NUREG-0243
COO-2477-7
VOL. 1 of 3

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

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Vol 2 → 515
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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. 19101

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1 Capital Cost: Pressurized Water Reactor Plant
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2 Capital Cost: Boiling Water Reactor Plant
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7 Cooling Systems Addendum: Capital and Total Generating Cost Studies
NUREG-0247, COO-2477-11

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

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FOREWORD
by the

United States Energy Research & Development Administration
and United States Nuclear Regulatory Commission

In 1971 the Atomic Energy Commission authorized power plant investment cost studies, which culminated in the WASH-1230 reports (1000 MWe Central Station Power Plants - Investment Cost Study) published in 1972. Their purpose was to facilitate policy and economic decisions about electric generation facilities in the public and private sectors. The WASH-1230 report-series consists of five volumes: Pressurized Water Reactor, Boiling Water Reactor, Coal-Fired, Oil-Fired and High Temperature Gas-Cooled Reactor power plants. National priorities on energy, the regulatory environment and the cost of labor, equipment and material have changed significantly. These changes dictated the necessity of an update of these series of studies, and an expansion of scope to encompass consideration of the fuel cycle and the total generating cost. As a result, a program to study, reassess and produce a new set of updated reports was authorized and undertaken.

This report is one of the new series of commercial electric power cost studies that have been prepared by United Engineers & Constructors Inc. (UE&C). These studies have been completed under the cooperative direction of the Energy Research and Development Administration (ERDA), Division of Nuclear Research and Applications, and the Nuclear Regulatory Commission (NRC), Division of Site Safety and Environmental Analysis. The study effort was funded jointly by ERDA (Contract No. EY-76-C-02-2477) and NRC (Contract No. AT(49-24)-0351).

The current series includes investment cost reports for a Pressurized Water Reactor Plant, a Boiling Water Reactor Plant, High Sulfur Coal Plants, and Low Sulfur Coal Plants. The Oil Fired Power Plant Study was not updated because utilities are no longer expected to build significant numbers of these plants, and the High Temperature Gas-Cooled Reactor Plant Study was not updated because these reactors are not now being marketed. Investment cost reports on multi-unit stations and for different cooling system types are included. In addition, the series addresses fuel supply investment costs and total generating costs for both nuclear and coal fired power plants.

Following is a list of the report titles and funding agency(ies) responsible for each:

Funding Agency(ies)	Report Titles
ERDA	Capital Cost - Pressurized Water Reactor Plant (NUREG-0241, COO-2477-5)
ERDA/NRC	Capital Cost - Boiling Water Reactor Plant (NUREG-0242, COO-2477-6)
ERDA/NRC	Capital Cost - High and Low Sulfur Coal Plants - 1200 MWe (NUREG-0243, COO-2477-7)
NRC/ERDA	Capital Cost - Low and High Sulfur Coal Plants - 800 MWe (NUREG-0244, COO-2477-8)
ERDA	Capital Cost Addendum - Multi t Coal and Nuclear Stations (NUREG-0245, COO-2477-)
NRC	Fuel Supply Investment Cost - Coal and Nuclear (NUREG-0246, COO-2477-10)
NRC	Cooling Systems Addendum - Capital and Total Generating Cost Studies (NUREG-0247, COO-2477-11)
NRC	Total Generating Costs - Coal and Nuclear Plants (NUREG-0248, COO-2477-12)

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The studies in these series have a uniform set of economic and technical criteria and a uniform accounting system as contained in (Guide for Economic Evaluation of Nuclear Reactor Plant Designs, NUS-531, January 1969). The investment cost estimates in these series are developed for reference plants constructed at a hypothetical site called "Middletown, USA".

The reference investment and total generating cost estimates can be used for baseline comparisons of different generating systems. However, the major use of the investment cost data is as input to the CONCEPT computer code which was developed for ERDA at the Oak Ridge National Laboratory (ORNL). The CONCEPT computer program adjusts the baseline cost estimates contained in these studies for different plant sizes, regional variations in material and craft labor rates, different construction schedule lengths, and different escalation and interest rates. These adjustments result in preliminary sets of alternative cost estimates for electric power plants constructed anywhere in the United States.

PREFACE

This Commercial Electric Power Cost Study for 1200 MWe (Nominal) high and low sulfur coal plants consists of three volumes. The high sulfur coal plant is described in Volumes I and II, while Volume III describes the low sulfur coal plant.

The design basis and cost estimate for the 1232 MWe high sulfur coal plant is presented in Volume I, and the drawings, equipment list and site description are contained in Volume II. The reference design includes a lime flue gas desulfurization system. A regenerative sulfur dioxide removal system using magnesium oxide is also presented as an alternate in Section 7 Volume II.

The design basis, drawings and summary cost estimate for a 1243 MWe low sulfur coal plant are presented in Volume III. This information was developed by redesigning the high sulfur coal plant for burning low sulfur sub-bituminous coal.

These coal plants utilize a mechanical draft (wet) cooling tower system for condenser heat removal. Costs of alternate cooling systems are provided in Report No. 7 in this series of studies of costs of commercial electrical power plants.

ACKNOWLEDGEMENTS

The information used in the preparation of this report was obtained from various sources, including United Engineers' records and files. Special recognition is given to the following organizations who contributed specific design, performance and/or cost information.

Company	Plant System
o The Babcock & Wilcox Co.	Pressurized Furnace Steam Generator
o The Babcock & Wilcox Co. Wheelabrator-Frye Inc.	Electrostatic Precipitators
o Brown Boveri Corporation	Cross-Compound Steam Turbine Generators
o Allen-Sherman-Hoff Co	Ash Handling System
o Marley Company	Cooling Towers
o David M. Spillane Co.	Condensers & Feedwater Heaters
o Delaval Turbine Inc.	Boiler Feed Pump & Turbine Drive
o John L. Klug Corp.	Lime Handling System
o American Standard	SO_2 Booster Fans
o FMC	Sludge Handling Equipment

Background information was obtained from AEP on the 1200 MWe plants in their system.

TABLE LIST

1232 MWe HIGH SULFUR COAL PLANT

DRAWING LIST

1232 MWe HIGH SULFUR COAL PLANT

Drawing Number	
6509.001-HSC-1	Symbol Legend for Flow and Block Diagrams
6509.001-HSC-2	Plot Plan
6509.001-HSC-3	General Arrangement Plan at Elevation 18'-0"
6509.001-HSC-4	General Arrangement Plans & Section - Elevation 43'-0" x 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.P. 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 [illegible] 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
6509.001-MGO-1	Block Diagram-Magnesium Oxide SO_2 Scrubber System - Sht. 1
6509.001-MGO-2	Block Diagram-Magnesium Oxide SO_2 Scrubber System - Sht. 2

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COMMERCIAL ELECTRIC POWER COST STUDY
HIGH AND LOW SULFUR COAL PLANTS - 1200 MWe

INDEX

VOLUME I 1232 Mwe High Sulfur Coal Plant

SECTION 1

SUMMARY FOR HIGH SULFUR COAL PLANT

SECTION 1

SUMMARY FOR HIGH SULFUR COAL PLANT

1.1 INTRODUCTION

This Commercial Electric Power Cost Study for the 1232 MWe High Sulfur Coal Plant is presented in two volumes. Volume I includes the Legal Notice, Foreword, Preface, Summary for High Sulfur Coal Plant, Plant Description and the Detailed Cost Estimate. Volume II contains the Drawings, Equipment List, Site Description and a description of the alternate Magnesium Oxide Sulfur Removal System.

1.2 MAJOR STUDY GROUND RULES

In addition to the "Site Description" presented in Volume II, Section 6, the major criteria used in the high sulfur coal plant study are as follows:

- The plant design incorporates a once-through supercritical pressure single reheat type steam generator to supply steam to a cross compound eight flow turbine. The heat balance shown on drawing 6509.001-HSC-6 (Volume II, Section 4) reflects steam conditions for a 1200 MWe nominally rated plant.

- The steam generator is designed for a high sulfur eastern coal. The coal selection criteria are discussed in Section 2.2.2. The characteristics of the design basis coal seam and the design basis coal specification are presented in Tables 2-3 and 2-4 respectively.

- Key plant parameters for the steam supply system, and the steam and power conversion system are shown in Tables 2-1 and 2-2 respectively.

- The plant coal handling system is designed to unload a 100 car coal unit train in five hours. The design provides indoor coal storage silos with a capacity sufficient for eight hours consumption at full load and an outdoor storage area with a capacity sufficient for 60 days consumption at full load.

- The reference plant design includes a lime scrubber system for removal of sulfur dioxide (SO_2) from the flue gas. A discussion of an alternate SO_2 removal system utilizing magnesium oxide (MgO) is included as an alternate (Volume II, Section 7).

- o A full complement of environmental and siting criteria circa January 1, 1976 are utilized. Structural design criteria for the major structures are addressed in Section 2.2.3.

- o The main heat rejection system incorporates mechanical draft wet cooling towers.

- o The design provides a connection to the utility grid at two different voltage levels; 500 kV for the generator connection and 230 kV for the reserve auxiliary transformer connection.

- o The detailed cost estimate is developed for a single unit, with sufficient land area to accommodate an identical second unit.

- o The detailed cost estimate is developed in accordance with a Code of Accounts as expanded from that presented in the USAEC Report NUS-531.

- o Cost data is based on prices effective as of July 1, 1976.

- o Escalation and interest during construction are not included in the cost estimate.

- o The plant design life is 40 years during the first part of which it will be baseloaded.

1.3 COST SUMMARY

The estimated total base construction cost for the 1200 MWe (Nominal) High Sulfur Coal Plant reference design is $465,498,393 or $378/kW based on July 1, 1976 prices. Summaries of the Detailed Cost Estimate at both the two and three digit account levels are shown in Tables 1-1 and 1-2 respectively. The cost estimate does not include normal contingency costs for the equipment, material and labor components of the total base construction cost; nor does it include escalation and interest during construction. Other items not included in the cost estimate are listed in the beginning of Section 3, Detailed Cost Estimate. As noted in the Foreword, for a specific site, this baseline cost estimate must be adjusted for regional variations in material and labor rates, different construction

schedule lengths, and escalation and interest rates incurred during construction.

Table 1-3 is a summary breakdown of the direct craft labor costs and hours for this 1232 MWe reference design. The total direct craft labor cost of approximately $108,000,000 corresponds to a weighted average hourly rate of $12.45. Approximately 8,675,000 craft labor manhours average 7.0 manhours/KW.

1.4 COMPARISON WITH LOW SULFUR COAL PLANT

The coal summary for the high sulfur coal (HSC) plant is presented in Section 1.3, Cost Summary, while the low sulfur coal (LSC) plant cost summary is shown in Section 8.3, Volume III. Significant features of each reference plant are summarized as follows:

	High Sulfur	Low Sulfur
Design Basis Coal	Eastern Bituminous	Western Sub-Bituminous
Coal Sulfur Content	3.61 percent	0.5 percent
Net Output	1232 MWe	1243 MWe
Base Construction Cost	$465.5 x 10^6	$403.8 x 10^6
Unit Capital Cost	$378/kW	$324/kW

The gross output from the turbine generator is identical (1309 MWe) for both plants. The difference in net plant output between the HSC plant and the LSC plant is due to the variation in auxiliary power requirements. For the design basis coals selected, the net output of the LSC plant is 11 MWe (0.9 percent) greater than the HSC plant.

Comparing total base construction costs, the differential unit capital cost between the HSC plant and the LSC plant is $54/kW. This differential is due primarily to the Flue Gas Desulfurization (FGD) system as determined by the coal selected for the reference designs. Much higher cost differentials for other plant designs are possible depending upon the coals selected, equipment redundancy and the items included in the plant captial cost. In the FGD system for this study, one spare module is provided to backup six operating modules. This is the only major redundancy in the system. The capital cost of an off-site sludge stabilization system is included in this study. However, the cost of disposal site land and its development are not included.

The cost of the FGD system is higher than the unit capital cost differential would indicate. This is due to higher steam generator, draft system and fuel handling costs for the LSC plant, which partially compensates for the FGD system cost and reduces the differential cost between plants. Coal composition has an important effect on the cost of a coal fired plant. In any examination of capital cost for HSC and LSC plants, the coal analyses must be identified for an understanding of the basis for comparison.

Following are examples of the differences in quantities of construction materials between plants:

	HSC Plant	LSC Plant
Concrete, cu. yds.	111,200	81,600
Reinforcing Steel, lbs.	15.2×10^6	11.8×10^6
Structural Steel, lbs.	58.4×10^6	47.0×10^6

COST BASIS
07/76

TABLE 1-1
COST ESTIMATE SUMMARY
TWO DIGIT ACCOUNT LEVEL
1232 MWe COAL FIRED PLANT
MIDDLETOWN, USA

08/10/77

ACCT NO	ACCOUNT DESCRIPTION	FACTORY EQUIP. COSTS	SITE LABOR HOURS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
20 .	LAND AND LAND RIGHTS				2,000,000	2,000,000
21 .	STRUCTURES + IMPROVEMENTS	2,555,564	1493304 MH	17,106,659	27,524,934	47,187,357
22 .	BOILER PLANT EQUIPMENT	105,321,960	3803868 MH	45,413,075	16,772,845	167,507,880
23 .	TURBINE PLANT EQUIPMENT	81,230,723	1853747 MH	23,706,125	5,291,549	110,228,397
24 .	ELECTRIC PLANT EQUIPMENT	9,009,800	1243552 MH	15,256,320	9,256,952	33,523,072
25 .	MISCELLANEOUS PLANT EQUIPT	5,722,267	85178 MH	3,323,701	811,186	9,857,154
26 .	MAIN COND HEAT REJECT SYS	11,547,105	261506 MH	3,230,373	1,072,055	15,849,533
2 .	TOTAL DIRECT COSTS	215,387,419	8675173 MH	108,036,453	62,729,521	306,153,393
91 .	CONSTRUCTION SERVICES	23,575,000	1270000 MH	13,250,000	11,620,000	48,445,000
92 .	HOME OFFICE ENGRG.&SERVICE	17,000,000				17,000,000
93 .	FIELD OFFICE ENGRG&SERVICE	12,900,000			1,000,000	13,900,000
9 .	TOTAL INDIRECT COSTS	53,475,000	1270000 MH	13,250,000	12,620,000	79,345,000
	TOTAL BASE COST	268,862,419	9945173 MH	121,286,453	75,349,521	465,498,393

TABLE 1-2
COST ESTIMATE SUMMARY
THREE DIGIT ACCOUNT LEVEL
1232 MWe COAL FIRED PLANT
MIDDLETOWN, USA

COST BASIS
07/76

08/10/77

ACCT NO	ACCOUNT DESCRIPTION	FACTORY EQUIP. COSTS	SITE LABOR HOURS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
20 .	LAND AND LAND RIGHTS				2,000,000	2,000,000
211.	YARDWORK	115,500	222317 MH	2,687,512	2,708,294	5,111,306
212.	STEAM GENERATOR BUILDING	529,607	552754 MH	6,770,555	14,990,442	22,290,604
213.	TURBINE,HEATER,CONTROL BLD	342,469	275629 MH	3,553,970	5,612,031	9,268,470
216B.	ADMINISTRATION+SERVICE BLD	214,656	58634 MH	716,425	824,794	1,755,875
216D.	FIRE PUMPHOUSE					
216I.	ELECTRICAL SWITCHGR BLDGS	22,763	6860 MH	84,000	45,403	152,163
216M.	COAL CAR THAW SHED		2023 MH	23,330	12,435	35,765
216N.	ROTARY CAR DUMP BLDG+TUNNL	3,485	37186 MH	431,915	374,245	809,645
216O.	COAL BREAKER HOUSE	54,150	20347 MH	252,633	343,828	650,611
216P.	COAL CRUSHER HOUSE	79,945	15607 MH	194,000	198,800	472,745
216Q.	BOILER HOUSE TRANSFR TOWER	2,680	5844 MH	74,678	131,972	209,330
216R.	ROTARY PLOW MAINTNCE SHED	6,040	90639 MH	1,034,587	793,553	1,834,180
216T.	LOCOMOTIVE REPAIR GARAGE	11,570	4715 MH	58,298	64,460	134,328
216U.	MATERIAL HANDL+SERVICE BLD	17,735	10570 MH	129,195	135,343	282,273
216V.	WASTE WATER TREATMENT BLDG	4,964	11160 MH	130,566	93,565	229,097
216W.	MISC COAL HANDLING STRUCT	150,000	71548 MH	810,427	1,006,947	1,967,374
219.	STACK STRUCTURE	1,000,000	67461 MH	774,766	188,825	1,963,591
21 .	STRUCTURES + IMPROVEMENTS	2,555,564	1433104 MH	17,106,559	27,524,934	47,187,357

TABLE 1-2
COST ESTIMATE SUMMARY
THREE DIGIT ACCOUNT LEVEL
1232 MWe COAL FIRED PLANT
MIDDLETOWN, USA

COST BASIS
07/76

08/10/77

ACCT NO	ACCOUNT DESCRIPTION	FACTORY EQUIP. COSTS	SITE LABOR HOURS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
220.	FOSSIL STEAM SUPPLY SYSTEM	55,675,000	1126000 MH	13,975,920	1,397,592	71,048,512
221.	STEAM GENERATING SYSTEM	1,253,585	37651 MH	488,922	58,724	1,801,231
222.	DRAFT SYSTEM	12,670,660	411522 MH	5,360,776	1,705,821	19,757,457
223.	ASH + DUST HANDLING SYSTEM	4,619,580	123732 MH	1,594,268	212,922	6,426,770
224.	FUEL HANDLING SYSTEMS	6,862,615	144285 MH	1,840,754	620,383	9,373,752
225.	FLUE GAS DESULFUR STRUCT.	88,675	6664 MH	833,614	958,659	1,881,148
226.	DESULFURIZATION EQUIPMENT	22,106,645	147053 MH	18,628,459	10,190,463	50,925,567
227.	INSTRUMENTATION + CONTROL	1,875,000	7654 MH	935,523	68,195	2,878,718
228.	BOILER PLANT MISC ITEMS	170,000	143465 MH	1,664,639	1,560,086	3,414,725
22 .	BOILER PLANT EQUIPMENT	105,321,960	3603880 MH	45,413,075	16,772,845	167,507,860
231.	TURBINE GENERATOR	45,288,261	339531 MH	4,179,574	1,580,551	51,048,386
232.	CONDENSING SYSTEMS	9,040,725	174429 MH	2,305,125	236,731	11,582,581
234.	FEED HEATING SYSTEM	14,310,145	313374 MH	4,071,610	407,590	18,789,545
235.	OTHER TURBINE PLANT EQUIP.	12,035,592	920379 MH	11,930,504	1,213,283	25,179,379
236.	INSTRUMENTATION + CONTROL	556,000	5383 MH	65,796	3,290	625,088
237.	TURBINE PLANT MISC ITEMS		99451 MH	1,153,314	1,850,104	3,003,418
23 .	TURBINE PLANT EQUIPMENT	81,230,723	1653747 MH	23,706,125	5,291,549	110,228,397

TABLE 1-2
COST ESTIMATE SUMMARY
THREE DIGIT ACCOUNT LEVEL
1232 MWe COAL FIRED PLANT
MIDDLETOWN, USA

COST BASIS
07/76

08/10/77

ACCT NO	ACCOUNT DESCRIPTION	FACTORY EQUIP. COSTS	SITE LABOR HOURS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
241.	SWITCHGEAR	4,626,500	69231 MH	856,431	86,520	5,569,451
242.	STATION SERVICE EQUIPMENT	3,380,200	55571 MH	716,552	146,351	4,243,103
243.	SWITCHBOARDS	518,000	10530 MH	130,167	61,419	709,586
244.	PROTECTIVE EQUIPMENT		85400 MH	1,053,419	671,000	1,724,419
245.	ELECT.STRUC +WIRING CONTNR		570551 MH	6,975,811	2,687,713	9,663,524
246.	POWER & CONTROL WIRING	485,100	449269 MH	5,523,940	5,603,949	11,612,989
24 .	ELECTRIC PLANT EQUIPMENT	9,009,800	1243552 MH	15,256,320	9,256,952	33,523,072
251.	TRANSPORTATION & LIFT EQPT	1,223,000	8125 MH	104,497	90,419	1,417,916
252.	AIR,WATER+STEAM SERVICE SY	3,162,672	182730 MH	2,365,717	294,839	5,823,225
253.	COMMUNICATIONS EQUIPMENT	100,000	25000 MH	307,386	154,656	562,042
254.	FURNISHINGS + FIXTURES	653,700	6720 MH	78,761	16,094	748,555
255.	WASTE WATER TREATMENT EQPT	562,395	36551 MH	467,340	255,178	1,305,413
25 .	MISCELLANEOUS PLANT EQUIPT	5,722,267	259176 MH	3,323,701	811,186	9,857,154
261.	STRUCTURES	89,971	63552 MH	740,739	674,932	1,505,692
262.	MECHANICAL EQUIPMENT	11,457,134	197954 MH	2,489,634	397,073	14,343,841
26 .	MAIN COND HEAT REJECT SYS	11,547,105	261506 MH	3,230,373	1,072,055	15,849,533
2 .	TOTAL DIRECT COSTS	215,367,419	8675173 MH	108,036,453	62,729,521	386,153,393

POOR ORIGINAL

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TABLE 1-2
COST ESTIMATE SUMMARY
THREE DIGIT ACCOUNT LEVEL
1232 MWe COAL FIRED PLANT
MIDDLETOWN, USA

COST BASIS
07/75

08/10/77

ACCT NO	ACCOUNT DESCRIPTION	FACTORY EQUIP. COSTS	SITE LABOR HOURS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
911.	TEMPORARY CONSTRUCTION FAC		1090000 MH	11,035,000	5,340,000	16,375,000
912.	CONSTRUCTION TOOLS & EQUIP	7,200,000	180000 MH	2,215,000	5,630,000	15,045,000
913.	PAYROLL INSURANCE & TAXES	16,375,000				16,375,000
914.	PERMITS,INS. & LOCAL TAXES				650,000	650,000
915.	TRANSPORTATION					
91 .	CONSTRUCTION SERVICES	23,575,000	1270000 MH	13,250,000	11,620,000	48,445,000
921.	HOME OFFICE SERVICES	16,000,000				16,000,000
922.	HOME OFFICE Q/A					
923.	HOME OFFICE CONSTRCTN MGMT	1,000,000				1,000,000
92 .	HOME OFFICE ENGRG.&SERVICE	17,000,000				17,000,000
931.	FIELD OFFICE EXPENSES				1,000,000	1,000,000
932.	FIELD JOB SUPERVISION	12,300,000				12,300,000
933.	FIELD QA/QC	220,000				220,000
934.	PLANT STARTUP & TEST	380,000				380,000
93 .	FIELD OFFICE ENGRG&SERVICE	12,900,000			1,000,000	13,900,000
9 .	TOTAL INDIRECT COSTS	53,475,000	1270000 MH	13,250,000	12,620,000	79,345,000
	TOTAL BASE COST	268,862,419	4945173 MH	121,286,453	75,349,521	465,498,393

TABLE 1-3

DIRECT CRAFT LABOR SUMMARY FOR 1232 MWe
HIGH SULFUR COAL PLANT - MIDDLETOWN, USA
COST BASIS - 7/76

Craft Description	Site Labor Hours	% Hours	Site Labor Cost	% Cost
Asbestos Worker	170,030	2.0	2,213,790	2.0
Boiler Maker	231,853	2.7	3,204,210	3.0
Bricklayer	139,973	1.6	1,597,105	1.5
Carpenter	343,552	4.0	3,985,207	3.7
Dock Builder	873	0.0	11,978	0.0
Electrician	1,517,158	17.5	18,812,757	17.4
Iron Worker	826,098	9.5	10,945,855	10.1
Laborers	557,859	6.4	5,199,243	4.8
Millwrights	164,870	1.9	2,090,544	1.9
Operating Engineers	575,560	6.6	7,182,944	6.6
Painters	241,288	2.8	2,309,127	2.1
Pipefitters	2,372,718	27.4	31,794,424	29.4
Roofers	10,455	.1	140,934	.1
Teamsters	146,514	1.7	1,254,165	1.2
Undefined Crafts	1,376,372	15.9	17,294,170	16.0
TOTAL FOR PLANT	8,675,173	100.0	$ 108,036,453	100.0

2

SECTION 2
PLANT DESCRIPTION

SECTION 2

PLANT DESIGN DESCRIPTION

2.1 INTRODUCTION

Section 2 describes the High Sulfur Coal Plant design and the construction support activities covered by the cost estimate.

The material presented in this section is organized to correspond to the uniform system of accounts (USAEC Report NUS-531) used for the detailed cost estimate. This format correlates the plant design description with the detailed cost estimate (Volume I, Section 3) and the detailed equipment list (Volume II, Section 5). The two digit accounts used in this regard are as follows:

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A summary description is provided in Section 2 for each major account. This is followed by detailed descriptions of each system and structure at the three digit account level.

The descriptions associated with Accounts 21 through 26 address the power plant design. This corresponds to the "direct cost" portion of the cost estimate. The descriptions associated with the Accounts 91 through 93 define the construction support activities. This corresponds to the "indirect cost" portion of the cost estimate. The sum of the "direct cost" and the "indirect cost" is the "total base construction cost".

The scope of the indirect cost accounts varies with utility and project. Therefore, an understanding of the definition of these accounts, provided later in this section, will avoid confusion when utilizing the cost estimates herein.

2.2 PLANT DESIGN CRITERIA

2.2.1 General Study Criteria

The major criteria for the High Sulfur Coal Plant study were discussed in Section 1. The key parameters are tabulated in Tables 2-1 and 2-2 in this section. The coal selection criteria is described in Section 2.2.2. Design codes for the major structures and equipment are addressed in Section 2.2.3 and in the Equipment List (Vol. II, Section 5). The design of the heat rejection system is based upon mechanical draft wet cooling towers.

2.2.2 Coal Selection Criteria

The design of a coal fired plant is influenced by the chemical characteristics and calorific value of the coal. Therefore, a coal was selected which is the basis for the plant design.

The following criteria were used in selecting the design basis coal:

- The coal is representative of a major eastern coal field.
- The coal field size is large enough to reasonably expect that it will be mined for steam electric power plant fuel in the future as long as the fuel is legally burnable.
- The sulfur content is sufficiently high to require the use of sulfur dioxide removal equipment.
- The coal field is currently providing fuel for steam electric power plants.

The description of the location and extent of the design basis coal seam selected for this study is presented in Table 2-3. The coal analysis for the coal from this location and seam is presented in Table 2-4.

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TABLE 2-1

KEY PLANT PARAMETERS - STEAM SUPPLY SYSTEM

1232 MWe HIGH SULFUR COAL PLANT

Steam Generator	Supercritical pressure, single reheat with a Pressurized Furnace
Steam Flow	
Maximum Continuous Rating 10^6 lb/hr	9.775
Normal Superheater Outlet, 10^6 lb/hr	9.141
Normal Reheater Outlet 10^6 lb/hr	7.486
Steam Pressure	
Superheater Outlet, psig	3,845
Reheater Outlet, psig	650
Steam Temperature	
Superheater Outlet, F	1,010
Reheater Outlet, F	1,000
Final Feedwater Temperature, F	547
Fuel Type	Eastern Bituminous Coal
Fuel Firing Rate, Ton/Hr	550
Fuel Analysis	See Table 2-4
Number of Pulverizers	6 Plus 1 Spare
Pulverizer Fuel Flow, Tons/Hr	92
Number of Forced Draft Fans	3
Total Forced Draft Fan, Capacity, scfm	2,040,000
Number of Primary Air Fans	2
Total Primary Air Fan Capacity, scfm	510,000
Number of Precipitators	3
Precipitator Efficiency, in percent	99.7

TABLE 2-2

KEY PLANT PARAMETERS - STEAM AND POWER CONVERSION SYSTEM

GUARANTEED CONDITION-1232 MWe HIGH SULFUR COAL PLANT

Turbine Configuration	Cross-Compound, 8 Flow
Steam Flow at HP Turbine Inlet, 10^6 lb/hr	9.141
Steam Pressure at HP Turbine Inlet, psia	3,515
Steam Temperature at HP Turbine Inlet, F	1,000
Turbine Back Pressure, in HgA (multi-pressure condenser)	1.7/2.5
Turbine Output, MWe	1,309
Auxiliary Power, MWe	77
Net Station Output, MWe	1,232
Number of Feedwater Heating Stages	8
Generator Rating, MVA	722
Net Station Steam Rate, lbs/kWhr	7.42
Net Station Heat Rate, Btu/kWhr	9,138
Thermal Efficiency, in percent	37.35

TABLE 2-3

LOCATION AND EXTENT OF DESIGN BASIS COAL SEAM

1232 MWe HIGH SULFUR COAL PLANT

Coal Type:	Eastern High Sulfur Bituminous Coal
Location:	
State:	Illinois
County:	St. Clair
Seam:	Illinois No. 6
Extent:	
Reserves (Est.):	3,000,000,000 Tons
Current Production:	8,000,000 Tons/Year (1976)
Projected Production:	10,000,000 Tons/Year (1978)
Major Coal Users:	Steam Electric Power Plants:

TABLE 2-4

DESIGN BASIS COAL ANALYSIS

1232 MWe HIGH SULFUR COAL PLANT

Coal Type: Bituminous Coal	Eastern High Sulfur
Moisture (% by Wt.);	11.31
Proximate Analysis (% by Wt. dry):	
Volatile Matter:	39.72
Fixed Carbon:	48.68
Ash:	11.60
Ultimate Analysis (% by Wt. dry):	
Carbon:	69.33
Hydrogen	4.30
Nitrogen	.86
Chlorine	.04
Sulfur	3.61
Oxygen	9.64
Ash Analysis (% by Wt. dry):	
P_2O_5	.05
SiO	45.73
Fe_2O_3	18.38
Al_2O_3	19.40
TiO_2	1.30
CaO	5.50
MgO	.95
SO_3	6.63
K_2O	1.53
Na_2O	.51
Undetermined	.02
Calorific Value (Btu/lb.)	
As Received	11,026
Dry	12,432
Ash Fusion Temperature (^oF Red./^oF Ox.)	
Initial	1950/2270
H = W	2140/2380
H = ½W	2[illegible]0/2400
Fluid	2[illegible]0/2500

2.2.3 Structural Design Criteria

The structural design criteria used for the reference plant design are summarized as follows:

Structures are designed to withstand the effects of various combinations of all normal loadings to which they are subjected in accordance with ACI 318, Building Code Requirements for Reinforced Concrete, AISC Specification for the Design, Fabrication and Erection of Structural Steel for Buildings and applicable local building codes. The structures are designed for seismic effects in accordance with criteria established by the Uniform Building Code. The chimney is designed in accordance with ACI 307, Specification for the Design and Construction of Reinforced Concrete Chimneys. Coal silos are designed using 55 lbs/cu ft as the coal density for load calculations.

The loads listed below are considered in the buildings designs where applicable.

- o Dead Loads - Permanent gravity loads including concrete, structural steel, equipment, piping, cable trays and hydrostatic pressure. The ground water level is assumed at El + 10 ft - 0 in. Buoyancy from ground water is considered in building stability and base mat design.
- o Live Loads - Loads which vary with intensity and/or occurrence. During normal operation the live loads considered are a snow load of 20 psf and the lateral soil pressures. During construction live load from cranes, wet concrete and major equipment transport loads are also considered.
- o Wind Load - Wind loading is in accordance with ANSI A58.1 with a basic wind loading of 26 psf.

- o Flood Loads - The plant site lies ten ft above the 100 year maximum water level of the North River. Consequently no flooding of the site is considered.

- o Seismic - Structures are designed for seismic conditions in accordance with the requirements of the Uniform Building Code.

2.3 PLANT DESIGN DESCRIPTION

Following are the HSC plant design descriptions for Accounts 21 through 26.

ACCOUNT 21 STRUCTURES AND IMPROVEMENTS

The steam generator , the turbine generator and all other related equipment are housed in fully enclosed buildings. The superstructures have braced steel frames bearing on concrete footings supported on the bedrock underlying the site. Grating floors are used whenever possible to allow maximum air circulation within the building. The siding for the buildings is generally insulated metal panels with interior liner panels. Layouts of the plants are shown on the drawings in Volume II, Section 4. Design concepts are discussed in greater detail in the following design descriptions for the major accounts.

ACCOUNT 211 Yardwork

The plant location is the hypothetical site of Middletown U.S.A. This is defined in Volume II, Section 6, Site Description.

The datum plane for site and yard elevations is mean river level. Main plant finish grade is 18 ft above mean river level. Soil overburden is estimated to be eight feet thick. Lime stone rock with no underground cavities are located below the overburden and is satisfactory for supporting plant structures.

Site preparation consists of clearing, grubbing and stripping of top soil for structures, roads, railroads, parking areas, the materials handling area and the construction facilities. Rough grading quantities include

the general cut and fill for the main plant structures and fine grading with landscaping.

Earth excavation, rock excavation, backfill, concrete fill and dewatering for the main plant structures are included with the structure associated yardwork. This includes all excavation work for the steam generator building and turbine heater and control building areas. Excavation work for structures not included with the main excavation are included with the structural work for each of the individual buildings. The cut and fill work also includes hauling, dumping, stockpiling, placing and compacting. For those portions of the structure below rock, concrete fill is used under and adjacent to the structure. In cases where rock elevations vary, concrete fill is used to assure that building loads are carried to competent rock.

Excavated material is used on site for general fill as much as possible. Spoil areas and storage areas are utilized for excavated material not used for fill or for top soil. Erosion and sedimentation control of those areas is practiced in accordance with EPA requirements. Temporary settling basins are provided to collect all runoff during construction prior to discharge into the North River.

Transformer area, above ground oil storage tanks and other oil or chemical storage and handling areas are designed to contain spills and collect and route surface runoff to the holding pond prior to discharge to the North River. In addition, steam generator and turbine building floor drains and other plant dirty drains are routed by underground piping to the waste

process building, as required, or to the holding pond for treatment before discharge into the North River.

The yard drainage system consists of a system of interceptor ditches (paved and unpaved) and storm drains with catch basins to carry storm water from developed areas. Sedimentation basins are provided during construction as required. Water courses that are intercepted near the power plant, coal storage pile, are diverted by ditches into existing stream beds or storm drains. Culverts carry stream flow under the railroad, railroad car storage yard and roads. The yard surface water drainage is directed to the North River via the existing water courses as much as possible. Building roof drainage is directed to the yard drainage system.

Surface water runoff from portions of the coal handling, precipitator, ash handling, and oil storage areas together with the plant dirty drains is routed by underground piping to a holding pond and to the waste treatment system for treatment system for treatment in the contaminated yard and building drainage system.

A temporary sanitary sewage system is provided during construction. Piping and toilet facilities for permanent plant requirements are provided based on permanent plant personnel requirements. All sewage receives tertiary treatment prior to discharge into the North River.

Highway access is provided to the site by five miles of secondary roads connecting to a state highway. This road is in good condition and needs no additional improvements. An onsite asphalt road is provided around

the main plant structures. The highway road is paved in accordance with the standard thickness required for public highways. In addition, parking areas, concrete curbs and walks are provided.

Temporary construction roads with minimum thickness paving (AASHO HS20 Loading) and unpaved roads for material handling equipment are provided. Service roads are arranged to provide access to all truck sized doors in the power plant units, to all buildings and to auxiliary structures requiring servicing or maintenance by vehicles. Paved roads for washing and refueling locomotives and mobile equipment are provided.

Railroad access to the site is provided by constructing a double track railroad spur which intersects the B&M Railroad. The spur which is five miles long from the main line to the plant site, approaches the site from the east. Anticipated railroad traffic is up to 1000 cars per week in 100 car unit coal trains plus the required number of lime trains. During construction 400 to 500 cars of construction materials are delivered including the boiler components, transformers, and generator stator. These items are the heaviest loads anticipated and require special cars. A yard locomotive is provided to handle all onsite car movements.

In addition to the coal delivery loop track there are spur tracks into the turbine hall, the transformer yard, the warehouse, the fuel tank area, and the locomotive repair shop.

A temporary spur is installed to the construction yard storage area and to the boiler area for delivery and installation of the boiler headers, boiler panels and subassemblies.

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A ladder track area, for storage of cars with bypass tracks and switches allows engine access to either end of trains being divided. This track accommodates odd lot trains of coal, lime or equipment arriving and the making up of departing trains with waste material and empty cars.

All road bed and trackage are designed in accordance with the latest railroad standards. Railroad structures are designed for Cooper E80 wheel loading.

In addition to the above items; fencing, a gate house, and roadway and yard lighting are provided with the yardwork.

ACCOUNT 212 Steam Generator Building

The steam generator building consists of the boiler house, auxiliary boiler room, air compressor room, machine shop, diesel generator room, and forced draft fan room. The building is 184 ft wide, 330 ft long and 300 ft high at the top of the boiler, and has an overall volume of approximately 12,700,000 cu ft. A description of each of the above areas of the building is given below.

Boiler House

The boiler house is a steel framed structure 184 ft wide and 280 ft long with two main roof heights of 180 ft for the coal silos and conveyors and 300 ft at the top of the boiler. The building volume, less the forced draft fan room, is approximately 12,000,000 cu ft. It has three main floors at elevations 18 ft, 43 ft, and 73 ft. The building is supported

on reinforced concrete spread footings on rock. The reinforced concrete ground floor is located at grade. The roof is cast in place concrete over metal deck, covered with a roofing membrane and supported on steel framing. The exterior walls are insulated metal siding and the interior walls are either concrete or metal partitions.

The building houses the steam generator, coal silos and pulverizers, coal conveyors, the forced draft fan room and an elevator.

Ventilation for the boiler house is provided by 24-66,600 cfm each power roof ventilators and heating is provided by 80 steam unit heaters located throughout the building.

Auxiliary Boiler Room

The auxiliary boiler room, located north west of the boiler house, is a one story steel frame structure 50 ft wide, 75 ft long and 40 ft high. The building volume is approximately 150,000 cu ft. The building substructure and superstructure are identical to that described for the boiler house. The auxiliary boiler room houses the two auxiliary boilers and their accessory equipment.

Ventilation is provided by wall exhaust fans and heating is provided by steam unit heaters.

Air Compressor Room

The air compressor room, located north of the boiler house, is a one story steel frame structure 50 ft wide, 50 ft long and 40 ft high. The building volume is 100,000 cu ft. The building substructure and superstructure

are identical to that described for the boiler house. The air compressor room houses the soot blowing air compressors, receiver and accessories the station air compressors, receivers, air dryers and accessories.

Ventilation is provided by wall exhaust fans and heating is provided by steam unit heaters.

Machine Shop

The machine shop, located north of the boiler house, is a one story steel framed structure 50 ft wide, 63 ft long and 40 ft high. The building volume is approximately 126,000 cu ft. The building substructure and superstructure are identical to that described for the boiler house.

The machine shop houses the machines and tools necessary to perform the required in-plant maintenance and repair of plant equipment. A monorail is installed for handling equipment.

Ventilation is provided by wall exhaust fans and heating is provided by steam unit heaters.

Diesel Generator Room

The diesel generator room, located north east of the boiler house, is a one story steel framed structure 50 ft wide, 27 ft long and 40 ft high. The building volume is approximately 54,000 cu ft. The building substructure and superstructure are identical to that described for the boiler house.

The diesel generator room houses the two auxiliary diesel generators, air intakes for the diesel generators, and auxiliary equipment. The exhaust silencers are mounted on the roof. A monorail is installed for equipment maintenance and removal.

Ventilation is provided by wall exhaust fans and heating is provided by steam unit heaters.

Forced Draft Fan Room

The forced draft fan room, located on west side of the boiler house, is a one story steel framed structure 42 ft wide, 140 ft long and 42 ft high. The building volume is approximately 247,000 cu ft. The fan room is part of the boiler house and has a common substructure. The roof slab is cast in place concrete over acoustically treated metal deck and supported on steel framing. The exterior walls are acoustical masonry block. The walls and roof are designed to resist the differential pressure caused by the fans. Sound attenuators are installed at the air inlets in the walls, and personnel doors are pressure tight and arranged to provide an air lock. A lintel is installed in a wall to allow for equipment removal.

The fan room houses the forced draft and primary air fans, inlet silencers, combustion air steam coils and accessories. A monorail is installed for equipment maintenance and removal.

ACCOUNT 213 Turbine, Heater and Control Building

The building consists of the turbine hall, auxiliary (heater) bay, and control and switchgear building as described below.

ACCOUNT 21

Turbine Hall and Auxiliary Bay

The turbine hall and auxiliary bay are located east of the boiler house. The turbine hall is a three story (elevations 18 ft, 43 ft and 73 ft) steel framed structure 151 ft wide, 260 ft long and 125 ft high. The auxiliary bay is a four story (elevations 18 ft, 43 ft, 73 ft and 102 ft) steel framed structure 30 ft wide, 260 ft long and 125 ft high. The building volume is approximately 5,882,500 cu ft. The building is supported on reinforced concrete spread footings on rock. The reinforced concrete ground floor is located at grade. The mezzanine, operating and deaerator floors are reinforced slabs supported on metal deck on steel framing. The roof is concrete plank covered with a roofing membrane. The exterior walls are insulated metal siding, and the interior walls are either concrete block or metal partitions. The massive "high tuned" turbine pedestal is reinforced concrete and is supported on a thick concrete foundation mat bearing on rock. The turbine pedestal is isolated from the remaining building support loads. Structural quantities for the pedestal are shown in account 231 of the cost estimate.

The building houses the turbine generator, its condensers and associated equipment, feedwater heaters, boiler feed pumps and condenser, boiler feed booster pumps, condensate pumps, condensate booster pumps, condensate polishing and demineralizing equipment, turbine lube oil equipment, deaerator, other auxiliary equipment and switchgear rooms.

The turbine hall and auxiliary bay are cooled by 12 - 75,000 cfm each power roof ventilators and heated by 34 steam unit heaters located throughout the building.

At the south end of the turbine hall is located a rail car bay for transport of generator and turbine parts. An overhead traveling crane located at the top of the building serves this bay as well as the full operating floor area. All floors are connected by several stairways.

Control and Switchgear Building

The control and switchgear building, located north of the turbine hall, is a four story (elevations 18 ft, 34 ft, 50 ft, and 73 ft) steel framed structure 50 ft wide, 150 ft long and 69 ft high. The building volume is approximately 517,500 cu ft. The building substructure and superstructure are identical to that described for the turbine hall and auxiliary bay.

The control and switchgear building houses the 13.8 kV and 4.16 kV switchgear, battery rooms, d-c auxiliary rooms, relay and instrumentation and control cabinet room, coal sampling and water analysis laboratories, cable spreading room, communication room, and control room.

The control and switchgear building HVAC system provides filtered and conditioned air to the control room, water analysis room, communications room, cable spreading room and switchgear area. Supply air to these rooms is provided by a multizone air handling unit and a heating and ventilating unit. A centrifugal water chiller supplies chilled water for air

conditioning and cooling requirements. Local exhaust fans exhaust air as required from the toilet and battery rooms.

ACCOUNT 218B Administration and Service Building

The administration and service building, located south of the turbine hall, is a four story (elevations 18 ft, 43 ft, 58 ft, and 73 ft) steel framed structure 90 ft wide, 90 ft long and 75 ft high. The building volume is approximately 607,500 cu ft. The building is supported on reinforced concrete spread footings on rock. The reinforced concrete ground floor is located at grade. The other floors are reinforced concrete supported on metal deck on steel framing. The roof is concrete plank covered with a roofing membrane. The exterior walls are insulated metal siding and the interior walls are either concrete block or metal partitions. Most areas are provided with suspended acoustical ceilings.

The building houses the service shops, storage areas, locker rooms, showers, lunch room, equipment rooms, laboratories, general offices and conference rooms.

Filtered and conditioned air is provided to the offices, conference room, laboratories, shops, storage area, lunch rooms, equipment rooms and toilet and locker rooms. Supply air to the rooms is provided by a multizone air handling unit and a heating and ventilating unit. Return air fans exhaust air to the units or to atmosphere as required. Chilled water is supplied from a centrifugal water chiller. Local fans exhaust air as required from toilets, locker rooms and fume hoods.

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218D Fire Pump House

The fire pump house, located along the riverbank west of the main plant structures, is an integral part of the makeup water intake structure.

The two fire pumps and one jockey pump are located on the north side of the makeup water intake structure and are supported from the reinforced concrete basin roof slab. The structural description, quantities and costs are shown in account 261.

218I Electrical Switchgear Buildings

The electrical switchgear buildings consist of three separate one story steel framed structures. The coal handling system and cooling tower buildings, located south of the main plant structures, are 30 ft wide, 50 ft long, and 16 ft high. The building volumes are approximately 24,000 cu ft. each. The material handling switchgear building, located southwest of the main plant structures, is 25 ft wide, 30 ft long and 16 ft high. The building volume is approximately 12,000 cu ft. The switchgear buildings are supported on reinforced concrete spread footings on rock. The superstructure is prefabricated and has insulated metal walls and roof.

The buildings are heated by electric unit heaters. Supply air is provided by ventilating units consisting of roughing filters and supply air fans. The buildings are pressurized to protect equipment from coal dust.

ACCOUNT 218M Coal Car Thaw Shed

The coal car thaw shed, located southwest of the main plant structures, is a one story steel framed structure 20 ft wide, 159 ft long and 24 ft

high. The building volume is approximately 76,000 cu ft. The shed is located on the track approaching the rotary car dumper. The shed is supported on reinforced concrete spread footings on rock. The reinforced concrete ground floor is located at grade. The superstructure is metal siding and roof deck, and is furnished with the coal car thawing equipment shown in account 224.13. The shed has two heating bays and one soaking bay.

ACCOUNT 218N Rotary Car Dumper Building and Tunnel

The rotary car dumper building, located southwest of the main plant structures, is a one story steel framed structure 52 ft wide, 66 ft long and 26 ft high. The building volume is approximately 89,200 cu ft. The foundation is reinforced concrete founded on rock. The roof is either insulated or uninsulated metal roof deck supported on steel framing. The exterior walls are either insulated or uninsulated metal siding and the interior walls are masonry block. The underground conveyor tunnels are reinforced concrete founded on rock.

