also employed as wall wash on the convergent section to present a wetted wall to the incoming hot flue gas.

The saturated gas exits downward from the diverging section and turns through a horizontal, low velocity sump. The slurry droplets exit the quencher at a relatively high velocity and are separated by inertia in the sump turn.

The flue gas leaving the sump flows up through the counter-current tray absorber where a slurry of recirculating lime, reaction products, and water is intimately contacted with the flue gas to remove the sulfur dioxide. The scrubbed gas continues on through a moisture separator and then proceeds through ducts to the stack.

Slurry Dewatering, Drying and Calcining Systems

Effluent from the SO₂ reaction tank, containing approximately 10 percent solids, is directed to a thickener. Thickened slurry is pumped to parallel centrifuges for separation of solids. Liquor from the thickener and centrifuges is returned to a recycle liquor tank.

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The centrifuge coke is dried in an oil-fired rotary drum dryer. Flue gas is cleaned in cyclone dust collectors and recycled to the drying chamber of the SO₂ scrubbing system.

MgSO₃ and MgSO₄ collected in the dryer and cyclone dust collectors is pneumatically conveyed to a storage silo. Subsequently, the dry solids are fed to an oil-fired fluid bed calciner, which is designed to operate at 1600 F. Air preheaters are provided for superheating fluid bed reactor air.

Exit gas from the calciner, after passing through air preheaters, is directed to cyclone collectors for MgO recovery. The gas is subsequently cooled in a waste heat boiler and fed to a venturi scrubber for final cleaning. The MgO collected in the cyclone and venturi scrubbers is recycled to the MgO slaking operation.

Sulfuric Acid Plant

Clean gas from the calcining system is directed to a gas cooling tower. Exit gas from the cooling tower, saturated at approximately 105 F and free of particulate solids and H₂SO₄ mist, is fed to a 1,032 tons per day contact sulfuric acid plant. Tail gas from the acid plant is recycled to the SO₂ scrubbers.

7.3 ELECTRIC PLANT EQUIPMENT COST CHANGES

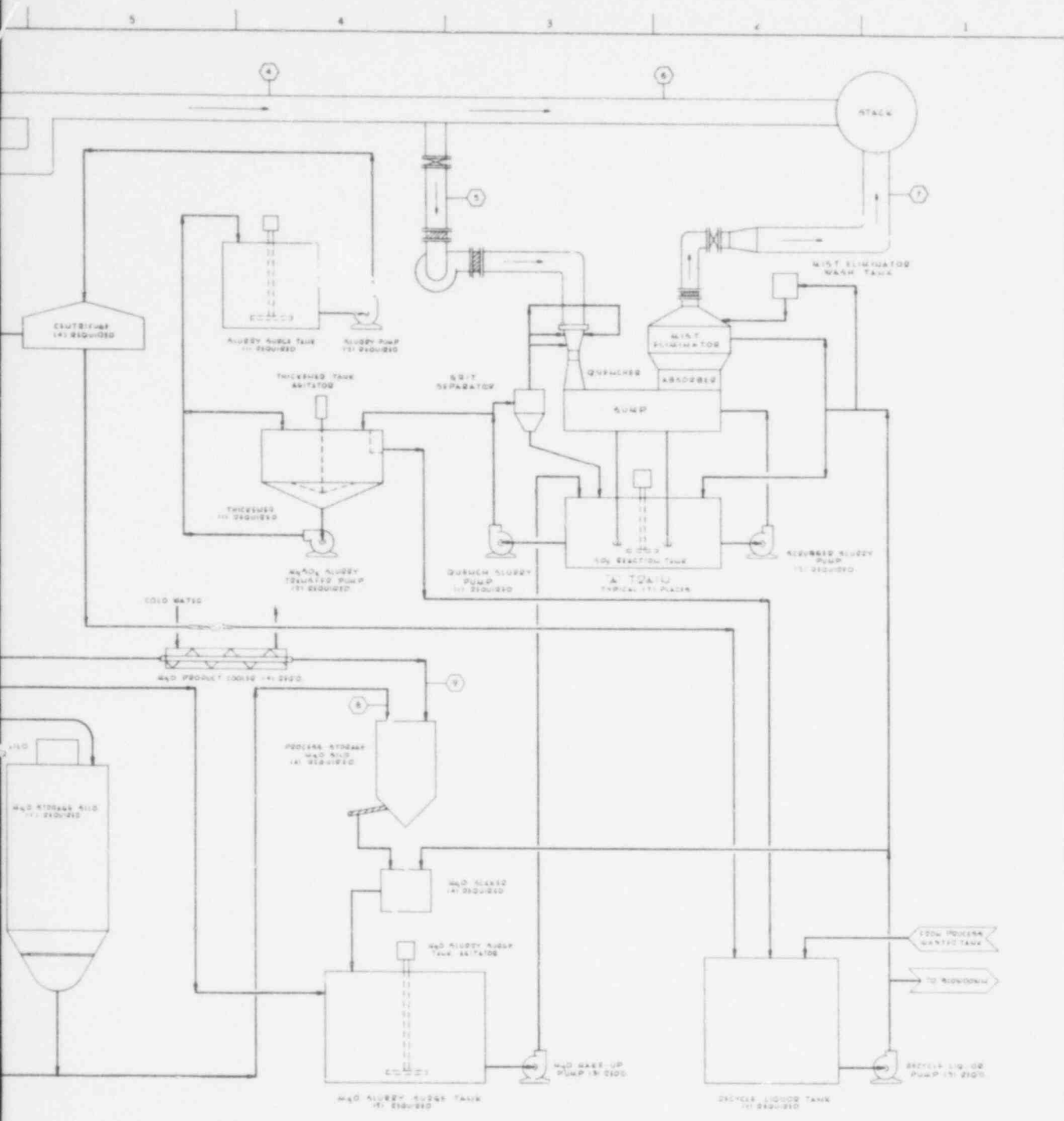
The Electric Plant Equipment costs for the lime flue gas desulfurization system were included in Account 24. The electrical costs associated with this system are of an incremental nature distributed through many of the