The building houses the rotary car dumper, traveling hammermill lump breaker, receiving hoppers, vibrating feeders, transfer chutes, dust suppression system, control house, toilet facilities, and equipment rooms.

Heating is provided by electric unit heaters. Supply air to the electrical equipment rooms is provided by a ventilating unit consisting of a roughing filter and supply air fan. Excess air is exhausted through wall louvers. The rooms are pressurized to protect equipment from coal dust. A packaged air cooled air conditioning unit maintains the control room at ambient

conditions. The substructure and tunnels are supplied with air through a ventilating fan.

ACCOUNT 2180 Coal Breaker House

The coal breaker house, located southwest of the main plant structures, is a steel framed structure 58 ft wide, 62 ft long and 144 ft high. The building volume is approximately 518,000 cu ft. The building is supported on reinforced concrete spread footings on rock. The reinforced concrete ground floor is located at grade. The three floors are reinforced concrete slabs supported on metal deck on steel framing. The roof is metal deck supported on metal framing. The exterior walls are either insulated or uninsulated metal siding and the interior walls are masonry block.

The building houses the head pulleys and drives for the car dumper-to-breaker house conveyor, two breakers, separators, distribution hopper, slide gates and belt feeders, tail pulleys of the breaker house-to-lowering well conveyors, sampler, and an elevator. The ground floor contains a power and motor control center.

Heating is provided for the coal breaker house by electric unit heaters. Supply air to electrical rooms is provided by a ventilating unit consisting of a roughing filter and supply air fan. Excess air is exhausted through wall louvers. The rooms are pressurized to protect equipment from coal dust.

ACCOUNT 218P Coal Crusher House

The coal crusher house, located south of the rotary car dumper building,

is a steel framed structure 48 ft wide, 48 ft long and 106 ft high. The building volume is approximately 244,000 cu ft. The building is supported on reinforced concrete spread footings on rock.

The reinforced concrete ground floor is located at grade. The three floors are reinforced concrete slab supported on metal deck on steel framing. The roof is metal deck supported on metal framing. The exterior walls are metal siding, and the interior walls are masonry block.

The building houses the head pulleys for the reclaim conveyors, magnetic separators, surge bin, vibrating feeders, and two crushers.

Heating is provided for the coal crusher house by electric unit heaters. Supply air to electrical rooms is provided by a ventilating unit consisting of roughing filter and supply air fan. Excess air is exhausted through wall louvers. The rooms are pressurized to protect equipment from coal dust.

ACCOUNT 218Q Boiler House Transfer Tower

The boiler house transfer tower, located at the southwest corner of the boiler house, is a steel framed structure 30 ft wide, 40 ft long and 242 ft high. The tower volume is approximately 290,000 cu ft. The tower is supported on reinforced concrete spread footings on rock. The reinforced concrete ground floor, which is integral with the boiler house ground floor, is located at grade. The two floors are reinforced concrete slabs supported on metal deck on steel framing. The roof is free standing metal deck. The exterior walls, from elevations 18 ft to 198 ft, are common

with the boiler house on two sides and insulated metal siding on the other two sides. From elevations 198 ft to 260 ft, the exterior walls are either insulated or uninsulated siding.

The tower houses the head pulleys of the crusher house-to-boiler house conveyors, transfer chutes-to-tripper conveyors, and as-fired sampling system.

Heating is provided to the electrical equipment room by electric unit heaters. Supply air is provided by a ventilating unit consisting of a roughing filter and supply air fan. Excess air is exhausted through wall louvers. The room is pressurized to protect equipment from coal dust.

ACCOUNT 218R Rotary Plow Maintenance Shed

The rotary plow maintenance shed, located south of the rotary car dumper, is a one story steel framed structure 32 ft wide, 88 ft long and 28 ft high. The shed volume is approximately 78,800 cu ft. The two reclaim tunnels are 430 ft long each. The rotary plow maintenance shed and reclaim tunnels are founded on rock. The tunnels are reinforced concrete. The shed has a reinforced concrete floor. The roof is metal deck. Exterior walls are metal siding except for the south wall which has a concrete retaining wall for the coal pile.

The shed houses the maintenance facilities for the rotary plows.

Heating is provided by electric unit heaters. Ventilation is provided by drawing outside air through wall louvers and exhausting through power roof ventilators.

ACCOUNT 218T Locomotive Repair Shop and Garage Facilities

The locomotive repair shop and garage, located north of the rotary car dumper, is a one story steel framed structure 65 ft wide, 65 ft long and 30 ft high. The building volume is approximately 126,800 cu ft. The reinforced concrete ground floor is located at grade. The roof is metal deck on steel framing. The exterior walls are insulated metal siding.

The building houses a locomotive repair area and four-bay garage facility for the on-site diesel operated heavy equipment and service vehicles.

Heating is provided by electric unit heaters. The area is ventilated by drawing outside air through wall louvers and exhausting through power roof ventilators.

ACCOUNT 218U Materials Handling and Service Building

The materials handling and service building, located north of the rotary car dumper, is a one story steel framed structure 50 ft wide, 60 ft long and 20 ft high. The building volume is approximately 60,000 cu ft. The building is supported on reinforced concrete spread footings on rock. The reinforced concrete ground floor is located at grade. The roof is insulated metal deck supported on steel framing. The exterior walls are insulated metal siding and the interior walls are masonry block.

The building houses the service shops, offices, storage areas, lunch room, toilet and shower rooms.

The HVAC system provides filtered and conditioned air to the offices, lunch rooms, electrical and mechanical rooms, toilet and shower rooms. Supply air to the rooms is provided by a multizone air handling unit and a heating and ventilating unit. The multizone air handling unit consists of a roughing filter, heating and cooling coils, and supply air fan.

ACCOUNT 218V Waste Water Treatment Building

The waste water treatment building, located west of the main plant structures, is a one story prefabricated steel structure 25 ft wide, 80 ft long and 20 ft high. The building volume is approximately 40,000 cu ft. The building is supported on reinforced concrete spread footings on rock. The reinforced concrete ground floor is located at grade. The exterior walls and roof are insulated metal and interior walls are masonry block.

The building houses a control area, storage area, pumps, tanks and other waste water treatment equipment. Large items of the treatment equipment, such as the batch holding tank, are located adjacent to the building.

Heating is provided by electric unit heaters. The building is ventilated by drawing outside air through wall louvers and exhausting through power roof ventilators.

ACCOUNT 218W Miscellaneous Coal Handling Structures

The conveyor galleries include all overhead supporting structures and their associated foundations. The galleries are approximately 2,500 ft long and are supported on reinforced concrete spread footings on rock. The conveyor galleries

consist of removable dust tight sheet metal enclosures supported from structural steel members. Grating walkways provided for access are illuminated.

The rotary plow access tunnel and ventilating shed are approximately 350 ft long and is parallel to the rotary plow tunnels. The access tunnel provides ventilation and is available for emergency exit. The tunnel structure consists of six ft concrete pipe sections. At the end of the tunnel, a well structure encloses a stairway to grade, and is enclosed in a concrete block shed. The shed houses the ventilating fans.

The coal pile membrane barrier area is 750,000 ft^2. The impermeable membrane layer blankets all areas where coal is stored outdoors, and prevents contamination of ground water by coal pile rain water runoff. The top of the membrane is covered with suitable fill material to prevent damage by coal handling equipment. A drainage system, installed below the membrane layer throughout the active and dead storage areas, routes intercepted surface drainage to drainage channels and prevents hydrostatic pressure on the underside of the membrane layer.

The two lowering wells, located in the center of the coal pile, are reinforced concrete structures 12 ft in diameter and 100 ft high. The cylinders are supported on reinforced concrete foundations bearing on rock. The foundations are integral with the rotary plow tunnels which pass on each side at the base of the cylinders.

ACCOUNT 219 Stack Structure

The stack structure measures 600 ft high (618 ft elevation) with a 30 ft inside diameter and 40 ft outside diameter at the top, and 50 ft inside diameter and 60 ft outside diameter at the bottom.

The stack is a reinforced concrete structure with a separate free standing brick liner. An elevator and ladder in the stack structure provide for access to platforms for sampling ports, smoke density temperature probes, and for maintenance of aircraft warning lights. The foundation is a 100 ft octagonal reinforced concrete mat bearing on rock.

ACCOUNT 22 BOILER PLANT EQUIPMENT

The steam generating system supplies steam to the turbine generator which converts heat energy to electrical energy. The steam generator includes the steam generator, soot blowers, pulverizers, coal feeders and piping, fuel firing equipment, primary air and forced draft fans, primary and secondary regenerative air preheaters and associated ductwork, complete structural steel, and associated instrumentation and controls.

ACCOUNT 221 Steam Generating System

The steam generator is a supercritical pressure unit with a single reheat designed for a maximum continuous rating of 9,775,000 lb/hr of steam at 3,845 psig and 1,010 F at the superheater outlet and 1,000 F at the reheater outlet using 547 F feedwater delivered to the economizer. The furnace is designed for firing high sulfur eastern bituminous coal. Ignitors fired with No. 2 fuel oil are utilized during startup and low load operation.

The overall dimension of the steam generator are approximately 120 ft wide by 140 ft long by 300 ft above floor elevation. The single dry ash furnace is designed for pressurized draft operation and is sized for possible future sub-bituminous coal firing. The furnace cross section is approximately 120 ft long by 5[illegible] ft deep. Multiple rows of burners are located in the front and rear walls. Steam temperature is maintained at reduced load by varying firing rate of burner rows. The burners are supplied with pulverized coal from a total of six pulverizers each rated at 105 tons/hr. A seventh pulverizer is provided as a spare.

The steam generator is equipped with an automatic sequential soot blowing system. The system is designed to remove soot and ash from the boiler surfaces to maintain effective heat transfer. The soot blowers use compressed air with electric motors for rotating and traversing the lances. Two 10,000 scfm centrifugal air compressors supply the required soot blowing air at a pressure of 300 psig.

A superheater bypass system is provided to control flow and pressure during the transition period of attaining critical pressure operation. This is accomplished by maintaining the pressure within the waterwalls and primary superheater sections above saturation pressure until supercritical operation is attained. The bypass provides the flexibility to control the rate of pressure and temperature increase and to coordinate the startup sequence of both the turbine and steam generator.

The steam generator is equipped with a vent and drain system which provides a means of venting air, steam and accumulated water from the boiler and piping systems during startup and shutdown. The system also is used for filling and draining the steam generator during chemical cleaning and hydrostatic testing. The system drains to the waste water treatment system and is designed to drain the steam generator during normal operation in two hours and during chemical cleaning in one hour.

Valves necessary for startup and shutdown or control of the unit are arranged for remote operation.

ACCOUNT 222 Draft System

A pressurized draft system provides combustion air to the furnace and forces the combustion gases thru the steam generator system. The draft system flow diagram for the unit is shown in Drawing 6509.001-HSC-5.

Three 33-1/3 percent capacity forced draft fans and two 50 percent capacity primary air fans are provided. The pressure drop thru the flue gas desulfurization system is taken care of by separate fans furnished with that system.

The forced draft fans operate the steam generator at its maximum continuous rating. One forced draft fan and one primary air fan is capable of sustaining operation at reduced load. The forced draft fans discharge through three secondary regenerative element type air heaters to the burner windboxes. The primary air fans discharge through two primary regenerative air heaters to the pulverizers inlets.

Steam coils are provided with sufficient surface to maintain a forced draft and primary air fan inlet temperature of 80 F. A control system is provided to maintain the average cold-end temperature of the regenerative air heater at 185 F (above the acid dewpoint) using the steam coils; or to maintain flue gas temperature to the precipitator at a minimum of 275 F. The inlet steam coils are protected against freezing.

Electrostatic precipitators, located at the outlets of the regenerative air heaters, are provided to reduce the particulate emissions of the flue gas to conform to applicable State and Federal Regulations (presently 0.1

lb per million Btu fired). Provisions are made to isolate each regenerative air heater, precipitator, and draft fan train. Each precipitator is sufficiently sectionalized to assure continued operation at guaranteed efficiency during rapping operations while isolated sections are operative.

Instrumentation for the boiler air and gas system monitors significant air and gas pressures, differential pressures flows and temperatures from the air inlet to the furnace, i.e., at the windbox, to the gas outlet.

The duct work in this account does not include the duct work required for the SO_2 scrubbing system, or that furnished with the steam generator. The added duct work and supports required for the SO_2 scrubbing system is included in Account 226.

ACCOUNT 223 Ash and Dust Handling System

The ash and dust handling system removes and transports flyash from the precipitators, economizer and gas duct hoppers to the storage silos. The system consists of two 100 percent capacity dry positive displacement pressurized systems designed to handle 45 tons of ash per hour each. The dry type system uses a mixture of flue gas and air as the transporting medium. An air lock valve is located on each economizer hopper, precipitator hopper and gas duct hopper. A pressure system conveys the flyash to the silos. The silos provide for 90 hours accumulation of flyash while operating at maximum continuous rating assuming 85 percent of the ash is flyash.

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Each flyash hopper is furnished with a hopper heater to prevent flyash caking. System capacity allows for intermittent operation with automatic actuation of the cycle on a timed basis. Control equipment is provided for the air preheater hopper, the precipitator hoppers and the flyash silos. All primary devices are located at or near the source, transmitting to receiver type indicators and controllers located in the control panel.

A prepackaged control panel is enclosed and located near the precipitator. It contains all alarms, controllers, indicators, lights and switches, required for automatic or manual operation. A local annunciator alarms various system malfunctions and transmits a common trouble alarm to the main control room. A hopper load level control automatically activates the removal and transport system, transferring the material to the disposal storage silos.

Bottom Ash and Pyrites Handling System

The bottom ash and pyrites handling system removes the bottom ash from the boiler and pyrites from the pulverizers and transports them to the dewatering bins for removal by truck. This system is designed to handle 20 tons per hour. The system flow diagram for the bottom ash handling system is shown in Drawing 6509.001-HSC-16.

The bottom ash is transported by a hydraulic system using water as a transport medium. The bottom ash hopper provides ten hours of bottom ash accumulation while operating at maximum continuous rating, assuming 25 percent of the ash content is bottom ash. A continuous water trough around the periphery of the ash hopper seals against the full furnace

pressure. Bottom ash dewatering bins provide 90 hours of storage, 45 hours for each bin, at maximum continuous rating. Bottom ash is removed from the site by truck and hauled to the disposal site.

The pyrites are also transported by a hydraulic system using water as a transport medium. Pyrites rejected from the pulverizers are sequentially sluiced from the pyrites box to a holding bin located near the pulverizer area. The holding bin provides storage of 12 hours accumulation of pyrites resulting from the boiler operation at maximum continuous rating. The pyrites are sluiced from the holding bin to one of two pyrites dewatering bins. Each bin provides 45 hours of storage while operating at maximum continuous rating. Control equipment is provided for the furnace bottom ash hoppers, the economizer ash hoppers, the pulverizer reject hoppers and the dewatering bins.

ACCOUNT 224 Fuel Handling Systems

The function of the coal handling system is to receive, stack out, reclaim, crush and transport coal to the coal silos in the boiler house. The buildings and structures comprising this system are located in the yard of the power plant southwest of the boiler house and turbine hall. The flow diagram for the coal handling system is shown in Drawing 6509.001-HSC-15.

The coal handling system is sized for coal rate of 550 tons per hour. This is based on using the design basis coal for the operating condition with the turbine valves wide open, five percent overpressure (VWO, 5 percent OP).

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A total of 792,000 tons of coal is stored at the plant site, in the form of active or dead storage. The active (short term) storage pile provides 40,000 tons, or three days coal supply. This coal pile is continuously cycled and completely turned over, in three days. The dead storage (long term) coal pile capacity is 752,000 tons, 57 days supply. This pile provides coal to the plant boiler only if normal rail delivery of coal is interrupted for extended periods of time. Since the Illinois No. 6 (seam) coal used by the plant has a relatively low moisture content (11 to 12 percent) long term storage poses no spontaneous ignition or coal property degradation problems.

The coal handling system consists of four major structures; a rotary car dumper, a breaker house, two lowering wells and an underground rotary plow gallery, and a crusher house. Coal enters the boiler house at a transfer tower at the southwest corner of the boiler house. Equipment for the coal handling system is sized to unload and transfer coal to storage at a rate of 2000 tons/hr. This allows turnaround of a 100-car a unit train (100 tons per car) in five hours. Ten unit train loads of coal are required to provide the tonnage of coal (92,400 tons) burned weekly (7-days) by the plant. Thus, two unit trains per day, unloaded during the first and second shifts, can be easily accommodated. The five hour unloading cycle does not incur increased transportation costs due to railroad demurrage penalties since it is assumed that the utility leases dedicated unit trains supplying coal to the site. The railroad crew uncouples a loaded unit train at the coal unloading loop, and picks

up an empty unit train at the storage ladder siding. The unit train is moved through the coal yard and switchyard by an in plant locomotive.

Coal is reclaimed from either active or dead storage at a rate of 750 tons/hr. Full 100 percent redundancy (i.e. crushers, conveyors and rotary plows) is provided. Coal is reclaimed on a nearly continuous basis.

Coal is weighed and totalized at two locations in the coal handling system; 1) at the rotary dumper-to-breaker house conveyor, and 2) for analysis at the lowering well-to-crusher house conveyors. As-fired coal is sampled in the boiler house transfer tower, prior to delivery to the coal silos; as received coal is sampled in the breaker house prior to discharge to the lowering well. Magnetic separators remove miscellaneous iron from the coal at the top of both the breaker house and crusher house.

All of the coal conveyors are equipped with wire-reinforced fabric/rubber belt material and have self aligning troughing (angled side) idlers. The conveyors, and the adjacent walkway, are enclosed above ground. A solvent/water spray dust suppression system prevents excessive dusting at the discharge of each conveyor.

Coal is delivered to the plant by a 100 car unit train, equipped with rotary car couplers. A hydraulic car positioner centers an individual car in the rotary dumper that rotates a car 180 degrees. The contents of a car discharge onto a traveling hammermill lump breaker, and subsequently into two hoppers. A vibrating feeder at the bottom of each hopper feeds coal onto the dumper-to-breaker house conveyor belt.

Coal enters the breaker house at a splitter chute that diverts coa to one of two breakers which reduce to three inch size and under.

A belt conveyor transfers coal from the breakers, to the top of either of two lowering wells. The lowering well is a hollow, cylindrical silo, with a hopper bottom. Openings in the side wall of each well allow coal to form a conical-shaped pile, as the lowering well fills with coal. The conical shaped piles account for the 40,000 ton active storage. Vibrating feeders at the center of the lowering well, allow gravity reclaim of the active storage pile.

Dead storage coal is moved by bulldozer to the vicinity of the lowering wells, when required. An underground (below grade) gallery beneath the lowering wells houses the two lowering well-to-crusher house conveyors and two rotary plows. The conveyors run in a direction parallel to a line connecting the lowering wells. The rotary plow is a small motor driven car, that travels on rails beneath the coal pile supported above each conveyor. A horizontal plow slowly rotates atop the car, sweeping coal from a concrete trough below the active coal piles to the conveyor. A rotary plow maintenance shed is located where the conveyors exit to the underground galleries and angle upwards.

Coal discharges from the lowering well-to-crusher house conveyors into a storage bin that has two outlets each of which feeds a crusher. The crushers reduce the coal to a one inch to one and one half inch size. The crushed coal is fed to one of two conveyors.

713 088

Crusher house-to-boiler house conveyor belts transport the coal to the boiler house transfer tower. Here the coal is divided between the two rows (near and far) of coal silos. Each row is serviced by a traveling tripper that can be stopped to discharge the conveyor belt flow to a specific silo. The seven silos are sized for eight hours (approximately 650 tons each) of coal storage.

Ignition and Plant Fuel Oil System

The fuel oil system supplies No. 2 fuel oil to the main boiler ignitors for startup and low-load operation. This fuel oil is also used for the auxiliary boiler and miscellaneous diesel driven equipment, the emergency diesel-driven generator, the locomotive, the diesel-driven fire pump and the coal moving equipment. The plant fuel oil systems are located in the plant yard, boiler room, auxiliary boiler room and at the circulating water intake.

An aboveground fuel oil storage tank which stores 150,000 gallons of No. 2 fuel oil provides for a 30 day supply of oil for the auxiliary boiler. A dike surrounding the tank will contain the oil in the event of a spill or tank failure. Separate pumps, which take suction directly from the fuel oil storage tank, supply the fuel oil to the main and auxiliary boilers.

Oil delivery for the aboveground tank is made by either rail or truck. An unloading pump is provided for vehicles not having unloading equipment.

All diesel engine driven equipment is capable of burning No. 2 fuel oil. The aboveground storage tank also supplies fuel to the diesel engine driven equipment located in the proximity of the tank.

Instrumentation for the fuel oil system monitors and controls unloading, storage and transfer of fuel oil to points of use. It also provides information both locally and to the main control room as required for controls, displays, alarms and logs.

ACCOUNT 225 Flue Gas Desulfurization Structures

Lime Slaking Building and Service Building

The lime slaking building, located southwest of the main plant structures, is a steel framed structure 56 ft wide and 98 ft, with an enclosed portion 51 ft high and an overall height of 160 ft. The enclosed building volume is approximately 280,000 cu ft. The adjacent service building is a steel framed structure 28 ft wide, 98 ft long and 16 ft high. The building volume is approximately 44,000 cu ft. The buildings are supported on reinforced concrete spread footings on rock. The reinforced concrete ground floors are located at grade. The lime slaking building has three enclosed floors and three platform floor elevations above the roof. The second and third floors are reinforced concrete slabs supported on metal deck on steel framing. The service building has one floor. The roofs of both structures are concrete channel plank covered with roofing membrane. The exterior walls are insulated metal siding.

The lime slaking building houses pumps, tanks, silos, conveyors, elevators and other associated equipment. The service building houses an electrical room, mechanical service room, control room, laboratory, toilets and office.

The lime slaking building is heated by electric unit heaters, and ventilated by drawing outside air through wall louvers and exhausting through power roof ventilators. The service building has a HVAC system which provides filtered and conditioned air to the offices, laboratory control room and service rooms.

Desulfurization Control and Switchgear Building

The desulfurization control and switchgear building, located north of the desulfurization area, is a two story steel framed structure 46 ft wide, 50 ft long and 42 ft high. The building volume is approximately 84,000 cu ft. The building is supported on reinforced concrete spread footings on rock. The reinforced concrete ground floor is located at grade. The second floor is a reinforced concrete slab supported on metal deck on steel framing. The roof is concrete channel plank covered with a roofing membrane. The exterior walls are insulated metal siding, and the interior walls are masonry block.

The building houses the control room, office, toilets and switchgear area.

The control room is heated by electric baseboard radiators and cooled by a window type air conditioner. The switchgear room is heated by electric unit heaters. Ventilation is provided by a ventilating unit consisting

of roughing filter and supply air fan. Air is exhausted through a wall louver.

Process and Seal Water Pump House

The process and seal water pump house, located west of the main plant structures, is a one story prefabricated steel structure 20 ft wide, 40 ft long and 16 ft high. The building volume is approximately 12,800 cu ft. The building is supported on reinforced concrete spread footings on rock. The reinforced concrete ground floor is located at grade. The exterior walls are insulated metal siding, and the roof is insulated metal standing rib.

The building houses the process and seal water pumps, tanks, filters and associated equipment.

Heating is provided by electric unit heaters. The building is ventilated by drawing outside air through wall louvers and exhausting through wall exhaust fans.

Thickener Equipment Building

The thickener equipment building, located northwest of the main plant structures, is a one story prefabricated steel structure 40 ft wide, 80 ft long and 16 ft high. The building volume is approximately 51,200 cu ft. The building substructure, superstructure and heating and ventilation is identical to that described for the process and seal water pump house.

Sludge Stabilization Building

The sludge stabilization building, located approximately six miles from the main plant structures, consists of a main building and a service building. The main building is a two story steel framed structure 60 ft wide, 75 ft long and 30 ft high. The building volume is approximately 135,000 cu ft. The adjacent service building is a one story steel framed structure 50 ft wide, 60 ft long and 18 ft high. The building volume is approximately 54,000 cu ft. The buildings are supported on reinforced concrete spread footings on rock. The reinforced concrete ground floors are at grade. The second floor of the main building is a reinforced concrete slab supported on metal deck on steel framing. The roofs are cast in place concrete over metal deck, covered with a roofing membrane and supported on steel framing. The exterior walls are insulated metal siding, and the interior walls are either masonry or metal partitions. Vinyl tile and ceramic tile floors and acoustical ceilings are provided, as appropriate, in the service building.

The main building houses the vacuum filters, pumps, sludge mixers, feeders, conveyors and associated equipment. The service building houses the offices, lunch room, control room and toilets.

The main building is heated by electric unit heaters and is ventilated by drawing outside air through wall louvers and exhausting through power roof ventilators. The service building has a HVAC system which provides filtered and conditioned air.

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Sludge Pump House

The sludge pump house, located north west of the main plant structures, is a one story steel framed structure 20 ft wide, 40 ft long and 12 ft high. The building volume is approximately 9,600 cu ft. The building is supported on reinforced concrete spread footings on rock. The reinforced concrete ground floor is at grade. The roof is concrete channel plank covered with a roofing membrane. The exterior walls are insulated metal siding.

The building houses an electrical equipment room and mechanical equipment room.

Heating is provided by electric unit heaters. The building is ventilated by drawing outside air through wall louvers and exhausting through wall exhaust fans.

Lime Unloading Building

The lime unloading building, located west of the main plant structures, is a one story steel framed structure 36 ft wide, 50 ft long and 20 ft high. The building volume is approximately 36,000 cu ft. The building support is reinforced concrete founded on rock. The reinforced concrete ground floor is located at grade. The roof is steel supported on steel framing. The exterior walls are metal siding.

The building houses the grizzly hopper and conveyor, and has rail and truck access. It is large enough to accommodate one railroad car. A tunnel accommodates a conveyor to the bucket elevator at the lime silos.

Tunnel ventilation is provided by a supply air fan.

ACCOUNT 226 Lime Flue Gas Desulfurization System

This system is designed to remove SO_2 from flue gas exiting from the electrostatic precipitators. Lime handling and slaking facilities, stack gas scrubbing equipment and spent slurry handling facilities are provided.

Lime Handling and Feed Preparation

Lime is unloaded from railroad hopper cars in an unloading shed. The lime is dropped into a hopper and conveyed to adjacent concrete storage silos by a conveyor belt and bucket elevator. Two silos provide a 30 day supply of lime for full load operation.

Lime is conveyed by a reclaim belt conveying system to four process storage silos located above the lime slaking building. Lime is fed by volumetric belt feeders to lime slakers located below each storage silo. A combination of fresh process makeup water thickener overflow is used for lime slaking. A 15 percent slurry of slaker lime is fed by gravity to slurry surge tanks located below the slakers and subsequently pumped to lime slurry feed tanks adjacent to the SO_2 scrubbing equipment.

Sulfur Dioxide Scrubbing Equipment

This system brings flue gas into intimate contact with the SO_2 scrubbing medium. Booster fans direct flue gas from a bypass duct fo SO_2 scrubbing modules, and are designed for a maximum pressure drop across the scrubbing system.

A bypass duct is sized to handle 100 percent of the flue gas at maximum load in case of operating problems with the scrubbers.

Seven 15 percent capacity booster fans and SO_2 modules are provided. Each module is designed to remove 90 percent of the SO_2 contained in the entering flue gas. The system is sized for a maximum gas velocity of 10.5 ft/sec through each scrubber. At full load, six modules scrubbing 88.15 percent of the flue gas are required to operate in order to comply with the SO_2 emission standard of 1.2 lb SO_2 per million Btu's. The seventh module is provided as a spare. The balance of flue gas is bypassed to provide reheat for the saturated flue gas leaving the SO_2 scrubbers.

In each SO_2 scrubber, the flue gas is initially directed to a down-flow quencher. A slurry of CaO, reaction products and water is sprayed into the hot flue gas at the quencher throat saturating the gas and providing the first stage of SO_2 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 of 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 recirculated lime, reaction products, and water is intimately contacted with the flue gas to remove the sulfur dioxide. The scrubber gas continues on through a moisture separator and ducts to the stack.

Sludge Handling System

A portion of the recirculating slurry in the SO_2 scrubbing system containing lime and reaction products is directed to thickeners. Clear supernatant from the thickeners is fed by gravity to an overflow surge tank. Thickened underflow is mixed with flyash and pumped to a sludge stabilization building located six miles from the station.

At the stabilization building the slurry is dewatered by vacuum filtration and conveyed to solid-solid mixers where lime is added. After mixing, the resulting material is conveyed to a point outside of the building for landfilling. The flyash and lime undergo pozzolanic reactions to produce a stabilized landfill material. Filtrate from the dewatering operation is returned to the thickener overflow storage tank at the plant site.

ACCOUNT 227 Steam Generator Plant Instrumentation and Control

The steam generator plant instrumentation and control provides the necessary instruments for the monitoring of the plant status and equipment condition. They include the required controls and indications for the startup, shutdown and normal operation of the plant. Monitors are provided for SO_2, NO_x, particulates and oxygen to insure compliance with the federal emission standards and other applicable state and local regulations.

Boiler-Turbine-Generator Control Board

The boiler-turbine-generator (BTG) board contains the necessary controllers, indicators and recorders for the plant coordinated control system, the turbine supervisory control system and the primary cycle systems. The board may be arranged in either an "L" or straight line configuration. Pneumatic instruments are not allowed on the board. The board is a walk-in type tunnel board.

Instrument items on the board are grouped according to their functions. Normally, controllers and control switches are placed on the bench portion of the board, indicators and recorders are placed on the vertical position. Control and instrumentation that require continuous operators attention are mounted in the front side and those requiring periodic attention are placed in the rear. Space is provided for inserts of the following items: Mechanical-hydraulic control insert, load frequency control equipment insert, burner control insert, computer CRT with keyboard.

Computer console, printers, and trend recorders are mounted separately from the BTG board. The coal handling and related systems are controlled from the vertical board.

Auxiliary Panels and Cabinets

These panels and cabinets provide monitoring and controls of miscellaneous operations such as soot blowing, coal handling, compressed air supply and service water supply.

Instrument Racks

The instrument racks take the form of an open rack. They are used to mount local instruments such as pressure transmitters, manifolds, pressure switches, and other pneumatic instruments that connect directly with the process pipes. The rack has a rigid structure, suitably braced, to withstand all stress incidental to shipping, installation and operation, without warping or twisting. Arrangement of instruments, conduits on racks, and electrical devices are placed out of the paths of condensation or water drains when testing or calibrating instruments. In addition, the instruments are so mounted that replacement could be accomplished without interruption of service to adjacent devices. There is provision to collect the drains when the instrument is removed. Suitable engraved, plastic nameplates are provided for each instrument.

Plant Computer System

The primary function of the plant computer system is to assist the control room operator in conducting safe and efficient operation of the power plant and to provide information on plant performance history. Normal safe operation of the plant does not require the use of the computer.

The major functions of the computer are:

a. Monitoring of all analog, digital and calculated input points

b. Analog input processing which includes conversion of analog inputs to engineering units, reasonability tests, limit comparisons, error checking

c. Digital input processing which includes status checkup

d. Sequence of event input processing

e. Pulse input signal processing

f. Operation of audible and visual alarm displays

g. Performance calculations - These include plant thermal efficiency calculations, unit heat rate calculations, condenser performance calculations, heat exchangers performance calculations, turbine performance calculations, boiler efficiency calculation and related electrical calculations

h. Analog and digital trend recording

i. Generation of periodic logs, on demand logs, alarm summary and post mortem review reports

The hardware of the computer system includes the following major equipment:

a. All required analog and digital signal conditioning equipment

b. All required signal scanning and signal multiplexing equipment

c. All required analog to digital and digital to analog converters

d. Termination cabinets for all incoming and outgoing cables and wires

e. Data acquisition computer with sufficient operating speed, core storage and input/output handling capability to meet system requirements and insure complete satisfactory performance

f. Watchdog timer for the computer

g. Two CRT's and three printers

h. Six point trend recorder

i. Paper tape reader/punch

j. Card reader

k. Uninterruptible a-c power supply

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Coordinated Control System

The coordinated control system operates the turbine-generator and the boiler as an integrated unit. This system coordinates the regulation of feedwater flow, fuel feed, air flow, main steam temperature control, reheat steam temperature control and the turbine servo or load reference motor. The system is designed to minimize interactions between the values to be controlled; namely, unit generation, steam pressure and steam temperature, by proper adjustment of fuel, feedwater, air, turbine control valve and the steam temperature regulating equipment. The system has the flexibility of operating in one of the three modes: coordinated mode, boiler follow mode and turbine follow mode.

Burner Control System

The burner control system is designed to prevent continued operation of the steam generator where a hazardous furnace condition could exist, and to assist the operator in starting and stopping of burners and fuel equipment.

The control system consists of four major subsystems: furnace purge system, burner mill control system, boiler fuel safety system and alarm system. The furnace purge system insures that the boiler is adequately purged under the conditions and in the proper sequence prior to igniting the first fire in the boiler. The burner mill control system allows remote operation of the ignitors and burners. The subsystem is designed to follow a predetermined set program in safely placing ignitors and burners in and out of service. The boiler fuel safety system is designed

to shut off all fuel to the furnace in the event that predetermined potentially hazardous conditions should develop during operation. Examples of these conditions are loss of flame, loss of seal air, or loss of primary air. The alarm system alerts the operator the existence of certain equipment malfunctions such as mill trip, main flame and detector failure.

ACCOUNT 23 TURBINE PLANT EQUIPMENT

The turbine plant equipment includes the turbine-generator and all auxiliary equipment necessary to assure continuous operation of the main turbine - generator. All turbine plant equipment is designed to operate at the valve wide open, five percent overpressure point (VWO, 5 percent OP).

The turbine generator is a cross compound (two shaft) eight flow machine. Normally 55 percent of the inlet steam passes through the entire turbine machinery frame and exhausts into the condenser at a vacuum condition, where waste heat is rejected. The remaining 45 percent of the inlet flow is extracted at various stages from the turbine for heating the feedwater being pumped to the boiler. A portion of the extraction steam also powers two auxiliary steam turbines that drive the main boiler feedwater pumps.

Cold reheat pipes carry 82 percent of main steam inlet flow from the high pressure turbine exhaust to the reheater section of the boiler. Hot reheat piping supplies reheated steam to interceptor valves that control steam flow to the intermediate pressure turbine.

Condensate is pumped from the condenser hot-wells by three 50 percent capacity condensate pumps through 100 percent flow deep bed polishing demineralizers, and a steam packing exhauster. Three 33-1/3 percent capacity condensate booster pumps provide the necessary head from that point for the condensate to flow through the four stages of low pressure heaters to the deaerator. The two 50 percent capacity heater drain pumps take the first stage heater drains from the heater drain tank and return it to the cycle at the suction to the condensate polishing system. Then

two 50 percent capacity steam turbine driven main feedwater pumps supply water to the high pressure feedwater heaters (6th, 7th, 8th stages) to raise the feedwater temperature to 547 F before entering the boiler economizer.

ACCOUNT 231 Turbine Generator

The turbine-generator is designed to deliver 1232 MWe net output with throttle steam conditions of 3515 psia, 1000 F superheated steam, 600 psia and 1000 F reheat, zero percent make-up, 1.7/2.5 in-HgA back pressure, eight stages of feedwater heating, and turbine driven feedwater pumps. The maximum guaranteed steam heat balance diagram is shown in Drawing 6509.001-HSC-6.

The turbine is a cross-compound two parallel shaft machine with eight flow exhaust using 30 inch last stage blades designed for 3600 rpm. One shaft consists of one high pressure turbine and two low pressure turbines driving an electrical generator. The second shaft consists of one intermediate pressure turbine and two low pressure turbines driving a second electrical generator. Both shafts rotate at 3600 rpm, and drive identical generators. The maximum guarantee throttle flow is 9,140,816 lb of steam/hr.

The cold reheat steam exhausts from the high pressure machine at 652 psia, 565 F and passes through the reheater section of the boiler. Hot reheat steam returns and passes through four interceptor valves to the intermediate pressure turbine. Exhaust from the intermediate pressure turbine passes to each of the four low pressure turbines through crossover pipes.

Generator

Each of the two turbine-driven electrical generators has a rating of 722 MVA with 0.90 PF, 26,000 V, 3 phase, 60 Hz output. Each has a totally enclosed hydrogen cooled (≤ 75 psig) rotor. The stator is a liquid conductor-cooled type with deionized water (at 100 F) as the liquid coolant.

The generator rotor is furnished with an internal cooling system including: hydrogen coolers, terminal bushings, instruments, grounding pads, seal housing insulation, foundation plates, shims, and special tools.

The generator stator is furnished with the following external equipment: deionized water circulating and cooling unit assembled on a skid and including storage tank, pumps, coolers, deionizer, flow meter, conductivity cells, gauges, piping, valves, filters, instruments, and regulating equipment, stator winding control cabinet assembled and combined with the hydrogen control cabinet including annunciator, generator automatic runback logic and all necessary control devices.

The generator hydrogen system includes: hydrogen coolers, one skid mounted seal oil unit, hydrogen manifold with one bottle pressure regulator with high and low pressure gauges, pressure switch for hydrogen supply pressure "low" alarm, shutoff valves and bottle connectors, generator hydrogen pressure regulator, hydrogen storage bottles, control cabinet, temperature detectors, and special tools.

The excitation switchgear is an integrated unit of standard low voltage, indoor, and metal enclosed. The function of the excitation switchgear is to connect, rectify and control excitation to the a-c alternator exciter from the alternator stator, and to provide voltage regulation by adjustment of the generator field voltage (d-c regulator) or the generator terminal voltage (a-c regulator). The excitation switchgear houses the exciter field breaker, the thyristor regulator bridge and the a-c and d-c regulato. logic.

Exciter

Each of the two generators is provided with static-type excitation. It has a response ratio of 1.5.

Mechanical-Hydraulic Control

Rotational speed and load of the HP and IP turbine shafts are controlled by a mechanical-hydraulic control system. A mechanical governor varies the oil pressure of a low pressure hydraulic system that uses the bearing lubricating oil as the working fluid. This low pressure system actuates the appropriate servomotors, that control a second high pressure fluid system using a fire retardant hydraulic fluid. This high pressure fluid controls hydraulic cylinders that actuate the HP turbine stop and throttle valves or the IP turbine reheat interceptor and stop valves.

The control system directly monitors and controls the speed of both turbine shafts from 50 rpm; i.e., slightly above turning gear speed, to synchronous generator speed of 3600 rpm, and for all generator load conditions. All safety subsystems actuate the low pressure hydraulic system to shut down the unit.

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During unit startup, thermal sensors in the turbine casings provide input to an analog computer model that continuously calculates critical thermal stress. Thus, high stress conditions can over-ride all other automatic control functions and provide longer turbine warming periods during startups, if necessary.

Turbine Gland Steam Sealing System

The gland steam sealing system provides sealing for all turbine shafts at the turbine shell penetrations, under all conditions of turbine loading. The shaft packings seal against leakage of air into the condenser (vacuum packings) and prevent steam from blowing out into the turbine room (pressure packings).

The steam sealing system provides the above functions automatically at all loads and consists of the following equipment: oil operated dual feed steam regulator, steam packing exhauster with two blowers, auxiliary steam feed regulator, regulator bypass unloading valve, blowdown valve, three-way diverting valves and ventilator valve. The HP turbine inner glands are relieved to heater number five. The HP, IP and LP turbine outer glands are relieved to the steam packing exhauster. The steam packing exhauster is designed with stainless steel tubes for 400 psig pressure and 125 F cooling water.

Lubricating Oil System

A main shaft driven positive displacement gear pump supplies the oil required by the high pressure hydraulic control system and the low pressure

lubrication system during normal operation, and provides high pressure and low pressure oil for the hydrogen seal oil system of the generators. A motor suction oil pump supplies low pressure lubrication oil to the main shaft pump suction during startup and shutdown.

Turbine Oil Conditioning System

The lubricating continuous bypass oil conditioning system has a capacity of 2,020 gallons per hour of 150 SSU viscosity lubricating oil at 100 F. The clean oil storage capacity in the conditioner is 1500 gallons at turbine shutdown. The system consists of the following equipment: centrifugal type lubrication oil purifier with inlet and discharge pump, necessary instruments, breakover switch, feed/stop valve, electric controller and safety interlocks, 14.2 kW heater, centrifuge driven by an open drip-proof motor including piping and wiring.

Gas Systems

The carbon dioxide system consists of a four ton liquid carbon dioxide storage unit with refrigeration system, vaporizer, relief valves and two pressure reducing valves. Carbon dioxide is used for purging hydrogen from the generator housing during shutdown, and for purging air from the housing before being filled with hydrogen during startup.

Hydrogen gas is used to cool the rotor of the generator and is circulated within the generator housing under pressure. Shell and tube type coolers at the ends of the generator are supplied with cooling water to dissipate the rotor heat and wind losses.

The hydrogen is supplied from a series of bottled containers which are individually connected to a manifold. The manifold is equipped with a relief valve and two pressure regulators with isolation valves.

ACOUNT 233 Condensing System

Condensing Equipment

The two surface condensers are multi-pressure, single pass design with divided fabricated steel water boxes and shell. The condensers are designed to handle the total heat rejection from the main turbine. Each condenser has a condensing surface of 407,000 sq ft; 29,602-3/4 inch diameter 18 BWG 90-10 CuNi tubes, 70 ft long. Cooling water flow in each condenser is 221,750 gpm resulting in a tube velocity of 6.5 ft/sec and a total temperature rise at full load of 26 F.

Each condenser shell is floor mounted and connected to the turbine exhaust flange by means of a stainless steel expansion joint to accommodate thermal expansion.

The carbon steel shell is equipped with fabricated steel water boxes that are bolted to the condenser shells and designed for removal without disturbing the tube sheets.

Four motor driven two stage vacuum pumps are supplied for removing non-condensible gases from the two condenser shells. During startup, all four pumps are operating, hogging the condensers to minimize the time to reach the intermediate pressure at which operation begins. To provide system reliability, four 50 percent capacity pumps are selected, with two

normally operating to maintain condenser vacuum. When condenser pressure falls to 26 in-Hg vacuum, the spare ejector or vacuum pumps start automatically.

The total hotwell capacity of the two shells is 62,000 gallons at normal water level. The hotwell is designed to deaerate the condensate to maintain a maximum of five ppm of dissolved O_2 during normal steady state operation.

The condensate pumps are vertical type, suitable for the NPSH requirements of the condenser hotwell service. The pumps develop sufficient head to ensure adequate suction pressure at the condensate booster pumps after overcoming the pressure drop in the condensate piping, steam packing exhauster, and the condensate polishing demineralizers. Three half-size motor driven pumps are supplied. The third pump is redundant and is on standby or isolated for maintenance.

The steam packing exhauster consists of a shell and tube type condenser and air removal equipment in the form of two full size motor driven blowers.

One complete condensate polishing system is provided that is capable of treating 100 percent of the condensate flow. The system consists of seven individual high flow rate, deep bed type demineralizers operating in parallel.

The condensate passes through six demineralizers with the seventh demineralizer serving as a standby. Each demineralizer is rated for a flow rate of 2,500 gpm (48 gpm per sq ft of flow area). The bed depth is three ft with two ft free board. The shells are designed for 200 psig, 130 F, and are lined with rubber with stainless steel internals. The total resin volume consists of 100 cu ft of cation resin and 50 cu ft of anion resin per shell. When the resin is expended, it is regenerated externally. A resin separation tank, cation regeneration tank, anion regeneration tank and resin storage tank are principal parts of the regeneration system. A hot water caustic dilution tank and a control panel complete with instrumentation for automatic regeneration is also provided with this system.

ACCOUNT 234 Feedheating System

Feedwater Heaters

Eight stages of feedwater heaters are utilized to heat the feedwater returning to the boiler. The heaters are placed in series and operate under increased pressure of various stages of extraction steam from the high pressure, intermediate pressure, and the low pressure turbines. All heaters have a horizontal U-tube arrangement, using stainless steel tubes. Each heater has an integral drain-cooler section with the exception of the first and fifth stage heaters.

There are four low pressure (LP) stages of feedwater heating, one deaerating stage, and three high pressure (HP) stages of feedwater heating. The LP heating system consists of eight feedwater heaters arranged in two parallel

trains of four each. A single bypass is provided to allow removing a complete train of heaters from service while still maintaining full load on the unit. The bypass is sized to pass 40 percent of the guarantee turbine throttle flow while the remaining heaters pass 60 percent. The LP heaters employ a cascade drain arrangement to heater number one, where they collect in a drain tank and are pumped foward to the inlet of the condensate polishing system.

The fifth stage heater is a horizontal tray type deaerator with storage tank. The storage tank is sized for five minutes storage at VWO, 5 percent OP.

The high pressure (HP) feedwater heating system consists of nine feedwater heaters arranged in three parallel trains of three each. Each train is designed to pass one third of the VWO, 5 percent OP flow. The HP heater drains cascade to the fifth stage deaerator drain tank.

Boiler Feedwater Pumps

Two 50 percent capacity motor driven boiler feedwater booster pumps are provided to supply the minimum net positive suction head (NPSH) at the suction of the boiler feedwater pumps. Each pump is designed for a flow rate of 13,500 gpm at 150 ft total dynamic head (TDH).

The two 50 percent capacity turbine driven boiler feedwater pumps are designed for a flow rate of 13,500 gpm each and develop a TDH of 11,500 ft when operating at a speed of 5,800 rpm. Calculated brake horsepower is 43,660. Each feed pump is driven by a dual admission, multi-stage, condensing steam turbine exhausting to a separate steam condenser which

then drains to the main steam condenser. The dual admission inlet consists of a high and a low pressure valve, one supplied with main steam, the other supplied with steam from the high pressure turbine exhaust to the low pressure valve. For startup purposes, auxiliary boiler steam is also supplied to the low pressure valve admission inlet.

ACCOUNT 235 Other Turbine Plant Equipment

Main Vapor Piping Systems

The main vapor piping systems consist of the main steam and hot and cold reheat systems. The main steam system conveys high pressure superheated steam from the steam generator to the high pressure turbine, related auxiliary equipment, and the station auxiliary steam system.

The hot and cold reheat system conveys exhaust steam from the HP turbine to the steam generator reheater and returns it to the intermediate pressure turbine.

The main steam and hot and cold reheat system flow diagram is shown in Drawing No. 6509.001-HSC-7.

Turbine Building Closed Cooling Water System

A closed cooling water system is provided with three 50 percent capacity (6,000 gpm each) motor driven water pumps, air tank and heat exchangers, which dissipates heat to the main cooling towers. The heat exchangers are two 50 percent capacity shell and tube type, designed for a flow rate of 6,000 gpm on both the shell and tube sides. The tubes are 90-10 CuNi material, and supply 95 F water to the system based on a supply water

temperature of 85 F from the plant service water system. The system supplies cooling water to the turbine plant and miscellaneous plant equipment.

Demineralized Water Makeup System

The demineralized water makeup system consists of two independent trains, each having the following equipment: an activated charcoal prefilter, cation demineralizer, an anion demineralizer, and a mixed bed demineralizer. A common vacuum degasifier serves both trains with water from the cation demineralizers directed to the vacuum degasifier before being admitted to the anion demineralizer. Each demineralizer regenerates in place without sluicing the resins. The makeup demineralizing system supplies the plant makeup requirements, and the effluent is discharged into the two 500,000 gallon condensate storage tanks.

Chemical Treatment System

The chemical treatment system is used to maintain the water chemistry of the feedwater and consists of two hydrazine feed pumps, two ammonia feed pumps, one hydrazine storage tank and one ammonia storage tank. The hydrazine chemically removes the dissolved oxygen from the feedwater and the ammonia controls the pH.

Neutralization System

The neutralization system consists of two pumps, one blower and one tank. The neutralization tank is used to chemically neutralize the spent regenerant from the demineralization system and condensate polishing system to acceptable levels prior to discharge.

ACCOUNT 236 Turbine Plant Instrumentation and Control

Main Control Board

The main control board for the turbine plant is an integral part of the boiler-turbine-generator control (BTG) board described in the Account 227. The requirements of the BTG board also apply to the turbine plant main control board.

Turbine Supervisory Panel

The turbine supervisory panel contains recorders to be mounted on the BTG board or the turbine and unit miscellaneous panel. These are the shaft vibration recorder, the eccentricity, speed and position recorder, and the multipoint expansion and temperature recorder. An indicator is provided for turbine shaft vibration phase angle.

MHC Control Cabinet

The mechanical hydraulic control (MHC) cabinet contains the control and indicating equipment required for the startup, normal operation and testing of the turbine. This cabinet is normally mounted as a subpanel on the boiler-turbine-generator board. Typical control functions available are:

a. Selection of starting rates: slow, medium or fast

b. Setting of turbine speed at startup

c. Setting of load limit, and loading rate limit

d. Chest/shell warming

e. Turbine trip

f. Selection of operating mode: standby, manual or remote

g. Selection of load: increase or decrease

Typical indicating functions available are:

a. Turbine speed

b. Percentage of warming rate

c. Throttle steam pressure, first stage pressure, intermediate pressure

d. Generator output, MW

e. Acceleration, rpm/minute

f. Valve positions for main stop valves, control valves and intermediate valves.

Typical testing functions available are:

a. Thrust bearing wear detector test

b. Backup overspeed trip test

c. Electrical trip test

d. Mechanical overspeed and piston trip test

e. Testing of main stop valves, control valves and intermediate valves

Turbine Accessory Panels

Turbine accessory panels contain the instrumentation and control devices for various turbine auxiliary systems. These panels may be field mounted or control room mounted. Typical auxiliary systems are hydrogen and cooling water, turning gear motor control, and excitation control. Control panels for these systems are located in the field. There are turbine panels located in the control room, such as the turbine control panels

and turbine supervisory instrument cabinets. These control room panels contain the circuitry for the turbine control devices, turbine supervisory instruments, and turbine stress measurement, and are mounted on the main control board or other vertical panels.

Turbine Plant Heating, Ventilation and Air Conditioning Panels

These panels provide monitoring and control of the HVAC systems for buildings which house the turbine plant systems. Typical HVAC systems controlled from these panels are turbine building air handling system, intake structure ventilation system, and administration building ventilation system.

Turbine and Unit Miscellaneous Panel

The turbine plant miscellaneous panel is a vertical, walk-through control board with access doors at both ends. The panel provides the monitors and controls for auxiliary turbine systems such as turbine lube oil system and miscellaneous turbine monitoring recorders. The panel also provides the controls of the valving for the extraction steam lines, drain lines, and feedwater heater isolation. Instrumentation and controls that require constant operator attention are located in the BTG board.

Computer

The computer system described in the steam generator plant instrumentation and control section also monitors the turbine plant systems. One computer system is used for both the boiler and the turbine systems.

Turbine Plant Instrument Tubing and Fittings

The scope of supply of instrument tubing begins at the root valve and

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extends to the instrument shutoff valve. Materials and certification of instrument lines which are part of the pressure boundary are in accordance with the Instrument Society of America Standards.

ACCOUNT 24 ELECTRIC PLANT EQUIPMENT

The electric plant equipment conveys the electric power generated in the plant to the low voltage bushings of the generator step-up (GSU) transformers, controls and meters the electric energy, and protects the components through which the power flows. It is the source of power for the plant auxiliaries and the plant control, protection and surveillance systems during normal operation and emergency conditions.

Continuous ratings of equipment and interrupting ratings of protective and disconnecting devices are based on equipment load tabulations, fault studies and voltage regulation studies. Equipment continuous current ratings are based on the maximum continuous load plus the largest spare auxiliary, and the effects of diversity. Short time intermittent loads are not included.

The electric plant design features are as follows:

a. The plant auxiliary distribution system design is based on a source voltage variation of ±5 percent.

b. The main generator, the three single phase generator step-up (GSU) transformers and the four three phase unit auxiliary transformers (UAT) are interconnected with isolated phase bus. (Note: The GSU transformers, the connections to the switchyard and the switchyard equipment and materials are not included in the equipment list or base cost estimate for this study. However, provisions have been madein the plant design for location of the GSU transformers and routing of the connection to the switchyard. The GSU transformers and switchyard are shown on the drawings for clarity and completeness).

c. Four unit auxiliary transformers (UAT), are connected to the generator main leads. Two are two winding transformers rated at 25.5 kV to 13.8 kV and two are three winding transformers rated at 25.5 kV to 4.16 - 4.16 kV.

d. Two reserve auxiliary transformers (RAT), are connected to an offsite transmission system. One is a two winding transformer rated at 230 kV to 13.8 kV and the other is a three winding transformer rated at 230 kV to 4.16 - 4.16 kV.

e. The medium voltage a-c distribution system is nominally 13.8 kV and 4.16 kV. Two separate and independent buses are provided for each voltage level. In addition, one 4.16 kV separate and independent bus is provided for the coal handling system and one for the SO_2 removal system.

f. The low voltage a-c distribution systems are a nominal 480 volts. Twenty-three buses are provided for the plant process systems, ten buses for the precipitators and ten buses for the coal handling and SO_2 removal systems.

g. Two separate and independent 120 volt nominal, uninterruptible power supplies fed from the 480 volt buses are provided. One supplies power to instrumentation and control and the other to the plant computer.

h. The auxiliary d-c distribution and supply system is nominally 125/250 volts, with a center-tapped battery system. One center-tapped station battery and distribution system is provided.

i. One 125 volt battery charger is provided for each of the two 125 volt sections of the 125/250 volt center-tapped battery.

j. Two redundant, 100 percent, 500 kW diesel generator units are provided as the power supply for the emergency buses, and are automatically connected to their respective buses when the unit and reserve auxiliary power supplies are not available.

Motor starting voltage and frequency and allowable operational variations, at which the required starting and operating torques are developed, are as follows:

a. Continuous Operation of a-c Motors

1) Voltage: ± 10 percent of rated

2) Frequency: ± 5 percent of rated

b. Starting and Short Time (Approx. 30 seconds) Operation of a-c Motors (Voltage): 80 percent of rated

c. d-c Motors (Voltage): 210 to 280 volts

All emergency loads are furnished with a-c or d-c power from one of the following: the a-c emergency buses, the uninterruptible instrumentation and control a-c power supplies or the d-c buses.

The unit power supply for the plant electric auxiliaries is from the main generator through the unit auxiliary transformers. The reserve power supply is from the 230 kV offsite power supply via the reserve auxiliary transformers. The emergency power supply is from one of the two diesel generator units to the corresponding emergency a-c bus.

The availability design bases for the electric power system are tabulated in Table 2-5 of this section.

Table 2-6 in this section presents allowable ranges of temperature for electric equipment. Design ambient conditions for spaces housing electric equipment are based on these ranges and limits plus a minimum of 5 percent for margin.

ACCOUNT 241 Switchgear

The medium voltage metal-clad switchgear comprises two 13.8 kV buses and four 4.16 kV buses. Each bus is supplied by an independent winding of a UAT or by a shared winding of an RAT. Motors rated 2,500 hp and above are rated 13.2 kV and motors rated 250 hp to 2,250 hp are rated 4.0 kV. Transfer schemes are provided for automatically and manually transferring

each bus between the reserve power supply and the unit power supply. Overcurrent protection is provided for all circuits. Differential protection, overload protection and zero sequence overcurrent ground protection is provided for all medium voltage motor circuits.

480 volt motor control centers are provided for power distribution to motors 100 hp and below, lighting loads and miscellaneous loads such as motor-operated valves, resistance heaters, heat tracing and motor space heaters.

ACCOUNT 242 Station Service Equipment

Four unit auxiliary transformers (UAT) and two reserve auxiliary transformers (RAT) are provided to furnish power to the plant auxiliary power system. Each UAT winding is sized with sufficient margin to carry the plant auxiliary load of its connected bus under the heaviest load conditions. Each RAT winding is sized to cover either the startup load of its two connected buses or the plant auxiliary load of either one of its connected buses at the heaviest load conditions. Transformer impedances are based on limiting fault current availability to switchgear capability considering voltage regulation. Each transformer is protected with differential protection schemes and sudden internal overpressure devices.

Unit substations are provided to transform the medium distribution voltages to the low distribution voltage for low voltage loads. Motors rated 125 hp through 200 hp are connected to the unit substations. Unit substation transformer impedances are based on matching switchgear capability to fault current availability considering voltage regulation. Overcurrent

protection is provided for all circuits. Overload protection is provided for motor circuits. The unit substations for the cooling towers are fed from a loop feeder. The distribution buses for the precipitators are also fed from a loop feeder.

The battery systems comprise the plant batteries and battery chargers. The plant 125/250 volt d-c bus is supplied from a 125/250 volt center tapped battery and two 125 volt battery chargers, one for each 125 volt section of the 125/250 volt battery. During normal operation, d-c power is supplied from the battery chargers. During emergency operation, d-c power is supplied from the batteries. During startup and shutdown, d-c power is supplied from whichever source is available.

Two redundant diesel generator units are provided to furnish emergency a-c power to the emergency buses.

Each diesel generator unit is provided with automatic starting systems that are initiated when loss of offsite power occurs. Minimum voltage that can be experienced at the diesel generator terminals during motor starting is 85 percent.

Two dual input solid state inverters are provided to serve as uninterruptible power sources for miscellaneous a-c and plant instrumentation loads. The inverters are supplied with power from the a-c buses through regulating transformers or directly from the station battery.

ACCOUNT 243 Switchboards

Two a-c power distribution panels are provided to distribute a-c power from the inverters to the 120/240 volt uninterruptible loads. They are configured as one panel per inverter.

One d-c power distribution switchgear lineup is provided to distribute d-c power from the battery and its associated chargers.

Twenty feet of control benchboard is provided in the main control board lineup for control and data acquisition of the main generator and the auxiliary electric power system.

One electric system relay panel lineup is provided for protection and metering of the main generators, the generator step-up transformers and the unit and reserve auxiliary transformers. The main generator is protected by high speed differential, ground current, loss-of-field, negative sequence overcurrent, and voltage restrained overcurrent relays. The main generator, the generator step-up transformers and the unit auxiliary transformers are protected by power directional and overall differential relays. The reserve auxiliary transformers are protected by power directional and differential relays.

ACCOUNT 244 Protective Equipment

The station grounding system provides the means for maintaining an effective ground at equipment and metal structures, protecting equipment and structures from galvanic corrosion and protecting personnel from dangerous potentials. Lightning protection schemes are provided for the stack and for the boiler structure.

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ACCOUNT 245 Electrical Structures and Wiring Containers

This equipment provides mechanical protection for wire and cable routed between various equipment and buildings. The bulk of the raceways consist of cable trays of various types. Raceways are routed in accordance with the same criteria as for cable routing. Fire stops are placed in cable trays wherever they penetrate floors or firewalls, and in other areas where their installation reduces the hazard of fire propagation.

ACCOUNT 246 Power and Control Wiring

Isolated phase bus is provided to interconnect generator terminals, GSU transformer low voltage terminals and UAT high voltage terminals. This is force-cooled with redundant active components in the cooling unit.

The plant wire and cable consists of three conductor and triplexed, single conductor power cable, multi-conductor control cable, coaxial, triaxial, shielded twisted pair and multi-shielded twisted pair and shielded quad instrument wire. Materials for insulation systems (ethylene-propylene rubber insulation with chloro-sulfonated polyethylene based jacket) are selected to provide optimum system performance in the areas of physical stability, tensile strength, flexibility, aging characteristics, resistance to abrasion, ozone (where required), water absorption, heat distortion, solvent extraction, self-extinguishing and non-propagating fire characteristics and resistance to corona effects where required. Wire and cable is separated by voltage and energy level to reduce heating and fault problems.

Wire and cable routing is governed by the following:

a. Requirements for the power supply, control network and/or instrumentation signals.

b. Requirements for loading.

c. Requirements for physical separation of different voltage and energy level circuits.

d. Avoidance of high hazard areas (e.g., areas subject to high ambient temperatures and fires).

e. Simplicity of layout.

f. Ease of installation.

g. Ease of access.

TABLE 2-5

AVAILABILITY RELATED DESIGN BASES FOR THE ELECTRIC POWER SYSTEM

1. Availability Oriented Design:

   a. Considers interactive effects of plant operating requirements and natural phenomena to the extent that power required by the plant auxiliaries is available to fulfill the plant operating requirements.

   b. Includes provisions to minimize fire or fire damage and to detect, confine and promptly extinguish any fire which might occur.

   c. Includes provisions to allow periodic maintenance of systems and equipment.

2. Power sources, and power supplies, have sufficient backup and distribution systems have sufficient independence so that reduction of plant output will be prevented or minimized for loss of any source or bus.

TABLE 2-6

DESIGN AMBIENT CONDITIONS FOR ELECTRIC EQUIPMENT

Type of Equipment	Limit	Ambient Temperature Limit (Degrees F) Equipment	Equipment Space
Battery	Max	90	N/A
Battery	Min	77	80
Cable	Max	104	100
Cable	Min	N/A	N/A
All Other**	Max	104	100
All Other**	Min	40*	50*

* Or above dewpoint temperature, whichever is higher

** Sensitive relays and other electrical devices are placed in controlled environment spaces such as the control room, computer room, or battery room, as applicable.

ACCOUNT 25 MISCELLANEOUS PLANT EQUIPMENT

Miscellaneous plant equipment includes systems for maintenance or provisions for plant equipment support requirements. Included are cranes and hoists, air, water and steam services, auxiliary boiler and associated equipment, and the plant fuel oil system.

ACCOUNT 251 Transportation and Lifting Equipment

Cranes and Hoists

A turbine-generator overhead traveling bridge crane located in the turbine hall has a main hoist capacity of 100 ton, and an auxiliary hoist of 30 ton capacity with a bridge span of 144 ft.

There are ten hoists provided, one of 10 ton capacity and nine of five ton capacity, which are capable of hoisting 30 ft in height.

ACCOUNT 252 Air, Water and Steam Service System

Compressed Air System

The plant compressed air system supplies service and instrument air for the entire plant. The compressed air system consists of three 50 percent (350 cfm each) reciprocating compressors, complete with intake filters, aftercoolers, air receivers and two 100 percent air dryers. Each compressor has an inlet silencer and filter.

Compressed air is supplied to the air receivers at a maximum of 150 psig and a minimum of 100 psig.

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Each compressor maintains air receiver tank pressure within desired operating range. A local control switch is provided to manually start and stop each compressor. To provide for an additional source of service air, an interconnection is made with the soot blower air compressor system.

Service Water System

The service water system supplies cooling water from the main condenser heat rejection (MCHR) system to the turbine building closed cooling water system. The system has three 50 percent capacity (9,000 gpm each), vertical wet pit service water pumps which are located in the circulating water pumphouse. Makeup water to the MCHR system is discharged near the suction of these pumps to lower the average temperature of the service water.

Fire Protection System

The fire protection system is designed to minimize the probability and effect of the occurrence of a fire. The system has three vertical wet pit fire pumps (1500 gpm each), two motor driven and one diesel driven; and one 50 gpm vertical wet pit jockey pump. The pumps are located in the fire pump house adjacent to and common with the makeup water pump house.

The jockey pump normally operates to maintain system pressure. One of the motor driven pumps is used in the event that the jockey pump cannot maintain system pressure. The second motor driven pump is started if the system pressure continues to drop. If system pressure is still falling the diesel driven pump is started. A booster pump is provided in the boiler house to supply water to the top elevations.

Potable Water System

Potable water is required for drinking, sanitary, and washing purposes at the plant. This water is supplied by the local municipal water supply system.

Auxiliary Boiler System

This system consists of two auxiliary oil fired boilers located in the auxiliary boiler room. The function of the auxiliary boiler system is to provide auxiliary steam during shutdown periods and during startup. The system flow diagram for the auxiliary steam is shown on Dwg. 6509.001-HSC-14.

Two 100 percent capacity auxiliary boilers are provided. These boilers are shop assembled, pressurized type, complete with forced draft fans, including ducting between fans, windboxes and breaching to the stack. These "packaged" boilers are equipped with automatic control of feedwater and combustion, including all protective devices.

Each auxiliary boiler is sized to provide the quantity of steam required for a cold start of the main unit, under the worst expected conditions. The estimated flow is 150,000 lb/hr each. The auxiliary boilers are designed to produce steam at 165 psig and 600 F.

The auxiliary boilers are manually started. They are capable of being normally started either locally or from the control room. Each phase of the startup procedure is separately initiated. The auxiliary boiler is

controlled to shut down when the steam-flow falls below the minimum flow capability of the boiler during plant startup.

Fuel oil atomization utilizes steam from the auxiliary steam system. Compressed air and/or mechanical atomizing burners are provided for startup when steam is not available. Each boiler discharges exhaust gases through separate flues. Forced draft flow control is provided by inlet dampers. Boiler blowdown in accomplished manually without heat recovery equipment.

ACCOUNT 253 Communications System

Local Communications System

The communication system consists of an intercommunication and paging system, a telephone system, and a sound-powered telephone system. These systems are designed to provide communications between various parts of the plant for all conditions of operation.

ACCOUNT 254 Furnishings and Fixtures

Instrument Shop Apparatus

Instrument shop apparatus are provided for testing, calibration, repairing, and routine maintenance of the plant instrumentation and control devices.

A typical list of instrument shop apparatus is provided below:

a. Dead weight tester
b. Pneumatic calibrator equipment
c. Decade resistance box
d. Digital volt meter
e. Variable voltage and current sources

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f. Potentiometer

g. Oscilloscope

h. Electronic counter

i. Stop watch

j. Resistance and impedance bridges

k. Megger

l. Pressure gauges

m. Meters: d-c (MA, Amp, Volts), a-c (Amp, Volts)

Meteorological Monitoring System

The meteorological monitoring system provides all equipment essential for the monitoring and recording of the atmospheric parameters of the plant prior to, during construction, and over the life of the plant. The equipment for the system consists of a meteorological tower and various meteorological monitoring instruments.

Water Quality Monitoring System

The water quality monitoring system monitors the rates and concentrations of contaminants in the plant effluent discharge. Typical variables measured are chlorine, suspended solids, pH, oil and grease. Sampling techniques are established to yield representative batches or flows of the effluent discharge. Analytical data are recorded in proper form for immediate, as well as future interpretation and use.

Thermal Effluent Monitoring System

This system monitors the temperature of the effluent discharged from the plant. The system provides basic data to evaluate the thermal effect of the plant effluent.

Air Quality Monitoring

Air quality monitoring is performed by the stack gas monitoring system which provides for the measurement and recording of pollutants related with the stack gas. Measurements are made of particulate load, and of sulfur dioxide and nitrogen oxide concentrations. Concentration measurements are corrected for diluting air by measuring oxygen concentration in the stack gas.

Emission standards for particulates, sulfur dioxide and nitrogen oxide are in accordance with CFR 40, Protection of Environment, Part 60, Subpart D, and other applicable local and state regulations.

The detecting instruments are of the in-situ type, i.e., with sensing devices located in the stack. Withdrawal and conditioning of stack gas samples are not required. Sulfur dioxide and nitrogen oxide is reported in terms of concentration, i.e., μ g/m^3 or ppm.

Particulate emission is reported in mass flow units, i.e., lbs/hr by combining measurements of particulate concentration and the mass flow rate of stack gas. Emission rate is integrated and logged daily. Sampling ports are provided for comformance testing.

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ACCOUNT 255 Waste Water Treatment Equipment

The wastewater treatment equipment is designed to treat all plant wastewater. This includes water runoff from coal piles, demineralizers regenerant effluents, metal cleaning wastes, and floor drain discharges.

Two two-million gallon holding tanks are provided for retention and treatment of metal cleaning wastes and coal pile runoff. Lime is fed to the tanks to raise the wastewater pH. Iron is effectively precipitated at pHs greater than 8.0. After allowing for the sludge to settle, sludge is withdrawn from the tanks and dewatered by two vacuum filters. Supernatant from the holding tanks is pumped to a 5,000 gallon pH adjustment tank. The wastewater subsequently passes through one of two two-million gallon earthen settling basins before discharge.

Regenerants from the demineralzers are treated in a 40,000 gallon neutralization tank. Acid and caustic feed systems are provided for neutralization. The treated wastewater is passed through the earthen settling basins prior to discharge.

Floor drains are collected in several sumps located in the plant, and pumped to a central API separator for oil and grease and suspended solids removal. Effluent from the separator is passed through the earthen settling basins prior to discharge.

ACCOUNT 26 MAIN CONDENSER HEAT REJECTION SYSTEM

The main heat rejection system is a circulating water system consisting of structures and mechanical equipment which serve the main condensers and service water system to reject the plant heat through two mechanical draft wet cooling towers. Makeup water extracted from the North River initially passes through traveling screens. The raw water is then clarified, and chemicals are injected for pH and fouling control. Fouling within the towers is controlled by continuous blowdown to the river in order to maintain the concentration at less than ten times that of the makeup water.

ACCOUNT 261 Structures

Makeup Water Intake and Discharge Structures

The makeup water intake and discharge structures are located along the riverbank west of the main plant structures. The intake basin is 18 ft wide by 32 ft long by 32 ft deep and is below plant grade. The volume of the basin is approximately 18,400 cu ft. The north wall of the structure has a 5 ft wide by 9 ft long and 32 ft high extension which houses the fire pumps. The structure is reinforced concrete with foundation mat bearing on rock. There are two intake chambers and two makeup water pumps supported from the reinforced concrete basin roof slab. The intakes are protected by bar racks, trash rakes, stop logs, traveling screens and a trash pit. Fish escapes are also provided. A channel is excavated in the river bottom from the ship channel to the intake structure to ensure an adequate supply of water during low tide conditions. Interior walls are reinforced and masonry concrete. A battery and switchgear room are

located at grade adjacent to the basin and supported on spread footings. The floor, roof, exterior walls and interior walls are reinforced concrete. The blowdown discharge is provided by concrete pipes running between the circulating water pumps discharge and the river.

Circulating Water Pump House

The circulating water pump house is a reinforced concrete structure located between the turbine building and the cooling towers and supported on a three ft thick reinforced concrete foundation. The superstructure has common walls with the turbine building and administration building. The circulating water pump basin foundation is supported on rock 28 ft below grade sloping upwards to the cooling tower water basins four ft below grade. The circulating water basin is approximately 60 ft wide, 70 ft long and 27 ft high to the operating floor. Attached to the west end of the four-bay circulating water pump basin is a service water pump basin founded 12 ft below grade. The basin is 12 ft wide, 17 ft long and 16 ft high to the operating floor. The foundation also slopes upwards to the cooling tower water basins. The approximate volume of the two basins is 120,000 cu ft.

The exterior walls, base mat, operating floor slab and interior columns supporting the operating floor are reinforced concrete. Portions of the operating floor are grating. The intake areas are protected by panel screens and stop logs. A 40 ft wide, 70 ft long and 13 ft high equipment room is located on the reinforced concrete portion of the operating slab. The room houses the circulating water pumps and electrical equipment.

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The equipment room is masonry construction with a built-up roof on metal deck.

Makeup Water Pretreatment Building

The makeup water pretreatment building, located west of the main plant structures, is a two story steel framed structure 60 ft wide, 115 ft long and 30 ft high. The building volume is approximately 207,000 cu ft. It is supported on reinforced concrete spread footings on rock. The reinforced concrete ground floor is located six ft below grade. The intermediate floor is reinforced concrete supported on metal deck on steel framing. The roof is concrete channel plank covered with a roofing membrane. The exterior walls are insulated metal siding and the interior walls are concrete block.

The building houses the sand filters, carbon filters, chemical feeds, sludge dewatering equipment and all other equipment and accessories required for a complete water pretreatment system.

The building has a heating and ventilation system which consists of four 25,000 cfm roof ventilators for cooling and four electric unit heaters for heating.

ACCOUNT 262 Mechanical Equipment

Circulating Water Pumps

There are four 25 percent capacity circulating water pumps, of the mixed flow vertical type. Each pump is designed for a flow rate of 111,000 gpm with a total dynamic head of 105 ft. Circulating water pump motors are

3,000 hp each, operating at a synchronous speed of 400 rpm. The pumps are located within a pump house well where the water flows from the individual cooling tower basins by gravity. The pumps discharge the water to the main condensers, where heat is absorbed. The water is then returned to the distribution system of the towers. Water flow from each individual cooling tower is controlled simply by an overflow from the tower basin.

Cooling Towers

There are two main mechanical draft wet cooling towers, each sized for one half of the requirements. Each tower is designed to cool 230,000 gpm of water from 118 F to 92 F when operating at a wet bulb temperature of 74 F. Each tower employs a reinforced concrete-filled structure combined with components for water distribution, fill splash service, support system, drift eliminators, louvers and fan deck. The fan deck provides a stable base for the 13 fan cylinders and mechanical equipment. Each fan is 33 ft in diameter and operates in an 18 ft high, glass reinforced polyester, velocity recovery fan stack. The hot water distribution system includes a circular flume distribution basin and metering orifice which uniformly distributes the hot water over the fill. The distribution basin is divided into thirds by means of concrete dividers. This design allows one third of the tower to be removed from service with the full flow distributed over the remainder of the tower.

Main Cooling Tower Make-up and Blowdown Systems

Two 100 percent mixed flow vertical type pumps are provided for the makeup system. Each pump is rated at 13,000 gpm developing a total dynamic head

of 35 ft and is driven by a 150 hp motor. The pumps are located at the intake structure adjacent to the river. Two six ft wide by 31 ft high traveling screens are provided, each suitable for 50 percent of the flow requirements with an approach velocity of 1/2 ft per second. Serving the traveling screens are two 100 percent capacity screen wash pumps with a flow rate of 110 gpm and a total dynamic head of 100 ft to wash the screens when they require cleaning. Two screen speeds are provided, a high and low speed, for removal of materials. Vertical trash racks with automatic rake are provided ahead of the traveling screens to remove debris.

Makeup Water Pretreatment Plant

The source of makeup water is from the North River. The purpose of this system is to precondition the raw river water which is used principally as makeup to the circulating water system. However, a small portion of the clarified water is used as makeup to the demineralizer.

The primary objective is to remove debris and suspended solids characteristically present in river water. The amount of solids and debris contained in the raw influent is subject to wide fluctuations due to seasonal changes and natural river environment.

Initially, the influent water is clarified within a rectangular vessel. Various chemicals are used to achieve optimum settling and removal of solid particulates. The clarified effluent is then used directly as makeup to the circulating water system.

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Chlorination at approximately 8,COO lb a day is included in the clarification step to oxidize naturally occurring organic matter. Chlorination is also applied directly to the recirculating cooling water on an intermittent basis to minimize biological fouling within the condenser and throughout the piping system. Sulfuric acid is also used for pH control to minimize formation of scale on the heat exchanger surfaces.

Accordingly, any serious operation and/or maintenance problems resulting from plugging, clogging, or development of bacteriological growths throughout the plant piping and cooling systems are practically eliminated. The water used as makeup to the demineralizer is first filtered and dechlorinated. In addition, the clarified water is used for the initial filling of the fire protection system and for general use throughout the power plant.

2.4 CONSTRUCTION SUPPORT ACTIVITIES

The description associated with accounts 91 through 93 addresses the construction support activities. This portion of the cost estimate (Volume 1, Section 3) is called the "indirect cost".

ACCOUNT 91 CONSTRUCTION SERVICES

The services, functions, expenses, taxes and other indirect costs are contained in the listed code of accounts.

ACCOUNT 911 Temporary Construction Facilities

The costs for temporary construction and facilities are costs of all temporary structures, janitorial services and maintenance of temporary facilities, guards and security, roads, parking lots, laydown areas, and temporary electrical and piping, temporary heat, air, steam and water systems, general cleanup, etc.

ACCOUNT 912 Construction Tools and Equipment

The costs for construction tools and equipment are the cost of rental and/or purchase of construction equipment, small tools, consumables (fuel and lubricants) and maintenance of construction equipment.

ACCOUNT 913 Payroll Insurance and Taxes

These include insurance and taxes related to craft labor such as Social Security taxes and state unemployment taxes at 9.3 percent of the cost of total craft labor. Workmen's Compensation Insurance and Public Liability and Property Damage Insurance are included at 4.9 percent of the cost of total craft labor.

ACCOUNT 914 Permits Insurance and Local Taxes

This account includes builders all-risk insurance, local fees and permits, state and local taxes and liability insurance.

Builders all-risk insurance is an allowance based upon in-house experience for the cost of their item during the project construction phase.

ACCOUNT 92 HOME OFFICE ENGINEERING AND SERVICES

ACCOUNT 921 Home Office Services

These services are associated with home office engineering and design, procurement and expediting activities, estimating and cost control, engineering planning and scheduling, home office reproduction services as well as expenses associated with performance of the above functions (i.e., telephone, postage, computer use, travel, etc.). These costs include salaries of personnel, direct payroll-related costs (DPC), overhead loading, expenses and fee for these services consistent with contractual terms.

ACCOUNT 922 Home Office Quality Assurance

This includes the services of home office quality assurance engineers and staff personnel engaged in work on the project. Services include reviews, audits, and vendor surveillance as required for design and construction of the facility. Costs included are salaries, DPC, overhead loading and expenses (i.e., travel) of these individuals. Manhours required for these services and their costs are based upon UE&C experience in this area.

ACCOUNT 923 Home Office - Construction Management

These services include those of the construction manager and his assistants. Services of construction planning and scheduling, construction methods, labor relations, safety and security personnel are utilized as required. Costs include salaries, DPC, overhead loading, and expenses.

ACCOUNT 93 FIELD OFFICE ENGINEERING AND SERVICE

ACCOUNT 931 Field Office Expenses

These expenses include costs associated with purchase and/or rental of furniture and equipment (including reproduction), communication charges, postage, stationery, other office supplies, first aid and medical expenses.

ACCOUNT 932 Field Job Supervision

This management function includes the resident construction superintendent and his assistants, craft labor supervisors, field accounting, payroll and administrative personnel, field construction schedulers, field purchasing personnel, warehousemen, survey parties, stenographers and clerical personnel. Costs include salaries, DPC, overhead loading, relocation costs of key personnel, and fee. The estimates assume that size of supervisory forces is a function of total direct employed craft labor. The supervision requirement was calculated to be the number of manhours equal to about 10 percent of 85 percent of total craft labor.

ACCOUNT 933 Field - Quality Assurance

These services include those of personnel located at the job site engaged in inspection, required documentation of equipment and inspection of construction activities. Costs included are salaries, DPC, and overhead loading.

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ACCOUNT 934 Test and Startup Engineering

These services are associated with preparation of startup and plant operation manuals and test procedures, direction and supervision of all testing of equipment and systems as the plant nears completion and direction of startup of the facility. Costs include salaries, DPC, overhead loading, and miscellaneous related expenses. Costs of any craft labor required for startup and testing activities are included in the appropriate Direct Cost line items.

Indirect accounts 913, 921, 922, 923, 932, 933 and 934 are included under factory costs in the cost estimate to differentiate them from site related craft labor and material costs.

SECTION 3

DETAILED COST ESTIMATE

3

SECTION 3

DETAILED COST ESTIMATE

3.1 INTRODUCTION

This section contains the details of the total base construction cost estimate for the high sulfur coal (HSC) plant described in Section 2. The criteria and plant description used to govern the development of the cost estimate are specified in Sections 1 and 2. The cost estimate reflects the reference plant design at the "Middletown" hypothetical site described in Section 6 entitled, "Site Description".

The total base construction cost for the 1232 MWe HSC is $465,498,393 or $378 kW based on July 1, 1976 prices.

The detailed cost estimate presented in this section is summarized at the two and three digit level of accounting detail in Tables 1-1 and 1-2 respectively. The cost estimate presented here is a total base construction cost that does not include contingency, interest during construction or escalation.

The total base construction cost is organized in accordance with the expanded AEC Code of Accounts (USAEC Report NUS-531). Therefore, it corresponds in structure to the Plant Description (Section 2) and the equipment list (Section 5). This is done for the reader's convenience in relating the material presented in the different sections of the report.

The total base construction cost consists of "direct" and "indirect" costs. The "direct cost" (Accounts 20 through 26) encompasses the cost of the power plant structures and systems. The "indirect cost" (Accounts 91 through 93) consists of the costs of the construction support activities.

A breakdown of the steam generation (boiler) equipment scope is shown in account number 220A, and a lump sum cost is shown in account 220A.1. The installation costs for the steam generator boiler equipment are distributed throughout the three digit level Accounts.

It should be noted that certain factory and site material quantities in the cost estimate are listed in two successive accounts rather than in one account. This situation occurs because the computer program is designed to handle material quantities that exceed six digits in this manner.

3.2 COST ESTIMATE EXCLUSIONS

The list of items excluded from the cost estimate is shown in Table 3-1. Generally, these items are sensitive to the particular policies and preferences of the individual utility and to the specific plant and site being considered.

A list of abbreviations is provided in Table 3-2 entitled, "Glossary of Significant Abbreviations".

TABLE 3-1

1232 MWe HSC COST ESTIMATE EXCLUSIONS

1. Main Transformer, Switchyard and Transmission Facility Costs
2. Owner's Costs, Including Consultants, Site Selection, etc.
3. Waste Disposal Costs
4. Fees and Permits - Federal, State, Local
5. State and Local Taxes
6. Spare Parts
7. Interest During Construction
8. Initial Coal Supply
9. Escalation
10. Contingency

TABLE 3-2

GLOSSARY OF SIGNIFICANT ABBREVIATIONS

AC	Acre
A/C	Air Conditioning
a-c	Alternating Current
AUX	Auxiliary
BD	Board
BFP	Boiler Feed Pump
Btu	British Thermal Unit
BU	Built Up
CI	Cast Iron
CLG	Cooling
CLNG	Cleaning
CPMNT	Component
CS	Carbon Steel
CU	Copper
CY	Cubic Yards
d-c	Direct Current
DETER	Detergent
DISPL	Displacement
DV	Division
DRNS	Drains
EA	Each
EL	Elevation
EMG	Emergency
EQ	Equipment
E/P	Electro-Pneumatic
EPA	Environ. Protection Agency
EVAC	Evacuating
EVAP	Evaporative
EXH	Exhaust
FDTN	Foundation
FGD	Flue Gas Desulfurization
FL	Fuel
FT	Feet
FWH	Feed Water Heater
FX	Fixtures
GALV	Galvanized
GEN	Generator
gph	Gallons Per Hour
gpm	Gallons Per Minute
GR	Gear
GSKT	Gasket
GSU	Generator Step Up
Hg	Mercury
HI	High
HOP	Hopper
HP	High Pressure
HP	Horse Power
HSC	High Sulfur Coal
HVAC	Heating Ventilation and Air Conditioning
HW	Hot Water
HX	Heat Exchanger
Hz	Hertz
IC	Instrument Control
I&C	Instrumentation & Control
IN	Inches
INJ	Injection
INS	Insurance
INSUL	Insulation
Kg	Kilo Gram
kV	Kilo Volt
kW	Kilo Watt
LB	Pounds
LD	Load
LF	Linear Feet
LO	Low
LP	Low Pressure
LSB	Last Stage Blades
LS/LT	Lump Sum/Lot
MCC	Master Control Center
MCR	Main Control Room
MCR	Maximum Continuous Rating
ME	Mechanical Equipment
MER	Mechanical Equipment Room
MISC	Miscellaneous
MN	Main
MON	Monitor
MTR	Motor
MU	Makeup
MWe	Megawatt Electric
MWt	Megawatt Thermal
OA	Outside Air
OP	Operating

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TABLE 3-2 (Continued)

PCT	Percent
P&M	Pump and Motor
PMP	Pump
POS	Positive
P	Pounds per Square Inch Absolute
Psig	Pounds per Square Inch Gravity
PURIF	Purification
PVC	Poly Vinyl Chloride
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
RC	Recycle
RECIRC	Recirculation
REGEN	Regenerating
RES	Restraint
RM	Room
rpm	Revolutions Per Minute
SCFM	Standard Cubic Feet Per Minute
SEQ	Sequence
SF	Square Feet
SS	Stainless Steel
STA	Storage
STL	Steel
SYS	System(s)
SW	Switch
TB	Turbine Building
T/C	Thermocouple
T-G	Turbine-Generator
TK	Tank
TPH	Tons Per Hour
TN	Tons
UAT	Unit Auxiliary Transformers
VAC	Vacuum
V	Volt
VWO	Valves Wide Open
WST	Waste
WTR	Water
XCHGR	Exchanger
XFER	Transfer
XFMR	Transformer
XPORT	Transport

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
2 .	TOTAL DIRECT COSTS							
20 .	LAND AND LAND RIGHTS			500 AC			2,000,000	
21 .	STRUCTURES + IMPROVEMENTS							
211.	YARDWORK							
211.1	GENERAL YARDWORK							
211.11	GENERAL CUT + FILL							
211.111	CUT + FILL BEYOND OPEN CUT			130000 CY	5200 MH	60,758	78,000	
211.112	CLEARING + GRUBBING			200 AC	12000 MH	118,256	100,000	
211.113	FINE GRADING			39000 SY	320 MH	4,523	9,750	
211.114	LANDSCAPING			8 AC	4240 MH	41,795	80,000	
	211.11 GENERAL CUT + FILL				21830 MH	225,392	267,750	493,142
211.12	ROADS, WALKS+PARKING AREA							
211.121	SUBGRADE PREPARATION			40000 SY	800 MH	8,139	40,000	
211.122	ON-SITE ROADS+PARKING AREA							
211.1221	ROADS - ASPHALT			65000 SY	16251 MH	166,352	487,500	
211.1222	PARKING AREAS - ASPHALT			10000 SY	2500 MH	25,591	75,000	
211.1223	CURBS - CONCRETE							
	211.122 ON-SITE ROADS+PARKING AREA				18751 MH	191,943	562,500	754,443
211.123	WALKS - CONCRETE			3000 LF	600 MH	6,443	4,200	
	211.12 ROADS, WALKS+PARKING AREA				20151 MH	206,575	606,700	813,275

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
211.14	FENCING + GATES							
211.141	PERMANENT FENCE			17000 LF	5100 MH	47,532	110,500	
211.142	GATE HOUSE			1 LS	2800 MH	34,226	12,000	
	211.14 FENCING + GATES				7900 MH	81,758	122,500	204,258
211.15	SANITARY SEWER FACILITY							
211.151	SEWAGE TREATMENT FACILITY	1 LT	115,500	1 LT	1541 MH	18,965	1,994	
211.152	SANITARY PIPING							
211.1521	2 IN + SMALLER							
211.1522	2.5 IN + LARGER							
211.15221	CI BELL + SPIGOT/RNS			5000 LF	2352 MH	30,139	30,000	
	211.1522 2.5 IN + LARGER				2352 MH	30,139	30,000	60,139
	211.152 SANITARY PIPING				2352 MH	30,139	30,000	60,139
211.153	OIL SEPERATORS							
	211.15 SANITARY SEWER FACILITY		115,500		3893 MH	50,074	31,994	197,566
211.16	YARD DRAINAGE STORM SEWERS							
211.161	DRAINS			78 EA	7800 MH	99,965	78,000	
211.162	PIPING							
211.1621	2 IN + SMALLER							
211.1622	2.5 IN + LARGER							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
211.16221	GALVANIZED/NNS							
	211.1622 2.5 IN + LARGER							
	211.162 PIPING							
	211.16 YARD DRAINAGE STORM SEWERS				7800 MH	99,965	78,000	177,965
211.17	ROADWAY + YARD LIGHTING			75 EA	11250 MH	136,325	112,500	
211.19	SETTLING BASINS							
211.191	EARTH EXCAVATION							
211.192	ROCK EXCAVATION							
211.193	BACKFILL							
211.194	PUMPING							
211.195	FORMWORK							
211.196	REINFORCING STEEL							
211.197	CONCRETE							
211.198	SHEET PILING							
211.199	RIP-RAP(12 IN. THICK)							
	211.19 SETTLING BASINS							
	211.1 GENERAL YARDWORK	115,500			72824 MH	802,087	1,219,444	2,137,031
211.4	RAILROADS							
211.41	CUT + FILL			33000 CY	1320 MH	15,431	19,800	
211.42	GRADING			72200 SY	722 MH	8,373	18,050	
211.43	TRACK(BALLAST,TIES,RAIL)			50000 LF	125000 MH	1,232,150	1,300,000	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
211.45	SWITCHES + BUMPERS							
211.451	TURNOUTS(NO. 8)			11 EA	2200 MH	21,666	33,000	
211.452	BUMPERS			2 EA	100 MH	986	2,000	
	211.45 SWITCHES + BUMPERS				2300 MH	22,672	35,000	57,672
211.46	RIP RAP(24 IN. THICK)							
	211.4 RAILROADS				129342 MH	1,276,626	1,372,850	2,651,476
211.7	STRUCTURE ASSOCIATED YDWK.							
211.71	CUT + FILL							
211.711	OPEN CUT							
211.7111	DEWATERING			1 LT	1100 MH	10,252	2,500	
211.7112	EARTH EXCAVATION			36500 CY	3651 MH	42,679	36,500	
211.7113	ROCK EXCAVATION			1000 CY	800 MH	8,563	4,000	
	211.711 OPEN CUT				5551 MH	61,499	43,000	104,499
211.712	FILL + BKFILL(PLACE/COMP)							
211.7122	EARTH FILL			18250 CY	5475 MH	54,468	18,250	
211.7123	SAND FILL			9125 CY	9125 MH	90,812	54,750	
211.7124	CONCRETE FILL							
	211.712 FILL + BKFILL(PLACE/COMP)				14600 MH	145,300	73,000	218,300
	211.71 CUT + FILL				20151 MH	206,799	116,000	322,799
	211.7 STRUCTURE ASSOCIATED YDWK.				20151 MH	206,799	116,000	322,799