subaccounts and are, therefore, not separated into a special subaccount as is done for the structures and mechanical systems. The results of the study indicate that replacing the lime system with the MgO system requires the adding of approximately \$500,000 to Account 24, the base Electric Plant Equipment cost estimate.

7.4 DUCT WORK CONSIDERATIONS

The draft system in Account 222 includes only the amount of duct work and its supporting steel and foundations required between the precipitators and stack, without consideration of an SO₂ scrubbing system. The added duct work and supports required for the SO₂ scrubbing systems is included in Account 226 of the base plant lime scrubbing system and Account 226A of the alternate MgO flue gas desulfurization system.

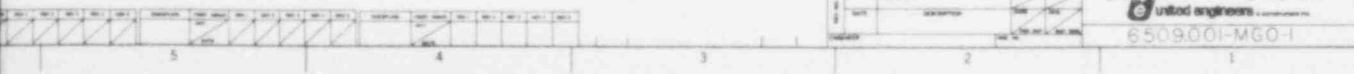
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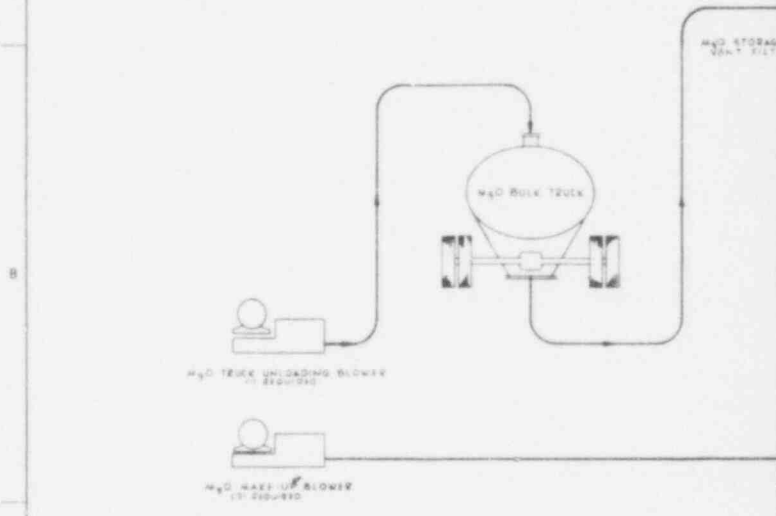
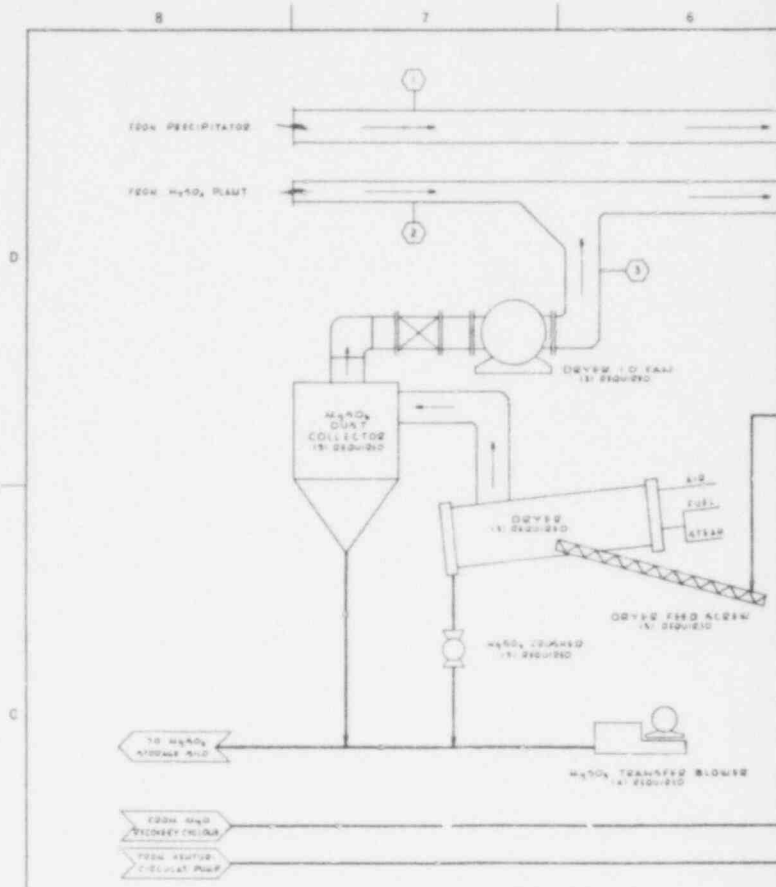