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	211. YARDWORK		115,500		222317 MH	2,287,512	2,708,294	5,111,306
212.	STEAM GENERATOR BUILDING							
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							
	212.11 EXCAVATION WORK							
212.13	SUBSTRUCTURE CONCRETE							
212.131	FORMWORK			70000 SF	28000 MH	309,168	70,000	
212.132	REINFORCING STEEL			600 TN	15000 MH	193,700	225,000	
212.133	CONCRETE			13200 CY	9900 MH	101,099	422,400	
212.134	EMBEDDED STEEL			60 TN	7500 MH	90,201	84,000	
212.135	FLOOR FINISH			60000 SF	600 MH	6,127	600	
212.139	WELDED WIRE FABRIC			60000 SF	1200 MH	15,496	7,200	
	212.13 SUBSTRUCTURE CONCRETE				62200 MH	715,811	809,200	1,525,011
212.14	SUPERSTRUCTURE							
212.141	CONCRETE WORK							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
212.1411	FORMWORK			60000 SF	3600 MH	39,753	54,000	
212.1412	REINFORCING STEEL			240 TN	6400 MH	108,472	90,000	
212.1413	CONCRETE			2300 CY	4025 MH	41,104	73,600	
212.1415	FLOOR FINISH			60000 SF	600 MH	6,127	600	
212.1416	CONSTRUCTION JOINTS							
	212.141 CONCRETE WORK				10625 MH	195,456	218,200	413,656
212.142	STRUCTURAL + MISC. STEEL							
212.1421	STRUCTURAL STEEL			16300 TN	244500 MH	3,162,803	11,817,500	
212.1422	MISC. FRAMES,ETC.			325 TN	10250 MH	211,536	357,500	
212.1423	FLOOR GRATING(GALVANIZED)			100000 SF	17000 MH	221,299	300,000	
212.1424	STAIR TREADS			1100 EA	880 MH	11,454	38,500	
212.1425	HANDRAIL			6400 LF	3840 MH	49,987	64,000	
	212.142 STRUCTURAL + MISC. STEEL				282470 MH	3,677,079	12,577,500	16,254,579
212.143	EXTERIOR WALLS							
212.1432	MASONRY WALLS							
212.1433	METAL INSULATED SIDING			217000 SF	43400 MH	564,964	868,000	
	212.143 EXTERIOR WALLS				43400 MH	564,964	868,000	1,432,964
212.144	ROOFING + FLASHING							
212.1441	METAL ROOF DECK			60000 SF	3600 MH	46,863	60,000	
212.1443	CONCRETE FILL			750 CY	1500 MH	15,318	24,000	
212.1444	WELDED WIRE FABRIC			60000 SF	1200 MH	15,496	7,200	
212.1445	B.U. ROOFING, NO INSULATIN			60000 SF	3000 MH	40,440	60,000	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	212.144 ROOFING + FLASHING				9300 MH	118,117	151,200	269,317
212.146	INTERIOR WALLS + PARTITION							
212.1462	MASONRY WALLS			13500 SF	3375 MH	38,509	37,800	
212.1463	METAL PARTITIONS			20000 SF	1200 MH	13,920	30,000	
	212.146 INTERIOR WALLS + PARTITION				4575 MH	52,429	67,800	120,229
212.147	DOORS + WINDOWS							
212.1471	ROLLING STEEL DOORS			800 SF	400 MH	5,207	11,200	
212.1472	PERSONNEL DOORS			400 SF	280 MH	3,243	4,800	
212.1475	SASH + GLAZING			1200 SF	480 MH	5,563	14,400	
	212.147 DOORS + WINDOWS				1160 MH	14,023	30,400	44,423
212.148	SPECIAL FINISHES							
212.1481	VINYL TILE FLOORS			200 S.	16 MH	186	300	
212.1482	COMPUTER FLOORS(RAISED)							
212.1483	CERAMIC TILE FLOOR + WALLS							
212.1484	ACOUSTICAL CEILING			200 SF	20 MH	232	100	
	212.148 SPECIAL FINISHES				36 MH	418	400	818
212.149	PAINTING							
212.1492	STEELWORK			16300 TN	81500 MH	779,955	97,800	
212.1493	HANDRAILS			6400 LF	128 MH	1,225	640	
212.1494	DOORS + WALLS			27000 SF	540 MH	5,168	2,700	
	212.149 PAINTING				82168 MH	786,348	101,140	887,488

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	212.14 SUPERSTRUCTURE				439734 MH	5,408,834	14,014,640	19,423,474
	212.1 BUILDING STRUCTURE				501934 MH	6,124,645	14,823,840	20,948,485
212.2	BUILDING SERVICES							
212.21	PLUMBING + DRAINS							
212.211	ROOF DRAINS + PIPING	30 EA	30,000	1 LT	5300 MH	42,770	4,277	
212.2111	DRAINS							
212.2115	PIPING							
	212.211 ROOF DRAINS + PIPING		30,000		5300 MH	42,770	4,277	77,047
212.212	FLOOR DRAINS + PIPING	50 EA	50,000	1 LT	5500 MH	71,232	7,128	
212.2121	DRAINS							
212.2125	PIPING							
	212.212 FLOOR DRAINS + PIPING		50,000		5500 MH	71,262	7,126	128,410
212.213	OIL SEPERATOR	1 EA	1,700	1 LT	100 MH	1,296	130	
	212.21 PLUMBING + DRAINS		81,700		8900 MH	115,343	11,535	208,583
212.22	HEATING,VENT + AIR COND	1 LT	367,907	1 LT	20559 MH	265,971	39,896	
212.221	BOILER ROOM							
212.2211	ROTATING MACHINERY							
212.22111	BOILER RM ROOF VENT+MOTOR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
212.221111	BOILER RM ROOF VENTILATOR							
212.221112	BOILER RM ROOF VENT MOTOR							
	212.22111 BOILER RM ROOF VENT+MOTOR							
	212.2211 ROTATING MACHINERY							
212.2212	HEAT TRANSFER EQUIPMENT							
212.22121	BOILER ROOM UNIT HEATERS							
	212.2212 HEAT TRANSFER EQUIPMENT							
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							
	212.22141 BOILER RM VAC CLEAN SYS+MT							
212.22142	BUNKER VENTILATION							
212.221421	CYCLONE DUST COLLECTOR							
	212.22142 BUNKER VENTILATION							
	212.2214 PURIFICATION + FILT EQUIP							
212.2215	EXHAUST DUCTWORK-BUNKER							
212.2216	VALVES + DAMPERS							
212.22169	SPECIAL VALVES + DAMPERS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
212.221597	BOILER ROOM WALL LOUVERS							
	212.22169 SPECIAL VALVES + DAMPERS							
	212.2216 VALVES + DAMPERS							
	212.221 BOILER ROOM							
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							
	212.22211 LUBE OIL DM ST EXHST FN+MT							
	212.2221 ROTATING MACHINERY							
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							
	212.22221 LUBE OIL DM ST HEATER+MTR							
	212.2222 HEAT TRANSFER EQUIPMENT							
212.2226	VALVES + DAMPERS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
212.22269	SPECIAL VALVES + DAMPERS							
212.222691	LUBE OIL DM ST WALL LOUVER							
	212.22269 SPECIAL VALVES + DAMPERS							
	212.2226 VALVES + DAMPERS							
	212.222 LUBE OIL DRUM STORAGE							
212.223	ELEVATOR MACHINE ROOM							
212.2232	HEAT TRANSFER EQUIPMENT							
212.22321	ELEV MACH RM BASEBOARD HTR							
	212.2232 HEAT TRANSFER EQUIPMENT							
212.2236	VALVES + DAMPERS							
212.22369	SPECIAL VALVES + DAMPERS							
212.223691	ELEV MACH RM WALL LOUVERS							
	212.22369 SPECIAL VALVES + DAMPERS							
	212.2236 VALVES + DAMPERS							
212.2239	FOUNDATIONS/SKIDS							
212.22391	ELEV MACH RM AIR UNIT&MTR							
212.223911	ELEV MACH RM AIR UNIT							
212.223912	ELEV MACH RM AIR UNT MOTOR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	212.22391 ELEV MACH RM AIR UNIT+MTR							
	212.2239 FOUNDATIONS/SKIDS							
	212.223 ELEVATOR MACHINE ROOM							
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							
	212.22411 AUX BOILER RM EXHST FN+MTR							
	212.2241 ROTATING MACHINERY							
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							
	212.22421 AUX BOILER RM HEATER+MOTOR							
	212.2242 HEAT TRANSFER EQUIPMENT							
212.2246	VALVES + DAMPERS							
212.22469	SPECIAL VALVES + DAMPERS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
212.224691	AUX BOILER RM WALL LOUVER							
	212.22469 SPECIAL VALVES + DAMPERS							
	212.2246 VALVES + DAMPERS							
	212.224 AUXILIARY BOILER ROOM							
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							
	212.22511 MACHINE SHOP EXHST FAN+MTR							
	212.2251 ROTATING MACHINERY							
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							
	212.22521 MACH SHOP UNIT HEATERS+MTR							
	212.2252 HEAT TRANSFER EQUIPMENT							
212.2256	VALVES + DAMPERS							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
212.22564	SPECIAL VALVES + DAMPERS							
212.225641	MACHINE SHOP WALL LOUVERS							
	212.22564 SPECIAL VALVES + DAMPERS							
	212.2256 VALVES + DAMPERS							
	212.225 MACHINE SHOP							
212.226	AIR COMPRESSOR HOUSE							
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							
	212.22611 AIR COMP RM EXHST FAN+MTR							
	212.2261 ROTATING MACHINERY							
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							
	212.22621 AIR COMP RM UNIT HEATR+MTR							
	212.2262 HEAT TRANSFER EQUIPMENT							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
212.2265	VALVES + DAMPERS							
212.22669	SPECIAL VALVES + DAMPERS							
212.226691	AIR COMP RM WALL LOUVERS							
	212.22669 SPECIAL VALVES + DAMPERS							
	212.2266 VALVES + DAMPERS							
	212.226 AIR COMPRESSOR ROOM							
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							
	212.22711 COAL TRIP GAL ROOF VENT+MT							
	212.2271 ROTATING MACHINERY							
	212.227 COAL TRIPPER GALLERY							
212.2[illegible]	INSTRUMENTATION + CONTROL	1 LT	2,000	1 LT	30 MH	363	16	
	212.22 HEATING,VENT + AIR COND		369,907		20589 MH	266,339	39,914	676,160
212.[illegible]4	LIGHTING + SERVICE POWER			62000 SF	18600 MH	22[illegible],695	111,600	
212.25	ELEVATOR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
212.251	ELEVATOR EQUIPMENT	1 EA	70,000	1 LT	2500 MH	32,343	3,234	
	212.25 ELEVATOR		70,000		2500 MH	32,343	3,234	105,577
212.26	FIRE PROTECTION SYSTEM							
212.261	ROTATING MACHINERY							
212.2611	FIRE PROTECTION PUMP+MOTOR	2 EA	6,000	1 LT	241 MH	3,185	319	
212.26111	FIRE PROTECTION PUMP							
212.26112	FIRE PROTECTION PUMP MOTOR							
	212.2611 FIRE PROTECTION PUMP+MOTOR		6,000		241 MH	3,185	319	11,504
	212.261 ROTATING MACHINERY		6,000		241 MH	3,185	319	11,504
212.262	HOSE + SPRAY EQUIPMENT							
212.2621	HOSE REELS							
212.2622	SPRAY HEADS							
	212.262 HOSE + SPRAY EQUIPMENT							
212.265	PIPING							
212.2652	2.5 IN + LARGER							
212.26521	CS/NNS							
	212.2652 2.5 IN + LARGER							
	212.265 PIPING							
	212.26 FIRE PROTECTION SYSTEM		6,000		241 MH	3,185	319	11,504

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	212.2 BUILDING SERVICES		529,607		50830 MH	645,910	166,602	1,342,119
	212. STEAM GENERATOR BUILDING		529,607		552764 MH	6,770,555	14,990,442	22,290,604
213.	TURBINE,HEATER,CONTROL BLD							
213.1	BUILDING STRUCTURE							
213.11	EXCAVATION WORK							
213.111	EARTH EXCAVATION							
213.112	ROCK EXCAVATION							
213.113	CONCRETE FILL							
213.114	FILL + BACKFILL							
213.115	DEWATERING							
	213.11 EXCAVATION WORK							
213.13	SUBSTRUCTURE CONCRETE							
213.131	FORMWORK			50000 SF	20000 MH	220,646	50,000	
213.132	REINFORCING STEEL			560 TN	14000 MH	180,787	210,000	
213.133	CONCRETE			12400 CY	9300 MH	94,972	396,800	
213.134	EMBEDDED STEEL			45 TN	5626 MH	67,663	63,300	
213.135	FLOOR FINISH			56000 SF	560 MH	5,713	560	
213.136	WATERPROOFING							
213.137	CONSTRUCTION JOINTS							
213.138	RUBBING CONCRETE SURFACE							
213.139	WIRE FABRIC			56000 SF	1120 MH	14,464	6,720	

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	213.13 SUBSTRUCTURE CONCRETE				50606 MH	584,452	727,080	1,311,532
213.14	SUPERSTRUCTURE							
213.141	CONCRETE WORK							
213.1411	FORMWORK							
213.14111	FORMWORK - WOOD							
213.14112	FORMWORK - METAL			100000 SF	6000 MH	66,254	90,000	
	213.1411 FORMWORK				6000 MH	66,254	90,000	156,254
213.1412	REINFORCING STEEL			400 TN	14000 MH	180,737	150,000	
213.1413	CONCRETE			3800 CY	6651 MH	67,923	121,000	
213.1414	EMBEDDED STEEL							
213.1415	FLOOR FINISH			100000 SF	1000 MH	10,212	1,000	
213.1416	WATERPROOFING							
213.1417	RUBBING CONCRETE SURFACES							
213.1418	EXPANSION JOINTS							
	213.141 CONCRETE WORK				27651 MH	325,173	362,000	687,773
213.142	STRUCTURAL + MISC STEEL							
213.1421	STRUCTURAL STEEL			4800 TN	72000 MH	937,267	3,480,000	
213.1422	FLOOR + PLATFORM SUPPORTS							
213.1423	MISC FRAMES, ETC			100 TN	5000 MH	65,066	110,000	
213.1424	CHECKERED PLATE							
213.1425	FLOOR GRATING(GALV)			10000 SF	1700 MH	22,130	30,000	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
213.1425	STAIR TREADS			700 EA	560 MH	7,290	24,500	
213.1427	HANDRAIL			4000 LF	2400 MH	31,242	40,000	
	213.142 STRUCTURAL + MISC STEEL				81660 MH	1,063,017	3,684,500	4,747,517
213.143	EXTERIOR WALLS							
213.1431	CONCRETE WALLS							
213.1432	MASONRY WALLS			45000 SF	11250 MH	128,363	126,000	
213.1433	METAL INSULATED SIDING			41500 SF	8300 MH	108,046	166,000	
	213.143 EXTERIOR WALLS				19550 MH	236,409	292,000	528,409
213.144	ROOF DECK							
213.1441	METAL ROOF DECK			10000 SF	600 MH	7,811	10,000	
213.1442	CONCRETE PLANK			60000 SF	4800 MH	62,485	78,000	
213.1443	CONCRETE FILL			120 CY	240 MH	2,451	3,840	
213.1444	REINFORCING STEEL			2 TN	71 MH	917	750	
	213.144 ROOF DECK				5711 MH	73,664	92,590	166,254
213.145	ROOFING + FLASHING							
213.1451	B.U. ROOF INSULATION+FLASH			60000 SF	420 MH	56,616	75,000	
213.1452	ELASTOMERIC ROOFING							
	213.145 ROOFING + FLASHING				4200 MH	56,616	75,000	131,616
213.146	INTERIOR WALLS+PARTITIONS							
213.1461	MASONRY WALLS			23000 SF	5750 MH	65,608	64,400	
213.1462	CONCRETE BLOCK WALLS							

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213.1463	METAL PARTITIONS			4750 SF	285 MH	3,306	7,125	
	213.146 INTERIOR WALLS+PARTITIONS				6035 MH	68,914	71,525	140,439
213.147	DOORS + WINDOWS							
213.1471	ROLLING STEEL DOORS			800 SF	400 MH	5,207	11,200	
213.1472	PERSONNEL DOORS			1600 SF	1120 MH	12,992	19,200	
213.1473	SASH + GLAZING			1500 SF	600 MH	6,960	18,000	
	213.147 DOORS + WINDOWS				2120 MH	25,159	48,400	73,559
213.148	SPECIAL FINISHES							
213.1481	VINYL TILE FLOORS			7500 SF	600 MH	6,960	11,250	
213.1484	ACOUSTICAL CEILING			7500 SF	750 MH	8,700	3,750	
	213.148 SPECIAL FINISHES				1350 MH	15,660	15,000	30,660
213.149	PAINTING							
213.1491	CONCRETE							
213.1492	STEELWORK			4900 TN	24500 MH	234,465	29,400	
213.1493	DOORS + WALLS			135000 SF	2700 MH	25,839	13,500	
213.1494	HANDRAIL			4000 LF	80 MH	766	400	
	213.149 PAINTING				27280 MH	261,070	43,300	304,370
	213.14 SUPERSTRUCTURE				175557 MH	2,125,682	4,684,915	6,810,597
	213.1 BUILDING STRUCTURE				226163 MH	2,710,134	5,411,995	8,122,129
213.2	BUILDING SERVICES							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
213.21	PLUMBING + DRAINS							
213.211	ROOF DRAINS + PIPING	22 EA	22,000	1 LT	2421 MH	31,373	3,137	
213.2111	DRAINS							
213.2115	PIPING							
213.21151	2 IN + SMALLER							
213.21152	2.5 IN + LARGER							
213.211521	GALV STEEL/NNS							
	213.21152 2.5 IN + LARGER							
	213.2115 PIPING							
	213.211 ROOF DRAINS + PIPING		22,000		2421 MH	31,373	3,137	56,510
213.212	FLOOR DRAINS + PIPING	50 EA	50,000	1 LT	5500 MH	71,282	7,128	
213.2121	DRAINS							
213.2125	PIPING							
213.21251	2 IN + SMALLER							
213.21252	2.5 IN + LARGER							
213.212521	CI/NNS							
213.212522	CS/NNS							
213.212523	PVC/NNS							
	213.21252 2.5 IN + LARGER							

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213.2125	PIPING							
213.212	FLOOR DRAINS + PIPING		50,000		5500 MH	71,282	7,128	128,410
213.213	PUMPS							
213.2131	DRAIN PUMP + MOTOR	2 EA	3,000	1 LT	100 MH	1,322	132	
213.21311	DRAIN PUMP							
213.21312	DRAIN PUMP MOTOR							
213.2131	DRAIN PUMP + MOTOR		3,000		100 MH	1,322	132	4,454
213.213	PUMPS		3,000		100 MH	1,322	132	4,454
213.214	SANITARY DRAINS + PIPING	1 LT	16,000	1 LT	1900 MH	24,625	2,463	
213.2141	SANITARY FIXTURES							
213.2145	PIPING							
213.21451	2 IN + SMALLER							
213.214511	CI/NNS							
213.214512	COPPER/NNS							
213.21451	2 IN + SMALLER							
213.21452	2.5 IN + LARGER							
213.214521	CI/NNS							
213.21452	2.5 IN + LARGER							
213.2145	PIPING							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	213.214 SANITARY DRAINS + PIPING		16,000		1900 MH	24,625	2,463	43,088
	213.21 PLUMBING + DRAINS		91,000		9921 MH	128,602	12,860	232,462
213.22	HEATING,VENT + AIR COND	1 LT	251,469	1 LT	14052 MH	181,788	27,268	
213.221	GENERAL BUILDING							
213.2211	ROTATING MACHINERY							
213.22111	ROOF VENTILATOR + MOTOR							
213.221111	ROOF VENTILATOR							
213.221112	ROOF VENTILATOR MOTOR							
	213.22111 ROOF VENTILATOR + MOTOR							
	213.2211 ROTATING MACHINERY							
213.2212	HEAT TRANSFER EQUIPMENT							
213.22121	STEAM,HEATER UNIT + MOTOR							
213.221211	STEAM UNIT HEATER							
213.221212	STEAM UNIT MOTOR							
	213.22121 STEAM HEATER UNIT + MOTOR							
	213.2212 HEAT TRANSFER EQUIPMENT							
213.2215	PIPING							
213.22151	2 IN + SMALLER							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
21 .221511	CS/NNS							
	213.22151 2 IN + SMALLER							
213.22152	2.5 IN + LARGER							
213.221521	CS/NNS							
	213.22152 2.5 IN + LARGER							
	213.2215 PIPING							
213.2216	VALVES + DAMPERS							
213.22161	GATE							
213.22162	CHECK							
213.22169	SPECIAL VALVES + DAMPERS							
213.221691	INTAKE LOUVERS							
	213.22169 SPECIAL VALVES + DAMPERS							
	213.2216 VALVES + DAMPERS							
213.2217	PIPING - MISC ITEMS							
213.22171	HANGERS + SUPPORTS							
213.22172	INSULATION							
	213.2217 PIPING - MISC ITEMS							
	213.221 GENERAL BUILDING							
213.222	HEATER BAY							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
213.2221	ROTATING MACHINERY							
213.22211	ROOF VENTILATOR + MOTOR							
213.222111	ROOF VENTILATOR							
213.222112	ROOF VENTILATOR MOTOR							
	213.22211 ROOF VENTILATOR + MOTOR							
	213.2221 ROTATING MACHINERY							
	213.222 HEATER BAY							
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							
	213.22311 LUBE OIL RM EXHST FAN+MTR							
	213.2231 ROTATING MACHINERY							
213.2236	VALVES							
213.22369	SPECIAL VALVES + DAMPERS							
213.223691	DAMPERS							
	213.22369 SPECIAL VALVES + DAMPERS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	213.2236 VALVES							
	213.223 LUBE OIL ROOM							
213.225	CONTROL ROOM							
213.2251	ROTATING MACHINERY							
213.22511	CHILLER WATER PUMP + MOTOR							
213.225111	CHILLER WATER PUMP							
213.225112	CHILLER WATER PUMP MOTOR							
	213.22511 CHILLER WATER PUMP + MOTOR							
213.22512	CONTROL RM EXHST FAN+MOTOR							
213.225121	CONTROL RM EXHST FAN							
213.225122	CONTROL RM EXHST FAN MOTOR							
	213.22512 CONTROL RM EXHST FAN+MOTOR							
	213.2251 ROTATING MACHINERY							
213.2252	HEAT TRANSFER EQUIPMENT							
213.22521	CHILLER + MOTOR							
213.225211	CHILLER							
213.225212	CHILLER MOTOR							
	213.22521 CHILLER + MOTOR							
213.22522	MULTIZONE AIR UNIT+MOTOR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
213.225221	MULTIZONE AIR HANDLING UNT							
213.225222	MULTIZONE AIR UNIT MOTOR							
	213.22522 MULTIZONE AIR UNIT+MOTOR							
213.22523	HEATING+VENT AIR UNIT+MTR							
213.225231	HEATING+VENT AIR UNIT							
213.225232	HEATING+VENT AIR UNIT MTR							
	213.22523 HEATING+VENT AIR UNIT+MTR							
	213.2252 HEAT TRANSFER EQUIPMENT							
213.2255	PIPING + DUCTWORK							
213.22551	GENERAL DUCTWORK							
	213.2255 PIPING + DUCTWORK							
	213.225 CONTROL ROOM							
213.226	WATER SAMPLING ROOM							
213.2261	ROTATING MACHINERY							
213.22611	WATR SAMP RM EXHST FAN+MTR							
213.226111	WATER SAMP RM EXHST FAN							
213.226112	WATR SAMP RM EXHST FAN MTR							
	213.22611 WATR SAMP RM EXHST FAN+MTR							
	213.2261 ROTATING MACHINERY							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	213.226 WATER SAMPLING ROOM							
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							
	213.22711 COAL SAMP RM EXHST FAN+MTR							
	213.2271 ROTATING MACHINERY							
	213.227 COAL SAMPLING ROOM							
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							
	213.22811 BATTERY ROOM EXHST FAN+MTR							
	213.2281 ROTATING MACHINERY							
	213.228 BATTERY ROOM							
213.229	INSTRUMENTATION + CONTROL							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	213.22 HEATING,VENT + AIR COND		251,469		14052 MH	181,788	27,268	460,525
213.23	FIRE PROTECTION SYSTEM							
213.232	HOSE + SPRAY EQUIPMENT							
213.2321	HOSE REELS							
213.2322	SPRAY HEADS							
	213.232 HOSE + SPRAY EQUIPMENT							
213.235	PIPING							
213.2352	2.5 IN + LARGER							
213.23521	CS/NNS							
	213.2352 2.5 IN + LARGER							
	213.235 PIPING							
213.236	VALVES							
213.2369	SPECIAL VALVES							
213.23691	DELUGE VALVES							
	213.2369 SPECIAL VALVES							
	213.236 VALVES							
	213.23 FIRE PROTECTION SYSTEM							
213.24	LIGHTING + SERVICE POWER			77250 SF	25493 MH	313,446	159,908	

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
213.2	BUILDING SERVICES		342,469	49466 MH		623,836	200,036	1,166,341
213.	TURBINE,HEATER,CONTROL BLD		342,469	275629 MH		3,333,970	5,612,031	9,288,470
2188.	ADMINISTRATION+SERVICE BLD							
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							
	2188.11 EXCAVATION WORK							
2188.13	SUBSTRUCTURE CONCRETE							
2188.131	FORMWORK			3870 SF	1548 MH	17,095	3,870	
2188.132	REINFORCING STEEL			52 TN	1300 MH	16,767	19,500	
2188.133	CONCRETE			1000 CY	751 MH	7,670	32,000	
2188.134	EMBEDDED STEEL			2 TN	250 MH	3,000	2,800	
2188.135	FLOOR FINISH			8500 SF	85 MH	867	85	
2188.136	WATERPROOFING							
2188.137	CONSTRUCTION JOINTS							
2188.138	RUBBING CONCRETE SURFACES							
2188.139	WELDED WIRE FABRIC							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	2188.13 SUBSTRUCTURE CONCRETE				3934 MH	45,427	58,255	103,682
2188.14	SUPERSTRUCTURE							
2188.141	CONCRETE WORK							
2188.1411	FORMWORK							
2188.14111	FORMWORK-WOOD							
2188.14112	FORMWORK-METAL			25000 SF	1500 MH	16,564	22,500	
	2188.1411 FORMWORK				1500 MH	16,564	22,500	39,064
2188.1412	REINFORCING STEEL			35 TN	1225 MH	15,818	15,125	
2188.1413	CONCRETE			460 CY	805 MH	8,221	14,720	
2188.1414	EMBEDDED STEEL							
2188.1415	FLOOR FINISH			25000 SF	251 MH	2,564	250	
2188.1416	WATERPROOFING							
2188.1417	RUBBING CONCRETE SURFACES							
2188.1418	CONSTRUCTION JOINTS							
	2188.141 CONCRETE WORK				3781 MH	43,167	50,595	93,762
2188.142	STRUCTURAL + MISC. STEEL							
2188.1421	STRUCTURAL STEEL			400 TN	6000 MH	78,105	290,000	
2188.1423	MISC. FRAMES,ETC.			2 TN	100 MH	1,302	2,200	
2188.1425	FLOOR GRATING(GALV.)							
2188.1426	STAIR TREADS			250 EA	200 MH	2,603	8,750	
2188.1427	HANDRAIL			600 LF	360 MH	4,687	6,000	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	2188.142 STRUCTURAL + MISC. STEEL				6660 MH	86,697	306,950	393,647
2188.143	EXTERIOR WALLS							
2188.1431	CONCRETE WALLS							
2188.1432	MASONRY WALLS							
2188.1433	METAL INSULATED SIDING			14500 SF	3900 MH	50,769	78,000	
2188.1434	WINDOW WALL			1000 SF	500 MH	6,507	6,000	
	2188.143 EXTERIOR WALLS				4400 MH	57,278	84,000	141,278
2188.144	ROOF DECK							
2188.1442	PRECAST CONCRETE PANELS			8350 SF	667 MH	8,685	10,855	
	2188.144 ROOF DECK				667 MH	8,685	10,855	19,540
2188.145	ROOFING + FLASHING							
2188.1451	B.U. ROOF INSUL + FLASHING			8350 SF	585 MH	7,686	10,438	
	2188.145 ROOFING + FLASHING				585 MH	7,686	10,438	18,324
2188.146	INTERIOR WALLS+PARTITIONS							
2188.1462	MASONRY WALLS			15000 SF	3750 MH	42,788	42,000	
2188.1463	METAL PARTITIONS			35000 SF	2100 MH	24,360	52,500	
	2188.146 INTERIOR WALLS+PARTITIONS				5850 MH	67,148	94,500	161,648
2188.147	DOORS + WINDOWS							
2188.1471	ROLLING STEEL DOORS			880 SF	440 MH	5,727	12,320	
2188.1472	PERSONNEL DOORS			1250 SF	875 MH	10,150	15,000	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
2188.1473	SASH + GLAZING			2000 SF	800 MH	9,280	24,000	
	2188.147 DOORS + WINDOWS				2115 MH	25,157	51,320	76,477
2188.148	WALLS,FLOOR+CEILING FINISH							
2188.1481	VINYL FLOOR TILE			21000 SF	1680 MH	19,488	31,500	
2188.1482	CERAMIC TILE FLOOR			4000 SF	600 MH	6,626	10,000	
2188.1483	CARPET			200 SY	80 MH	925	3,000	
2188.1484	CERAMIC TILE WALL FINISH			2000 SF	300 MH	3,313	5,000	
2188.1485	SUSPENDED CEILING							
	2188.148 WALLS,FLOOR+CEILING FINISH				2660 MH	30,355	49,500	79,855
2188.149	PAINTING							
2188.1491	CONCRETE							
2188.1492	STEELWORK			400 TN	2000 MH	19,140	2,400	
2188.1495	HANDRAIL			600 LF	120 MH	1,146	60	
2188.1497	DOORS + WALLS			30000 SF	600 MH	5,742	3,000	
	2188.149 PAINTING				2720 MH	26,030	5,460	31,490
	2188.14 SUPERSTRUCTURE				29438 MH	352,403	663,618	1,016,021
	2188.1 BUILDING STRUCTURE				33372 MH	397,830	721,873	1,119,703
2188.2	BUILDING SERVICES							
2188.21	PLUMBING + DRAINS	1 LT	36,000	1 LT	4010 MH	51,973	5,197	
2188.211	ROOF DRAINS + PIPING							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
2188.2111	DRAINS							
2188.2115	PIPING							
2188.21152	2.5 IN+LARGER(GALV/NNS)							
	2188.2115 PIPING							
	2188.211 ROOF DRAINS + PIPING							
2188.212	FLOOR DRAINS + PIPING							
2188.2121	DRAINS							
2188.2125	PIPING							
2188.21251	2.5 IN+LARGER(CS/NNS)							
2188.21252	2.5 IN+LARGER(CI/NNS)							
	2188.2125 PIPING							
	2188.212 FLOOR DRAINS + PIPING							
2188.213	PLUMBING FIXTURES+PIPING							
2188.2131	FIXTURES							
2188.2132	DOMESTIC WATER HEATERS							
2188.2135	PIPING							
2188.21351	2 IN + SMALLER(CS/NNS)							
2188.21352	2 IN + SMALLER(COPPER/NNS)							
2188.21355	2.5 IN+LARGER(CS/NNS)							
	2188.2135 PIPING							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	2188.213 PLUMBING FIXTURES+PIPING							
	2188.21 PLUMBING + DRAINS		36,000		4010 MH	51,973	5,197	93,170
2188.22	HEATING,VENT + AIR COND	1 LT	103,656	1 LT	5793 MH	74,942	13,490	
2188.221	AIR CONDITIONING SYSTEMS							
2188.2214	FOUNDATIONS/SKIDS							
2188.22141	MULTIZONE AIR UNIT + MOTOR							
	2188.2214 FOUNDATIONS/SKIDS							
	2188.221 AIR CONDITIONING SYSTEMS							
2188.222	EXHAUST AIR SYSTEMS							
2188.2223	ROTATING MACHINERY							
2188.22231	TOILET RM EXHAUST FAN+MTR							
2188.22232	FUME HOOD EXHAUST FAN+MTR							
2188.22233	RETURN AIR FANS + MOTORS							
	2188.2223 ROTATING MACHINERY							
	2188.222 EXHAUST AIR SYSTEMS							
2188.223	REFRIG CHILLED WATER SYS							
2188.2231	ROTATING MACHINERY							
2188.22311	CHILLER + MOTOR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	2188.2231 ROTATING MACHINERY							
2188.22322	CHILLED WATER PUMP + MOTOR							
	2188.223 REFRIG CHILLED WATER SYS							
2188.224	BUILDING HEATING SYSTEMS							
2188.2241	HEAT TRANSFER EQUIPMENT							
2188.22411	HEAT+VENT AIR UNIT + MOTOR							
2188.22412	ELECTRIC BASEBOARD HEATERS							
	2188.2241 HEAT TRANSFER EQUIPMENT							
	2188.224 BUILDING HEATING SYSTEMS							
2188.225	PIPING							
2188.2251	2 IN+SMALLER							
2188.22511	CS/NNS							
	2188.2251 2 IN+SMALLER							
2188.2252	2.5 IN+LARGER							
2188.22521	CS/NNS							
	2188.2252 2.5 IN+LARGER							
	2188.225 PIPING							
2188.226	VALVES							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
2188.2261	GATE							
2188.2262	CHECK							
2188.2263	GLOBE							
2188.2265	SAFETY/RELIEF							
2188.2266	PLUG							
2188.2269	SPECIAL VALVES							
	2188.226 VALVES							
2188.227	PIPING-MISC. ITEMS							
2188.2271	HANGERS							
	2188.227 PIPING-MISC. ITEMS							
2188.228	DUCTWORK							
2188.229	INSTRUMENTATION+CONTROL							
	2188.22 HEATING,VENT + AIR COND		103,656		5793 MH	74,942	13,490	192,088
2188.23	FIRE PROTECTION							
2188.231	FIRE HOSE CABINETS							
2188.232	SPRINKLERS							
	2188.23 FIRE PROTECTION							
2188.24	LIGHTING+SERVICE POWER			32400 SF	12959 MH	159,337	81,000	
2188.25	ELEVATOR							
2188.251	ELEVATOR EQUIPMENT	1 EA	75,000	1 LT	2500 MH	32,343	3,234	
	2188.25 ELEVATOR		75,000		2500 MH	32,343	3,234	110,577

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	2188.2 BUILDING SERVICES		214,656		25262 MH	318,595	102,921	636,172
	2188. ADMINISTRATION+SERVICE BLD		214,656		58634 MH	716,425	824,794	1,755,875
2180.	FIRE PUMPHOUSE							
2181.	ELECTRICAL SWITCHGR BLDGS							
2181.1	BUILDING STRUCTURE							
2181.11	EXCAVATION WORK							
2181.111	EXCAVATION-EARTH			250 CY	63 MH	675	250	
2181.114	BACKFILL-EARTH			200 CY	60 MH	597	200	
	2181.11 EXCAVATION WORK				123 MH	1,272	450	1,722
2181.13	SUBSTRUCTURE CONCRETE							
2181.131	FORMWORK			3400 SF	1360 MH	15,016	3,400	
2181.132	REINFORCING STEEL			3 TN	75 MH	970	1,125	
2181.133	CONCRETE			135 CY	101 MH	1,030	4,320	
2181.134	EMBEDDED STEEL			3 TN	376 MH	4,523	4,200	
2181.135	FLOOR FINISH			3750 SF	38 MH	390	38	
2181.139	WIRE FABRIC			3750 SF	75 MH	970	450	
	2181.13 SUBSTRUCTURE CONCRETE				2025 MH	22,899	13,533	36,432
2181.14	SUPERSTRUCTURE							
2181.142	STRUCTURAL + MISC. STEEL							
2181.1421	PREFAB BUILDING	3750 SF	12,563	1 LT	1051 MH	13,570	1,357	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	218I.142 STRUCTURAL + MISC. STEEL		12,563		101 MH	13,570	1,357	27,490
218I.147	DOORS + WINDOWS							
218I.1472	PERSONNEL DOORS			240 SF	168 MH	1,949	2,880	
218I.1473	SASH + GLAZING			360 SF	144 MH	1,670	4,320	
	218I.147 DOORS + WINDOWS				312 MH	3,619	7,200	10,819
	218I.14 SUPERSTRUCTURE		12,563		1363 MH	17,189	8,557	38,309
	218I.1 BUILDING STRUCTURE		12,563		3511 MH	41,360	22,540	76,463
218I.2	BUILDING SERVICES							
218I.21	PLUMBING + DRAINS			1 LT	1651 MH	21,395	15,000	
218I.22	HEATING,VENT + AIR COND	1 LT	10,200	1 LT	572 MH	7,400	1,110	
218I.24	LIGHTING + SERVICE POWER			3750 SF	1126 MH	13,845	6,750	
	218I.2 BUILDING SERVICES		10,200		3349 MH	42,640	22,860	75,700
	218I. ELECTRICAL SWITCHGR BLDGS		22,763		6860 MH	84,000	45,400	152,163
218M.	COAL CAR THAW SHED							
218M.1	BUILDING STRUCTURE							
218M.11	EXCAVATION WORK							
218M.111	EXCAVATION-EARTH			180 CY	45 MH	483	180	
218M.114	BACKFILL-EARTH			130 CY	39 MH	389	130	
	218M.11 EXCAVATION WORK				84 MH	872	310	1,182

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
218M.13	SUBSTRUCTURE CONCRETE							
218M.131	FORMWORK			2500 SF	1000 MH	11,042	2,500	
218M.132	REINFORCING STEEL			3 TN	75 MH	970	1,125	
218M.133	CONCRETE			50 CY	38 MH	397	1,600	
218M.134	EMBEDDED STEEL			3 TN	376 MH	4,523	4,200	
	218M.13 SUBSTRUCTURE CONCRETE				1489 MH	16,925	9,425	26,350
218M.14	SUPERSTRUCTURE							
	218M.1 BUILDING STRUCTURE				1573 MH	17,797	9,735	27,532
218M.24	LIGHTING + SERVICE POWER			1500 SF	450 MH	5,533	2,700	
	218M. COAL CAR THAW SHED				2023 MH	23,330	12,435	35,765
218N.	ROTARY CAR DUMP BLDG+TUNNL							
218N.1	BUILDING STRUCTURE							
218N.11	EXCAVATION WORK							
218N.111	EXCAVATION-EARTH			1500 CY	375 MH	4,383	1,500	
218N.112	EXCAVATION-ROCK			15000 CY	12000 MH	140,280	60,000	
218N.114	BACKFILL-EARTH			3000 CY	900 MH	8,956	3,000	
218N.115	DEWATERING			1 LT	220 MH	2,050	220	
	218N.11 EXCAVATION WORK				13495 MH	155,669	64,720	220,389
218N.13	SUBSTRUCTURE CONCRETE							
218N.131	FORMWORK			25000 SF	10000 MH	110,424	25,000	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
218N.132	REINFORCING STEEL			200 TN	5000 MH	64,567	75,000	
218N.133	CONCRETE			4300 CY	3225 MH	32,934	137,600	
218N.134	EMBEDDED STEEL			6 TN	750 MH	9,020	8,400	
218N.135	FLOOR FINISH			10000 SF	100 MH	1,021	100	
218N.139	WIRE FABRIC			2000 SF	40 MH	516	240	
	218N.13 SUBSTRUCTURE CONCRETE				19115 MH	218,452	246,340	464,822
218N.14	SUPERSTRUCTURE							
218N.141	CONCRETE WORK							
218N.142	STRUCTURAL + MISC STEEL							
218N.1421	STRUCTURAL STEEL			20 TN	300 MH	3,905	14,500	
218N.1423	MISC STEEL			1 TN	50 MH	651	1,100	
218N.1425	FLOOR GRATING			600 SF	102 MH	1,329	1,800	
218N.1426	STAIR TREADS			65 EA	52 MH	678	2,275	
	218N.142 STRUCTURAL + MISC STEEL				504 MH	6,563	19,675	26,238
218N.143	EXTERIOR WALLS							
218N.1433	METAL INSULATED SIDING			1400 SF	280 MH	3,643	5,600	
218N.1434	METAL UNINSULATED SIDING			4800 SF	720 MH	9,374	7,200	
	218N.143 EXTERIOR WALLS				1000 MH	13,017	12,800	25,817
218N.144	ROOF DECK							
218N.1441	METAL ROOF DECK -INSULATED			1900 SF	190 MH	2,472	4,750	
218N.1442	METAL ROOF DECK-UNINSUL			3500 SF	210 MH	2,734	3,500	

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	218N.144 ROOF DECK				400 MH	5,206	8,250	13,456
218N.146	INTERIOR WALLS							
218N.1462	MASONRY			2200 SF	550 MH	6,276	6,160	
	218N.146 INTERIOR WALLS				550 MH	6,276	6,160	12,436
218N.147	DOORS + WINDOWS							
218N.1472	PERSONNEL DOORS			210 SF	147 MH	1,705	2,520	
218N.1474	WINDOWS -INSULATED GLASS							
	218N.147 DOORS + WINDOWS				147 MH	1,705	2,520	4,225
	218N.14 SUPERSTRUCTURE				2601 MH	32,767	49,405	82,172
	218N.1 BUILDING STRUCTURE				35211 MH	406,918	360,465	767,383
218N.2	BUILDING SERVICES							
218N.21	DRAINS + PIPING			1 LT	879 MH	11,396	8,000	
218N.211	ROOF DRAINS + PIPING							
218N.212	FLOOR DRAINS + PIPING							
218N.213	PLUMBING FIXTURES+PIPING							
218N.2131	FIXTURES							
218N.2132	DOMESTIC WATER HEATERS							
	218N.213 PLUMBING FIXTURES+PIPING							
218N.215	PIPING							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	218N.21 DRAINS + PIPING				879 MH	11,396	8,000	19,396
218N.22	HEAT,VENT+AIR CONDITIONING	1 LT	3,485	1 LT	196 MH	2,534	380	
218N.23	FIRE PROTECTION							
218N.24	LIGHTING + SERVICE POWER			3000 SF	900 MH	11,067	5,400	
	218N.2 BUILDING SERVICES		3,485		1975 MH	24,997	13,780	42,262
	218N. ROTARY CAR DUMP BLDG+TUNNL		3,485		37186 MH	431,915	374,245	809,645
2180.	COAL BREAKER HOUSE							
2180.1	BUILDING STRUCTURE							
2180.11	EXCAVATION WORK							
2180.111	EXCAVATION-EARTH			400 CY	100 MH	1,169	400	
2180.114	BACKFILL-EARTH			200 CY	60 MH	597	200	
	2180.11 EXCAVATION WORK				160 MH	1,766	600	2,366
2180.13	SUBSTRUCTURE CONCRETE							
2180.131	FORMWORK			3000 SF	1200 MH	13,251	3,000	
2180.132	REINFORCING STEEL			15 TN	375 MH	4,843	5,625	
2180.1	CONCRETE			260 CY	195 MH	1,991	8,320	
2180.134	EMBEDDED STEEL			2 TN	250 MH	3,006	2,800	
2180.135	FLOOR FINISH			3600 SF	35 MH	356	36	
2180.139	WIRE FABRIC			3600 SF	72 MH	930	432	
	2180.13 SUBSTRUCTURE CONCRETE				2127 MH	24,377	20,213	44,590

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
2180.14	SUPERSTRUCTURE							
2180.141	CONCRETE WORK							
2180.1411	FORMWORK							
2180.14111	METAL FORMWORK			6700 SF	402 MH	4,439	6,030	
	2180.1411 FORMWORK				402 MH	4,439	6,030	10,469
2180.1413	CONCRETE			180 CY	315 MH	3,217	5,760	
	2180.141 CONCRETE WORK				717 MH	7,656	11,790	19,446
2180.142	STRUCTURAL + MISC STEEL							
2180.1421	STRUCTURAL STEEL			275 TN	4126 MH	53,708	199,375	
	2180.142 STRUCTURAL + MISC STEEL				4126 MH	53,708	199,375	253,083
2180.143	EXTERIOR WALLS							
2180.1433	METAL INSULATED SIDING			2000 SF	400 MH	5,207	6,000	
2180.1434	METAL UNINSULATED SIDING			31000 SF	4650 MH	60,532	46,500	
	2180.143 EXTERIOR WALLS				5050 MH	65,739	54,500	120,239
2180.144	ROOF DECK							
2180.1441	METAL ROOF DECK			4400 SF	264 MH	3,438	4,400	
	2180.144 ROOF DECK				264 MH	3,438	4,400	7,838
2180.146	INTERIOR WALLS							
2180.1462	MASONRY WALLS			13000 SF	3250 MH	37,083	36,400	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	2180.146 INTERIOR WALLS				3250 MH	37,083	36,400	73,483
2180.147	DOORS + WINDOWS							
2180.1472	PERSONNEL DOORS			500 SF	350 MH	4,060	6,000	
	2180.147 DOORS + WINDOWS				350 MH	4,060	6,000	10,060
	2180.14 SUPERSTRUCTURE				13757 MH	171,684	312,465	484,149
	2180.1 BUILDING STRUCTURE				16044 MH	197,827	333,278	531,105
2180.2	BUILDING SERVICES							
2180.21	DRAINS + PIPING			1 LT	221 MH	2,861	2,000	
2180.211	ROOF DRAINS + PIPING							
2180.212	FLOOR DRAINS + PIPING							
	2180.21 DRAINS + PIPING				221 MH	2,861	2,000	4,861
2180.22	HEATING,VENT + AIR COND	1 LT	4,150	1 LT	232 MH	3,003	450	
2180.24	LIGHTING + SERVICE POWER			4500 SF	1350 MH	16,599	8,100	
2180.25	ELEVATOR							
2180.251	ELEVATOR EQUIPMENT	1 EA	50,000		2500 MH	32,343		
	2180.25 ELEVATOR		50,000		2500 MH	32,343		82,343
	2180.2 BUILDING SERVICES		54,150		4303 MH	54,806	10,550	119,506
	2180. COAL BREAKER HOUSE		54,150		20347 MH	252,633	343,828	650,611
218P.	COAL CRUSHER HOUSE							

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218P.1	BUILDING STRUCTURE							
218P.11	EXCAVATION WORK							
218P.111	EXCAVATION-EARTH			400 CY	100 MH	1,189	400	
218P.114	BACKFILL-EARTH			300 CY	90 MH	896	300	
	218P.11 EXCAVATION WORK				190 MH	2,085	709	2,765
218P.13	SUBSTRUCTURE CONCRETE							
218P.131	FORMWORK			3000 SF	1200 MH	13,251	3,000	
218P.132	REINFORCING STEEL			9 TN	225 MH	2,905	3,375	
218P.133	CONCRETE			130 CY	93 MH	1,002	4,160	
218P.134	EMBEDDED STEEL			3 TN	376 MH	4,523	4,200	
218P.135	FLOOR FINISH			2300 SF	23 MH	234	23	
218P.139	WIRE FABRIC			2300 SF	46 MH	593	276	
	218P.13 SUBSTRUCTURE CONCRETE				1968 MH	22,513	15,034	37,544
218P.14	SUPERSTRUCTURE							
218P.141	CONCRETE WORK							
218P.1411	FORMWORK							
218P.14111	METAL FORMWORK			3200 SF	192 MH	2,120	2,880	
	218P.1411 FORMWORK				192 MH	2,120	2,880	5,000
218P.1413	CONCRETE			110 CY	193 MH	1,972	3,520	
	218P.141 CONCRETE WORK				385 MH	4,092	6,400	10,492

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
218P.142	STRUCTURAL + MISC STEEL							
218P.1421	STRUCTURAL STEEL			150 TN	2251 MH	29,066	108,750	
	218P.142 STRUCTURAL + MISC STEEL				2251 MH	29,066	108,750	137,816
218P.143	EXTERIOR WALLS							
218P.1434	METAL UNINSULATED SIDING			19000 SF	2650 MH	37,100	28,500	
	218P.143 EXTERIOR WALLS				2650 MH	37,100	28,500	65,600
218P.144	ROOF DECK							
218P.1442	METAL ROOF DECK-UNINSUL			2600 SF	156 MH	2,031	2,600	
	218P.144 ROOF DECK				156 MH	2,031	2,600	4,631
218P.146	INTERIOR WALLS							
218P.1462	MASONRY			7400 SF	1850 MH	21,109	20,720	
	218P.146 INTERIOR WALLS				1850 MH	21,109	20,720	41,829
218P.147	DOORS + WINDOWS							
218P.1472	PERSONNEL DOORS			400 SF	280 MH	3,248	4,800	
	218P.147 DOORS + WINDOWS				280 MH	3,248	4,800	8,048
	218P.14 SUPERSTRUCTURE				7772 MH	96,646	171,770	268,416
	218P.1 BUILDING STRUCTURE				9930 MH	121,221	187,504	308,725
218P.2	BUILDING SERVICES							

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218P.21	DRAINS + PIPING	1 LT	2,000		221 MH	2,861		
218P.211	ROOF DRAINS + PIPING							
218P.212	FLOOR DRAINS + PIPING							
	218P.21 DRAINS + PIPING		2,000		221 MH	2,861		4,861
218P.22	HEATING,VENT + AIR COND	1 LT	46,945	1 LT	2621 MH	33,905	5,086	
218P.24	LIGHTING + WIRING			3450 SF	1035 MH	12,727	6,210	
218P.25	ELEVATOR							
218P.251	ELEVATOR EQUIPMENT	1 EA	31,000		1800 MH	23,286		
	218P.25 ELEVATOR		31,000		1800 MH	23,286		54,286
	218P.2 BUILDING SERVICES		79,945		5677 MH	72,779	11,296	164,020
	218P. COAL CRUSHER HOUSE		79,945		15607 MH	194,000	198,600	472,745
218Q.	BOILER HOUSE TRANSFR TOWER							
218Q.1	BUILDING STRUCTURE							
218Q.11	EXCAVATION WORK							
218Q.111	EXCAVATION-EARTH			90 CY	23 MH	263	90	
218Q.114	BACKFILL-EARTH			70 CY	21 MH	208	70	
	218Q.11 EXCAVATION WORK				44 MH	476	160	636
218Q.13	SUBSTRUCTURE CONCRETE							
218Q.131	FORMWORK			400 SF	160 MH	1,765	400	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
2182.132	REINFORCING STEEL			5 TN	125 MH	1,614	1,875	
2182.133	CONCRETE			90 CY	68 MH	695	2,860	
2182.134	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
	2182.13 SUBSTRUCTURE CONCRETE				479 MH	5,589	6,555	12,144
2182.14	SUPERSTRUCTURE							
2182.141	CONCRETE WORK							
2182.1411	FORMWORK							
2182.14111	METAL FORMWORK			3000 SF	160 MH	1,937	2,700	
	2182.1411 FORMWORK				160 MH	1,987	2,700	4,687
2182.1413	CONCRETE			35 CY	81 MH	622	1,120	
	2182.141 CONCRETE WORK				241 MH	2,609	3,820	6,429
2182.142	STRUCTURAL + MISC STEEL							
2182.1421	STRUCTURAL STEEL			80 TN	1200 MH	15,621	58,000	
	2182.142 STRUCTURAL + MISC STEEL				1200 MH	15,621	58,000	73,621
2182.143	EXTERIOR WALLS							
2182.1433	METAL INSULATED SIDING			12910 SF	2583 MH	33,623	51,640	
2182.1434	METAL UNINSULATED SIDING			6160 SF	923 MH	12,018	9,240	
	2182.143 EXTERIOR WALLS				3506 MH	45,641	60,880	106,521
2182.144	ROOF DECK							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
2189.1441	METAL ROOF DECK			1200 SF	72 MH	940	1,200	
	2169.144 ROOF DECK				72 MH	940	1,200	2,140
2189.147	DOORS + WINDOWS							
2189.1472	PERSONNEL DOORS			21 SF	15 MH	174	252	
	2169.147 DOORS + WINDOWS				15 MH	174	252	426
	2139.14 SUPERSTRUCTURE				5034 MH	64,965	124,152	189,137
	2139.1 BUILDING STRUCTURE				5557 MH	71,053	130,867	201,917
2189.2	BUILDING SERVICES							
2189.22	HEATING,VENT + AIR COND	1 LT	2,680	1 LT	152 MH	1,966	295	
2189.24	LIGHTING + SERVICE POWER			450 SF	135 MH	1,652	810	
	2169.2 BUILDING SERVICES		2,680		287 MH	3,628	1,105	7,413
	2139. BOILER HOUSE TRANSFR TOWER		2,680		5844 MH	74,678	131,972	209,330
218R.	ROTARY PLOW MAINTNCE SHED							
218R.1	BUILDING STRUCTURE							
218R.11	EXCAVATION WORK							
218R.111	EXCAVATION-EARTH			15000 CY	3751 MH	43,848	15,000	
218R.112	EXCAVATION-ROCK			10000 CY	8000 MH	93,520	40,000	
218R.114	BACKFILL-EARTH			10000 CY	3000 MH	29,856	10,000	
218R.115	DEWATERING			1 LT	500 MH	4,660	500	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	218R.11 EXCAVATION WORK				15251 MH	171,884	65,500	237,384
218R.13	SUBSTRUCTURE CONCRETE							
218R.131	FORMWORK			120000 SF	48000 MH	530,036	120,000	
218R.132	REINFORCING STEEL			700 TN	17500 MH	225,983	262,500	
218R.133	CONCRETE			9700 CY	7275 MH	74,292	310,400	
218R.134	EMBEDDED STEEL			12 TN	1500 MH	18,059	16,800	
	218R.13 SUBSTRUCTURE CONCRETE				74275 MH	848,350	709,700	1,558,050
218R.14	SUPERSTRUCTURE							
218R.141	CONCRETE WORK							
218R.142	STRUCTURAL + MISC STEEL							
218R.1421	STRUCTURAL STEEL			13 TN	195 MH	2,538	9,425	
	218R.142 STRUCTURAL + MISC STEEL				195 MH	2,538	9,425	11,963
218R.143	EXTERIOR WALLS							
218R.1434	METAL UNINSULATED SIDING			1400 SF	210 MH	2,734	2,100	
	218R.143 EXTERIOR WALLS				210 MH	2,734	2,100	4,834
218R.144	ROOF DECK							
218R.1442	METAL ROOF DECK-UNINSUL			2800 SF	167 MH	2,176	2,800	
	218R.144 ROOF DECK				167 MH	2,176	2,800	4,976
218R.145	ROOFING + FLASHING							

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218R.1454	FLASHING			200 SF	10 MH	135	200	
	218R.145 ROOFING + FLASHING				10 MH	135	200	335
218R.147	DOORS + WINDOWS							
218R.1471	ROLLING STEEL DOORS			140 SF	70 MH	913	1,960	
218R.1472	PERSONNEL DOORS			63 SF	44 MH	510	756	
	218R.147 DOORS + WINDOWS				114 MH	1,423	2,716	4,139
	218R.14 SUPERSTRUCTURE				696 MH	9,006	17,241	26,247
	218R.1 BUILDING STRUCTURE				90222 MH	1,029,240	792,441	1,821,681
218R.2	BUILDING SERVICES							
218R.22	HEATING,VENT + AIR COND	1 LT	6,040	1 LT	341 MH	4,411	662	
218R.24	LIGHTING + SERVICE POWER			250 SF	76 MH	936	450	
	218R.2 BUILDING SERVICES		6,040		417 MH	5,347	1,112	12,499
	218R. ROTARY PLOW MAINTNCE SHED		6,040		90639 MH	1,034,587	793,553	1,834,180
218T.	LOCOMOTIVE REPAIR GARAGE							
218T.1	BUILDING STRUCTURE							
218T.11	EXCAVATION WORK							
218T.111	EXCAVATION-EARTH			150 CY	37 MH	433	150	
218T.114	BACKFILL-EARTH			100 CY	30 MH	299	100	
	218T.11 EXCAVATION WORK				67 MH	732	250	982

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
218T.13	SUBSTRUCTURE CONCRETE							
218T.131	FORMWORK			2100 SF	840 MH	9,277	2,100	
218T.132	REINFORCING STEEL			3 TN	75 MH	970	1,125	
218T.133	CONCRETE			200 CY	151 MH	1,542	6,400	
218T.134	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
218T.135	FLOOR FINISH			4700 SF	47 MH	479	47	
218T.139	WIRE FABRIC			9400 SF	188 MH	2,423	1,128	
	218T.13 SUBSTRUCTURE CONCRETE				1427 MH	16,211	12,200	28,411
218T.14	SUPERSTRUCTURE							
218T.141	CONCRETE WORK							
218T.142	STRUCTURAL + MISC STEEL							
218T.1421	STRUCTURAL STEEL			5 TN	76 MH	967	3,625	
	218T.142 STRUCTURAL + MISC STEEL				76 MH	967	3,625	4,612
218T.143	EXTERIOR WALLS							
218T.1433	METAL INSULATED SIDING			3500 SF	700 MH	9,112	14,000	
	218T.143 EXTERIOR WALLS				700 MH	9,112	14,000	23,112
218T.144	ROOF DECK							
218T.1441	METAL ROOF DECK			4700 SF	283 MH	3,682	4,700	
	218T.144 ROOF DECK				283 MH	3,682	4,700	8,382
218T.147	DOORS + WINDOWS							

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218T.1471	ROLLING STEEL DOORS			1700 SF	850 MH	11,065	23,800	
218T.1472	PERSONNEL DOORS			85 SF	60 MH	696	1,020	
	218T.147 DOORS + WINDOWS				910 MH	11,761	24,820	36,581
	218T.14 SUPERSTRUCTURE				1969 MH	25,542	47,145	72,687
	218T.1 BUILDING STRUCTURE				3463 MH	42,465	59,595	102,080
218T.2	BUILDING SERVICES							
218T.22	HEATING,VENT + AIR COND	1 LT	11,570	1 LT	652 MH	8,435	1,265	
218T.24	LIGHTING + SERVICE POWER			2000 SF	600 MH	7,378	3,600	
	218T.2 BUILDING SERVICES		11,570		1252 MH	15,813	4,865	32,248
	218T. LOCOMOTIVE REPAIR GARAGE		11,570		4715 MH	58,293	64,460	134,328
218U.	MATERIAL HANDL+SERVICE BLD							
218U.1	BUILDING STRUCTURE							
218U.11	EXCAVATION WORK							
218U.111	EXCAVATION-EARTH			150 CY	37 MH	433	150	
218U.114	BACKFILL-EARTH			120 CY	35 MH	357	120	
	218U.11 EXCAVATION WORK				73 MH	790	270	1,060
218U.13	SUBSTRUCTURE CONCRETE							
218U.131	FORMWORK			2000 SF	800 MH	8,834	2,000	
218U.132	REINFORCING STEEL			2 TN	51 MH	657	750	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
218U.133	CONCRETE			100 CY	75 MH	765	3,200	
218U.134	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
218U.135	FLOOR FINISH			3000 SF	31 MH	316	30	
218U.139	WIRE FABRIC			3000 SF	60 MH	775	360	
	218U.13 SUBSTRUCTURE CONCRETE				1143 MH	12,862	7,740	20,602
218U.14	SUPERSTRUCTURE							
218U.141	CONCRETE WORK							
218U.142	STRUCTURAL + MISC STEEL							
218U.143	EXTERIOR WALLS							
218U.1433	METAL INSULATED SIDING			5600 SF	1120 MH	14,581	22,400	
218U.1434	METAL UNINSULATED SIDING			2600 SF	390 MH	5,076	3,900	
	218U.143 EXTERIOR WALLS				1510 MH	19,657	26,300	45,957
218U.144	ROOF DECK							
218U.1441	METAL ROOF DECK			11200 SF	672 MH	8,750	11,200	
	218U.144 ROOF DECK				672 MH	8,750	11,200	19,950
218U.145	ROOFING + FLASHING							
218U.1451	B.U. ROOF, INSUL + FLASHING			11200 SF	784 MH	10,568	14,000	
	218U.145 ROOFING + FLASHING				784 MH	10,568	14,000	24,568
218U.146	INTERIOR WALLS							
218U.1462	MASONRY			9000 SF	2250 MH	25,673	25,200	

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218U.1463	TOILET PARTITIONS			125 SF	8 MH	93	250	
	218U.146 INTERIOR WALLS				2258 MH	25,766	25,450	51,216
218U.147	DOORS + WINDOWS							
218U.1471	ROLLING STEEL DOORS			1440 SF	720 MH	9,174	20,160	
218U.1472	PERSONNEL DOORS			715 SF	501 MH	5,812	8,580	
218U.1473	SASH + GLAZING			520 SF	208 MH	2,413	6,240	
	218U.147 DOORS + WINDOWS				1429 MH	17,599	34,980	52,579
218U.148	WALLS,FLOOR+CEIL FINISH							
218U.1481	VINYL FLOOR TILE			1600 SF	126 MH	1,455	2,400	
218U.1482	CERAMIC FLOOR TILE			2100 SF	316 MH	3,490	5,250	
218U.1485	SUSPENDED CEILING			4100 SF	410 MH	4,756	2,050	
218U.1486	CEMENT PLASTER CEILING			350 SF	35 MH	406	35	
	218U.148 WALLS,FLOOR+CEIL FINISH				889 MH	10,137	9,735	19,872
	218U.14 SUPERSTRUCTURE				7542 MH	92,477	121,665	214,142
	218U.1 BUILDING STRUCTURE				8758 MH	106,129	129,675	235,804
218U.2	BUILDING SERVICES							
218U.21	DRAINS + PIPING	1 LT	4,000	1 LT	440 MH	5,702	570	
218U.211	ROOF DRAINS + PIPING							
218U.212	FLOOR DRAINS + PIPING							
	218U.21 DRAINS + PIPING		4,000		440 MH	5,702	570	10,272

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
218J.22	HEATING,VENT + AIR COND	1 LT	13,735	1 LT	772 MH	9,986	1,498	
218J.23	FIRE PROTECTION							
218J.24	LIGHTING + SERVICE POWER			2000 SF	600 MH	7,378	3,600	
	218J.2 BUILDING SERVICES		17,735		1812 MH	23,066	5,668	46,469
	218J. MATERIAL HANDL+SERVICE BLD		17,735		10570 MH	129,195	135,543	282,273
218V.	WASTE WATER TREATMENT BLDG							
218V.1	WASTE WATER EQUIPMENT BLDG							
218V.11	BUILDING STRUCTURE							
218V.111	EXCAVATION WORK							
218V.1111	EXCAVATION-EARTH			230 CY	57 MH	667	230	
218V.1114	BACKFILL-EARTH			150 CY	45 MH	448	150	
	218V.111 EXCAVATION WORK				102 MH	1,115	380	1,495
218V.113	SUBSTRUCTURE CONCRETE							
218V.1131	FORMWORK			1700 SF	680 MH	7,509	1,700	
218V.1132	REINFORCING STEEL			7 TN	175 MH	2,261	2,625	
218V.1133	CONCRETE			160 CY	120 MH	1,226	5,120	
218V.1134	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
218V.1135	FLOOR FINISH			2000 SF	20 MH	204	20	
218V.1139	WIRE FABRIC			2000 SF	40 MH	516	240	
	218V.113 SUBSTRUCTURE CONCRETE				1161 MH	13,231	11,105	24,336

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218V.114	SUPERSTRUCTURE							
218V.1141	CONCRETE WORK							
218V.1142	STRUCTURAL + MISC STEEL							
218V.1143	EXTERIOR WALLS							
218V.11433	METAL INSULATED SIDING			4280 SF	856 MH	11,144	17,120	
	218V.1143 EXTERIOR WALLS				856 MH	11,144	17,120	28,264
218V.1145	ROOFING + FLASHING							
218V.11455	METAL ROOF DECK			2030 SF	120 MH	1,564	2,000	
	218V.1145 ROOFING + FLASHING				120 MH	1,564	2,000	3,564
218V.1147	DOORS + WINDOWS							
218V.11471	ROLLING STEEL DOORS			200 SF	100 MH	1,302	2,600	
218V.11472	PERSONNEL DOORS			80 SF	56 MH	650	960	
	218V.1147 DOORS + WINDOWS				156 MH	1,952	3,760	5,712
218V.1149	PAINTING							
218V.11495	DOORS			280 SF	6 MH	57	28	
	218V.1149 PAINTING				6 MH	57	28	85
	218V.114 SUPERSTRUCTURE				1138 MH	14,717	22,908	37,625
	218V.11 BUILDING STRUCTURE				2401 MH	29,063	34,393	63,456
218V.12	BUILDING SERVICES							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
218V.121	PLUMBING + DRAINS	1 LT	2,000		221 MH	2,861		
218V.1212	FLOOR DRAINS + PIPING							
	218V.121 PLUMBING + DRAINS		2,000		221 MH	2,861		4,861
218V.122	HEATING,VENT + AIR COND	1 LT	2,964	1 LT	166 MH	2,147	322	
218V.1221	ROTATING MACHINERY							
218V.12211	POWER ROOF VENTILATOR+MTR							
	218V.1221 ROTATING MACHINERY							
218V.1222	HEAT TRANSFER EQUIPMENT							
218V.12221	ELECTRIC UNIT HEATERS+MTR							
	218V.1222 HEAT TRANSFER EQUIPMENT							
218V.1226	VALVES + DAMPERS							
218V.12269	WALL LOUVERS							
	218V.1226 VALVES + DAMPERS							
	218V.122 HEATING,VENT + AIR COND		2,964		166 MH	2,147	322	5,433
218V.123	FIRE PROTECTION EQUIPMENT							
218V.1231	PORTABLE FIRE EXTINGUISH							
	218V.123 FIRE PROTECTION EQUIPMENT							
218V.124	LIGHTING + SERVICE POWER			1000 SF	300 MH	3,689	1,600	
	218V.12 BUILDING SERVICES		4,964		687 MH	8,697	2,122	15,783

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	218V.1 WASTE WATER EQUIPMENT BLDG	4,964			3088 MH	37,760	36,515	79,239
218V.2	WASTE WATER SETTLING BASIN							
218V.21	EXCAVATION WORK							
218V.211	EXCAVATION-EARTH			20000 CY	5000 MH	58,450	20,000	
218V.214	BACKFILL-EARTH			2500 CY	750 MH	7,464	2,500	
	218V.21 EXCAVATION WORK				5750 MH	65,914	22,500	88,414
218V.23	SUBSTRUCTURE CONCRETE							
218V.231	FORMWORK			2000 SF	800 MH	8,634	2,000	
218V.232	REINFORCING STEEL			25 TN	625 MH	8,079	9,375	
218V.233	CONCRETE			500 CY	375 MH	3,829	16,000	
	218V.23 SUBSTRUCTURE CONCRETE				1800 MH	20,733	27,375	48,108
	218V.2 WASTE WATER SETTLING BASIN				7550 MH	86,647	49,875	136,522
218V.3	API OIL SEPARATOR							
218V.31	BUILDING STRUCTURE							
218V.311	EXCAVATION WORK							
218V.3111	EXCAVATION-EARTH			100 CY	25 MH	293	100	
218V.3114	BACKFILL-EARTH			50 CY	15 MH	149	50	
	218V.311 EXCAVATION WORK				40 MH	442	150	592
218V.313	SUBSTRUCTURE CONCRETE							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	LABOR HRS	LABOR COST	MATERIAL COST	TOTAL COSTS
218V.3131	FORMWORK			520 CY	208 MH	2,297	520	
218V.3132	REINFORCING STEEL			3 TN	75 MH	970	1,125	
218V.3133	CONCRETE			65 CY	49 MH	499	2,080	
	218V.313 SUBSTRUCTURE CONCRETE				332 MH	3,765	3,725	7,491
218V.314	SUPERSTRUCTURE							
218V.3141	CONCRETE WORK							
218V.3142	STRUCTURAL + MISC STEEL							
218V.31421	CARBON STEEL FLUME			3 TN	150 MH	1,953	3,300	
	218V.3142 STRUCTURAL + MISC STEEL				150 MH	1,953	3,300	5,253
	218V.314 SUPERSTRUCTURE				150 MH	1,953	3,300	5,253
	218V.31 BUILDING STRUCTURE				522 MH	6,161	7,175	13,336
	218V.3 API OIL SEPARATOR				522 MH	6,161	7,175	13,336
	218V. WASTE WATER TREATMENT BLDG	4,904			11160 MH	130,568	93,565	229,097
218W.	MISC COAL HANDLING STRUCT							
218W.1	CONVEYOR GALLERIES							
218W.11	BUILDING STRUCTURE							
218W.111	EXCAVATION WORK							
218W.1111	EXCAVATION-EARTH			2700 CY	675 MH	7,890	2,700	
218W.1114	BACKFILL-EARTH			2300 CY	691 MH	8,077	2,300	

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	218w.111 EXCAVATION WORK				1366 MH	15,967	5,000	20,967
218w.113	SUBSTRUCTURE CONCRETE							
218w.1131	FORMWORK			5000 SF	2000 MH	22,084	5,000	
218w.1132	REINFORCING STEEL			30 TN	751 MH	9,697	11,250	
218w.1133	CONCRETE			375 CY	281 MH	2,869	12,000	
218w.1134	EMBEDDED STEEL			8 TN	1000 MH	12,028	11,200	
	213w.113 SUBSTRUCTURE CONCRETE				4032 MH	46,678	39,450	86,128
218w.114	SUPERSTRUCTURE							
218w.1141	CONCRETE WORK							
218w.1142	STRUCTURAL + MISC STEEL							
218w.11421	STRUCTURAL STEEL			730 TN	10950 MH	142,543	547,500	
218w.11423	MISC. FRAMES, ETC.			2 TN	100 MH	1,302	2,200	
218w.11425	METAL WALKWAYS			10300 SF	2060 MH	26,817	51,500	
	213w.1142 STRUCTURAL + MISC STEEL				13110 MH	170,662	01,200	771,862
218w.1143	EXTERIOR WALLS							
218w.11433	METAL INSULATED SIDING			54000 SF	10800 MH	140,590	216,000	
	213w.1143 EXTERIOR WALLS				10800 MH	140,590	216,000	356,590
218w.1144	ROOF DECK							
218w.11441	METAL ROOF DECK-INSULATED			38000 SF	2280 MH	29,679	38,000	
218w.11443	TRANSLUCENT PANALS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	218W.1144 ROOF DECK				2280 MH	29,679	38,000	67,679
	218W.114 SUPERSTRUCTURE				26190 MH	340,931	855,200	1,196,131
	218W.11 BUILDING STRUCTURE				31566 MH	403,576	899,650	1,303,226
	218W.1 CONVEYOR GALLERIES				31588 MH	403,576	899,650	1,303,226
218W.2	ROTARY PLOW ACCESS TUNNEL							
218W.21	BUILDING STRUCTURE							
218W.211	EXCAVATION WORK							
218W.2111	EXCAVATION-EARTH			1200 CY	900 MH	10,521	1,200	
218W.2112	EXCAVATION-ROCK			600 CY	480 MH	5,611	2,400	
218W.2114	BACKFILL-EARTH			300 CY	90 MH	896	300	
218W.2115	DEWATERING			1 LT	100 MH	932	100	
	218W.211 EXCAVATION WORK				1570 MH	17,960	4,000	21,960
218W.213	SUBSTRUCTURE CONCRETE							
218W.2131	FORMWORK			12000 SF	4800 MH	53,003	12,000	
218W.2132	REINFORCING STEEL			3 TN	75 MH	970	1,125	
218W.2133	CONCRETE			400 CY	300 MH	3,064	12,800	
	218W.213 SUBSTRUCTURE CONCRETE				5175 MH	57,037	25,925	82,962
218W.214	SUPERSTRUCTURE							
218W.2141	CONCRETE WORK							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
218W.2142	STRUCTURAL + MISC STEEL							
218W.21421	STRUCTURAL STEEL			1 TN	15 MH	196	725	
	218W.2142 STRUCTURAL + MISC STEEL				15 MH	196	725	921
218W.2144	ROOF DECK							
218W.21441	METAL ROOF DECK-INSULATED			250 SF	15 MH	196	250	
	218W.2144 ROOF DECK				15 MH	196	250	446
218W.2146	INTERIOR WALLS							
218W.21462	MASONRY			800 SF	200 MH	2,282	2,240	
	218W.2146 INTERIOR WALLS				200 MH	2,282	2,240	4,522
218W.2147	DOORS + WINDOWS							
218W.21472	PERSONNEL DOORS			21 SF	15 MH	174	252	
	218W.2147 DOORS + WINDOWS				15 MH	174	252	426
	218W.214 SUPERSTRUCTURE				245 MH	2,848	3,467	6,315
	218W.21 BUILDING STRUCTURE				6990 MH	77,845	33,392	111,237
	218W.2 ROTARY PLOW ACCESS TUNNEL				6990 MH	77,845	33,392	111,237
218W.3	COAL PILE MEMBRANE BARRIER							
218W.31	EARTHWORK			125000 CY	2500 MH	29,225	37,500	
218W.32	MEMBRANE BARRIER	750000 SF	150,000		22500 MH	209,700		
	218W.3 COAL PILE MEMBRANE BARRIER		150,000		25000 MH	238,925	37,500	426,425

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
218W.4	LOWERING WELLS							
218W.41	BUILDING STRUCTURE							
218W.411	EXCAVATION WORK							
218W.412	SUBSTRUCTURE+SUPERSTRUCTRE							
218W.4121	FORMWORK			6000 SF	6000 MH	66,254	8,000	
218W.4122	REINFORCING STEEL			40 TN	1200 MH	15,496	15,000	
218W.4123	CONCRETE			320 CY	560 MH	5,719	10,240	
218W.4124	STRUCTURAL + MISC. STEEL			3 TN	45 MH	586	2,175	
	218W.412 SUBSTRUCTURE+SUPERSTRUCTRE				7605 MH	88,054	35,415	123,469
	218W.41 BUILDING STRUCTURE				7605 MH	88,054	35,415	123,469
	218W.4 LOWERING WELLS				7605 MH	88,054	35,415	123,469
218W.5	BUILDING SERVICES							
218W.54	LIGHTING + SERVICE POWER			550 SF	165 MH	2,027	990	
	218W.5 BUILDING SERVICES				165 MH	2,027	990	3,017
	218W. MISC COAL HANDLING STRUCT	150,000			71548 MH	810,427	1,006,947	1,967,374
219.	STACK STRUCTURE							
219.1	STRUCTURE							
219.11	EXCAVATION WORK							
219.111	EXCAVATION-EARTH			2300 CY	575 MH	6,721	2,300	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
219.112	EXCAVATION-ROCK			600 CY	480 MH	5,611	2,400	
219.114	BACKFILL-EARTH			600 CY	180 MH	1,791	600	
219.115	DEWATERING			1 LT	150 MH	1,398	150	
	219.11 EXCAVATION WORK				1385 MH	15,521	5,450	20,971
219.13	SUBSTRUCTURE CONCRETE							
219.131	FORMWORK			3000 SF	1200 MH	13,251	3,000	
219.132	REINFORCING STEEL			225 TN	5625 MH	72,636	84,375	
219.133	CONCRETE			3000 CY	2251 MH	22,988	96,000	
	219.13 SUBSTRUCTURE CONCRETE				9076 MH	106,875	183,375	292,250
219.14	SUPERSTRUCTURE	1 EA	1,000,000		57000 MH	650,370		
219.141	CONCRETE WORK							
219.1412	REINFORCING STEEL							
219.1413	CONCRETE							
219.1414	BRICK LINER							
	219.141 CONCRETE WORK							
219.142	STRUCTURAL + MISC STEEL							
219.1421	STRUCTURAL STEEL							
	219.142 STRUCTURAL + MISC STEEL							
	219.14 SUPERSTRUCTURE		1,000,000		57000 MH	650,370		1,650,370
	219.1 STRUCTURE		1,000,000		67461 MH	774,766	188,825	1,963,591

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
219.2	CHIMNEY SERVICES							
219.24	AIRCRAFT WARNING LIGHTS							
219.25	ELEVATOR							
219.26	LIGHTNING PROTECTION							
	219.2 CHIMNEY SERVICES							
	219. STACK STRUCTURE	1,000,000		67461 MH		774,766	188,625	1,963,591
	21 . STRUCTURES + IMPROVEMENTS	2,555,564		1453304 MH		17,106,859	27,524,934	47,187,357

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22 .	BOILER PLANT EQUIPMENT							
220A.	FOSSIL STEAM SUPPLY SYSTEM							
220A.1	QUOTED FSSS PRICE	1 LT	55,675,000	1 LT	1128000 MH	15,975,920	1,397,592	
220A.2	DISTRIBUTED FSSS COST							
220A.21	STEAM GENERATING EQUIPMENT							
220A.211	SUPERCRITICAL PRESS BOILER							
220A.212	ASSOCIATED BOILER SYSTEMS							
220A.213	MISC BOILER SYSTEMS							
220A.214	SOOTBLOWERS							
	220A.21 STEAM GENERATING EQUIPMENT							
220A.22	DRAFT EQUIPMENT							
220A.221	FORCED DRAFT FAN + MOTOR							
220A.222	PRIMARY AIR FAN + MOTOR							
220A.224	REGENERATIVE AIR HTR+MOTOR							
	220A.22 DRAFT EQUIPMENT							
220A.25	FUEL HANDLING EQUIPMENT							
220A.251	COAL FEEDER + MOTOR							
220A.252	COAL PULVERIZER + MOTOR							
	220A.25 FUEL HANDLING EQUIPMENT							
	220A.2 DISTRIBUTED FSSS COST							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	220A. FOSSIL STEAM SUPPLY SYSTEM		55,675,000		1128000 MH	13,975,920	1,397,592	71,048,512
221.	STEAM GENERATING SYSTEM							
221.1	STEAM GENERATING EQUIPMENT							
221.11	SUPERCRITICAL PRESS BOILER							
221.12	ASSOCIATED BOILER SYSTEMS							
221.13	MISC BOILER SYSTEMS							
	221.1 STEAM GENERATING EQUIPMENT							
221.2	STEAM GENERATING ACCESSORY							
221.21	BOILER BYPASS SYSTEM							
221.215	PIPING							
221.2152	2.5 IN + LARGER							
221.21521	CS/NWS	103460 LB	155,220	1 LT	15523 MH	201,182	20,118	
	221.2152 2.5 IN + LARGER		155,220		15523 MH	201,182	20,118	376,520
	221.215 PIPING		155,220		15523 MH	201,182	20,118	376,520
221.216	VALVES	1 LT	70,000					
221.2161	GATE							
221.2162	CHECK							
	221.216 VALVES		70,000					70,000
221.217	PIPING-MISC ITEMS							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
221.2171	HANGERS + SUPPORTS	20000 LB	30,000					
221.2172	INSULATION							
	221.217 PIPING-MISC ITEMS		30,000					30,000
	221.21 BOILER BYPASS SYSTEM		255,220		15523 MH	201,182	20,118	476,520
221.22	BOILER VENTS AND DRAINS							
221.225	PIPING							
221.2251	2 IN + SMALLER							
221.22511	CS/NNS			7700 LB	2310 MH	29,941	10,010	
	221.2251 2 IN + SMALLER				2310 MH	29,941	10,010	39,951
221.2252	2.5 IN + LARGER							
221.22521	CS/NNS	74200 LB	111,300	1 LT	11130 MH	144,250	14,425	
	221.2252 2.5 IN + LARGER		111,300		11130 MH	144,250	14,425	269,975
	221.225 PIPING		111,300		13440 MH	174,191	24,435	309,926
221.226	VALVES	1 LT	13,000					
221.2265	RELIEF							
	221.226 VALVES		13,000					13,000
221.227	PIPING-MISC ITEMS							
221.2271	HANGERS + SUPPORTS	15000 LB	22,500					
	221.227 PIPING-MISC ITEMS		22,500					22,500

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	221.22 BOILER VENTS AND DRAINS		146,800		13440 MH	174,191	24,435	345,426
	221.2 STEAM GENERATING ACCESSORY		402,020		28963 MH	375,373	44,553	821,946
221.3	SOOTBLOWING SYSTEM							
221.31	ROTATING MACHINERY							
221.311	SOOTBLOWERS							
221.312	S.B. COMPRESSOR + MOTOR	2 EA	768,000	1 LT	3600 MH	47,581	4,758	
221.3121	S.B. COMPRESSOR							
221.3122	S.B. COMPRESSOR MOTOR							
	221.312 S.B. COMPRESSOR + MOTOR		768,000		3600 MH	47,581	4,758	820,339
	221.31 ROTATING MACHINERY		768,000		3600 MH	47,581	4,758	820,339
221.33	TANKS AND PRESSURE VESSELS							
221.331	S.B. AIR RECEIVER	1 EA	8,000	1 LT	200 MH	2,616	262	
	221.33 TANKS AND PRESSURE VESSELS		8,000		200 MH	2,616	262	10,878
221.35	PIPING							
221.351	2 IN + SMALLER							
221.3511	CS/NNS			3090 LB	927 MH	12,015	4,017	
	221.351 2 IN + SMALLER				927 MH	12,015	4,017	16,032
221.352	2.5 IN + LARGER							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
221.3521	CS/NNS	26410 LB	39,615	1 LT	3961 MH	51,337	5,134	
	221.352 2.5 IN + LARGER		39,615		3961 MH	51,337	5,134	96,086
	221.35 PIPING		39,615		4886 MH	63,352	9,151	112,118
221.36	VALVES	1 LT	28,000					
221.361	GATE							
221.362	CHECK							
221.363	GLOBE							
221.365	RELIEF							
	221.36 VALVES		28,000					28,000
221.37	PIPING-MISC ITEMS							
221.371	HANGERS + SUPPORTS	5500 LB	7,950					
	221.37 PIPING-MISC ITEMS		7,950					7,950
221.38	INSTRUMENTATION + CONTROL							
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							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
221.39734	EMBEDDED STEEL							
	221.3973 SUPERSTRUCTURE CONCRETE							
	221.397 COMPRESSORS + AIR RECEIVER							
	221.39 FOUNDATIONS/SKIDS							
	221.3 SOOTBLOWING SYSTEM		851,565		6688 MH	113,549	14,771	979,285
	221. STEAM GENERATING SYSTEM		1,253,565		37651 MH	488,922	58,724	1,801,231
222.	DRAFT SYSTEM							
222.1	ROTATING MACHINERY							
222.11	FORCED DRAFT FAN + MOTOR							
222.1	FORCED DRAFT FAN							
22	FORCED DRAFT FAN MOTOR							
	222.11 FORCED DRAFT FAN + MOTOR							
222.12	PRIMARY AIR FAN + MOTOR							
222.121	PRIMARY AIR FAN							
222.122	PRIMARY AIR FAN MOTOR							
	222.12 PRIMARY AIR FAN + MOTOR							
222.14	AIR HEATER DRAIN PUMP+MTR	3 EA	6,000	1 LT	210 MH	2,775	278	
222.141	AIR HEATER DRAIN PUMP							
222.142	AIR HEATER DRAIN PUMP							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	222.14 AIR HEATER DRAIN PUMP+MTR		6,000		210 MH	2,775	278	9,053
	222.1 ROTATING MACHINERY		6,000		210 MH	2,775	278	9,053
222.2	HEAT TRANSFER EQUIPMENT							
222.21	REGENERATIVE AIR HEATERS							
222.211	SECONDARY AIR HEATER+MOTOR							
222.2111	SECONDARY AIR HEATER							
222.2112	SECONDARY AIR HEATER MOTOR							
	222.211 SECONDARY AIR HEATER+MOTOR							
222.212	PRIMARY AIR HEATER + MOTOR							
222.2121	PRIMARY AIR HEATER							
222.2122	PRIMARY AIR HEATER MOTOR							
	222.212 PRIMARY AIR HEATER + MOTOR							
	222.21 REGENERATIVE AIR HEATERS							
222.22	INLET COMBUST AIR STM COIL	1 LT	237,000	1 LT	1100 MH	14,388	1,439	
222.23	COMBST AIR PREHT STM COILS	1 LT	120,000	1 LT	900 MH	11,772	1,177	
	222.2 HEAT TRANSFER EQUIPMENT		357,000		2000 MH	26,160	2,616	385,776
222.3	TANKS AND PRESSURE VESSELS							
222.31	AIR HEATER DRAIN TANK	2 EA	3,000	1 LT	81 MH	1,060	106	
	222.3 TANKS AND PRESSURE VESSELS		3,000		81 MH	1,060	106	4,166

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
222.4	PURIFICATION+FILTRATION EQ							
222.41	ELECTROSTATIC PRECIPITATOR	3 EA	10,002,000	1 LT	225000 MH	2,942,933	294,293	
	222.4 PURIFICATION+FILTRATION EQ		10,002,000		225000 MH	2,942,933	294,293	13,239,226
222.5	PIPING + DUCTWORK							
222.51	AIR PREHEAT STEAM PIPING							
222.511	2 IN + SMALLER							
222.5111	CS/NAS			300 LB	91 MH	1,176	390	
	222.511 2 IN + SMALLER				91 MH	1,176	390	1,566
222.512	2.5 IN + LARGER							
222.5121	CS/NAS	87720 LB	131,580	1 LT	13158 MH	170,532	17,053	
	222.512 2.5 IN + LARGER		131,580		13158 MH	170,532	17,053	319,165
	222.51 AIR PREHEAT STEAM PIPING		131,580		13249 MH	171,708	17,443	320,731
222.52	DUCTWORK							
222.521	AIR DUCTS							
222.5211	FD FAN TO AIR HEATER DUCTS	278 TN	311,360	1 LT	17236 MH	230,273	23,027	
222.5212	PRIMARY AIR DUCTWORK	169 IN	189,280	1 LT	10478 MH	139,986	13,999	
	222.521 AIR DUCTS		500,640		27714 MH	370,259	37,026	907,925
222.522	GAS DUCTS							

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222.5221	AIR HTR TO SO2 SUPPLY DUCT	1259 TN	1,410,080	1 LT	78058 MH	1,042,855	104,286	
222.5222	DUCT INSULATION			1 LT	32311 MH	420,545	478,400	
	222.522 GAS DUCTS		1,410,080		110358 MH	1,463,401	582,686	3,456,167
	222.52 DUCTWORK		1,910,720		138072 MH	1,833,660	619,712	4,364,092
	222.5 PIPING + DUCTWORK		2,042,300		151321 MH	2,005,363	637,155	4,684,823
222.6	VALVES	1 LT	80,000					
222.61	GATE							
222.62	CHECK							
222.63	GLOBE							
	222.6 VALVES		80,000					80,000
222.7	PIPING-MISC ITEMS							
222.72	INSULATION							
222.73	SPECIALTIES							
222.731	AIR INLET SILENCERS	3 EA	121,560	1 LT	1500 MH	19,530	1,953	
	222.73 SPECIALTIES		121,560		1500 MH	19,530	1,953	143,043
	222.7 PIPING-MISC ITEMS		121,560		1500 MH	19,530	1,953	143,043
222.8	INSTRUMENTATION + CONTROLS	1 LT	59,000	1 LT	671 MH	8,201	410	
222.9	FOUNDATIONS/SKIDS							
222.91	PRECIPITATOR+DUCT FOUND							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
222.911	EXCAVATION WORK							
222.9111	EXCAVATION-EARTH			200 CY	50 MH	536	200	
222.9114	BACKFILL-EARTH			100 CY	30 MH	299	100	
	222.911 EXCAVATION WORK				80 MH	835	300	1,135
222.913	SUBSTRUCTURE CONCRETE							
222.9131	FORMWORK			5280 SF	2111 MH	23,310	5,260	
222.9132	REINFORCING STEEL			20 TN	500 MH	6,456	7,500	
222.9133	CONCRETE			200 CY	151 MH	1,542	6,400	
	222.913 SUBSTRUCTURE CONCRETE				2762 MH	31,308	19,180	50,488
222.914	SUPERSTRUCTURE							
222.9142	STRUCTURAL + MISC STEEL							
222.91421	STRUCTURAL STEEL			500 TN	7500 MH	97,632	362,500	
222.91423	MISCELLANEOUS STEEL			50 TN	1500 MH	19,527	33,000	
222.91425	FLOOR GRATING (GALVANIZED)			10000 SF	1700 MH	22,130	30,000	
222.91426	STAIR TREADS			900 EA	720 MH	9,374	31,500	
222.91427	HANDRAIL			4000 LF	2400 MH	31,242	40,000	
	222.9142 STRUCTURAL + MISC STEEL				13820 MH	179,905	497,000	676,905
222.9149	PAINTING							
222.91492	STRUCTURAL STEEL			530 TN	2650 MH	25,361	3,180	
222.91494	HANDRAIL			4000 LF	800 MH	7,656	400	
	222.9149 PAINTING				3450 MH	33,017	3,580	36,597

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	222.914 SUPERSTRUCTURE				17270 MH	212,922	500,580	713,502
	222.91 PRECIPITATOR+DUCT FOUND				20112 MH	245,065	520,060	765,125
222.92	PRIMARY AIR+FD FAN FOUND							
222.921	EXCAVATION WORK							
222.9211	EXCAVATION-EARTH			400 CY	100 MH	1,071	400	
222.9214	BACKFILL-EARTH			40 CY	12 MH	116	40	
	222.921 EXCAVATION WORK				112 MH	1,169	440	1,629
222.923	SUBSTRUCTURE CONCRETE							
222.9231	FORMWORK			3000 SF	1200 MH	13,251	3,000	
222.9232	REINFORCING STEEL			30 TN	751 MH	9,697	11,250	
222.9233	CONCRETE			400 CY	300 MH	3,064	12,800	
	222.923 SUBSTRUCTURE CONCRETE				2251 MH	26,012	27,050	53,062
222.924	SUPERSTRUCTURE							
	222.92 PRIMARY AIR+FD FAN FOUND				2363 MH	27,201	27,490	54,691
222.93	AIR HEATER FOUNDATIONS							
222.931	EXCAVATION WORK							
222.9311	EXCAVATION-EARTH			130 CY	32 MH	343	130	
222.9314	BACKFILL-EARTH			80 CY	24 MH	239	80	
	222.931 EXCAVATION WORK				56 MH	582	210	792

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
222.933	SUBSTRUCTURE CONCRETE							
222.9331	FORMWORK			1500 SF	600 MH	6,626	1,500	
222.9332	REINFORCING STEEL			4 TN	100 MH	1,291	1,500	
222.9333	CONCRETE			50 CY	36 MH	390	1,600	
222.9334	EMBEDDED STEEL			3 TN	375 MH	4,523	4,200	
	222.933 SUBSTRUCTURE CONCRETE				1114 MH	12,830	8,800	21,630
222.934	SUPERSTRUCTURE							
222.9342	STRUCTURAL + MISC STEEL							
222.93421	STRUCTURAL STEEL			150 TN	2250 MH	29,237	108,750	
222.93423	MISCELLANEOUS STEEL			15 TN	750 MH	9,763	10,500	
222.93425	FLOOR GRATING/CHECKER PLT			12000 SF	2400 MH	31,242	60,000	
222.93426	STAIR TREADS			180 EA	144 MH	1,874	6,300	
222.93427	HANDRAIL			1000 LF	600 MH	7,811	10,000	
	222.9342 STRUCTURAL + MISC STEEL				6144 MH	79,977	201,550	281,529
222.9349	PAINTING							
222.93492	STRUCTURAL STEEL			150 TN	750 MH	7,178	900	
222.93494	HANDRAIL			1000 LF	200 MH	1,914	10,000	
	222.9349 PAINTING				950 MH	9,092	10,900	19,992
	222.934 SUPERSTRUCTURE				7094 MH	89,071	212,450	301,521
	222.93 AIR HEATER FOUNDATIONS				8264 MH	102,483	221,460	323,943

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	222.9 FOUNDATIONS/SKIDS				30739 MH	374,749	769,010	1,143,759
	222. DRAFT SYSTEM		12,070,860		411522 MH	5,380,776	1,705,821	19,757,457
223.	ASH + DUST HANDLING SYSTEM							
223.1	ASH + DUST HANDLING EQUIP	1 LT	4,500,000	1 LT	110000 MH	1,423,059	142,306	
223.11	FLY ASH EQUIPMENT							
223.11914	BACKFILL-EARTH							
	223.11 FLY ASH EQUIPMENT							
223.12	BOTTOM ASH + PYRITES EQUIP							
223.16	INSTRUMENTATION + CONTROL							
223.19	FOUNDATIONS/SKIDS							
223.191	DEWATERING BIN FOUNDATIONS							
223.1911	EXCAVATION WORK							
223.19111	EXCAVATION-EARTH			300 CY	75 MH	803	300	
223.19114	BACKFILL-EARTH			200 CY	60 MH	597	200	
	223.1911 EXCAVATION WORK				135 MH	1,400	500	1,900
223.1913	SUBSTRUCTURE CONCRETE							
223.19131	FORMWORK			900 SF	360 MH	3,974	900	
223.19132	REINFORCING STEEL			4 TN	10[illegible] MH	1,291	1,500	
223.19133	CONCRETE			50 CY	38 MH	390	1,600	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
223.19134	EMBEDDED STEEL			2 TN	250 MH	3,006	2,600	
	223.1913 SUBSTRUCTURE CONCRETE				748 MH	8,661	6,800	15,461
223.1914								
	223.191 DEWATERING BIN FOUNDATIONS				883 MH	10,061	7,300	17,361
223.192	FLY ASH SILO FOUNDATIONS							
223.1921	EXCAVATION WORK							
223.19211	EXCAVATION-EARTH			125 CY	32 MH	343	125	
223.19214	BACKFILL-EARTH			100 CY	30 MH	299	100	
	223.1921 EXCAVATION WORK				62 MH	642	225	867
223.1923	SUBSTRUCTURE CONCRETE							
223.19231	FORMWORK			900 SF	360 MH	3,974	900	
223.19232	REINFORCING STEEL			2 TN	51 MH	657	750	
223.19233	CONCRETE			30 CY	23 MH	234	960	
223.19234	EMBEDDED STEEL			2 TN	250 MH	3,006	2,800	
	223.1923 SUBSTRUCTURE CONCRETE				684 MH	7,871	5,410	13,281
	223.192 FLY ASH SILO FOUNDATIONS				746 MH	8,513	5,635	14,148
223.193	PYRITES HOLDING BIN FOUND							
223.1931	EXCAVATION WORK							
223.1933	SUBSTRUCTURE CONCRETE							
223.19331	FORMWORK			300 SF	120 MH	1,325	300	