- NOTES**
1. FUEL RUMEN DATA 1100000 10/66
 2. COAL ANALYSIS
ASH 10.5%
H₂O 8.1%
SULFUR 0.5%
 3. 100% STUDD
 4. WASHERS IN 20/100 #MESH W&D
 5. 6" x 10" TANKS ARE OPERATED AT MAXIMUM
FLOW RATES
 6. SO₂ FEEDER ALWAYS NOT EXCEEDS 100%
IF FLOW CAN MUST BE RETURNED TO W&D TANK
(LIMITATION 111 LB/HR (W&D) 1 4 LB/HR (100 W&D))
 7. 100% STUDD 100000 #MESH W&D

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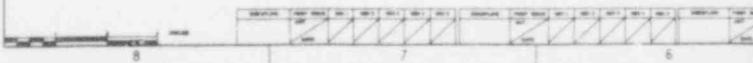
BLOCK DIAGRAM
MAGNESIUM OXIDE SO₂
SCRUBBER SYSTEM-SHT.1
1232 MW FOSIL PLANT
MICHIGAN HYDRO-ELECTRIC SITE
United Engineers
6509.001-MGO-1



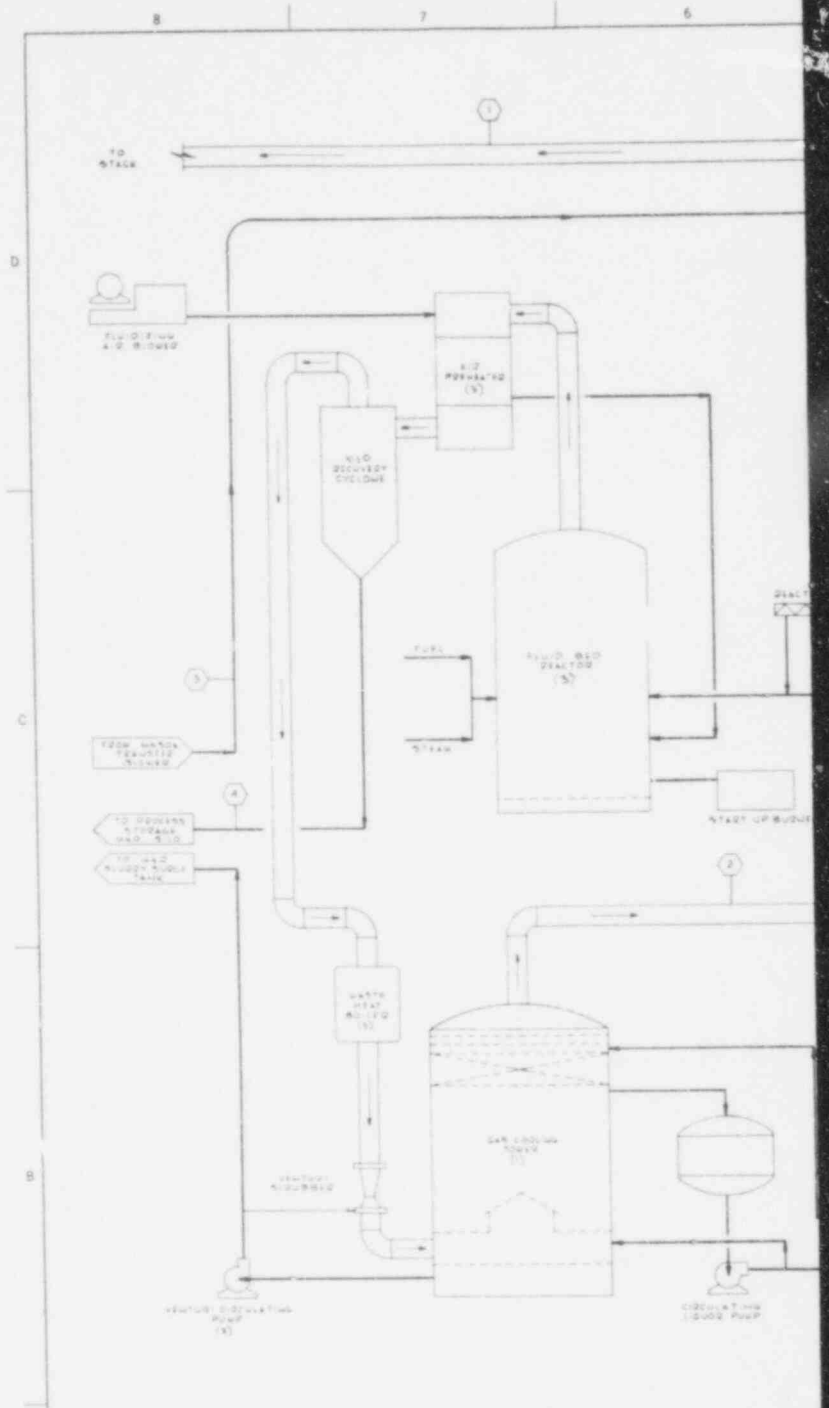


STEAM (lb/hr)	1	2	3	4	5	6	7	8	9
CO2 GAS	178.86	200.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00
H2O (VAPOR)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
CO2	70.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
H2O LIQ	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
H2O								800	5000
TOTAL (lb/hr)	348.86	500.00	450.00	450.00	450.00	450.00	450.00	800	5000
TRAP (%)	100	100	100					100	

708303



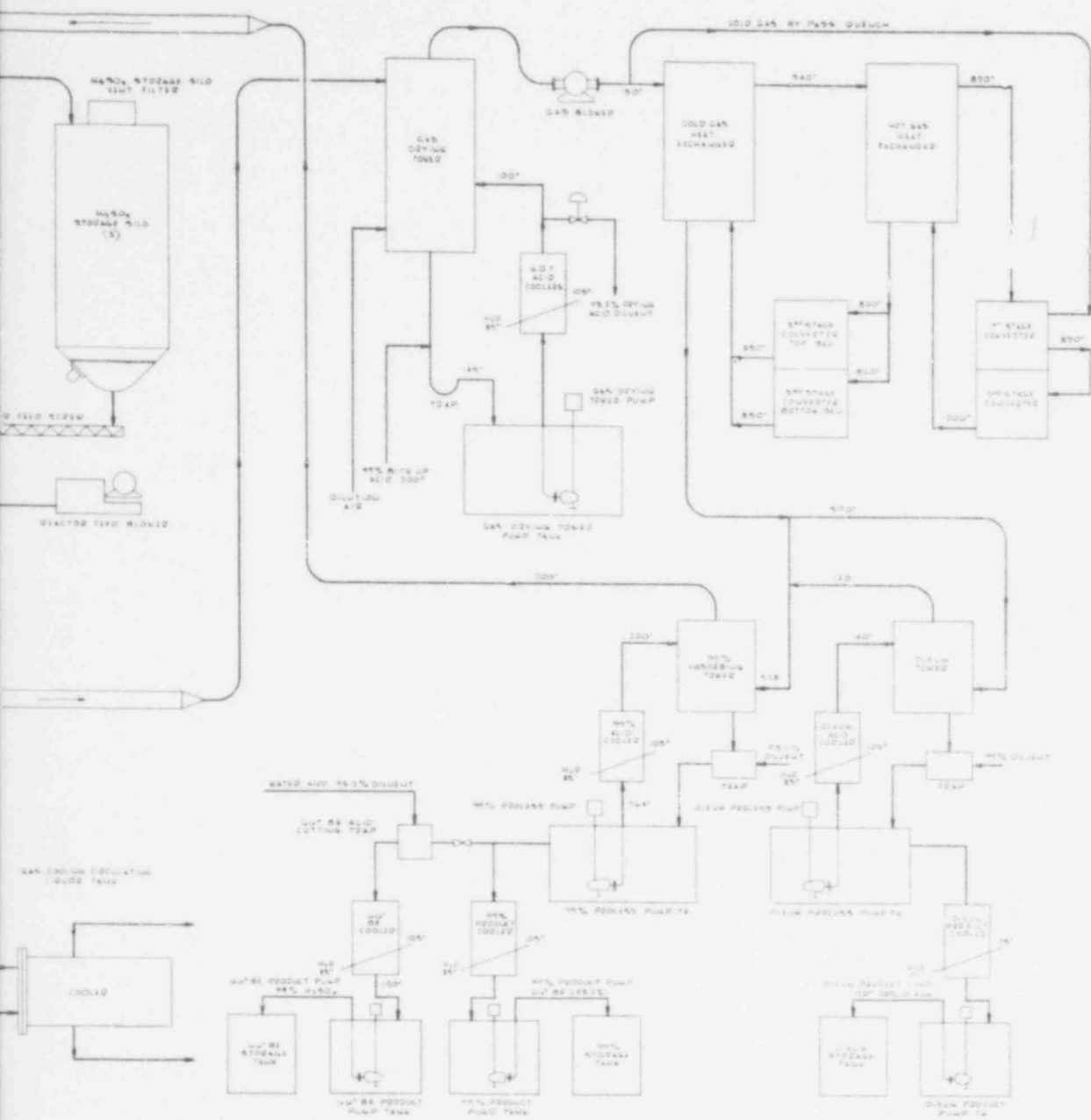
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COMPONENT	1	2	3	4
INLET GAS	26,400	27,447		
FLUID BED REACTOR		2,154		
NO. 2 OIL	2,154	18,408		
NO. 6 OIL			34,500	
NO. 7 OIL			28,804	
NO. 8 OIL			1,234	
TOTAL (LBS)	28,554	46,118	63,416	34,500
TEMP (°F)	100	108		