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
223.19332	REINFORCING STEEL			1 TN	25 MH	322	375	
223.19333	CONCRETE			10 CY	8 MH	82	320	
223.19334	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
	223.1933 SUBSTRUCTURE CONCRETE				279 MH	3,244	2,395	5,639
	223.193 PYRITES HOLDING BIN FOUND				279 MH	3,244	2,395	5,639
223.194	SETTLING TANK FOUNDATION							
223.1941	EXCAVATION WORK							
223.19411	EXCAVATION-EARTH			200 CY	50 MH	536	200	
223.19414	BACKFILL-EARTH			175 CY	53 MH	528	175	
	223.1941 EXCAVATION WORK				103 MH	1,064	375	1,439
223.1943	SUBSTRUCTURE CONCRETE							
223.19431	FORMWORK			1000 SF	400 MH	4,417	1,000	
223.19432	REINFORCING STEEL			3 TN	75 MH	970	1,125	
223.19433	CONCRETE			35 CY	26 MH	265	1,120	
223.19434	EMBEDDED STEEL			2 TN	250 MH	3,006	2,800	
	223.1943 SUBSTRUCTURE CONCRETE				751 MH	8,658	6,045	14,703
	223.194 SETTLING TANK FOUNDATION				854 MH	9,722	6,420	16,142
223.195	RECIRCULATING TANK FOUND							
223.1951	EXCAVATION WORK							
223.19511	EXCAVATION-EARTH			600 CY	150 MH	1,607	600	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
223.19514	BACKFILL-EARTH			75 CY	23 MH	230	75	
	223.1951 EXCAVATION WORK				173 MH	1,837	675	2,512
223.1953	SUBSTRUCTURE CONCRETE							
223.19531	FORMWORK			1100 SF	440 MH	4,860	1,100	
223.19532	REINFORCING STEEL			29 TN	725 MH	9,361	10,875	
223.19533	CONCRETE			570 CY	428 MH	4,371	18,240	
223.19534	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
	223.1953 SUBSTRUCTURE CONCRETE				1719 MH	20,107	31,615	51,722
	223.195 RECIRCULATING TANK FOUND				1692 MH	21,944	32,290	54,234
	223.19 FOUNDATIONS/SKIDS				4654 MH	53,484	54,040	107,524
	223.1 ASH + DUST HANDLING EQUIP		4,300,000		114654 MH	1,476,543	196,346	6,172,889
223.2	MISC ASH+DUST HANDLING EQ							
223.21	ROTATING MACHINERY							
223.211	ASH HOPPER SEAL PUMP+MOTOR	2 EA	36,400	1 LT	280 MH	3,700	370	
223.2111	ASH HOPPER SEAL PUMP							
223.2112	ASH HOPPER SEAL PUMP MOTOR							
	223.211 ASH HOPPER SEAL PUMP+MOTOR		36,400		280 MH	3,700	370	40,470
	223.21 ROTATING MACHINERY		36,400		280 MH	3,700	370	40,470
223.25	PIPING							

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223.251	RECIRCULATION+SEAL WATER							
223.2511	2 IN + SMALLER							
223.25111	CS/NNS			5270 LB	1580 MH	20,480	6,851	
	223.2511 2 IN + SMALLER				1580 MH	20,480	6,851	27,331
223.2512	2.5 IN + LARGER							
223.25121	CS/NNS	48120 LB	72,180	1 LT	7218 MH	93,545	9,355	
	223.2512 2.5 IN + LARGER		72,180		7218 MH	93,545	9,355	175,080
	223.251 RECIRCULATION+SEAL WATER		72,180		6798 MH	114,025	16,206	202,411
	223.25 PIPING		72,180		6798 MH	114,025	16,206	202,411
223.26	VALVES	1 LT	11,000					
223.261	GATE							
223.262	CHECK							
223.263	GLOBE							
	223.26 VALVES		11,000					11,000
	223.2 MISC ASH+DUST HANDLING EQ		119,560		9078 MH	117,725	16,576	253,861
	223. ASH + DUST HANDLING SYSTEM		4,619,580		123732 MH	1,594,268	212,922	6,426,770
224.	FUEL HANDLING SYSTEMS	1 LT	6,500,000	1 LT	106000 MH	1,371,311	137,131	
224.1	COAL UNLOADING EQUIPMENT							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
224.11	RAILROAD CAR POSITIONER							
224.12	ROTARY CAR DUMPER							
224.13	COAL CAR THAWING EQUIPMENT							
	224.1 COAL UNLOADING EQUIPMENT							
224.2	CONVEYING EQUIPMENT							
224.21	BELT CONVEYORS							
	224.2 CONVEYING EQUIPMENT							
224.3	BREAKER+CRUSHER EQUIPMENT							
224.31	BRADFORD BREAKER + MOTOR							
224.311	BRADFORD BREAKER							
224.312	BRADFORD BREAKER MOTOR							
	224.31 BRADFORD BREAKER + MOTOR							
224.32	MAGNETIC SEPARATORS							
224.33	ROTARY PLOW							
224.34	COAL CRUSHER + MOTOR							
224.341	COAL CRUSHER							
224.342	COAL CRUSHER MOTOR							
	224.34 COAL CRUSHER + MOTOR							
	224.3 BREAKER+CRUSHER EQUIPMENT							
224.4	PULVERIZING SYSTEMS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
224.41	COAL FEEDER + MOTOR							
224.411	COAL FEEDER							
224.412	COAL FEEDER MOTOR							
	224.41 COAL FEEDER + MOTOR							
224.42	PULVERIZER + MOTOR							
224.421	PULVERIZER							
224.422	PULVERIZER MOTOR							
	224.42 PULVERIZER + MOTOR							
224.45	PIPING + DUCTWORK							
224.49	FOUNDATIONS/SKIDS							
224.491	PULVERIZER FOUNDATIONS							
224.4911	FORMWORK							
224.4912	REINFORCING STEEL							
224.4913	CONCRETE							
224.4914	EMBEDDED STEEL							
	224.491 PULVERIZER FOUNDATIONS							
	224.49 FOUNDATIONS/SKIDS							
	224.4 PULVERIZING SYSTEMS							
224.5	STORAGE EQUIPMENT							
224.51	LOWERING WELL EQUIP+ MOTOR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
224.511	LOWERING WELL EQUIPMENT							
224.512	LOWERING WELL EQUIP MOTOR							
	224.51 LOWERING WELL EQUIP+ MOTOR							
224.52	COAL SILO							
224.521	COAL SILO A283,3/8IN PLATE			165 TN	16500 MH	255,670	240,500	
224.522	COAL SILO A304,3/8IN PLATE			50 TN	7500 MH	103,650	200,000	
224.523	COAL SILO A 36 STIFFENERS			30 TN	900 MH	12,438	27,000	
	224.52 COAL SILO				26900 MH	371,758	467,500	839,258
	224.5 STORAGE EQUIPMENT				26900 MH	371,758	467,500	839,258
224.6	OTHER COAL HANDLING EQUIP							
224.61	SLIDEGATE + MOTOR							
224.611	SLIDEGATE							
224.612	SLIDEGATE MOTOR							
	224.61 SLIDEGATE + MOTOR							
224.62	WEIGHT SCALES							
224.63	MISC VIBRATING FEEDERS+MTR							
224.631	MISC VIBRATING FEEDERS							
224.632	MISC VIBRATING FEEDER MTR							
	224.63 MISC VIBRATING FEEDERS+MTR							
224.64	COAL SAMPLING SYSTEMS							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
224.65	DUST SUPPRESSION SYSTEMS	1 LT	110,000	1 LT	2000 MH	25,874	2,587	
224.66	FIRE PROTECTION SYSTEM	1 LT	130,000	1 LT	2700 MH	34,993	3,499	
224.67	SUMP DRAIN SYSTEM							
224.671	ROTATING MACHINERY							
224.6711	SUMP PUMPS + MOTORS	1 LT	50,000	1 LT	559 MH	7,388	739	
224.67111	SUMP PUMPS							
224.67112	SUMP PUMP MOTORS							
	224.6711 SUMP PUMPS + MOTORS		50,000		559 MH	7,388	739	58,127
	224.671 ROTATING MACHINERY		50,000		559 MH	7,388	739	58,127
224.675	PIPING	1 LT	50,000	1 LT	5000 MH	64,802	6,480	
	224.67 SUMP DRAIN SYSTEM		100,000		5559 MH	72,190	7,219	179,409
	224.6 OTHER COAL HANDLING EQUIP		340,000		10259 MH	133,057	13,305	486,362
224.7	IGNITION OIL SYSTEM							
224.71	ROTATING MACHINERY							
224.711	IGNITION OIL PUMP + MOTOR	2 EA	8,000	1 LT	141 MH	1,863	186	
224.7111	IGNITION OIL PUMP							
224.7112	IGNITION OIL PUMP MOTOR							
	224.711 IGNITION OIL PUMP + MOTOR		8,000		141 MH	1,863	186	10,049
	224.71 ROTATING MACHINERY		8,000		141 MH	1,863	186	10,049

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
224.75	PIPING							
224.751	2 IN + SMALLER							
224.7	CS/NVS			1080 LB	324 MH	4,197	1,404	
	224.751 2 IN + SMALLER				324 MH	4,197	1,404	5,601
224.752	2.5 IN + LARGER							
224.7521	CS/NVS	4410 LB	6,615	1 LT	661 MH	8,563	857	
	224.752 2.5 IN + LARGER		6,615		661 MH	8,563	857	16,040
	224.75 PIPING		6,615		985 MH	12,755	2,261	21,641
224.76	VALVES	1 LT	8,000					
224.762	CHECK							
224.768	PLUG							
	224.76 VALVES		8,000					8,000
	224.7 IGNITION OIL SYSTEM		22,615		1126 MH	14,628	2,447	39,690
224.8	INSTRUMENTATION + CONTROL							
	224. FUEL HANDLING SYSTEMS		6,862,615		144285 MH	1,890,754	620,383	9,373,7.
225.	FLUE GAS DESULFUR STRUCT							
225.1	LIME SLAKING BUILDING							
225.11	BUILDING STRUCTURE							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.111	EXCAVATION WORK							
225.1111	EXCAVATION-EARTH			1500 CY	375 MH	4,383	1,500	
225.1114	BACKFILL-EARTH			1300 CY	390 MH	3,881	1,300	
	225.111 EXCAVATION WORK				765 MH	8,264	2,800	11,064
225.113	SUBSTRUCTURE CONCRETE							
225.1131	FORMWORK			7000 SF	2800 MH	30,919	7,000	
225.1132	REINFORCING STEEL			24 TN	600 MH	7,748	9,000	
225.1133	CONCRETE			320 CY	240 MH	2,451	10,240	
225.1134	EMBEDDED STEEL			4 TN	500 MH	6,014	5,000	
225.1135	FLOOR FINISH			5300 SF	53 MH	543	53	
	225.113 SUBSTRUCTURE CONCRETE				4193 MH	47,675	31,893	79,568
225.114	SUPERSTRUCTURE							
225.1141	CONCRETE WORK							
225.11411	FORMWORK							
225.114111	FORMWORK-WOOD			1000 SF	750 MH	8,281	1,000	
225.114112	FORMWORK-METAL			10800 SF	648 MH	7,156	9,720	
	225.11411 FORMWORK				1396 MH	15,437	10,720	26,157
225.11412	REINFORCING STEEL			6 TN	180 MH	2,323	2,250	
225.11413	CONCRETE			220 CY	385 MH	3,933	7,040	
	225.1141 CONCRETE WORK				1963 MH	21,693	20,010	41,703

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.1142	STRUCTURAL + MISC STEEL							
225.11421	STRUCTURAL STEEL			300 TN	4500 MH	58,579	217,500	
225.11423	MISC. FRAMES, ETC.			70 TN	1000 MH	13,017	22,000	
225.11425	FLOOR GRATING (GALV)			3000 SF	510 MH	6,640	9,000	
225.11426	STAIR TREADS			200 EA	160 MH	2,084	7,000	
225.11427	HANDRAIL			1120 LF	672 MH	8,750	11,200	
	225.1142 STRUCTURAL + MISC STEEL				6842 MH	89,070	266,700	355,770
225.1143	EXTERIOR WALLS							
225.11433	METAL INSULATED SIDING			15000 SF	3000 MH	39,053	60,000	
	225.1143 EXTERIOR WALLS				3000 MH	39,053	60,000	99,053
225.1144	ROOF DECK							
225.11441	METAL ROOF DECK			5300 SF	317 MH	4,128	5,300	
	225.1144 ROOF DECK				317 MH	4,128	5,300	9,428
225.1145	ROOFING + FLASHING							
225.11451	B.U. ROOF INSUL. + FLASH			5300 SF	371 MH	5,001	6,625	
	225.1145 ROOFING + FLASHING				371 MH	5,001	6,625	11,626
225.1147	DOORS + WINDOWS							
225.11471	ROLLING STEEL DOORS			200 SF	100 MH	1,302	2,800	
225.11472	PERSONNEL DOORS			30 SF	21 MH	244	360	
	225.1147 DOORS + WINDOWS				121 MH	1,546	3,160	4,706

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.1149	PAINTING							
225.11492	STEELWORK			300 TN	1500 MH	14,355	1,800	
225.11493	DOORS			460 SF	9 MH	86	46	
225.11494	HANDRAIL			1120 LF	224 MH	2,144	112	
	225.1149 PAINTING				1733 MH	16,585	1,958	18,543
	225.114 SUPERSTRUCTURE				14347 MH	177,075	363,753	540,829
	225.11 BUILDING STRUCTURE				16305 MH	233,015	398,446	631,461
225.12	BUILDING SERVICES							
225.121	PLUMBING + DRAINS	1 LT	8,000	1 LT	879 MH	11,536	1,140	
225.122	HEATING,VENT + AIR COND	1 LT	11,116	1 LT	621 MH	8,032	1,205	
225.1221	ROTATING MACHINERY							
225.12211	ROOF VENTILATOR + MOTOR							
225.122111	ROOF VENTILATOR							
225.122112	ROOF VENTILATOR MOTOR							
	225.12211 ROOF VENTILATOR + MOTOR							
225.12212	WALL EXHAUST FAN + MOTOR							
225.122121	WALL EXHAUST FAN							
225.122122	WALL EXHAUST FAN MOTOR							
	225.12212 WALL EXHAUST FAN + MOTOR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	225.1221 ROTATING MACHINERY							
225.1222	HEAT TRANSFER EQUIPMENT							
225.12221	ELECTRIC UNIT HEATER+MOTOR							
225.122211	ELECTRIC UNIT HEATERS							
225.122212	ELECTRIC UNIT HEATER MOTOR							
	225.12221 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							
	225.12223 AIR CONDITIONING UNIT+MTR							
225.12224	HEATING+VENT AIR UNIT+MTR							
225.122241	HEATING+VENT AIR UNIT							
225.122242	HEATING+VENT AIR UNIT MTR							
	225.12224 HEATING+VENT AIR UNIT+MTR							
225.12225	AIR COOLED COMPRESSOR COND							
	225.1222 HEAT TRANSFER EQUIPMENT							
225.1226	VALVES + DAMPERS							
225.12269	SPECIAL VALVES + DAMPERS							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.122691	WALL LOUVERS							
	225.12269 SPECIAL VALVES + DAMPERS							
	225.1226 VALVES + DAMPERS							
	225.122 HEATING,VENT + AIR COND	11,116			621 MH	8,032	1,205	20,353
225.124	LIGHTING + SERVICE POWER			12800 SF	3841 MH	47,225	23,040	
	225.12 BUILDING SERVICES	19,116			5341 MH	66,653	25,385	111,154
	225.1 LIME SLAKING BUILDING	19,116			24646 MH	299,663	423,831	742,615
225.2	LIME SLAKING SERVICE BLDG							
225.21	BUILDING STRUCTURE							
225.211	EXCAVATION WORK							
225.2111	EXCAVATION-EARTH			70 CY	17 MH	199	70	
225.2114	BACKFILL-EARTH			50 CY	15 MH	149	50	
	225.211 EXCAVATION WORK				32 MH	348	120	468
225.213	SUBSTRUCTURE CONCRETE							
225.2131	FORMWORK			1230 SF	492 MH	5,433	1,230	
225.2132	REINFORCING STEEL			4 TN	100 MH	1,291	1,500	
225.2133	CONCRETE			75 CY	56 MH	571	2,400	
225.2134	EMBEDDED STEEL			2 TN	250 MH	3,006	2,800	
225.2135	FLOOR FINISH			2750 SF	28 MH	286	28	
225.2139	WIRE FABRIC			2750 SF	55 MH	710	330	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	225.213 SUBSTRUCTURE CONCRETE				981 MH	11,297	8,288	19,585
225.214	SUPERSTRUCTURE							
225.2141	CONCRETE WORK							
225.2142	STRUCTURAL + MISC STEEL							
225.21421	STRUCTURAL STEEL			22 TN	330 MH	4,294	15,950	
225.21423	MISC. FRAMES, ETC.			2 TN	100 MH	1,302	1,200	
	225.2142 STRUCTURAL + MISC STEEL				430 MH	5,596	18,150	23,746
225.2143	EXTERIOR WALLS							
225.21433	METAL INSULATED SIDING			870 SF	173 MH	2,255	3,480	
	225.2143 EXTERIOR WALLS				173 MH	2,255	3,480	5,735
225.2144	ROOF DECK							
225.21442	PRECAST CONCRETE PANALS			2750 SF	220 MH	2,865	3,575	
	225.2144 ROOF DECK				220 MH	2,865	3,575	6,440
225.2145	ROOFING + FLASHING							
225.21451	B.U. ROOF INSUL. + FLASH			2750 SF	193 MH	2,602	3,438	
	225.2145 ROOFING + FLASHING				193 MH	2,602	3,438	6,040
225.2147	DOORS + WINDOWS							
225.21472	PERSONNEL DOORS			315 SF	221 MH	2,564	3,780	
	225.2147 DOORS + WINDOWS				221 MH	2,564	3,780	6,344

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.2149	PAINTING							
225.21492	STEELWORK			22 TN	110 MH	1,053	132	
225.21493	DOORS			315 SF	6 MH	57	32	
	225.2149 PAINTING				116 MH	1,110	164	1,274
	225.214 SUPERSTRUCTURE				1353 MH	16,992	32,587	49,579
	225.21 BUILDING STRUCTURE				2366 MH	28,637	40,995	69,632
225.22	BUILDING SERVICES							
	225.2 LIME SLAKING SERVICE BLDG				2366 MH	28,637	40,995	69,632
225.3	DESULFUR CTRL+SWTCHGR BLDG							
225.31	BUILDING STRUCTURE							
225.311	EXCAVATION WORK							
225.3111	EXCAVATION-EARTH			250 CY	63 MH	736	250	
225.3114	BACKFILL-EARTH			220 CY	66 MH	656	220	
	225.311 EXCAVATION WORK				129 MH	1,392	470	1,862
225.313	SUBSTRUCTURE CONCRETE							
225.3131	FORMWORK			1400 SF	560 MH	6,183	1,400	
225.3132	REINFORCING STEEL			5 TN	125 MH	1,614	1,875	
225.3133	CONCRETE			60 CY	45 MH	460	1,920	
225.3134	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
225.3135	FLOOR FINISH			2000 SF	20 MH	204	20	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.3139	WIRE FABRIC			2000 SF	40 MH	516	240	
	225.313 SUBSTRUCTURE CONCRETE				916 MH	10,492	6,855	17,347
225.314	SUPERSTRUCTURE							
225.3141	CONCRETE WORK							
225.31411	FORMWORK							
225.314112	FORMWORK-METAL			4000 SF	240 MH	2,652	3,600	
	225.31411 FORMWORK				240 MH	2,652	3,600	6,252
225.31412	REINFORCING STEEL			4 TN	120 MH	1,552	1,500	
225.31413	CONCRETE			50 CY	88 MH	898	1,600	
225.31415	FLOOR FINISH			2000 SF	20 MH	204	20	
	225.3141 CONCRETE WORK				468 MH	5,306	6,720	12,026
225.3142	STRUCTURAL + MISC STEEL							
225.31421	STRUCTURAL STEEL			76 TN	1140 MH	14,839	55,100	
225.31423	MISC. FRAMES, ETC.			4 TN	200 MH	2,603	4,400	
225.31426	STAIR TREADS			70 EA	56 MH	730	2,450	
225.31427	HANDRAIL			180 LF	107 MH	1,394	1,800	
	225.3142 STRUCTURAL + MISC STEEL				1503 MH	19,566	63,750	83,316
225.3143	EXTERIOR WALLS							
225.31432	MASONRY			200 SF	50 MH	571	560	
225.31433	METAL INSULATED SIDING			7600 SF	1520 MH	19,789	30,400	

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	225.3143 EXTERIOR WALLS				1570 MH	20,360	30,960	51,320
225.3144	ROOF DECK							
225.31442	PRECAST CONCRETE PANALS							
	225.3144 ROOF DECK							
225.3145	ROOFING + FLASHING							
225.31451	B.U. ROOF INSUL. + FLASH			2000 SF	140 MH	1,887	2,500	
	225.3145 ROOFING + FLASHING				140 MH	1,887	2,500	4,387
225.3147	DOORS + WINDOWS							
225.31472	PERSONNEL DOORS			220 SF	154 MH	1,786	2,640	
	225.3147 DOORS + WINDOWS				154 MH	1,786	2,640	4,426
225.3148	WALLS,FLOOR + CEIL FINISHS							
225.31481	VINYL FLOOR TILE			1500 SF	120 MH	1,392	2,250	
225.31486	ACOUSTICAL CEILING			1500 SF	150 MH	1,740	750	
	225.3148 WALLS,FLOOR + CEIL FINISHS				270 MH	3,132	3,000	6,132
225.3149	PAINTING							
225.31492	STEELWORK			80 TN	400 MH	3,828	480	
225.31494	HANDRAIL			180 LF	4 MH	38	18	
225.31495	METAL DECK			1000 SF	20 MH	191	100	
	225.3149 PAINTING				424 MH	4,057	598	4,655

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	225.314 SUPERSTRUCTURE				4529 MH	56,094	110,168	166,262
	225.31 BUILDING STRUCTURE				5574 MH	67,976	117,493	185,471
225.32	BUILDING SERVICES							
225.321	PLUMBING + DRAINS	1 LT	8,000	1 LT	879 MH	11,396	1,140	
225.322	HEATING,VENT + AIR COND	1 LT	5,440	1 LT	304 MH	3,933	590	
225.3222	HEAT TRANSFER EQUIPMENT							
225.32221	ELECTRIC UNIT HEATER+MOTOR							
225.322211	ELECTRIC UNIT HEATERS							
225.322212	ELECTRIC UNIT HEATER MOTOR							
	225.32221 ELECTRIC UNIT HEATER+MOTOR							
225.32222	ELECTRIC BASEBOARD HEATER							
225.32223	HEATING+VENT AIR UNIT+MTR							
225.322231	HEATING+VENT AIR UNIT							
225.322232	HEATING+VENT AIR UNIT MTR							
	225.32223 HEATING+VENT AIR UNIT+MTR							
225.32224	AIR CONDITIONING UNIT+MTR							
225.322241	AIR CONDITIONING UNIT							
225.322242	AIR CONDITIONING UNIT MTR							
	225.32224 AIR CONDITIONING UNIT+MTR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	225.3222 HEAT TRANSFER EQUIPMENT							
225.3226	VALVES + DAMPERS							
225.32269	SPECIAL VALVES + DAMPERS							
225.322691	WALL LOUVERS							
	225.32269 SPECIAL VALVES + DAMPERS							
	225.3226 VALVES + DAMPERS							
	225.322 HEATING,VENT + AIR COND	5,440			304 MH	3,933	590	9,963
225.324	LIGHTING + SERVICE POWER			2000 SF	600 MH	7,376	3,600	
	225.32 BUILDING SERVICES	13,440			1783 MH	22,707	5,330	41,477
	225.3 DESULFUR CTRL+SWTCHGR BLDG	13,440			7357 MH	90,685	122,823	226,948
225.5	PROCESS+SEAL WATER PUMPHSE							
225.51	BUILDING STRUCTURE							
225.511	EXCAVATION WORK							
225.5111	EXCAVATION-EARTH			100 CY	25 MH	293	100	
225.5114	BACKFILL-EARTH			70 CY	21 MH	208	70	
	225.511 EXCAVATION WORK				46 MH	501	170	671
225.513	SUBSTRUCTURE CONCRETE							
225.5131	FORMWORK			1000 SF	400 MH	4,417	1,000	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.5132	REINFORCING STEEL			2 TN	51 MH	657	750	
225.5133	CONCRETE			40 CY	31 MH	316	1,280	
225.5134	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
225.5135	FLOOR FINISH			800 SF	8 MH	82	8	
225.5139	WIRE FABRIC			800 SF	16 MH	207	96	
	225.513 SUBSTRUCTURE CONCRETE				632 MH	7,194	4,534	11,728
225.514	SUPERSTRUCTURE			600 SF	223 MH	2,905	2,680	
225.5141	CONCRETE WORK							
225.5142	STRUCTURAL + MISC STEEL							
225.5143	EXTERIOR WALLS							
225.51433	PREFAB METAL INSUL. SIDING							
	225.5143 EXTERIOR WALLS							
225.5145	ROOFING + FLASHING							
225.51455	PREFAB STANDING RIB & INSL							
	225.5145 ROOFING + FLASHING							
225.5147	DOORS + WINDOWS							
225.51472	PERSONNEL DOORS							
	225.5147 DOORS + WINDOWS							
	225.514 SUPERSTRUCTURE				223 MH	2,905	2,680	5,585
	225.51 BUILDING STRUCTURE				901 MH	10,600	7,384	17,984

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.52	BUILDING SERVICES							
225.521	PLUMBING + DRAINS	1 LT	4,000	1 LT	440 MH	5,702	570	
225.522	HEATING,VENT + AIR COND	1 LT	641	1 LT	34 MH	442	66	
225.5221	ROTATING MACHINERY							
225.52211	WALL EXHAUST FAN + MOTOR							
225.522111	WALL EXHAUST FAN							
225.522112	WALL EXHAUST FAN MOTOR							
	225.52211 WALL EXHAUST FAN + MOTOR							
	225.5221 ROTATING MACHINERY							
225.5222	HEAT TRANSFER EQUIPMENT							
225.52221	ELECTRIC UNIT HEATER+MOTOR							
225.522211	ELECTRIC UNIT HEATERS							
225.522212	ELECTRIC UNIT HEATER MOTOR							
	225.52221 ELECTRIC UNIT HEATER+MOTOR							
	225.5222 HEAT TRANSFER EQUIPMENT							
225.5226	VALVES							
225.52269	SPECIAL VALVES + DAMPERS							
225.522691	WALL LOUVERS							
	225.52269 SPECIAL VALVES + DAMPERS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	225.5226 VALVES							
	225.522 HEATING,VENT + AIR COND	643			34 MH	442	66	1,149
225.526	LIGHTING + SERVICE POWER			400 SF	119 MH	1,463	720	
	225.52 BUILDING SERVICES	4,641			593 MH	7,607	1,356	13,604
	225.5 PROCESS+SEAL WATER PUMPHSE	4,641			1494 MH	18,207	8,740	31,588
225.6	THICKENER EQUIPMENT BLDG							
225.61	BUILDING STRUCTURE							
225.611	EXCAVATION WORK							
225.6111	EXCAVATION-EARTH			200 CY	51 MH	595	200	
225.6114	BACKFILL-EARTH			100 CY	30 MH	299	100	
	225.611 EXCAVATION WORK				81 MH	894	300	1,194
225.613	SUBSTRUCTURE CONCRETE							
225.6131	FORMWORK			2000 SF	800 MH	8,334	2,000	
225.6132	REINFORCING STEEL			5 TN	125 MH	1,614	1,875	
225.6133	CONCRETE			110 CY	83 MH	847	3,520	
225.6134	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
225.6135	FLOOR FINISH			3200 SF	32 MH	326	32	
225.6139	WIRE FABRIC			3200 SF	63 MH	815	384	
	225.613 SUBSTRUCTU ONCRETE				1229 MH	13,951	9,211	23,162
225.614	SUPERSTRUCTURE			3200 SF	896 MH	11,663	10,720	

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225.6141	CONCRETE WORK							
225.6142	STRUCTURAL + MISC STEEL							
225.6143	EXTERIOR WALLS							
225.61433	METAL INSULATED SIDING							
	225.6143 EXTERIOR WALLS							
225.6145	ROOFING + FLASHING							
225.61455	STANDING RIB + INSUL							
	225.6145 ROOFING + FLASHING							
225.6146	INTERIOR WALLS + PARTITION							
225.61462	MASONRY							
	225.6146 INTERIOR WALLS + PARTITION							
225.6147	DOORS + WINDOWS							
225.61471	R..ING STEEL DOORS							
225.61472	PERSONNEL DOORS							
	225.6147 DOORS + WINDOWS							
	225.614 SUPERSTRUCTURE				896 MH	11,663	10,720	22,383
	225.61 BUILDING STRUCTURE				2206 MH	26,508	20,231	46,739
225.62	BUILDING SERVICES							
225.621	PLUMBING + DRAINS	1 LT	4,000	1 LT	440 MH	5,702	570	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.622	HEATING,VENT + AIR COND	1 LT	1,887	1 LT	104 MH	1,345	202	
225.6221	ROTATING MACHINERY							
225.62211	WALL EXHAUST FAN + MOTOR							
225.622111	WALL EXHAUST FAN							
225.622112	WALL EXHAUST FAN MOTOR							
	225.62211 WALL EXHAUST FAN + MOTOR							
	225.6221 ROTATING MACHINERY							
225.6222	HEAT TRANSFER EQUIPMENT							
225.62221	ELECTRIC UNIT HEATER+MOTOR							
225.622211	ELECTRIC UNIT HEATERS							
225.622212	ELECTRIC UNIT HEATER MOTOR							
	225.62221 ELECTRIC UNIT HEATER+MOTOR							
	225.6222 HEAT TRANSFER EQUIPMENT							
225.6226	VALVES							
225.62269	SPECIAL VALVES + DAMPERS							
225.622691	WALL LOUVERS							
	225.62269 SPECIAL VALVES + DAMPERS							
	225.6226 VALVES							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	225.622 HEATING,VENT + AIR COND		1,867		104 MH	1,345	202	3,434
225.624	LIGHTING + SERVICE POWER			1600 SF	481 MH	5,916	2,680	
	225.62 BUILDING SERVICES		5,887		1025 MH	12,963	3,052	22,502
	225.6 THICKENER EQUIPMENT BLDG		5,867		3231 MH	39,471	23,863	69,241
225.7	SLUDGE STABILIZATION BLDG							
225.71	HANGERS AND SUPPORTS							
225.711	EXCAVATION WORK							
225.7111	EXCAVATION-EARTH			600 CY	151 MH	1,704	600	
225.7114	BACKFILL-EARTH			500 CY	150 MH	1,492	500	
	225.711 EXCAVATION WORK				301 MH	3,256	1,100	4,356
225.713	SUBSTRUCTURE CONCRETE							
225.7131	FORMWORK			5300 SF	2120 MH	23,410	5,300	
225.7132	REINFORCING STEEL			20 TN	500 MH	6,456	7,500	
225.7133	CONCRETE			270 CY	203 MH	2,072	8,040	
225.7134	EMBEDDED STEEL			3 TN	376 MH	4,523	4,200	
225.7135	FLOOR FINISH			7500 SF	75 MH	765	75	
225.7139	WIRE FABRIC			7500 SF	151 MH	1,949	900	
	225.713 SUBSTRUCTURE CONCRETE				3425 MH	39,175	26,615	65,790
225.714	SUPERSTRUCTURE							
225.7141	CONCRETE WORK							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.7142	STRUCTURAL + MISC STEEL							
225.71421	STRUCTURAL STEEL			70 TN	1050 MH	13,669	50,750	
225.71423	MISC. FRAMES, ETC.			2 TN	100 MH	1,302	2,200	
225.71426	STAIR TREADS			45 EA	36 MH	468	1,575	
225.71427	HANDRAIL			100 LF	60 MH	782	1,000	
	225.7142 STRUCTURAL + MISC STEEL				1246 MH	16,221	55,525	71,746
225.7143	EXTERIOR WALLS							
225.71433	METAL INSULATED SIDING			9500 SF	1900 MH	24,733	38,000	
	225.7143 EXTERIOR WALLS				1900 MH	24,733	38,000	62,733
225.7144	ROOF DECK							
225.71441	METAL ROOF DECK			11700 SF	702 MH	9,139	14,625	
225.71443	CONCRETE FILL			180 CY	360 MH	4,687	5,760	
225.71444	REINFORCING STEEL			4 TN	140 MH	1,807	1,500	
	225.7144 ROOF DECK				1202 MH	15,633	21,885	37,518
225.7145	ROOFING + FLASHING							
225.71451	B.U. ROOF INSUL + FLASH			7200 SF	504 MH	6,794	9,000	
	225.7145 ROOFING + FLASHING				504 MH	6,794	9,000	15,794
225.7146	INTERIOR WALLS + PARTITION							
225.71462	MASONRY			2100 SF	525 MH	5,990	5,880	
225.71463	METAL PARTITIONS			1700 SF	102 MH	1,329	2,550	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	225.7146 INTERIOR WALLS + PARTITION				627 MH	7,319	8,430	15,749
225.7147	DOORS + WINDOWS							
225.71471	ROLLING STEEL DOORS			170 SF	85 MH	1,105	2,380	
225.71472	PERSONNEL DOORS			420 SF	294 MH	3,413	5,040	
225.71473	SASH + GLAZING			200 SF	80 MH	925	2,400	
	225.7147 DOORS + WINDOWS				459 MH	5,443	9,820	15,263
225.7148	WALLS, FLOOR+CEIL FINISHS							
225.71481	VINYL FLOOR TILE			1500 SF	120 MH	1,392	2,250	
225.71486	ACOUSTICAL CEILING			1500 SF	150 MH	1,740	750	
	225.7148 WALLS, FLOOR+CEIL FINISHS				270 MH	3,132	3,000	6,132
225.7149	PAINTING							
225.71492	STEELWORK			70 TN	350 MH	3,350	420	
225.71493	DOORS+WALLS			4200 SF	84 MH	804	420	
225.71494	HANDRAIL			100 LF	20 MH	191	10	
	225.7149 PAINTING				454 MH	4,345	850	5,195
	225.714 SUPERSTRUCTURE				6662 MH	83,620	146,510	230,130
	225.71 HANGERS AND SUPPORTS				10388 MH	126,051	174,225	300,276
225.72	BUILDING SERVICES							
225.721	PLUMBING + DRAINS	1 LT	20,000	1 LT	2200 MH	28,512	2,451	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.7211	ROOF DRAINS + PIPING							
225.7212	FLOOR DRAINS + PIPING							
225.7213	PLUMBING FIXTURES + PIPING							
225.72131	FIXTURES							
225.72135	PIPING							
225.7213	PLUMBING FIXTURES + PIPING							
225.721	PLUMBING + DRAINS		20,000		2203 MH	28,512	2,851	51,363
225.722	HEATING,VENT + AIR COND	1 LT	16,750	1 LT	941 MH	12,173	1,826	
225.7221	ROTATING MACHINERY							
225.72211	POWER ROOF VENTILATORS+MTR							
225.722111	POWER ROOF VENTILATORS							
225.722112	POWER ROOF VENT MOTORS							
225.72211	POWER ROOF VENTILATORS+MTR							
225.72212	WALL EXHAUST FANS+MOTORS							
225.722121	WALL EXHAUST FANS							
225.722122	WALL EXHAUST FAN MOTORS							
225.72212	WALL EXHAUST FANS+MOTORS							
225.72213	RETURN AIR FANS + MOTORS							
225.722131	RETURN AIR FANS							
225.722132	RETURN AIR FAN MOTORS							

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	225.72213 RETURN AIR FANS + MOTORS							
	225.7221 ROTATING MACHINERY							
225.7222	HEAT TRANSFER EQUIPMENT							
225.72221	ELECTRIC UNIT HEATER+MOTOR							
225.722211	ELECTRIC UNIT HEATERS							
225.722212	ELECTRIC UNIT HEATER MOTOR							
	225.72221 ELECTRIC UNIT HEATER+MOTOR							
225.72222	HEATING+VENT AIR UNIT+MTR							
225.722221	HEATING+VENT AIR UNIT							
225.722222	HEATING+VENT AIR UNIT MTR							
	225.72222 HEATING+VENT AIR UNIT+MTR							
225.72223	AIR CONDITIONING UNIT+MTR							
225.722231	AIR CONDITIONING UNIT							
225.722232	AIR CONDITIONING UNIT MTR							
	225.72223 AIR CONDITIONING UNIT+MTR							
	225.7222 HEAT TRANSFER EQUIPMENT							
225.7226	VALVES							
225.72269	SPECIAL VALVES + DAMPERS							
225.722691	WALL LOUVERS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	225.72269 SPECIAL VALVES + DAMPERS							
	225.7226 VALVES							
	225.722 HEATING,VENT + AIR COND		16,750		941 MH	12,173	1,826	30,749
225.724	LIGHTING + SERVICE POWER			6000 SF	1800 MH	22,131	10,800	
	225.72 BUILDING SERVICES		36,750		4941 MH	62,816	15,477	115,043
	225.7 SLUDGE STABILIZATION BLDG		36,750		15329 MH	188,867	189,702	415,319
225.8	SLUDGE PUMP HOUSE							
225.81	BUILDING STRUCTURE							
225.811	EXCAVATION WORK							
225.8111	EXCAVATION-EARTH			70 CY	17 MH	199	70	
225.8114	BACKFILL-EARTH			50 CY	15 MH	149	50	
	225.811 EXCAVATION WORK				32 MH	348	120	468
225.813	SUBSTRUCTURE CONCRETE							
225.8131	FORMWORK			1000 SF	400 MH	4,417	1,000	
225.8132	REINFORCING STEEL			2 TN	51 MH	657	750	
225.8133	CONCRETE			30 CY	23 MH	234	960	
225.8134	EMBEDDED STEEL							
225.8135	FLOOR FINISH			800 SF	8 MH	82	8	
225.8139	WIRE FABRIC			800 SF	16 MH	207	96	
	225.813 SUBSTRUCTURE CONCRETE				498 MH	5,597	2,814	8,411

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225.814	SUPERSTRUCTURE							
225.8141	CONCRETE WORK							
225.8142	STRUCTURAL + MISC STEEL							
225.81421	STRUCTURAL STEEL			5 TN	76 MH	987	3,625	
	225.8142 STRUCTURAL + MISC STEEL				76 MH	987	3,625	4,612
225.8143	EXTERIOR WALLS							
225.81433	METAL INSULATED SIDING			1500 SF	300 MH	3,905	6,000	
	225.8143 EXTERIOR WALLS				300 MH	3,905	6,000	9,905
225.8144	ROOF DECK							
225.81442	PRECAST CONCRETE PANALS			800 SF	64 MH	835	1,040	
	225.8144 ROOF DECK				64 MH	835	1,040	1,875
225.8145	ROOFING + FLASHING							
225.81451	B.U. ROOF INSUL + FLASH			800 SF	56 MH	755	1,000	
	225.8145 ROOFING + FLASHING				56 MH	755	1,000	1,755
225.8147	DOORS + WINDOWS							
225.81471	ROLLING STEEL DOORS			80 SF	40 MH	520	1,120	
225.81472	PERSONNEL DOORS			42 SF	29 MH	336	504	
225.81473	SASH + GLAZING			240 SF	96 MH	1,114	2,880	
	225.8147 DOORS + WINDOWS				165 MH	1,970	4,504	6,474

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.8149	PAINTING							
225.81492	STEELWORK			5 TN	25 MH	239	30	
	225.8149 PAINTING				25 MH	239	30	269
	225.814 SUPERSTRUCTURE				686 MH	8,691	16,199	24,890
	225.81 BUILDING STRUCTURE				1216 MH	14,636	19,133	33,769
225.82	BUILDING SERVICES							
225.821	PLUMBING + DRAINS	1 LT	6,600	1 LT	660 MH	8,554	655	
225.822	HEATING,VENT + AIR COND	1 LT	841	1 LT	52 MH	671	101	
225.8221	ROTATING MACHINERY							
225.82211	WALL EXHAUST FAN + MOTOR							
225.822111	WALL EXHAUST FAN							
225.822112	WALL EXHAUST FAN MOTOR							
	225.82211 WALL EXHAUST FAN + MOTOR							
	225.8221 ROTATING MACHINERY							
225.8222	HEAT TRANSFER EQUIPMENT							
225.82221	ELECTRIC UNIT HEATER+MOTOR							
225.822211	ELECTRIC UNIT HEATER							
225.822212	ELECTRIC UNIT HEATER MOTOR							
	225.82221 ELECTRIC UNIT HEATER+MOTOR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	225.8222 HEAT TRANSFER EQUIPMENT							
225.8226	VALVES							
225.82269	SPECIAL VALVES + DAMPERS							
225.822691	INTAKE LOUVERS							
	225.82269 SPECIAL VALVES + DAMPERS							
	225.8226 VALVES							
	225.822 HEATING,VENT + AIR COND	841			52 MH	671	101	1,613
225.824	LIGHTING + SERVICE POWER			400 SF	119 MH	1,463	720	
	225.82 BUILDING SERVICES	6,841			831 MH	10,688	1,676	19,205
	225.8 SLUDGE PUMP HOUSE	6,841			2047 MH	25,324	20,809	52,974
225.9	LIME UNLOADING BLDG+TUNNEL							
225.91	BUILDING STRUCTURE							
225.911	EXCAVATION WORK							
225.9111	EXCAVATION-EARTH			750 CY	186 MH	2,198	750	
225.9112	EXCAVATION-ROCK			1500 CY	1200 MH	14,028	6,000	
225.9114	BACKFILL-EARTH			200 CY	60 MH	597	200	
225.9115	DEWATERING			1 LT	100 MH	932	100	
	225.911 EXCAVATION WORK				1548 MH	17,755	7,050	24,805
225.913	SUBSTRUCTURE CONCRETE							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
225.9131	FORMWORK			12000 SF	4800 MH	53,003	12,000	
225.9132	REINFORCING STEEL			50 TN	1251 MH	16,153	18,750	
225.9133	CONCRETE			700 CY	525 MH	5,362	22,400	
225.9134	EMBEDDED STEEL			10 TN	1250 MH	15,034	14,000	
	225.913 SUBSTRUCTURE CONCRETE				7826 MH	89,552	67,150	156,702
225.914	SUPERSTRUCTURE							
225.9141	CONCRETE WORK							
225.9142	STRUCTURAL + MISC STEEL							
225.91421	STRUCTURAL STEEL			16 TN	270 MH	3,517	13,050	
225.91423	MISC. FRAMES, ETC.			2 TN	100 MH	1,302	2,200	
225.91425	FLOOR GRATING (GALV)			300 SF	51 MH	664	900	
225.91426	STAIR TREADS			120 EA	96 MH	1,249	4,200	
225.91427	HANDRAIL			400 LF	240 MH	3,124	4,000	
	225.9142 STRUCTURAL + MISC STEEL				757 MH	9,856	24,350	34,206
225.9143	EXTERIOR WALLS							
225.91434	METAL UNINSULATED SIDING			3500 SF	700 MH	9,112	14,000	
	225.9143 EXTERIOR WALLS				700 MH	9,112	14,000	23,112
225.9144	ROOF DECK							
225.91441	METAL ROOF DECK			1800 SF	107 MH	1,394	1,80[illegible]	
	225.9144 ROOF DECK				107 MH	1,394	1,800	3,194
225.9147	DOORS + WINDOWS							