208302



NOTES
 1. ACID PLANT CAPACITY - 1000 TONS H2SO4 PER DAY

BLOCK DIAGRAM
 MAGNESIUM OXIDE SO₂
 SCRUBBER SYSTEM SHT 2
 1232 MW FOSIL PLANT
 WOODBURN PROTHEMAL SITE
 united engineers
 6509.001-M60-2

NO.	REV.	DATE	BY	CHKD.	DESCRIPTION
1					
2					
3					
4					
5					

NO.	REV.	DATE	BY	CHKD.	DESCRIPTION
1					
2					
3					
4					
5					

MODEL 699 - 1232 MWF/ 3300MWT COAL - MAGNESIUM OXIDE SCRUBBING SYSTEM

- COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
225.	FLUE GAS DESULFUR STRUCT	
225.1	MGO SLAKING BUILDING	
225.11	BUILDING STRUCTURE	
225.12	BUILDING SERVICES	
225.2	MGO SLAKING SERVICE BLDG	
225.21	BUILDING STRUCTURE	
225.22	BUILDING SERVICES	INCLUDED IN ACCOUNT 225.12
225.3	DESULFUR CTRL+SWTCHGR BLDG	
225.31	BUILDING STRUCTURE	
225.32	BUILDING SERVICES	
225.4	PROCESS+SEAL WATER PUMPHSE	
225.41	BUILDING STRUCTURE	
225.42	BUILDING SERVICES	
225.5	THICKENER EQUIPMENT BLDG	
225.51	BUILDING STRUCTURE	
225.52	BUILDING SERVICES	
226.	MGO DESULFURIZATION EQUIP	
226.1	MGO HANDLING SYS+FEED PREP	INCLUDES: PNEUMATIC MGO MAKE-UP CONVEYING SYS- TEM FOR TRUCK UNLOADING CONCRETE MGO STORAGE SILD MGO SLAKERS-6 MGO SLURRY SURGE TANKS-3 MGO PROCESS STORAGE SILOS-6 ALL ASSOCIATED EQUIPMENT FOUNDATIONS
226.11	ROTATING MACHINERY	

008002

EQUIPMENT LIST - REPORT 1

08/22/77

MODEL 699 - 1232 TWE/ 3300WWT COAL - MAGNESIUM OXIDE SCRUBBING SYSTEM

- COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.13	TANKS AND PRESSURE VESSELS	
226.15	PIPING	
226.16	VALVES	
226.17	PIPING - MISC. ITEMS	
226.171	HANGERS + SUPPORTS	
226.19	FOUNDATIONS/SKIDS	
226.2	SO ₂ DIOXIDE SCRUBBING SYS	SEVEN COMPLETE SO ₂ MODULES(ONE SPARE) INCLUDES: 316L VENTURI-TYPE QUENCHER SINGLE STAGE TRAY ABSORBER TWO STAGE MOISTURE SEPARATOR RECIRCULATION TANK QUENCHER RECIRCULATION PUMPS+MOTORS ABSORBER RECIRCULATION PUMPS+MOTORS ALL SLURRY PIPING, VALVES + FITTINGS COMPLETE CONTROL SYSTEM
226.27	PIPING - MISC. ITEMS	
226.273	SPECIALTIES-HEAT TRACING	
226.29	FOUNDATIONS/SKIDS	ALL FOUNDATIONS AND STRUCTURAL STEEL FOR SO ₂ SCRUBBING SYSTEM
226.291	SO ₂ FOUNDATION+STRUCTURE	
226.292	SO ₂ STRUCTURE MISC. EQUIP	
226.3	GAS HANDLING SYSTEM	INCLUDES: SO ₂ BOOSTER FANS + MOTORS - 7 ISOLATION DAMPERS AND MOTORS -14 DUCTWORK REQUIRED FOR SO ₂ SCRUB SYS FOUNDATIONS AND SUPPORTS FOR DUCTS
226.31	ROTATING MACHINERY	
226.35	PIPING AND DUCTWORK	
226.36	VALVES AND DAMPERS	

408802

EQUIPMENT LIST - REPORT 1

MODEL 699 - 1232 MWE / 3300 MWT COAL - MAGNESIUM OXIDE SCRUBBING SYSTEM

- COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.39	FOUNDATIONS/SKIDS	
226.4	SLURRY PROCESSING	INCLUDES: THICKENER - 1 CENTRIFUGES-4
226.41	ROTATING MACHINERY	
226.43	TANKS AND PRESSURE VESSELS	
226.45	PIPING	
226.46	VALVES	
226.47	PIPING-MISC ITEMS (HANGERS)	
226.49	FOUNDATIONS/SKIDS	
226.5	DRYING	INCLUDES: ROTARY DRYER - 3 MGSO3 STORAGE SILOS-3 MGSO3 COLLECTORS - 7 DRYER ID FANS - 3 ASSOCIATED DUCTWORK
226.51	ROTATING MACHINERY	
226.52	HEAT TRANSFER EQUIPMENT	
226.53	TANKS AND PRESSURE VESSELS	
226.54	FILTRATION EQUIPMENT	
226.55	PIPING AND DUCTWORK	
226.551	PIPING	
226.552	DUCTWORK	
226.56	VALVES	
226.57	PIPING-MISC. ITEMS	
226.59	FOUNDATIONS/SKIDS	

708318

EQUIPMENT LIST - REPORT 1

08/22/77

MODEL 699 - 1232 MWF 3300 MWT COAL - MAGNESIUM OXIDE SCRUBBING SYSTEM

- COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
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226.6	CALCINATION	INCLUDES: FLUID BED REACTORS -3 WASTE HEAT BOILERS -3 AIR PRE-HEATERS -3 MGO FILTERS -3 REACTOR FEED BLOWERS -3 FLUIDIZING AIR BLOWERS-3 MGO COOLERS ASSOCIATED DUCTWORK
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226.61	ROTATING MACHINERY	
226.62	HEAT TRANSFER EQUIPMENT	
226.64	PURIFICATION+FILTRATN EGYT	
226.65	PIPING AND DUCTWORK	
226.651	PIPING	
226.652	DUCTWORK	
226.66	VALVES	
226.67	PIPING-MISC. ITEMS	
226.69	FOUNDATIONS/SKIDS	
226.7	GAS CONDITIONING+ACID PLNT	
226.71	GAS CONDITIONING	INCLUDES: GAS COOLING TOWER ACID COOLER VENTURI SCRUBBER ASSOCIATED DUCTWORK

226.711	ROTATING MACHINERY	
226.712	HEAT TRANSFER EQUIPMENT	
226.713	TANKS AND PRESSURE VESSELS	
226.714	PURIFICATION+FILTRATN EGYT	
226.715	PIPING AND DUCTWORK	

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EQUIPMENT LIST - REPORT 1

08/22/77

MODEL 699 - 1232 MWE/ 3300 COAL - MAGNESIUM OXIDE SCRUBBING SYSTEM - COST BASIS 07/76

ACCOUNT NUMBER	ITEM	DESCRIPTION
226.716	VALVES	
226.717	PIPING-MISC. ITEMS	
226.719	FOUNDATIONS/SKIDS	
226.72	SULFURIC ACID PLANT	COMPLETE 1000 TONS/DAY H2SO4 PLANT
226.8	MISC. DESULFURIZATION EQPT	INCLUDES: PROCESS AND SEAL WATER PUMPS+MOTORS TANKAGE AND PIPING
226.9	INSTRUMENTATION + CONTROL	

07880%

PLANT CODE 699 COST BASIS 07/75

UNITED ENGINEERS & CONSTRUCTORS INC.
MAGNESIUM OXIDE SCRUBBING SYSTEM
1232 MWE COAL FIRED FOSSIL PLANT

DR/22177

ACCT NO.	ACCOUNT DESCRIPTION	***** FACTORY ***** QUANTITY COSTS	***** SITE ***** QUANTITY LABOR HRS LABOR COST MATERIAL COST	TOTAL COSTS
2	TOTAL DIRECT COSTS			
225	FLUE GAS DESULFUR STRUCT			
225.1	MGO SLAKING BUILDING			
225.11	BUILDING STRUCTURE	1 EA 28758 MH	349,523	597,700
225.12	BUILDING SERVICES	1 LT 28,675	99,982	37,993
225.1	MGO SLAKING BUILDING	28,675	36970 MH 449,505	635,693
225.2	MGO SLAKING SERVICE BLDG			
225.21	BUILDING STRUCTURE	1 EA 2366 MH	28,632	40,995
225.22	BUILDING SERVICES			
225.2	MGO SLAKING SERVICE BLDG		2366 MH 28,632	40,995
225.3	DESULFUR CTRL+SWTCHGR BLDG			
225.31	BUILDING STRUCTURE	1 EA 5574 MH	67,978	117,493
225.32	BUILDING SERVICES	1 LT 13,440	1,83 MH 22,707	5,330
225.3	DESULFUR CTRL+SWTCHGR BLDG	13,440	7357 MH 90,685	122,823
225.4	PROCESS+SEAL WATER PUMPHSE			
225.41	BUILDING STRUCTURE	1 EA 401 MH	13,600	7,384
225.42	BUILDING SERVICES	1 LT 4,641	593 MH 7,607	1,356
225.4	PROCESS+SEAL WATER PUMPHSE	4,641	1404 MH 18,207	8,740
225.5	THICKENER EQUIPMENT BLDG			