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225.91471	ROLLING STEEL DOORS			640 SF	320 MH	4,167	8,960	
225.91472	PERSONNEL DOORS			80 SF	56 MH	650	960	
	225.9147 DOORS + WINDOWS				376 MH	4,817	9,920	14,737
225.9149	PAINTING							
225.91492	STEELWORK			20 TN	100 MH	957	120	
	225.9149 PAINTING				100 MH	957	120	1,077
	225.914 SUPERSTRUCTURE				2040 MH	26,136	50,190	76,326
	225.91 BUILDING STRUCTURE				11414 MH	133,443	124,390	257,833
225.92	BUILDING SERVICES							
225.921	FLOOR DRAINS	1 LT	2,000	1 LT	221 MH	2,861	286	
225.924	LIGHTING + SERVICE POWER			1 LT	541 MH	6,651	3,200	
	225.92 BUILDING SERVICES		2,000		762 MH	9,512	3,486	14,998
	225.9 LIME UNLOADING BLDG+TUNNEL		2,000		12176 MH	142,955	127,876	272,831
	225. FLUE GAS DESULFUR STRUCT		88,675		68646 MH	833,814	958,659	1,881,148
226.	DESULFURIZATION EQUIPMENT							
226.1	LIME HANDLING SYSTEM	1 LT	900,000	1 LT	16000 MH	206,990	20,699	
226.11	ROTATING MACHINERY							
226.111	SILO VIBRATORY FEEDER+MTR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.1111	SILO VIBRATORY FEEDER							
226.1112	SILO VIBRATORY FEED MOTOR							
	226.111 SILO VIBRATORY FEEDER+MTR							
226.112	SILO LOAD/BYPASS CONVY+MTR							
226.1121	SILO LOAD/BYPASS CONVEYOR							
226.1122	SILO LOAD/BYPASS CONVY MTR							
	226.112 SILO LOAD/BYPASS CONVY+MTR							
226.113	RECLAIM CONVEYOR + MOTOR							
226.1131	RECLAIM CONVEYOR							
226.1132	RECLAIM CONVEYOR MOTOR							
	226.113 RECLAIM CONVEYOR + MOTOR							
226.114	FD SILO DIST BELT CONV+MTR							
226.1141	FEED SILO DIST BELT CONVYR							
226.1142	FD SILO DIST BELT CONV MTR							
	226.114 FD SILO DIST BELT CONV+MTR							
226.115	HOP TRANS+SILO UNLD CON+MR							
226.1151	HOP TRANS+SILO UNLOAD CONV							
226.1152	HOP TRAN+SILO UNLD CON MTR							
	226.115 HOP TRANS+SILO UNLD CON+MR							
226.116	FEED BIN BUCKET ELEVTR+MTR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.1161	FEED BIN BUCKET ELEVATOR							
226.1162	FEED BIN BUCKET ELEVTR MTR							
	226.116 FEED BIN BUCKET ELEVTR+MTR							
226.117	SILO BUCKET ELEVATOR+MOTOR							
226.1171	SILO BUCKET ELEVATOR							
226.1172	SILO BUCKET ELEVATOR MOTOR							
	226.117 SILO BUCKET ELEVATOR+MOTOR							
226.118	RL UNLD HOP VIB FEEDER+MTR							
226.1181	RAIL UNLD HOP VIB FEEDER							
226.1182	RL UNLD HOP VIB FEEDER MTR							
	226.118 RL UNLD HOP VIB FEEDER+MTR							
	226.11 ROTATING MACHINERY							
226.13	TANKS AND PRESSURE VESSELS							
226.131	SILO WITHDRAWAL HOPPER							
226.132	RAIL UNLOADING HOPPER							
	226.13 TANKS AND PRESSURE VESSELS							
226.14	PURIFICATION+FILTRATION EQ							
226.141	FEED+RECLM DUST COLLCT+MTR							
226.1411	FEED+RECLM DUST COLLECTOR							
226.1412	FEED+RECLM DUST COLLCT MTR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	226.141 FEED+RECLM DUST COLLCT+MTR							
226.142	RAIL UNLOAD DUST COLCT+MTR							
226.1421	RAIL UNLOAD DUST COLLECTOR							
226.1422	RAIL UNLOAD DUST COLCT MTR							
	226.142 RAIL UNLOAD DUST COLCT+MTR							
	226.14 PURIFICATION+FILTRATION EQ							
226.15	CHUTES + SKIRTS							
226.151	FEEDER CHUTES + SKIRTS							
226.152	ELEV CHRG+DISCHRG CHUTES							
226.153	CONVEYOR CHUTES							
226.154	BIN CHUTES							
	226.15 CHUTES + SKIRTS							
226.16	GATES + DIVERTERS							
226.161	SLIDE GATES							
226.162	DIVERTERS							
226.1621	TWO WAY DIVERTER							
226.1622	THREE WAY DIVERTER							
	226.162 DIVERTERS							
	226.16 GATES + DIVERTERS							
226.19	FOUNDATIONS/SKIDS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.191	LIME STORAGE SILO							
226.1911	EXCAVATION WORK							
226.19111	EXCAVATION-EARTH			2500 CY	625 MH	6,694	2,500	
226.19112	EXCAVATION-ROCK			1260 CY	1008 MH	10,797	5,040	
226.19114	BACKFILL-EARTH			800 CY	240 MH	2,388	800	
226.19115	DEWATERING			1 LT	100 MH	932	100	
	226.1911 EXCAVATION WORK				1973 MH	20,811	8,440	29,251
226.1913	SUBSTRUCTURE CONCRETE							
226.19131	FORMWORK			14000 SF	5600 MH	61,836	14,000	
226.19132	REINFORCING STEEL			85 TN	2125 MH	27,441	31,575	
226.19133	CONCRETE			1700 CY	1275 MH	13,020	54,400	
226.19134	EMBEDDED STEEL			2 TN	250 MH	3,006	2,600	
226.19135	FLOOR FINISH			7000 SF	71 MH	726	70	
	226.1913 SUBSTRUCTURE CONCRETE				9321 MH	106,031	103,145	209,176
226.1914	SUPERSTRUCTURE							
226.19141	CONCRETE WORK							
226.191411	FORMWORK			100000 SF	75000 MH	828,180	100,000	
226.191412	REINFORCING STEEL			100 TN	3000 MH	38,740	37,500	
226.191413	CONCRETE			2000 CY	3500 MH	35,742	64,000	
	226.19141 CONCRETE WORK				81500 MH	902,662	201,500	1,104,162
226.19145	FLOOR FINISH			7000 SF	71 MH	726	70	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	226.1914 SUPERSTRUCTURE				81571 MH	903,388	201,570	1,104,958
226.1915	STRUCTURAL + MISC STEEL							
226.19153	MISCELLANEOUS STEEL			20 TN	1000 MH	13,017	22,000	
	226.1915 STRUCTURAL + MISC STEEL				1000 MH	13,017	22,000	35,017
	226.191 LIME STORAGE SILO				93865 MH	1,043,247	335,155	1,378,402
	226.19 FOUNDATIONS/SKIDS				93865 MH	1,043,247	335,155	1,378,402
	226.1 LIME HANDLING SYSTEM		900,000		109865 MH	1,250,237	355,654	2,506,091
226.2	FEED PREPARATION SYSTEM							
226.21	ROTATING MACHINERY							
226.211	LIME SLRY TNK AGITATOR+MTR	2 EA	60,000	1 LT	220 MH	2,909	291	
226.2111	LIME SLURRY TANK AGITATOR							
226.2112	LIME SLRY TNK AGITATOR MTR							
	226.211 LIME SLRY TNK AGITATOR+MTR		60,000		220 MH	2,909	291	63,200
226.212	LIME SLURRY TRANS PUMP+MTR	3 EA	42,000	1 LT	1500 MH	19,825	1,983	
226.2121	LIME SLURRY TRANSFER PUMP							
226.2122	LIME SLURRY TRANS PUMP MTR							
	226.212 LIME SLURRY TRANS PUMP+MTR		42,000		1500 MH	19,825	1,983	63,808
226.213	VOLUMETRIC BELT FEEDER+MTR	4 EA	14,800	1 LT	241 MH	3,118	312	

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.2131	VOLUMETRIC BELT FEEDER							
226.2132	VOLUMETRIC BELT FEEDER MTR							
	226.213 VOLUMETRIC BELT FEEDER+MTR		14,800		241 MH	3,115	312	18,230
226.214	LIME SLAKER AND MOTOR	4 EA	160,000	1 LT	2000 MH	25,874	2,587	
226.2141	LIME SLAKER							
226.2142	LIME MIXER MOTOR							
226.2143	LIME DEGRITTER MOTOR							
	226.214 LIME SLAKER AND MOTOR		160,000		2000 MH	25,874	2,587	188,461
	226.21 ROTATING MACHINERY		276,800		5951 MH	51,726	5,173	333,699
226.22	TANKS AND PRESSURE VESSELS							
226.221	GRIT BIN			2 EA	1800 MH	23,544	16,000	
226.222	LIME SLURRY SURGE TANK			2 EA	3200 MH	41,855	20,000	
226.223	LIME FEED SILO/HOPPER			4 EA	5400 MH	70,631	150,000	
	226.22 TANKS AND PRESSURE VESSELS				10400 MH	136,030	194,000	330,030
226.25	PIPING							
226.252	2.5 IN + LARGER							
226.2521	CS/NNS	106030 LB	159,045	1 LT	15904 MH	206,125	20,613	
	226.252 2.5 IN + LARGER		159,045		15904 MH	206,125	20,613	385,783
	226.25 PIPING		159,045		15904 MH	206,125	20,613	385,783
226.26	VALVES	1 LT	24,200					

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.261	GATE							
	226.26 VALVES		24,200					24,200
226.27	PIPING-MISC ITEMS							
226.271	HANGERS + SUPPORTS	21000 LB	31,500					
	226.27 PIPING-MISC ITEMS		31,500					31,500
226.29	FOUNDATIONS/SKIDS							
226.291	LIME SLRY TRANS PUMP FOUND							
226.2911	EXCAVATION WORK							
226.2913	SUBSTRUCTURE CONCRETE							
226.29131	FORMWORK			300 SF	120 MH	1,325	300	
226.29132	REINFORCING STEEL			1 TN	25 MH	322	375	
226.29133	CONCRETE			20 CY	15 MH	152	640	
226.29134	EMBEDDED STEEL			2 TN	250 MH	3,006	2,800	
226.29135	FLOOR FINISH			200 SF	1 MH	9	2	
	226.2913 SUBSTRUCTURE CONCRETE				411 MH	4,814	4,117	8,931
	226.291 LIME SLRY TRANS PUMP FOUND				411 MH	4,814	4,117	8,931
226.292	LIME SLURRY TANK FOUND							
226.2921	EXCAVATION WORK							
226.29214	BACKFILL-SAND			300 CY	300 MH	2,986	1,800	
	226.2921 EXCAVATION WORK				300 MH	2,986	1,800	4,786

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.2923	SUBSTRUCTURE CONCRETE							
226.29231	FORMWORK			2000 SF	800 MH	8,834	2,000	
226.29232	REINFORCING STEEL			4 TN	100 MH	1,291	1,500	
226.29233	CONCRETE			75 CY	56 MH	571	2,400	
	226.2923 SUBSTRUCTURE CONCRETE				956 MH	10,696	5,900	16,596
	226.292 LIME SLURRY TANK FOUND				1256 MH	13,682	7,700	21,382
	226.29 FOUNDATIONS/SKIDS				1667 MH	18,496	11,817	30,313
	226.2 FEED PREPARATION SYSTEM		491,545		31952 MH	412,377	231,603	1,135,525
226.3	SUL DIOXIDE SCRUBBING SYS	1 LT	9,500,000	1 LT	270000 MH	3,492,903	349,296	
226.31	ROTATING MACHINERY							
226.311	QUENCH RECIRCULAT PUMP+MTR							
226.3111	QUENCH RECIRCULATION PUMP							
226.3112	QUENCH RECIRCULAT PUMP MTR							
	226.311 QUENCH RECIRCULAT PUMP+MTR							
226.312	ABSORB RECIRCULAT PUMP+MTR							
226.3121	ABSORB RECIRCULATION PUMP							
226.3122	ABSORB RECIRCULAT PUMP MTR							
	226.312 ABSORB RECIRCULAT PUMP+MTR							
226.313	FEED SLURRY PUMP + MOTOR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.3131	FEED SLURRY PUMP							
226.3132	FEED SLURRY PUMP MOTOR							
226.313	FEED SLURRY PUMP + MOTOR							
226.314	RECIRCULATION TANK MIX+MTR							
226.3141	RECIRCULATION TANK MIXER							
226.3142	RECIRCULATION TANK MIX MTR							
226.314	RECIRCULATION TANK MIX+MTR							
226.315	FEED SLURRY TANK MIXER+MTR							
226.3151	FEED SLURRY TANK MIXER							
226.3152	FEED SLURRY TANK MIXER MTR							
226.315	FEED SLURRY TANK MIXER+MTR							
226.316	MOIST WASH TANK AGITAT+MTR							
226.3161	MOIST WASH TANK AGITATOR							
226.3162	MOIST WASH TANK AGITAT MTR							
226.316	MOIST WASH TANK AGITAT+MTR							
226.31	ROTATING MACHINERY							
226.33	TANKS AND PRESSURE VESSELS							
226.331	LOW VELOCITY SUMP TANK							
226.332	RECIRCULATION TANK							
226.333	SLURRY FEED TANK							

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226.334	MOIST SEPARATOR WASH TANK							
	226.33 TANKS AND PRESSURE VESSELS							
226.34	PURIFICATION+FILTRATION EQ							
226.341	QUENCHER							
226.342	ABSORBER							
226.343	MOISTURE SEPARATOR							
226.344	CYCLONE SEPARATOR							
	226.34 PURIFICATION+FILTRATION EQ							
226.35	PIPING							
226.351	2 IN + SMALLER							
226.3511	316L SS/VNS							
	226.351 2 IN + SMALLER							
226.352	2.5 IN + LARGER							
226.3521	CS/NNS							
	226.352 2.5 IN + LARGER							
	226.35 PIPING							
226.36	VALVES							
226.361	GATE							
	226.36 VALVES							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.37	PIPING - MISC ITEMS							
226.373	SPECIALTIES							
226.3731	HEAT TRACING			1 LT	4200 MH	54,433	36,400	
	226.373 SPECIALTIES				4200 MH	54,433	36,400	90,833
	226.37 PIPING - MISC ITEMS				4200 MH	54,433	36,400	90,833
226.38	INSTRUMENTATION + CONTROL							
226.39	FOUNDATIONS/SKIDS							
226.391	FEED SLURRY PUMP FOUND							
226.3911	EXCAVATION WORK							
226.39111	EXCAVATION-EARTH			60 CY	15 MH	162	60	
226.39114	BACKFILL-EARTH			30 CY	9 MH	90	30	
	226.3911 EXCAVATION WORK				24 MH	252	90	342
226.3913	SUBSTRUCTURE CONCRETE							
226.39131	FORMWORK			500 SF	200 MH	2,209	500	
226.39132	REINFORCING STEEL			2 TN	51 MH	657	750	
226.39133	CONCRETE			30 CY	23 MH	234	960	
226.39134	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
	226.3913 SUBSTRUCTURE CONCRETE				400 MH	4,615	3,610	8,225
	226.391 FEED SLURRY PUMP FOUND				424 MH	4,867	3,700	8,567

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.392	SLURRY FEED TANK FOUND							
226.3921	EXCAVATION WORK							
226.39211	EXCAVATION-EARTH			300 CY	75 MH	876	300	
226.39214	BACKFILL-EARTH			360 CY	108 MH	1,077	360	
	226.3921 EXCAVATION WORK				183 MH	1,953	660	2,613
226.3923	SUBSTRUCTURE CONCRETE							
226.39231	FORMWORK			2200 SF	880 MH	9,717	2,200	
226.39232	REINFORCING STEEL			4 TN	100 MH	1,291	1,500	
226.39233	CONCRETE			80 CY	60 MH	612	2,560	
	226.3923 SUBSTRUCTURE CONCRETE				1040 MH	11,620	6,260	17,880
	226.392 SLURRY FEED TANK FOUND				1223 MH	13,573	6,920	20,493
226.393	SUL DIOXIDE SCRUBBER FOUND							
226.3931	EXCAVATION WORK							
226.39311	EXCAVATION-EARTH			10000 CY	2500 MH	29,225	10,000	
226.39314	BACKFILL-EARTH			1500 CY	450 MH	4,478	1,500	
	226.3931 EXCAVATION WORK				2950 MH	33,703	11,500	45,203
226.3933	SUBSTRUCTURE CONCRETE							
226.39331	FORMWORK			20000 SF	8000 MH	88,340	20,000	
226.39332	REINFORCING STEEL			400 TN	10000 MH	129,133	150,000	
226.39333	CONCRETE			10000 CY	7500 MH	76,590	320,000	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.39334	EMBEDDED STEEL			30 TN	3750 MH	5,101	42,000	
226.39335	FLOOR FINISH			27600 SF	275 MH	2,808	276	
	226.3933 SUBSTRUCTURE CONCRETE				29525 MH	341,972	532,276	874,24
226.3934	SUPERSTRUCTURE							
226.39341	CONCRETE WORK							
226.393411	FORMWORK-METAL			27600 SF	20700 MH	228,577	24,840	
226.393412	REINFORCING STEEL			26 TN	780 MH	10,072	9,750	
226.393413	CONCRETE			520 CY	911 MH	9,304	16,640	
226.393415	FLOOR FINISH			27600 SF	275 MH	2,808	276	
	226.39341 CONCRETE WORK				22666 MH	250,761	51,506	302,267
226.39342	STRUCTURAL + MISC STEEL							
226.393421	STRUCTURAL STEEL			2240 TN	33600 MH	437,391	1,624,000	
226.393423	MISC. FRAMES, ETC.			245 TN	12250 MH	159,465	269,500	
226.393425	FLOOR GRATING			80000 SF	13600 MH	177,039	320,000	
226.393426	STAIR TREADS			520 EA	416 MH	5,416	18,200	
226.393427	HANDRAIL			6000 LF	3600 MH	46,863	60,000	
	226.39342 STRUCTURAL + MISC STEEL				63466 MH	826,174	2,291,700	3,117,874
226.39349	PAINTING							
226.393492	STEELWORK			2485 TN	12425 MH	116,907	14,910	
226.393494	HANDRAIL			6000 LF	1200 MH	11,484	600	
	226.39349 PAINTING				13625 MH	130,391	15,510	145,901

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	226.3934 SUPERSTRUCTURE				99757 MH	1,207,326	2,358,716	3,566,042
226.3935	SO2 STRUCTURE MISC EQUIP							
226.39354	LIGHTING + SERVICE POWER			14000 SF	4200 MH	51,641	25,200	
226.39355	ELEVATOR							
226.393551	ELEVATOR EQUIPMENT	2 EA	136,000	1 LT	8000 MH	103,495	10,350	
	226.39355 ELEVATOR		136,000		8000 MH	103,495	10,350	249,845
	226.3935 SO2 STRUCTURE MISC EQUIP		136,000		12200 MH	155,136	35,550	326,686
	226.393 SUL DIOXIDE SCRUBBER FOUND		136,000		144432 MH	1,738,137	2,938,042	4,812,179
	226.39 FOUNDATIONS/SKIDS		136,000		146079 MH	1,756,577	2,948,662	4,841,239
	226.3 SUL DIOXIDE SCRUBBING SYS		9,636,000		420279 MH	5,303,973	3,334,358	18,274,331
226.4	GAS HANDLING SYSTEM							
226.41	ROTATING MACHINERY							
226.411	SUL DIOXIDE BOOSTR FAN+MTR							
226.4111	SUL DIOXIDE BOOSTER FAN	7 EA	1,687,000	1 LT	18900 MH	249,797	24,980	
226.4112	SUL DIOXIDE BOOSTR FAN MTR							
	226.411 SUL DIOXIDE BOOSTR FAN+MTR		1,687,000		18900 MH	249,797	24,980	1,961,777
226.412	DAMPER BLOWER AND MOTOR	14 EA	107,100	1 LT	1541 MH	20,368	2,037	
226.4121	DAMPER BLOWER							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.4122	DAMPER BLOWER MOTOR							
	226.412 DAMPER BLOWER AND MOTOR		107,100		1541 MH	20,366	2,037	129,505
	226.41 ROTATING MACHINERY		1,794,100		20441 MH	270,165	27,017	2,091,282
226.45	PIPING,DUCTS,EXPANSION JTS							
226.451	PIPING							
226.4511	2 IN + SMALLER							
226.45111	CS/VNS			5680 LB	1703 MH	22,072	7,384	
	226.4511 2 IN + SMALLER				1703 MH	22,072	7,384	29,456
	226.451 PIPING				1703 MH	22,072	7,384	29,456
226.452	DUCTS AND EXPANSION JOINTS							
226.4522	SO2 SUPPLY+BYPASS DUCTS	2300 TN	2,576,000	1 LT	142600 MH	1,905,136	190,514	
226.4523	DUCT INSULATION			1 LT	59000 MH	768,180	874,000	
	226.452 DUCTS AND EXPANSION JOINTS		2,576,000		201600 MH	2,673,316	1,064,514	6,313,830
226.453	HANGERS	1100 LB	1,650					
	226.45 PIPING,DUCTS,EXPANSION JTS		2,577,650		203303 MH	2,695,388	1,071,898	6,344,936
226.46	VALVES + DAMPERS							
226.461	ISOLATION DAMPER AND MOTOR	1 LT	400,000	1 LT	3600 MH	46,659	4,666	
226.4611	ISOLATION DAMPER							
226.4612	ISOLATION DAMPER MOTOR							

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	226.461 ISOLATION DAMPER AND MOTOR		400,000		3600 MH	46,658	4,666	451,324
	226.46 VALVES + DAMPERS		400,000		3600 MH	46,658	4,666	451,324
226.49	FOUNDATIONS/SKIDS							
226.491	SUL DIOXID BOOST FAN FOUND							
226.4911	EXCAVATION WORK							
226.49111	EXCAVATION-EARTH			400 CY	100 MH	1,169	400	
226.49114	BACKFILL-EARTH			130 CY	39 MH	389	130	
	226.4911 EXCAVATION WORK				139 MH	1,558	530	2,088
226.4913	SUBSTRUCTURE CONCRETE							
226.49131	FORMWORK			1800 SF	720 MH	7,951	1,800	
226.49132	REINFORCING STEEL			2 TN	51 MH	657	750	
226.49133	CONCRETE			260 CY	195 MH	1,991	8,320	
226.49134	EMBEDDED STEEL			2 TN	250 MH	3,006	2,800	
	226.4913 SUBSTRUCTURE CONCRETE				1216 MH	13,605	13,670	27,275
	226.491 SUL DIOXID BOOST FAN FOUND				1355 MH	15,163	14,200	29,363
226.492	DUCTWORK FOUND + SUPPORT							
226.4921	EXCAVATION WORK							
226.49211	EXCAVATION-EARTH			200 CY	51 MH	595	200	
	226.4921 EXCAVATION WORK				51 MH	595	200	795

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.4923	SUBSTRUCTURE CONCRETE							
226.49231	FORMWORK			5700 SF	2280 MH	25,177	5,700	
226.49232	REINFORCING STEEL			20 TN	500 MH	6,456	7,500	
226.49233	CONCRETE			200 CY	151 MH	1,542	6,400	
226.49234	EMBEDDED STEEL			5 TN	626 MH	7,529	7,000	
	226.4923 SUBSTRUCTURE CONCRETE				3557 MH	40,704	26,600	67,304
226.4924	SUPERSTRUCTURE							
226.49241	CONCRETE WORK							
226.49242	STRUCTURAL + MISC STEEL							
226.492421	STRUCTURAL STEEL			600 TN	12000 MH	156,211	580,000	
226.492423	MISC. FRAMES, ETC.			30 TN	1500 MH	19,527	33,000	
226.492425	FLOOR GRATING (GALV)			4000 SF	680 MH	8,851	12,000	
226.492426	STAIR TREADS			800 EA	640 MH	8,330	28,000	
226.492427	HANDRAIL			4000 LF	2400 MH	31,242	40,000	
	226.49242 STRUCTURAL + MISC STEEL				17220 MH	224,161	693,000	917,161
226.49249	PAINTING							
226.492492	STEELWORK			830 TN	4150 MH	39,716	4,980	
226.492493	HANDRAIL			4000 LF	800 MH	7,656	400	
	226.49249 PAINTING				4950 MH	47,372	5,380	52,752
	226.4924 SUPERSTRUCTURE				22170 MH	271,533	698,380	969,913
	226.492 DUCTWORK FOUND + SUPPORT				25775 MH	312,832	725,160	1,038,012

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	226.49 FOUNDATIONS/SKIDS				27133 MH	327,995	739,380	1,067,375
	226.4 GAS HANDLING SYSTEM		4,771,750		254477 MH	3,340,206	1,842,961	9,954,917
226.5	SLUDGE HANDLING SYSTEM							
226.51	ROTATING MACHINERY							
226.511	AGITATORS + MOTORS							
226.5111	THICK SURGE TNK AGITAT+MTR	2 EA	50,000	1 LT	200 MH	2,643	264	
226.51111	THICK SURGE TANK AGITATOR							
226.51112	THICK SURGE TNK AGITAT MTR							
	226.5111 THICK SURGE TNK AGITAT+MTR		50,000		200 MH	2,643	264	52,907
	226.511 AGITATORS + MOTORS		50,000		200 MH	2,643	264	52,907
226.512	PUMPS + MOTORS							
226.5121	THICK UNDERFLOW PUMP+MOTOR	2 EA	252,000	1 LT	600 MH	10,574	1,057	
226.51211	THICKENER UNDERFLOW PUMP							
226.51212	THICK UNDERFLOW PUMP MOTOR							
	226.5121 THICK UNDERFLOW PUMP+MOTOR		252,000		600 MH	10,574	1,057	263,631
226.5122	SLUDGE TRANSFER PUMP+MOTOR	3 EA	12,000	1 LT	300 MH	3,965	397	
226.51221	SLUDGE TRANSFER PUMP							
226.51222	SLUDGE TRANSFER PUMP MOTOR							
	226.5122 SLUDGE TRANSFER PUMP+MOTOR		12,000		300 MH	3,965	397	16,362

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226.5123	THICK OVERFLOW PUMP+MOTOR	5 EA	95,000	1 LT	2400 MH	31,720	3,172	
226.51231	THICKENER OVERFLOW PUMP							
226.51232	THICK OVERFLOW PUMP MOTOR							
	226.5123 THICK OVERFLOW PUMP+MOTOR		95,000		2400 MH	31,720	3,172	129,892
226.5124	THICK OVFLOW SUMP PUMP+MTR	2 EA	9,000	1 LT	220 MH	2,909	291	
226.51241	THICK OVERFLOW SUMP PUMP							
226.51242	THICK OVFLOW SUMP PUMP MTR							
	226.5124 THICK OVFLOW SUMP PUMP+MTR		9,000		220 MH	2,909	291	12,200
226.5125	SLDG DISPOS TRANS PUMP+MTR	2 EA	21,000	1 LT	241 MH	3,185	319	
226.51251	SLDG DISPOSAL TRANS PUMP							
226.51252	SLDG DISPOS TRANS PUMP MTR							
	226.5125 SLDG DISPOS TRANS PUMP+MTR		21,000		241 MH	3,185	319	24,504
226.5126	FILTRATE RETURN PUMP+MOTOR	2 EA	19,000	1 LT	141 MH	1,863	186	
226.51261	FILTRATE RETURN PUMP							
226.51262	FILTRATE RETURN PUMP MOTOR							
	226.5126 FILTRATE RETURN PUMP+MOTOR		19,000		141 MH	1,863	186	21,049
	226.512 PUMPS + MOTORS		408,000		4102 MH	54,216	5,422	467,638
226.513	SLUDGE PROCESSING EQUIP							
226.5131	ROT DRUM VAC FILT PUMP+MTR	3 EA	360,000	1 LT	900 MH	11,895	1,190	

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.51311	ROTARY DRUM VACUUM PUMP							
226.51312	ROTARY DRUM MOTOR							
226.51313	VACUUM PUMP MOTOR							
226.51314	FILTRATE PUMP MOTOR							
	226.5131 ROT DRUM VAC FILT PUMP+MTR		360,000		900 MH	11,895	1,190	373,085
226.5132	SLUDGE MIXER AND MOTOR	2 EA	280,000	1 LT	741 MH	9,794	979	
226.51321	SLUDGE MIXER							
226.51322	SLUDGE MIXER MOTOR							
	226.5132 SLUDGE MIXER AND MOTOR		280,000		741 MH	9,794	979	290,773
	226.513 SLUDGE PROCESSING EQUIP		640,000		1641 MH	21,689	2,169	663,858
226.514	MATERIAL HANDLING EQUIP	1 LT	180,000	1 LT	8300 MH	107,376	10,738	
226.5141	BELT FEEDER + MOTOR							
226.51411	BELT FEEDER							
226.51412	BELT FEEDER MOTOR							
	226.5141 BELT FEEDER + MOTOR							
226.5142	BELT CONVEYOR/SCALE + MTR							
226.51421	BELT CONVEYOR/SCALE							
226.51422	BELT CONVEYOR/SCALE MOTOR							
	226.5142 BELT CONVEYOR/SCALE + MTR							
226.5143	BELT CONVEYOR + MOTOR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.51431	BELT CONVEYOR							
226.51432	BELT CONVEYOR MOTOR							
	226.5143 BELT CONVEYOR + MOTOR							
226.5144	RADIAL BELT STACKER + MTR							
226.51441	RADIAL BELT STACKER							
226.51442	RADIAL BELT STACKER MOTOR							
	226.5144 RADIAL BELT STACKER + MTR							
226.5145	LIME SCREW FEEDER + MOTOR							
226.51451	LIME SCREW FEEDER							
226.51452	LIME SCREW FEEDER MOTOR							
	226.5145 LIME SCREW FEEDER + MOTOR							
	226.514 MATERIAL HANDLING EQUIP	180,000			6300 MH	107,376	10,738	298,114
	226.51 ROTATING MACHINERY	1,278,000			14243 MH	185,924	18,593	1,482,517
226.53	TANKS AND PRESSURE VESSELS							
226.531	THICKENER TANK/RAKE+MOTOR			4 EA	52000 MH	680,145	1,200,000	
226.5311	THICKENER TANK/RAKE							
226.5312	THICKENER TANK/RAKE MOTOR							
226.5313	RAKE LIFT MOTOR							
	226.531 THICKENER TANK/RAKE+MOTOR				52000 ~	680,145	1,200,000	1,880,145
226.532	SLUDGE SURGE TANK			2 EA	4000 MH	52,319	38,000	

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226.533	THICKENER OVERFLOW TANK			2 EA	4000 MH	52,319	38,000	
226.534	LIME SILO			1 EA	2000 MH	26,160	19,000	
226.535	SLUDGE DISPOSAL SURGE TANK			1 EA	2000 MH	26,160	19,000	
226.536	FILTRATE SURGE TANK			1 EA	2000 MH	26,160	19,000	
	226.53 TANKS AND PRESSURE VESSELS				66000 MH	863,263	1,333,000	2,196,263
226.55	PIPING							
226.552	2.5 IN + LARGER							
226.5521	CS/NNS							
226.55211	CS/NNS	950000 LB	1,425,000	1 LT	142500 MH	1,846,857	184,686	
226.55212	CS/NNS	950000 LB	1,425,000	1 LT	142500 MH	1,846,857	184,686	
226.55213	CS/NNS	915600 LB	1,373,400	1 LT	137340 MH	1,779,931	177,998	
	226.5521 CS/NNS		4,223,400		422340 MH	5,473,695	547,370	10,244,465
	226.552 2.5 IN + LARGER		4,223,400		422340 MH	5,473,695	547,370	10,244,465
	226.55 PIPING		4,223,400		422340 MH	5,473,695	547,370	10,244,465
226.56	VALVES	1 LT	140,000					
226.561	GATE							
	226.56 VALVES		140,000					140,000
226.57	PIPING-MISC ITEMS							
226.571	SLUDGE PIPE SUPPORT SYSTEM							

ACCT NO.	ACCOUNT DESCRIPTION	******* FACTORY ******* QUANTITY COSTS	********** SITE ********** QUANTITY	LABOR HRS	LABOR COST	MATERIAL COST	TOTAL COSTS
226.5711	TREATED RR TIE SUPPORTS		2200 EA	1430 MH	13,328	24,200	
226.5712	SUPPORT BALLAST		2200 CY	2200 MH	21,894	13,200	
226.5713	CLEARING/GRUB PIPE ROUTE		7 AC	420 MH	4,139	3,500	
226.5714	STEEL FASTENERS - 55 TNS		55 TN	2750 MH	35,799	60,500	
	226.571 SLUDGE PIPE SUPPORT SYSTEM			6800 MH	75,160	101,400	176,560
	226.57 PIPING-MISC ITEMS			6800 MH	75,160	101,400	176,560
226.59	FOUNDATIONS/SKIDS						
226.591	THICKENER FOUNDATION						
226.5911	EXCAVATION WORK						
226.59111	EXCAVATION-EARTH		4000 CY	1000 MH	11,690	4,000	
226.59112	EXCAVATION-ROCK		3000 CY	2400 MH	28,056	12,000	
226.59114	BACKFILL-EARTH		2000 CY	600 MH	5,972	2,000	
226.59115	DEWATERING		1 LT	175 MH	1,631	175	
	226.5911 EXCAVATION WORK			4175 MH	47,349	18,175	65,524
226.5913	SUBSTRUCTURE CONCRETE						
226.59131	FORMWORK		60000 SF	24000 MH	265,018	60,000	
226.59132	REINFORCING STEEL		600 TN	15000 MH	193,700	225,000	
226.59133	CONCRETE		9500 CY	7125 MH	72,761	304,000	
	226.5913 SUBSTRUCTURE CONCRETE			46125 MH	531,479	589,000	1,120,479
	226.591 THICKENER FOUNDATION			50300 MH	578,828	607,175	1,186,003

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226.592	SLUDGE SURGE TANK FOUND							
226.5921	EXCAVATION WORK							
226.59211	EXCAVATION-EARTH			330 CY	83 MH	970	330	
226.59214	BACKFILL-SAND			420 CY	420 MH	4,180	2,520	
	226.5921 EXCAVATION WORK				503 MH	5,150	2,850	8,000
226.5923	SUBSTRUCTURE CONCRETE							
226.59231	FORMWORK			2400 SF	960 MH	10,599	2,400	
226.59232	REINFORCING STEEL			5 TN	125 MH	1,614	1,675	
226.59233	CONCRETE			90 CY	66 MH	695	2,880	
	226.5923 SUBSTRUCTURE CONCRETE				1193 MH	12,908	7,155	20,063
	226.592 SLUDGE SURGE TANK FOUND				1656 MH	18,058	10,005	28,063
226.593	THICKENER PIPE BRIDGE							
226.5931	EXCAVATION WORK							
226.59311	EXCAVATION-EARTH			500 CY	125 MH	1,462	500	
226.59314	BACKFILL-EARTH			200 CY	60 MH	597	200	
	226.5931 EXCAVATION WORK				185 MH	2,059	700	2,759
226.5933	SUBSTRUCTURE CONCRETE							
226.59331	FORMWORK			10000 SF	4000 MH	44,170	10,000	
226.59332	REINFORCING STEEL			50 TN	1251 MH	16,153	18,750	
226.59333	CONCRETE			100 CY	75 MH	765	3,200	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	226.5933 SUBSTRUCTURE CONCRETE				5326 MH	61,088	31,950	93,038
226.5934	SUPERSTRUCTURE							
226.59341	STRUCTURAL + MISC STEEL							
226.593411	STRUCTURAL STEEL			2000 TN	30000 MH	390,523	1,450,000	
226.593413	MISCELLANEOUS STEEL			50 TN	2500 MH	32,544	55,000	
226.593415	FLOOR GRATING (GALV.)			40000 SF	6800 MH	88,520	120,000	
226.593416	STAIR TREADS			480 EA	384 MH	4,997	16,800	
226.593417	HANDRAIL			1000 LF	600 MH	7,811	10,000	
	226.59341 STRUCTURAL + MISC STEEL				40284 MH	524,400	1,651,800	2,176,200
226.59349	PAINTING							
226.593492	STEELWORK			2000 TN	10000 MH	95,700	12,000	
226.593494	HANDRAIL			1000 LF	200 MH	1,914	100	
	226.59349 PAINTING				10200 MH	97,614	12,100	109,714
	226.5934 SUPERSTRUCTURE				50484 MH	622,014	1,663,900	2,285,914
	226.593 THICKENER PIPE BRIDGE				55995 MH	685,161	1,696,550	2,381,711
226.594	THICK OVERFLOW TANK FOUND							
226.5941	EXCAVATION WORK							
226.59411	EXCAVATION-EARTH			1000 CY	251 MH	2,933	1,000	
226.59414	BACKFILL-SAND			1500 CY	1500 MH	14,928	9,000	
	226.5941 EXCAVATION WORK				1751 MH	17,861	10,000	27,861

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226.5943	SUBSTRUCTURE CONCRETE							
226.59431	FORMWORK			9500 SF	3800 MH	41,961	9,500	
226.59432	REINFORCING STEEL			6 TN	200 MH	2,583	3,000	
226.59433	CONCRETE			160 CY	120 MH	1,226	5,120	
	226.5943 SUBSTRUCTURE CONCRETE				4120 MH	45,770	17,620	63,390
	226.594 THICK OVERFLOW TANK FOUND				5871 MH	63,631	27,620	91,251
226.595	SLUDGE TRANSFER PUMP FOUND							
226.5951	EXCAVATION WORK							
226.59511	EXCAVATION-EARTH			100 CY	25 MH	293	100	
226.59514	BACKFILL-EARTH			60 CY	18 MH	180	60	
	226.5951 EXCAVATION WORK				43 MH	473	160	633
226.5953	SUBSTRUCTURE CONCRETE							
226.59531	FORMWORK			2000 SF	800 MH	8,834	2,000	
226.59532	REINFORCING STEEL			3 TN	75 MH	970	1,125	
226.59533	CONCRETE			60 CY	45 MH	460	1,920	
226.59534	EMBEDDED STEEL			2 TN	250 MH	3,006	2,800	
	226.5953 SUBSTRUCTURE CONCRETE				1170 MH	13,270	7,845	21,115
	226.595 SLUDGE TRANSFER PUMP FOUND				1213 MH	13,743	8,005	21,748
226.596	SLDG DISPOSL SRG TK FOUND							
226.5961	EXCAVATION WORK							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.59611	EXCAVATION-EARTH			165 CY	41 MH	480	165	
226.59614	BACKFILL-SAND			210 CY	63 MH	628	1,260	
	226.5961 EXCAVATION WORK				104 MH	1,108	1,425	2,533
226.5963	SUBSTRUCTURE CONCRETE							
226.59631	FORMWORK			1200 SF	480 MH	5,300	1,200	
226.59632	REINFORCING STEEL			5 TN	125 MH	1,614	1,875	
226.59633	CONCRETE			45 CY	34 MH	347	1,440	
	226.5963 SUBSTRUCTURE CONCRETE				639 MH	7,261	4,515	11,776
	226.596 SLDG DISPOSL SRG TK FOUND				743 MH	8,369	5,940	14,309
226.597	EMERGENCY SLURRY STRG POND							
226.5971	EXCAVATION WORK							
226.59711	EXCAVATION-EARTH			13000 CY	3251 MH	38,003	13,000	
226.59714	BACKFILL-EARTH			600 CY	180 MH	1,791	600	
	226.5971 EXCAVATION WORK				3431 MH	39,794	13,600	53,394
226.5973	SUBSTRUCTURE CONCRETE							
226.59753	POND LINER							
	226.597 EMERGENCY SLURRY STRG POND				3431 MH	39,794	13,600	53,394
	226.59 FOUNDATIONS/SKIDS				119209 MH	1,407,564	2,368,895	3,776,479
	226.5 SLUDGE HANDLING SYSTEM		5,641,400		628592 MH	8,005,626	4,369,258	18,016,284
226.6	MISC DESULFURIZATION EQUIP							

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226.61	ROTATING MACHINERY							
226.611	PROCESS WATER PUMP + MOTOR	2 EA	34,000	1 LT	741 MH	9,794	979	
226.6111	PROCESS WATER PUMP							
226.6112	PROCESS WATER PUMP MOTOR							
	226.611 PROCESS WATER PUMP + MOTOR		34,000		741 MH	9,794	979	44,773
226.612	SEAL WATER PUMP + MOTOR	2 EA	12,000	1 LT	400 MH	5,286	529	
226.6121	SEAL WATER PUMP							
226.6122	SEAL WATER PUMP MOTOR							
	226.612 SEAL WATER PUMP + MOTOR		12,000		400 MH	5,286	529	17,815
	226.61 ROTATING MACHINERY		46,000		1141 MH	15,080	1,508	62,586
226.63	TANKS AND PRESSURE VESSELS							
226.631	PROCESS WATER SURGE TANK			1 EA	1200 MH	15,696	11,000	
226.632	SEAL WATER TANK	1 EA	13,500	1 LT	140 MH	1,831	183	
	226.63 TANKS AND PRESSURE VESSELS		13,500		1340 MH	17,527	11,783	42,810
226.64	PURIFICATION+FILTRATION EQ							
226.641	SEAL WATER FILTER	1 EA	8,000	1 LT	100 MH	1,293	129	
	226.64 PURIFICATION+FILTRATION EQ		8,000		100 MH	1,293	129	9,422
226.65	PIPING							
226.651	2 IN + SMALLER							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.6511	CS/NNS			11200 LB	3360 MH	43,547	14,560	
	226.651 2 IN + SMALLER				3360 MH	43,547	14,560	58,107
226.652	2.5 IN + LARGER							
226.6521	CS/NNS	70300 LB	105,450	1 LT	10545 MH	136,667	13,667	
	226.652 2.5 IN + LARGER		105,450		10545 MH	136,667	13,667	255,784
	226.65 PIPING		105,450		13905 MH	180,214	28,227	313,891
226.66	VAVLES	1 LT	30,000					
226.663	GLOBE							
	226.66 VAVLES		30,000					30,000
226.67	PIPING - MISC. ITEMS							
226.671	HANGERS + SUPPORTS	14000 LB	21,000					
	226.67 PIPING - MISC. ITEMS		21,000					21,000
226.69	FOUNDATIONS/SKIPS							
226.691	PROCESS WATER PUMP FOUND							
226.6911	EXCAVATION WORK							
226.69111	EXCAVATION-EARTH			30 CY	8 MH	94	30	
226.69114	BACKFILL-EARTH			15 CY	5 MH	49	15	
	226.6911 EXCAVATION WORK				13 MH	143	45	188
226.6913	SUBSTRUCTURE CONCRETE							

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226.69131	FORMWORK			200 SF	80 MH	883	200	
226.69132	REINFORCING STEEL			2 TN	51 MH	657	750	
226.69133	CONCRETE			15 CY	11 MH	113	480	
226.69134	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
226.69135	FLOOR FINISH			130 SF	1 MH	9	1	
	226.6913 SUBSTRUCTURE CONCRETE				269 MH	3,177	2,831	6,008
	226.691 PROCESS WATER PUMP FOUND				282 MH	3,320	2,876	6,196
226.692	SEAL WATER PUMP FOUNDATION							
226.6921	EXCAVATION WORK							
226.69211	EXCAVATION-EARTH			30 CY	8 MH	94	30	
226.69214	BACKFILL-EARTH			15 CY	5 MH	49	15	
	226.6921 EXCAVATION WORK				13 MH	143	45	188
226.6923	SUBSTRUCTURE CONCRETE							
226.69231	FORMWORK			250 CY	100 MH	1,104	250	
226.69232	REINFORCING STEEL			1 TN	25 MH	322	375	
226.69233	CONCRETE			15 CY	11 MH	113	480	
226.69234	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
	226.6923 SUBSTRUCTURE CONCRETE				262 MH	3,054	2,505	5,559
	226.692 SEAL WATER PUMP FOUNDATION				275 MH	3,197	2,550	5,747
226.693	PRCS WATER SURGE TNK FOUND							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
226.6931	EXCAVATION WORK							
226.69311	EXCAVATION-EARTH			80 CY	20 MH	234	80	
226.69314	BACKFILL-SAND			100 CY	100 MH	996	600	
	226.6931 EXCAVATION WORK				120 MH	1,230	680	1,910
226.6933	SUBSTRUCTURE CONCRETE							
226.69331	FORMWORK			820 SF	326 MH	3,622	820	
226.69332	REINFORCING STEEL			2 TN	51 MH	657	750	
226.69333	CONCRETE			30 CY	23 MH	234	960	
	226.6933 SUBSTRUCTURE CONCRETE				402 MH	4,513	2,530	7,043
	226.693 FRCS WATER SURGE TNK FOUND				522 MH	5,743	3,210	8,953
226.694	SEAL WATER TANK FOUNDATION							
226.6941	EXCAVATION WORK							
226.69411	EXCAVATION-EARTH			30 CY	8 MH	94	30	
226.69414	BACKFILL-EARTH			15 CY	5 MH	49	15	
	226.6941 EXCAVATION WORK				13 MH	143	45	188
226.6943	SUBSTRUCTURE CONCRETE							
226.69431	FORMWORK			150 SF	60 MH	661	150	
226.69432	REINFORCING STEEL			2 TN	51 MH	657	750	
226.69433	CONCRETE			25 CY	19 MH	195	800	
	226.6943 SUBSTRUCTURE CONCRETE				130 MH	1,513	1,700	3,213

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	226.694 SEAL WATER TANK FOUNDATION				143 MH	1,656	1,745	3,401
	226.69 FOUNDATIONS/SKIPS				1222 MH	13,916	10,381	24,297
	226.6 MISC DESULFURIZATION EQUIP		223,950		17708 MH	228,030	52,028	504,008
226.7	INSTRUMENTATION+CONTROL	1 LT	442,000	1 LT	7200 MH	88,010	4,401	
226.82	BUILDING SERVICES							
	226. DESULFURIZATION EQUIPMENT		22,106,645		1470053 MH	18,628,459	10,190,463	50,925,567
227.	INSTRUMENTATION + CONTROL							
227.1	BENCHBOARD, PANELS + RACKS							
227.11	BOILER - TG CONTROL PANEL	1 LT	240,000	1 LT	6540 MH	79,943	3,997	
227.17	AUXILIARY PANELS+CABINETS	1 LT	113,000	1 LT	4090 MH	49,995	2,500	
227.18	INSTRUMENT RACKS	1 LT	210,000	1 LT	2860 MH	34,958	1,748	
	227.1 BENCHBOARD, PANELS + RACKS		563,000		13490 MH	164,896	8,245	736,141
227.2	PLANT COMPUTER SYSTEM	1 LT	600,000	1 LT	30140 MH	368,421	36,842	
227.3	STACK GAS MONITORING SYS							
227.4	PLANT CONTROL SYSTEM							
227.41	COORDINATED CONTROL SYSTEM	1 LT	600,000	1 LT	4904 MH	59,945	5,995	
227.42	BURNER CONTROL SYSTEM							
	227.4 PLANT CONTROL SYSTEM		600,000		4904 MH	59,945	5,995	665,940
227.5	INSTRUMENT TUBING+FITTINGS	1 LT	112,000	1 LT	28000 MH	342,261	17,113	
	227. INSTRUMENTATION + CONTROL		1,875,000		76534 MH	935,523	68,195	2,878,718