70831

PLANT CODE
699

COST BASIS
37776

UNITED ENGINEERS & CONSTRUCTORS INC.
MAGNESIUM OXIDE SCRUBBING SYSTEM
1250 MWE COAL FIRED FOSSIL PLANT

PAGE 2 of 5
03/22/79

ACCT NO.	ACCOUNT DESCRIPTION	***** FACTORY *****		***** SITE *****			TOTAL COSTS
		QUANTITY	COSTS	QUANTITY	LABOR HRS	LABOR COST	
225.51	BUILDING STRUCTURE			1 EA	2206 MH	26,507	20,231
225.52	BUILDING SERVICES	1 LT	5,987	1 LT	1025 MH	12,963	3,652
	225.5 THICKENER EQUIPMENT BLDG		5,987		3231 MH	39,470	23,983
	225. FLUE GAS DESULFUR STRUCT		52,643		51418 MH	626,504	932,134
							1,511,281
226.	MGO DESULFURIZATION EQUIP						
226.1	MGO HANDLING SYS+FEED PREP						
226.11	ROTATING MACHINERY	1 LT	514,400	1 LT	8600 MH	111,714	11,121
226.13	TANKS AND PRESSURE VESSELS			1 LT	35545 MH	421,606	295,250
226.15	PIPING	126030 LB	159,045	1 LT	15904 MH	206,125	20,613
226.16	VALVES	1 LT	16,800	1 LT	400 MH	5,184	518
226.17	PIPING - MISC. ITEMS						
226.171	HANGERS + SUPPORTS	21000 LB	31,500				
	226.17 PIPING - MISC. ITEMS		31,500				31,500
226.19	FOUNDATIONS/SKIDS			1 LT	140 MH	1,672	1,751
	226.1 MGO HANDLING SYS+FEED PREP		721,745		60589 MH	749,391	329,303
							1,799,439
226.2	SUL DIOXIDE SCRUBBING SYS	1 LT	9,500,000	1 LT	77000 MH	1,492,963	349,296
226.27	PIPING - MISC. ITEMS						
226.273	SPECIALTIES-HEAT TRACING			1 LT	4200 MH	54,433	36,400
	226.27 PIPING - MISC. ITEMS				4200 MH	54,433	36,400
							90,833
226.29	FOUNDATIONS/SKIDS						

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UNITED ENGINEERS & CONSTRUCTORS INC.
MAGNESIUM OXIDE SCRUBBING SYSTEM
1237 ACF COAL FIRED FOSSIL PLANT

PLANT CODE 699
COST BASIS 07/76

ACCT NO.	ACCOUNT DESCRIPTION	QUANTITY	FACILITY	QUANTITY	LABOR HRS	SITE	LABOR COST	MATERIAL COST	TOTAL COSTS
226.291	S02 FOUNDATION/STRUCTURE	1 LT	133879 MH	1,601,661			2,913,112		
226.292	S02 STRUCTURE MISC. EQUIP	1 LT	12203 MH	155,135			15,350		
226.29	FOUNDATIONS/SKIDS		146079 MH	1,756,577			2,948,662		5,841,259
226.2	SUL DIOXIDE SCRUBBING SYS		420279 MH	5,303,973			3,334,358		18,274,311
226.3	GAS HANDLING SYSTEM								
226.31	ROTATING MACHINERY	1 LT	27441 MH	270,164			27,016		
226.35	PIPING AND DUCTWORK	1 LT	153600 MH	2,121,216			2,751,600		
226.36	VALVES AND DAMPERS	1 LT	2203 MH	93,146			9,115		
226.39	FOUNDATIONS/SKIDS	1 LT	223493 MH	2,626,078			813,320		
226.3	GAS HANDLING SYSTEM		404731 MH	5,110,536			3,601,051		11,405,585
226.4	SLURRY PROCESSING								
226.41	ROTATING MACHINERY	1 LT	6180 MH	80,224			8,022		
226.43	TANKS AND PRESSURE VESSELS	1 LT	29871 MH	393,732			350,000		
226.45	PIPING	400000 LB	90300 MH	1,165,636			116,644		
226.46	VALVES	1 LT							
226.47	PIPING-MISC ITEMS(HANGERS)	120000 LB					180,000		
226.49	FOUNDATIONS/SKIDS	1 LT	53121 MH	369,709			612,084		
226.4	SLURRY PROCESSING		159172 MH	3,005,461			1,276,750		5,188,431
226.5	DRYING								
226.51	ROTATING MACHINERY	1 LT	2372 MH	10,686			1,069		
226.52	HEAT TRANSFER EQUIPMENT	1 LT	27003 MH	349,295			34,930		

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UNITED ENGINEERS & CONSTRUCTORS INC.
MAGNESIUM OXIDE SCRUBBING SYSTEM
1232 MWE COAL FIRED FOSSIL PLANT

PLANT CODE COST BASIS
600 07/76

ACCT NO.	ACCOUNT DESCRIPTION	QUANTITY	FACTORY COSTS	QUANTITY	LABOR HRS	SITE LABOR COST	MATERIAL COST	TOTAL COSTS
226.53	TANKS AND PRESSURE VESSELS			1 LT	5012 MH	65,554	44,420	
226.54	FILTRATION EQUIPMENT	1 LT	800,000	1 LT	15400 MH	199,228	19,923	
226.55	PIPING AND DUCTWORK							
226.551	PIPING	28092 LB	42,138	1 LT	6214 MH	54,614	5,661	
226.552	DUCTWORK			200 TN	12400 MH	171,358	224,000	
226.55	PIPING AND DUCTWORK		42,138		16614 MH	225,982	229,661	497,581
226.56	VALVES	1 LT	25,000	1 LT	452 MH	5,847	585	
226.57	PIPING-MISC. ITEMS			1 LT	310 MH	4,335	4,820	
226.59	FOUNDATIONS/SKIDS			1 LT	4388 MH	50,813	70,030	
226.5	DRYING		2,482,138		71548 MH	931,447	407,198	3,820,778
226.6	CALCINATION							
226.61	ROTATING MACHINERY	1 LT	167,000	1 LT	2204 MH	29,513	2,851	
226.62	HEAT TRANSFER EQUIPMENT	1 LT	1,940,000	1 LT	3400 MH	491,857	49,186	
226.64	PURIFICATION-FILTRATION EGY.	1 LT	250,000	1 LT	3600 MH	46,573	4,657	
226.65	PIPING AND DUCTWORK							
226.651	PIPING	32370 LB	48,555	1 LT	4855 MH	62,923	6,292	
226.652	DUCTWORK			400 TN	24800 MH	342,735	448,000	
226.65	PIPING AND DUCTWORK		48,555		29655 MH	405,659	454,292	908,506
226.66	VALVES	1 LT	13,000	1 LT	200 MH	7,586	759	
226.67	PIPING-MISC. ITEMS			1 LT	520 MH	8,072	9,600	
226.69	FOUNDATIONS/SKIDS			1 LT	5644 MH	65,665	126,588	
226.9	CALCINATION		2,418,555		70268 MH	1,051,726	649,433	3,119,714

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UNITED ENGINEERS & CONSTRUCTORS INC.
MAGNESIUM OXIDE SCORBING SYSTEM
1212 MWP COAL FIRED FOSSIL PLANT

PLANT CODE 699
COST BASIS 07176

ACT NO.	ACCOUNT DESCRIPTION	QUANTITY	FACORY COSTS	LABOR HRS	SITE LABOR COST	MATERIAL COST	TOTAL COSTS
226.7	GAS CONDITIONING+ACID PLANT						
226.71	GAS CONDITIONING						
226.711	ROTATING MACHINERY	1 LT	50,000	700 MH	9,252	925	
226.712	HEAT TRANSFER EQUIPMENT	1 LT	500,000	4600 MH	59,513	5,951	
226.713	TANKS AND PRESSURE VESSELS	1 LT		1215 MH	15,803	14,580	
226.714	PURIFICATION+FILTRATN EQPT	1 LT	250,000	3600 MH	46,578	4,657	
226.715	PIPING AND DUCTWORK	1 LT		6345 MH	83,313	49,180	
226.716	VALVES	1 LT	1,500				
226.717	PIPING-MISC. ITEMS	1 LT		70 MH	911	3,925	
226.719	FOUNDATIONS/SKIDS	1 LT		4661 MH	54,768	55,156	
226.71	GAS CONDITIONING		801,500	21191 MH	269,514	134,874	1,205,388
226.72	SULFURIC ACID PLANT	1 FA	7,900,000				
226.7	GAS CONDITIONING+ACID PLNT		8,701,500	21191 MH	269,514	134,874	9,105,388
226.8	MISC. DESULFURIZATION EQPT	1 LT	221,950	17705 MH	228,025	25,083	
226.9	INSTRUMENTATION + CONTROL	1 LT	442,000	7200 MH	98,013	4,601	
226.	MGO DESULFURIZATION EQUIP		29,224,888	1242386 MH	15,738,777	9,761,951	54,725,116
2	TOTAL DIRECT COSTS		29,277,511	1293804 MH	16,364,781	10,594,085	56,236,397

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