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
228.	BOILER PLANT MISC ITEMS							
228.1	MISC SUSPENSE ITEMS							
228.11	FINAL ALIGNMENT + CHECKING			1 LT	50000 MH	646,845	50,000	
228.12	FIELD PAINTING			1 LT	50000 MH	478,500	200,000	
228.13	QUALIFICATION OF WELDERS			1 LT	2500 MH	33,500	10,000	
	228.1 MISC SUSPENSE ITEMS				102500 MH	1,158,845	260,000	1,418,845
228.3	BOILER PLANT INSULATION			1 LT	34460 MH	448,669	1,250,800	
228.31	PIPE INSULATION							
228.32	EQUIPMENT INSULATION							
	228.3 BOILER PLANT INSULATION				34460 MH	448,669	1,250,800	1,699,469
228.4	SAMPLING EQUIPMENT	1 LT	170,000	1 LT	1400 MH	17,113	656	
228.7	MISC PIPE BRIDGE							
228.71	EXCAVATION WORK							
228.711	EXCAVATION-EARTH			80 CY	20 MH	234	80	
	228.71 EXCAVATION WORK				20 MH	234	80	314
228.73	SUBSTRUCTURE CONCRETE							
228.731	FORMWORK			3150 SF	1260 MH	13,912	3,150	
228.733	CONCRETE			100 CY	75 MH	765	3,200	
228.734	EMBEDDED STEEL			30 TN	3750 MH	45,101	42,000	
	228.73 SUBSTRUCTURE CONCRETE				5085 MH	59,778	48,350	108,128

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228.7	MISC PIPE BRIDGE			5105 MH		60,012	48,430	108,442
226.	BOILER PLANT MISC ITEMS		170,000	143465 MH		1,684,639	1,560,086	3,414,725
22 .	BOILER PLANT EQUIPMENT		105,321,960	3603888 MH		45,413,075	16,772,845	167,507,880

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
23 .	TURBINE PLANT EQUIPMENT							
231.	TURBINE GENERATOR							
231.1	TURBINE GENERATOR +ACCSSRY							
231.11	TURBINE FACTORY COST	1 LT	45,000,000					
231.12	OTHER TURBINE COSTS			1 LT	190000 MH	2,415,945	240,000	
231.13	EXCITER & VOLTAGE REGULTR.							
	231.1 TURBINE GENERATOR +ACCSSRY		45,000,000		190000 MH	2,415,945	240,000	47,655,945
231.2	FOUNDATIONS							
231.21	T-G PEDESTAL							
231.211	EXCAVATION WORK							
231.2111	EXCAVATION - EARTH							
231.2112	EXCAVATION - ROCK							
231.2114	BACKFILL - EARTH							
231.2115	DEWATERING							
	231.211 EXCAVATION WORK							
231.213	SUBSTRUCTURE CONCRETE							
231.2131	FORMWORK			14100 SF	5640 MH	62,260	14,100	
231.2132	REINFORCING STEEL			280 TN	7000 MH	90,394	105,000	
231.2133	CONCRETE			4700 CY	8225 MH	83,994	150,400	
231.2134	EMBEDDED STEEL			25 TN	3126 MH	37,596	35,000	

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231.2137	RUBBING CONCRETE SURFACE							
231.2138	EXPANSION JOINT							
	231.213 SUBSTRUCTURE CONCRETE				23991 MH	274,264	304,500	578,764
231.214	SUPERSTRUCTURE							
231.2141	CONCRETE WORK							
231.21411	FORMWORK			75000 SF	45000 MH	496,903	150,000	
231.21412	REINFORCING STEEL			1200 TN	42000 MH	542,359	450,000	
231.21413	CONCRETE			7700 CY	13475 MH	137,606	246,400	
231.21414	EMBEDDED STEEL			60 TN	7500 MH	90,201	84,000	
231.21417	RUBBING CONCRETE SURFACES			75000 SF	2251 MH	22,988	750	
231.21416	EXPANSION JOINT			600 LF	60 MH	696	600	
	231.2141 CONCRETE WORK				110286 MH	1,290,758	931,750	2,222,508
231.2142	STRUCTURAL + MISC STEEL							
231.21421	STRUCTURAL STEEL			5 TN	76 MH	987	3,625	
231.21425	GRATING			750 SF	128 MH	1,665	2,250	
	231.2142 STRUCTURAL + MISC STEEL				204 MH	2,652	5,875	8,527
	231.214 SUPERSTRUCTURE				110490 MH	1,293,410	937,625	2,231,035
	231.21 T-G PEDESTAL				134481 MH	1,567,674	1,242,125	2,809,799
	231.2 FOUNDATIONS				134481 MH	1,567,674	1,242,125	2,809,799
231.4	LUBRICATING OIL SYSTEM							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
231.43	TANKS + PRESSURE VESSELS							
231.431	LUBE OIL STORAGE TANK			1 EA	281 MH	3,676	22,897	
	231.43 TANKS + PRESSURE VESSELS				281 MH	3,676	22,897	26,573
231.45	PIPING							
231.451	2IN. + SMALLER							
231.4511	CS/NNS			2400 LB	721 MH	9,341	3,120	
	231.451 2IN. + SMALLER				721 MH	9,341	3,120	12,461
231.452	2.5IN + LARGER							
231.4521	CS/NNS	1920 LB	2,880	1 LT	288 MH	3,730	373	
	231.452 2.5IN + LARGER		2,880		288 MH	3,730	373	6,983
	231.45 PIPING		2,880		1009 MH	13,071	3,493	19,444
231.46	VALVES	1 LT	5,000					
231.461	GATE							
	231.46 VALVES		5,000					5,000
231.47	PIPING-MISC. ITEMS							
231.471	HANGERS + SUPPORTS	864 LB	1,296					
231.472	INSULATION							
231.473	SPECIALTIES							
	231.47 PIPING-MISC. ITEMS		1,296					1,296

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231.48	INSTRUMENTATION + CONTROL	1 LT	9,830	1 LT	75 MH	917	46	
231.49	SKIDS / FOUNDATIONS							
231.491	LUBE OIL CONDTNG EQPT SKID	1 LT	108,575	1 LT	1152 MH	14,903	1,490	
231.492	FIRE PROTECTION EQPT.			1 LT	3000 MH	38,881	58,050	
	231.49 SKIDS / FOUNDATIONS		108,575		4152 MH	53,784	59,540	221,899
	231.4 LUBRICATING OIL SYSTEM		127,561		5517 MH	71,443	85,976	285,005
231.5	GAS SYSTEMS							
231.51	HYDROGEN STORAGE SYSTEM							
231.513	TANKS + PRESSURE VESSELS							
231.5131	HYDROGEN STORAGE BOTTLES	1 LT	88,150	1 LT	5031 MH	65,801	6,580	
	231.513 TANKS + PRESSURE VESSELS		88,150		5031 MH	65,801	6,580	160,531
231.515	PIPING							
231.5151	2 IN + SMALLER							
231.5152	2.5 IN + LARGER							
231.51521	CS/NNS	4800 LB	7,200	1 LT	721 MH	9,341	934	
	231.5152 2.5 IN + LARGER		7,200		721 MH	9,341	934	17,475
	231.515 PIPING		7,200		721 MH	9,341	934	17,475
231.516	VALVES							
231.5163	GLOBE	10 EA	1,000					

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	231.516 VALVES		1,000					1,000
231.517	PIPING-MISC ITEMS							
231.5171	HANGERS + SUPPORTS	960 LB	1,440					
231.5172	INSULATION							
231.5173	SPECIALTIES							
	231.517 PIPING-MISC ITEMS		1,440					1,440
	1.51 HYDROGEN STORAGE SYSTEM		97,790		5752 MH	75,142	7,514	180,446
231.52	CARBON DIOXIDE STORAGE SYS							
231.523	TANKS + PRESSURE VESSELS							
231.5231	CARBON DIOXIDE TANKS	1 LT	53,750	1 LT	3060 MH	40,024	4,002	
	231.523 TANKS + PRESSURE VESSELS		53,750		3060 MH	40,024	4,002	97,776
231.525	PIPING							
231.5251	2 IN + SMALLER							
231.5252	2.5 IN + LARGER							
231.52521	CS/NNS	4800 LB	7,200	1 LT	721 MH	9,341	934	
	231.5252 2.5 IN + LARGER		7,200		721 MH	9,341	934	17,475
	231.525 PIPING		7,200		721 MH	9,341	934	17,475
231.526	VALVES							
231.5263	GLOBES	10 EA	500					

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	231.526 VALVES		500					500
231.527	PIPING-MISC ITEMS							
231.5271	HANGER + SUPPORT	960 LB	1,440					
	231.527 PIPING-MISC ITEMS		1,440					1,440
	231.52 CARBON DIOXIDE STORAGE SYS		62,690		3781 MH	49,365	4,936	117,191
	231.5 GAS SYSTEMS		160,660		9533 MH	124,507	12,450	297,637
	231. TURBINE GENERATOR		45,288,261		339531 MH	4,179,574	1,580,551	51,048,386
233.	CONDENSING SYSTEMS							
233.1	CONDENSER EQUIPMENT							
233.12	HEAT TRANSFER EQUIPMENT							
233.121	CONDENSERS	1 LT	6,020,000	1 LT	95353 MH	1,273,656	127,366	
	233.12 HEAT TRANSFER EQUIPMENT		6,020,000		95353 MH	1,273,656	127,366	7,421,022
	233.1 CONDENSER EQUIPMENT		6,020,000		95353 MH	1,273,656	127,366	7,421,022
233.2	CONDENSATE SYSTEM							
233.21	ROTATING MACHINERY							
233.211	CONDENSATE PUMP + MOTOR	3 EA	216,000	1 LT	2851 MH	37,681	3,768	
233.2111	COND PUMP							
233.2112	COND PUMP MOTOR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	233.211 CONDENSATE PUMP + MOTOR		216,000		2851 MH	37,681	3,768	257,449
233.212	CONDENSATE BOOSTER PUMP+MT	3 EA	252,000	1 LT	2700 MH	35,685	3,569	
233.2121	CONDENSATE BOOSTER PUMP							
233.2122	CONDENSATE BOOSTER PUMP MT							
	233.212 CONDENSATE BOOSTER PUMP+MT		252,000		2700 MH	35,685	3,569	291,254
233.213	TRANSFER PUMP + MOTOR	2 EA	16,000	1 LT	200 MH	2,643	264	
233.2131	TRANS PUMP							
233.2132	TRANS PUMP MOTOR							
	233.213 TRANSFER PUMP + MOTOR		16,000		200 MH	2,643	264	18,907
	233.21 ROTATING MACHINERY		484,000		5751 MH	76,009	7,601	567,610
233.221	COND. STORAGE TK HEATER							
233.23	TANKS & PRESSURE VESSELS							
233.231	CONDENSATE STORAGE TANK	2 EA	100,000	1 LT	6400 MH	83,710	8,371	
	233.23 TANKS & PRESSURE VESSELS		100,000		6400 MH	83,710	8,371	192,081
233.25	PIPING							
233.251	2 IN. + SMALLER							
233.2511	CS/NNS			2495 LB	748 MH	9,697	3,244	
	233.251 2 IN. + SMALLER				748 MH	9,697	3,244	12,941
233.252	2.5 IN. + LARGER							

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233.2521	CS/NAS	254670 LB	382,005	1 LT	38200 MH	495,088	49,509	
	233.252 2.5 IN. + LARGER		382,005		38200 MH	495,088	49,509	926,602
	233.25 PIPING		382,005		38948 MH	504,735	52,753	939,543
233.26	VALVES	1 LT	377,000					
233.261	GATE VALVES							
233.262	CHECK VALVES							
233.263	GLOBE VALVES							
233.266	BUTTERFLY							
233.267	BALL VALVES							
	233.26 VALVES		377,000					377,000
233.27	PIPING-MISC. ITEMS							
233.271	HANGERS + SUPPORTS	40700 LB	61,050					
233.272	INSULATION							
233.273	SPECIALTIES							
	233.27 PIPING-MISC. ITEMS		61,050					61,050
233.28	INSTRUMENTATION + CONTROL	1 LT	49,300	1 LT	380 MH	4,647	232	
233.29	FOUNDATIONS							
233.291	CONDENSATE TANK FDTN							
233.2911	FORMWORK			1600 SF	640 MH	7,068	1,600	
233.2912	REINFORCING STEEL			3 TN	75 MH	970	1,125	
233.2913	CONCRETE			60 CY	105 MH	1,074	1,920	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	233.291 CONDENSATE TANK FDTN				820 MH	9,112	4,645	13,757
233.292	CONDENSATE PUMP FDTN.							
233.2921	FORMWORK							
233.2922	REINF. STEEL							
233.2923	CONCRETE							
233.2924	EMBEDDED IRON							
233.2925	STRUCTURAL STEEL							
233.2926	MISC. STEEL							
	233.292 CONDENSATE PUMP FDTN.							
233.293	BOOSTER PUMP FDTN							
233.2931	FORMWORK							
233.2932	REINF. STEEL							
233.2933	CONCRETE							
233.2934	EMBEDDED IRON							
233.2935	STRUCTURAL STEEL							
233.2936	MISC. STEEL							
	233.293 BOOSTER PUMP FDTN							
	233.29 FOUNDATIONS				820 MH	9,112	4,645	13,757
	233.2 CONDENSATE SYSTEM	1,453,355		52299 MH		678,263	73,602	2,205,220
233.3	GAS REMOVAL SYSTEM							
233.31	CONDENSER GAS REMOVAL SYS.							

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233.311	ROTATING MACHINERY							
233.3111	MECH VACUUM PUMP & MOTOR	4 EA	301,000	1 LT	2000 MH	26,433	2,643	
233.31111	MECH VAC PUMP							
233.31112	MECH VAC PUMP MOTOR							
	233.3111 MECH VACUUM PUMP & MOTOR		301,000		2000 MH	26,433	2,643	330,076
	233.311 ROTATING MACHINERY		301,000		2000 MH	26,433	2,643	330,076
233.315	PIPING							
233.3151	2 IN. + SMALLER							
233.31511	CS/NNS			813 LB	244 MH	3,163	1,057	
	233.3151 2 IN. + SMALLER				244 MH	3,163	1,057	4,220
233.3152	2.5 IN. + LARGER							
233.31521	CS/NNS	30300 LB	45,450	1 LT	4545 MH	58,906	5,891	
	233.3152 2.5 IN. + LARGER		45,450		4545 MH	58,906	5,891	110,247
	233.315 PIPING		45,450		4784 MH	62,069	6,948	114,467
233.316	VALVES	1 LT	5,500					
233.3161	GATE							
233.3163	GLOBE							
	233.316 VALVES		5,500					5,500
233.317	PIPING-MISC. ITEMS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
233.3171	HANGERS + SUPPORTS	6200 Lb	9,300					
233.3172	INSULATION							
233.3173	SPECIALTIES							
	233.317 PIPING-MISC. ITEMS		9,300					9,300
233.318	INSTRUMENTATION + CONTROL	1 LT	7,600	1 LT	58 MH	709	35	
233.319	FOUNDATIONS/SKIDS							
233.3191	VACUUM PUMP FDTN.							
.31911	FORMWORK							
233.31912	REINFORCING STEEL							
233.31913	CONCRETE							
233.31914	EMBEDDED STEEL							
	233.3191 VACUUM PUMP FDTN.							
	233.319 FOUNDATIONS/SKIDS							
	233.31 CONDENSER GAS REMOVAL SYS.		368,850		6847 MH	89,211	9,626	467,687
	233.3 GAS REMOVAL SYSTEM		368,850		6847 MH	89,211	9,626	467,687
233.4163								
233.5	CONDENSATE POLISHING	1 LT	1,145,000	1 LT	20000 MH	258,738	25,874	
233.51	ROTATING MACHINERY							
233.511	ACID REGEN PUMP + MOTOR							
233.5111	ACID REGEN PUMP							

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233.5112	ACID REGEN PUMP MOTOR							
	233.511 ACID REGEN PUMP + MOTOR							
233.512	CAUSTIC REGEN PUMP + MOTOR							
233.5121	CAUSTIC REGEN PUMP							
233.5122	CAUSTIC REGEN PUMP MOTOR							
	233.512 CAUSTIC REGEN PUMP + MOTOR							
233.513	AMMONIA REGEN PUMP + MOTOR							
233.5131	AMMONIA REGEN PUMP							
233.5132	AMMONIA REGEN PUMP MOTOR							
	233.513 AMMONIA REGEN PUMP + MOTOR							
233.514	SLUICE WATER REGEN P+M							
233.5141	SLUICE WATER REGEN PUMP							
233.5142	SLUICE WATER REGEN P MOTOR							
	233.514 SLUICE WATER REGEN P+M							
233.515	RECYCLE PUMP + MOTOR							
233.5151	RECYCLE PUMP							
233.5152	RECYCLE PUMP MOTOR							
	233.515 RECYCLE PUMP + MOTOR							
233.516	AIR BLOWER + MOTOR							
233.5161	AIR BLOWER							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
233.5162	AIR BLOWER MOTOR							
	233.516 AIR BLOWER + MOTOR							
	233.51 ROTATING MACHINERY							
233.53	TANKS + PRESSURE VESSELS							
233.531	RESIN SEPRTR+CATION RGN TK							
233.532	ANION REGEN TANK							
233.533	RESIN STORAGE TANK							
233.534	HOT WATER HEATING TANK							
233.535	BULK ACID STORAGE TANK							
233.536	BULK CAUSTIC STORAGE TANK							
233.537	BULK AMMONIA STORAGE TANK							
	233.53 TANKS + PRESSURE VESSELS							
233.54	PURIFICATION EQUIPMENT							
233.541	MIXED BED DEMINERALIZERS							
	233.54 PURIFICATION EQUIPMENT							
233.58	INSTRUMENTATION + CONTROL	1 LT	53,520	1 LT	430 MH	5,257	263	
	233.5 CONDENSATE POLISHING		1,198,520		20430 MH	263,995	26,137	1,488,652
	233. CONDENSING SYSTEMS		9,040,725		174929 MH	2,303,125	236,731	11,582,581
234.	FEED HEATING SYSTEM							
234.1	FEEDWATER HEATERS	1 LT	4,910,000	1 LT	10000 MH	130,797	13,080	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
234.12	HEAT TRANSFER EQUIPMENT							
234.121	NO.1 LP HEATERS							
234.122	NO.2 LP HEATERS							
234.123	NO.3 LP HEATERS							
234.124	NO 4 LP HEATER							
234.125	NO 5 LP HEATER/DEAERATOR							
234.1251	DEAERATOR							
234.1252	DEAERATOR STORAGE TANK							
	234.125 NO 5 LP HEATER/DEAERATOR							
234.126	NO 6 HP HEATER							
234.127	NO 7 HP HEATER							
234.128	NO 8 HP HEATER							
	234.12 HEAT TRANSFER EQUIPMENT							
	234.1 FEEDWATER HEATERS		4,910,000		10000 MH	130,797	13,080	5,053,877
234.2	FEED ATER SYSTEM							
234.21	ROTATING MACHINERY							
234.211	MAIN BOILER FEED PUMP-MBFP	2 EA	1,074,000	1 LT	11541 MH	152,536	15,254	
234.212	MBFP TURBINE DRIVES	2 EA	3,000,000	1 LT	18000 MH	232,864	23,286	
234.216	MAIN BF BOOSTER PUMP + MTR	2 EA	92,000	1 LT	3151 MH	41,646	4,165	
234.2161	MAIN BF BOOSTER PUMP							
234.2162	MAIN BF BOOSTER PUMP MTR.							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
234.216	MAIN BF BOOSTER PUMP + MTR		92,000		3151 MH	41,646	4,165	137,811
234.21	ROTATING MACHINERY		4,166,000		32692 MH	427,046	42,705	4,635,751
234.22	HEAT TRANSFER EQUIPMENT							
234.221	MAIN BOILER FP CONDENSER	1 EA	490,000	1 LT	500 MH	6,678	668	
234.22	HEAT TRANSFER EQUIPMENT		490,000		500 MH	6,678	668	497,346
234.25	PIPING							
234.251	2 IN + SMALLER							
234.2511	CS/PC			640 LB	193 MH	2,499	632	
234.2512	CS/BC			600 LB	179 MH	2,324	780	
234.251	2 IN + SMALLER				372 MH	4,823	1,612	6,435
234.252	2.5IN + LARGER							
234.2521	CS/PC							
234.25211	CS/PC	900000 LB	1,350,000	1 LT	135000 MH	1,749,654	174,965	
234.25212	CS/PC	251315 LB	376,973	1 LT	37698 MH	488,580	48,858	
234.2521	CS/PC		1,726,973		172698 MH	2,238,234	223,823	4,189,030
234.2522	CS/BC	67200 LB	100,800	1 LT	10079 MH	130,632	13,063	
234.252	2.5IN + LARGER		1,827,773		182777 MH	2,368,866	236,886	4,433,525
234.25	PIPING		1,827,773		183149 MH	2,373,689	238,498	4,439,960
234.26	VALVES	1 LT	750,000					

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234.261	GATE							
234.262	CHECK							
234.263	GLOBE							
	234.26 VALVES		750,000					750,000
234.27	PIPING-MISC. ITEMS							
234.271	HANGERS & SUPPORTS	280,000 LB	426,000					
234.272	INSULATION							
234.273	SPECIALTIES							
	234.27 PIPING-MISC. ITEMS		426,000					426,000
234.28	INSTRUMENTATION + CONTROL	1 LT	66,160	1 LT	560 MH	6,844	342	
234.29	SKIDS/FOUNDATIONS							
234.291	MBFP							
234.2911	FORMWORK							
234.2912	REINFORCING STEEL							
234.2913	CONCRETE							
234.2914	EMBEDDED STEEL							
	234.291 MBFP							
	234.29 SKIDS/FOUNDATIONS							
	234.2 FEEDWATER SYSTEM		7,727,933		216901 MH	2,814,257	282,213	10,824,403
234.3	EXTRACTION STEAM SYSTEM							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
234.35	PIPING							
234.351	2 IN + SMALLER							
234.3511	CS/NNS							
	234.351 2 IN + SMALLER							
234.352	2.5IN + LARGER							
234.3521	CS/NNS	460522 LB	690,783	1 LT	69078 MH	895,280	89,528	
	234.352 2.5IN + LARGER		690,783		69078 MH	895,280	89,528	1,675,591
	234.35 PIPING		690,783		69078 MH	895,280	89,528	1,675,591
234.36	VALVES	1 LT	375,000					
234.361	GATE							
234.362	CHECK							
234.363	GLOBE							
	234.36 VALVES		375,000					375,000
234.37	PIPING-MISCELLANEOUS							
234.371	HANGER + SUPPORTS	92104 LB	138,156					
234.372	INSULATION							
234.373	SPECIALTIES							
	234.37 PIPING-MISCELLANEOUS		138,156					138,156
234.38	INSTRUMENTATION + CONTROL	1 LT	37,680	1 LT	311 MH	3,802	190	
	234.3 EXTRACTION STEAM SYSTEM		1,241,619		69389 MH	899,082	89,718	2,230,419

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
234.4	FWH VENT + DRAIN SYSTEM							
234.41	ROTATING MACHINERY							
234.411	HEATER DRAIN PUMP + MOTOR	2 EA	13,700	1 LT	480 MH	6,344	634	
234.4111	HEATER DRAIN PUMP							
234.4112	HEATER DRAIN PUMP MOTOR							
	234.411 HEATER DRAIN PUMP + MOTOR		13,700		480 MH	6,344	634	20,678
	234.41 ROTATING MACHINERY		13,700		480 MH	6,344	634	20,678
234.43	TANKS + PRESSURE VESSELS							
234.431	HEATER DRAIN TANK	1 EA	17,000	1 LT	59 MH	764	76	
	234.43 TANKS + PRESSURE VESSELS		17,000		59 MH	764	76	17,840
234.45	PIPING							
234.451	2 IN + SMALLER							
234.4511	CS/PC			110 LB	33 MH	428	143	
	234.451 2 IN + SMALLER				33 MH	428	143	571
234.452	2.5IN + LARGER							
234.4521	CS/PC	91375 LB	137,063	1 LT	13706 MH	177,638	17,764	
234.4522	CR-MO/PC	11340 LB	28,350	1 LT	2835 MH	36,744	3,674	
	234.452 2.5IN + LARGER		165,413		16541 MH	214,382	21,438	401,233
	234.45 PIPING		165,413		16574 MH	214,810	21,581	401,804

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
234.46	VALVES	1 LT	150,000					
234.461	GATE							
234.462	CHECK							
234.463	GLOBE							
	234.46 VALVES		150,000					150,000
234.47	PIPING-MISC. ITEMS							
234.471	HANGERS & SUPPORTS	18300 LB	27,450					
234.472	INSULATION							
234.473	SPECIALTIES							
	234.47 PIPING-MISC. ITEMS		27,450					27,450
234.48	INSTRUMENTATION + CONTROL	1 LT	57,030	1 LT	471 MH	5,756	288	
	234.4 FWH VENT + DRAIN SYSTEM		430,593		17584 MH	227,674	22,579	660,846
	234. FEED HEATING SYSTEM		14,310,145		313874 MH	4,071,810	407,590	18,789,545
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			440 LB	307 MH	3,981	1,430	

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
235.11512	CR-MO/PC			1320 LB	924 MH	11,975	4,290	
	235.1151 2 IN + SMALLER				1231 MH	15,956	5,720	21,676
235.1152	2.5 IN + LARGER							
235.11521	CR-MO/BC							
235.115211	CR-MO/BC	900000 LB	2,250,000	1 LT	225000 MH	2,916,093	291,609	
235.115212	CR-MO/BC	873300 LB	2,183,250	1 LT	218325 MH	2,829,573	282,958	
	235.11521 CR-MO/BC		4,433,250		443325 MH	5,745,668	574,567	10,753,485
235.11522	CR-MO/NNS	3080 LB	7,700	1 LT	771 MH	9,991	999	
	235.1152 2.5 IN + LARGER		4,440,950		444096 MH	5,755,659	575,566	10,772,175
	235.115 PIPING		4,440,950		445327 MH	5,771,615	581,286	10,793,851
235.116	VALVES	1 LT	40,000					
235.1161	GATE							
235.1162	CHECK							
235.1163	GLOBE							
235.1165	RELIEF							
	235.116 VALVES		40,000					40,000
235.117	PIPING-MISC ITEMS							
235.1171	HANGERS + SUPPORTS	355000 LB	532,500					
235.1172	INSULATION							
235.1173	SPECIALTIES							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
235.11732	STEAM TRAPS + STRAINERS							
	235.1173 SPECIALTIES							
	235.117 PIPING-MISC ITEMS		532,500					532,500
235.118	INSTRUMENTATION+CONTROL	1 LT	16,500	1 LT	320 MH	3,910	196	
	235.11 MAIN STEAM SYSTEM		5,029,950		445647 MH	5,775,525	581,482	11,386,957
235.12	HOT REHEAT SYSTEM							
235.125	PIPING							
235.1251	2 IN + SMALLER							
235.12511	CR-MO/PC			755 LB	528 MH	6,843	2,454	
	235.1251 2 IN + SMALLER				528 MH	6,843	2,454	9,297
235.1252	2.5IN + LARGER							
235.12521	CR-MO/PC							
235.125211	CR-MO/PC	900000 LB	2,250,000	1 LT	225000 MH	2,916,090	291,609	
235.125212	CR-MO/PC	518600 LB	1,297,000	1 LT	129700 MH	1,680,963	168,096	
	235.12521 CR-MO/PC		3,547,000		354700 MH	4,597,053	459,705	8,603,758
	235.1252 2.5IN + LARGER		3,547,000		354700 MH	4,597,053	459,705	8,603,758
	235.125 PIPING		3,547,000		355228 MH	4,603,896	462,159	8,613,055
235.126	VALVES	1 LT	16,000					

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR MHS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
235.1261	GATE							
235.1263	GLOBE							
235.1265	SAFETY/RELIEF							
	235.126 VALVES		16,000					16,000
235.127	PIPING-MISC. ITEMS							
235.1271	HANGERS + SUPPORTS	280000 LB	420,000					
235.1272	INSULATION							
235.1273	SPECIALTIES							
235.12732	TRAPS + STRAINERS							
	235.1273 SPECIALTIES							
	235.127 PIPING-MISC. ITEMS		420,000					420,000
235.128	INSTRUMENTATION + CONTROL	1 LT	9,400	1 LT	211 MH	2,579	129	
	235.12 HOT REHEAT SYSTEM		3,992,400		355439 MH	4,606,475	462,288	9,061,163
235.13	COLD REHEAT SYSTEM							
235.135	PIPING							
235.1351	2 IN + SMALLER							
235.13511	CS/PC			250 LB	75 MH	974	325	
	235.1351 2 IN + SMALLER				75 MH	974	325	1,299
235.1352	2.5 IN + LARGER							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
235.13521	CS/PC	510195 LB	765,293	1 LT	76528 MH	991,834	99,183	
	235.1352 2.5 IN + LARGER		765,293		76528 MH	991,834	99,183	1,856,310
	235.135 PIPING		765,293		76603 MH	992,808	99,508	1,857,609
235.136	VALVES	1 LT	65,000					
235.1361	GATE							
235.1362	CHECK							
235.1363	GLOBE							
235.1365	RELIEF							
	235.136 VALVES		65,000					65,000
235.137	PIPING-MISC. ITEMS							
235.1371	HANGERS + SUPPORTS	102000 LB	153,000					
235.1372	INSULATION							
235.1373	SPECIALTIES							
235.13732	TRAPS + STRAINERS							
	235.1373 SPECIALTIES							
	235.137 PIPING-MISC. ITEMS		153,000					153,000
235.138	INSTRUMENTATION + CONTROL	1 LT	8,900	1 LT	180 MH	2,201	110	
	235.13 COLD REHEAT SYSTEM		992,193		76783 MH	995,009	99,618	2,086,820
235.15	ATTEMPERATING SYSTEM							
235.155	PIPING							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTOR QUANTITY	FACTOR COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
235.1551	2 IN + SMALLER							
235.15511	CS/PC			1450 LB	435 MH	5,640	1,885	
	235.1551 2 IN + SMALLER				435 MH	5,640	1,885	7,525
235.1552	2.5 IN + LARGER							
235.15521	CS/PC	24120 LB	36,180	1 LT	3618 MH	46,883	4,689	
	235.1552 2.5 IN + LARGER		36,180		3618 MH	46,883	4,689	87,757
	235.155 PIPING		36,180		4053 MH	52,523	6,574	95,282
235.156	VALVES	1 LT	55,000					
235.1561	GATE							
235.1562	CHECK							
	235.156 VALVES		55,000					55,000
235.157	PIPING-MISC ITEMS							
235.1571	HANGERS + SUPPORTS	5100 LB	7,650					
235.1572	INSULATION							
235.1573	SPECIALTIES							
235.15732	STEAM TRAPS + STRAINERS							
	235.1573 SPECIALTIES							
	235.157 PIPING-MISC ITEMS		7,650					7,650
235.158	INSTRUMENTATION + CONTROL							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
235.15	ATTEMPERATING SYSTEM		98,830		4053 MH	52,528	6,574	157,932
235.173	SPECIALTIES							
235.1	MAIN VAPOR PIPING SYSTEM		10,113,373		881922 MH	11,429,537	1,149,962	22,692,872
235.2	TURBINE AUXILIARIES							
235.21	MAIN STM/RHT VENTS & DRAIN							
235.215	PIPING							
235.2151	2 IN + SMALLER							
235.21511	CS/PC			3850 LB	1148 MH	14,881	4,979	
235.21512	CR-MO/PC			3300 LB	2310 MH	29,941	10,725	
235.2151	2 IN + SMALLER				3458 MH	44,822	15,704	60,526
235.2152	2.5 IN + LARGER							
235.21521	CS/PC							
235.21522	CR-MO/PC	6710 LB	16,775	1 LT	1677 MH	21,737	2,174	
235.2152	2.5 IN + LARGER		16,775		1677 MH	21,737	2,174	40,586
235.215	PIPING		16,775		5135 MH	66,559	17,878	101,212
235.216	VALVES	1 LT	45,000					
235.2163	GLOBE	1 LT	3,225					
235.216	VALVES		48,225					48,225
235.217	PIPING-MISC. ITEMS							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
235.2171	HANGERS + SUPPORTS	10000 LB	15,000					
235.2172	INSULATION							
235.2173	SPECIALTIES							
	235.217 PIPING-MISC. ITEMS		15,000					15,000
235.218	INSTRUMENTATION + CONTROL	1 LT	9,500	1 LT	211 MH	2,579	129	
	235.21 MAIN STM/RHT VENTS & DRAIN		89,500		5346 MH	69,138	18,007	176,645
	235.2 TURBINE AUXILIARIES		89,500		5346 MH	69,138	18,007	176,645
235.3	TB CLOSED CLG WATER SYS							
235.31	ROTATING MACHINERY							
235.311	TB CLOSED CLG WTR PUMP	3 EA	39,000	1 LT	1351 MH	17,856	1,786	
235.3111	TB CCW PUMP							
235.3112	TB CCW PUMP MOTOR							
	235.311 TB CLOSED CLG WTR PUMP		39,000		1351 MH	17,856	1,786	58,642
	235.31 ROTATING MACHINERY		39,000		1351 MH	17,855	1,786	58,642
235.32	HEAT TRANSFER EQUIPMENT							
235.321	HEAT EXCHANGERS	2 EA	356,000	1 LT	800 MH	10,464	1,046	
	235.32 HEAT TRANSFER EQUIPMENT		356,000		800 MH	10,464	1,046	367,510
235.33	TANKS + PRESSURE VESSELS							
235.331	HEAD TANK	1 EA	1,400	1 LT	52 MH	678	68	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	235.33 TANKS + PRESSURE VESSELS		1,400		52 MH	678	68	2,146
235.35	PIPING							
235.351	2 IN. + SMALLER							
235.3511	CS/NVS			1650 LB	496 MH	6,426	2,145	
	235.351 2 IN. + SMALLER				496 MH	6,426	2,145	8,571
235.352	2.5 IN + LARGER							
235.3521	CS/NVS	158770 LB	238,155	1 LT	23815 MH	308,651	30,865	
	235.352 2.5 IN + LARGER		238,155		23815 MH	308,651	30,865	577,671
	235.35 PIPING		238,155		24311 MH	315,077	33,010	586,242
235.36	VALVES	1 LT	165,000					
235.361	GATE							
235.362	CHECK							
235.363	GLOBE							
235.365	RELIEF							
235.366	BUTTERFLY							
235.368	PLUG							
	235.36 VALVES		165,000					165,000
235.37	PIPING-MISC. ITEMS							
235.371	HANGERS + SUPPORTS	32000 LB	48,000					
235.372	INSULATION							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
235.373	SPECIALTIES							
	235.37 PIPING-MISC. ITEMS		48,000					48,000
235.38	INSTRUMENTATION + CONTROL	1 LT	25,400	1 LT	200 MH	2,445	122	
	235.3 TB CLOSED CLG WATER SYS		872,955		26714 MH	346,520	36,032	1,255,507
235.4	DEMIN.WATER MAKE-UP SYSTEM	1 LT	760,000	1 LT	4252 MH	55,612	5,561	
235.45	PIPING							
235.451	2 IN + SMALLER							
235.4511	CS/NNS							
	235.451 2 IN + SMALLER							
235.452	2.5 IN + LARGER							
235.4521	CS/NNS							
	235.452 2.5 IN + LARGER							
	235.45 PIPING							
235.46	VALVES							
235.47	PIPING-MISC ITEMS							
235.48	INSTRUMENTATION + CONTROL	1 LT	85,170	1 LT	680 MH	8,313	416	
235.49	SKIDS / FOUNDATIONS							
235.491	DEMINERALIZER PACKAGE							
235.4911	ROTATING MACHINERY							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
235.49111	ACID REGENERANT P+M							
235.491111	ACID REGENERANT PUMP							
235.491112	ACID REGENERANT PUMP MOTOR							
	235.49111 ACID REGENERANT P+M							
235.49112	CAUSTIC REGENERANT P+M							
235.491121	CAUSTIC REGEN PUMP							
235.491122	CAUSTIC REGEN PUMP MOTOR							
	235.49112 CAUSTIC REGENERANT P+M							
235.49113	DEGASIFIER EVACUATING P+M							
235.491131	DEGASIFIER EVAC PUMP							
235.491132	DEGASIFIER EVAC PUMP MOTOR							
	235.49113 DEGASIFIER EVACUATING P+M							
235.49114	DEGASIFIER BOOSTER P+M							
235.491141	DEGASIFIER BOOSTER PUMP							
235.491142	DEGASIFIER BOOSTER P MOTOR							
	235.49114 DEGASIFIER BOOSTER P+M							
	235.4911 ROTATING MACHINERY							
235.49121	DILUTE CAUSTIC WATER HTR.							
235.4913	TANKS + PRESSURE VESSELS							
235.49131	VACUUM DEGASIFIER							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
235.49132	ACID REGENERANT DAY TANK							
235.49133	CAUSTIC REGENERANT DAY TK							
235.49134	HT WTR CAUSTIC DILUTION TK							
	235.4913 TANKS + PRESSURE VESSELS							
235.4914	PURIFICATION+FILTRATION EQ							
235.49141	FILTERS							
235.49142	CATION ION EXCHANGE BEDS							
235.49143	ANION ION EXCHANGE BEDS							
235.49144	MIXED-BED ION EXCHANGE BED							
	235.4914 PURIFICATION+FILTRATION EQ							
	235.491 DEMINERALIZER PACKAGE							
	235.49 SKIDS / FOUNDATIONS							
	235.4 DEMIN.WATER MAKE-UP SYSTEM		645,170		4932 MH	63,925	5,977	915,072
235.5	CHEMICAL TREATMENT SYSTEM	1 LT	32,250	1 LT	152 MH	1,966	197	
235.51	ROTATING MACHINERY							
235.511	AMMONIA FEED PUMP + MOTOR							
235.5111	AMMONIA FEED PUMP							
235.5112	AMMONIA FEED PUMP MOTOR							
	235.511 AMMONIA FEED PUMP + MOTOR							
235.512	HYDRAZINE FEED PUMP+MOTOR							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	S1 QUANTITY	S1 LABOR HRS	S1 LABOR COST	S1 MATERIAL COST	TOTAL COSTS
235.5121	HYDRAZINE FEED PUMP							
235.5122	HYDRAZINE FEED PUMP MOTOR							
	235.512 HYDRAZINE FEED PUMP+MOTOR							
	235.51 ROTATING MACHINERY							
235.53	TANKS + PRESSURE VESSELS							
235.531	AMMONIA STORAGE TANK							
235.532	HYDRAZINE STORAGE TANK							
	235.53 TANKS + PRESSURE VESSELS							
235.55	PIPING							
235.551	2 IN + SMALLER							
235.5511	SS/NS			360 LB	288 MH	3,730	1,800	
	235.551 2 IN + SMALLER				288 MH	3,730	1,800	5,530
235.552	2.5 IN + LARGER							
	235.55 PIPING				288 MH	3,730	1,800	5,530
235.56	VALVES							
235.563	GLOBE	10 EA	1,000					
	235.56 VALVES		1,000					1,000
235.57	PIPE-MISC. ITEMS							
235.571	HANGERS + SUPPORTS	72 LB	108					

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
235.572	INSULATION							
235.573	SPECIALTIES							
	235.57 PIPE-MISC. ITEMS		108					108
235.58	INSTRUMENTATION + CONTROL	1 LT	1,960	1 LT	16 MH	196	10	
	235.5 CHEMICAL TREATMENT SYSTEM		35,318		456 MH	5,892	2,007	43,217
235.6	NEUTRALIZATION SYSTEM							
235.61	ROTATING MACHINERY							
235.611	OVERBOARD/RECIR PUMP+MOTOR	2 EA	9,000	1 LT	200 MH	2,643	264	
235.6111	OVERBOARD/RECIR PUMP							
235.6112	OVERBOARD/RECIR PUMP MOTOR							
	235.611 OVERBOARD/RECIR PUMP+MOTOR		9,000		200 MH	2,643	264	11,907
235.612	BLOWER + MOTOR	2 EA	6,000	1 LT	200 MH	2,643	264	
235.6121	BLOWER							
235.6122	BLOWER MOTOR							
	235.612 BLOWER + MOTOR		6,000		200 MH	2,643	264	8,907
	235.61 ROTATING MACHINERY		15,000		400 MH	5,286	528	20,814
235.63	TANKS AND PRESSURE VESSELS							
235.631	NEUTRALIZATION TANK	2 EA	40,000	1 LT	200 MH	2,616	262	
	235.63 TANKS AND PRESSURE VESSELS		40,000		200 MH	2,616	262	42,878

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
235.65	PIPING							
235.651	2IN & SMALLER							
235.6511	CS/NNS							
	235.651 2IN & SMALLER							
235.652	2.5 IN & LARGER							
235.6521	CS/NNS	1320 LB	1,960	1 LT	196 MH	2,565	257	
	235.652 2.5 IN & LARGER		1,960		196 MH	2,565	257	4,802
	235.65 PIPING		1,960		196 MH	2,565	257	4,802
235.66	VALVES	1 LT	300					
235.67	PIPING - MISC ITEMS							
235.671	HANGERS + SUPPORTS	264 LB	396					
235.672	INSULATION							
235.673	SPECIALTIES							
	235.67 PIPING - MISC ITEMS		396					396
235.68	INSTRUMENTATION + CONTROL	1 LT	21,600	1 LT	411 MH	5,025	251	
	235.6 NEUTRALIZATION SYSTEM		79,276		1209 MH	15,492	1,298	96,066
	235. OTHER TURBINE PLANT EQUIP.		12,035,592		920579 MH	11,930,504	1,213,283	25,179,379
236.	INSTRUMENTATION + CONTROL							
236.1	PROCESS IC EQUIPMENT							

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236.11	BENCHBOARD, PANELS & RACKS							
236.111	TURBINE PLT MAIN CONTRL BD							
236.112	TURBINE PANELS							
236.1121	TURBINE SUPERVISORY PANELS							
236.1122	MMC CONTROL CABINET							
236.1123	TURBINE ACCESSORY PANELS							
	236.112 TURBINE PANELS							
236.113	TURBINE PLANT HVAC PANELS	1 LT	40,000	1 LT	333 MH	4,069	203	
236.115	INSTRUMENT RACK-TURB PLANT	1 LT	456,000	1 LT	4560 MH	55,739	2,787	
236.116	TURBINE + UNIT MISC PANEL	1 LT	60,000	1 LT	490 MH	5,990	300	
	236.11 BENCHBOARD, PANELS + RACKS		556,000		5383 MH	65,798	3,290	625,088
	236.1 PROCESS IC EQUIPMENT		556,000		5383 MH	65,798	3,290	625,088
236.2	PROCESS COMPUTER							
236.3	TURB PLT I+C TUBING							
	236. INSTRUMENTATION + CONTROL		556,000		5383 MH	65,798	3,290	625,088
237.	TURBINE PLANT MISC ITEMS							
237.1	MISC SUSPENSE ITEMS							
237.11	PIPE			1 LT	7651 MH	99,158	87,612	
237.12	FIELD PAINTING			1 LT	41700 MH	399,069	180,062	
237.13	QUALIFICATION OF WELDERS			1 LT	7330 MH	98,222	30,100	
	237.1 MISC SUSPENSE ITEMS				56681 MH	596,449	297,774	894,223

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
237.3	TURBINE PLANT INSULATION			1 LT	42770 MH	556,865	1,552,330	
237.31	PIPE INSULATION							
237.32	EQUIPMENT INSULATION							
	237.3 TURBINE PLANT INSULATION				42770 MH	556,865	1,552,330	2,109,195
	237. TURBINE PLANT MISC ITEMS				99451 MH	1,153,314	1,650,104	3,003,418
	23 . TURBINE PLANT EQUIPMENT	81,230,725			1653747 MH	23,706,125	5,291,549	110,228,397

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
24.	ELECTRIC PLANT EQUIPMENT							
241.	SWITCHGEAR							
241.1	GEN EQPT SWITCHGEAR							
241.11	GEN LOAD BREAK SWITCH							
241.12	GEN NEUTRAL GROUNDING EQPT			1 LT	6000 MH	74,224	8,344	
241.13	GEN CURRENT+POTENTIAL XFMR			16 EA	1080 MH	13,361	1,291	
241.131	GEN.CURRENT TRANSFORMERS							
241.132	GEN.POTENTIAL TRANSFORMERS							
	241.13 GEN CURRENT+POTENTIAL XFMR				1080 MH	13,361	1,291	14,652
241.14	GEN SURGE PROTECTION EQPT							
241.15	GEN EXCITATION SWITCHGEAR							
	241.1 GEN EQPT SWITCHGEAR				7080 MH	87,585	9,635	97,220
241.2	STATION SERVICE SWITCHGEAR							
241.21	MEDIUM VOLTAGE METAL CLAD							
241.211	13.8 KV	2 EA	1,054,000	1 LT	12000 MH	148,448	14,845	
241.212	6.9 KV							
241.213	4.16 KV	4 EA	2,400,000	1 LT	20000 MH	247,412	24,741	
	241.21 MEDIUM VOLTAGE METAL CLAD		3,454,000		32000 MH	395,860	39,586	3,889,446
241.22	STATION MOTOR CONTROL CNTR							
241.221	GENERAL PLANT	67 EA	1,172,500	1 LT	30151 MH	372,966	37,299	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
241.22	STATION MOTOR CONTROL CN		1,172,500		30151 MH	372,986	37,299	1,582,785
241.2	STATION SERVICE SWITCHGEAR		4,526,500		62151 MH	768,846	76,885	5,472,231
241.	SWITCHGEAR	%	4,626,500		69231 MH	856,431	86,520	5,569,451
242.	STATION SERVICE EQUIPMENT							
242.1	STATION SERV&STARTUP XFMR							
242.11	UNIT AUXILIARY TRANSFORMER							
242.111	13.8 KV TRANSFORMERS	2 EA	351,000	1 LT	4500 MH	55,669	5,567	
242.112	4.16 KV TRANSFORMERS	2 EA	316,000	1 LT	4000 MH	49,482	4,948	
242.11	UNIT AUXILIARY TRANSFORMER		667,000		8500 MH	105,151	10,515	782,666
242.12	RESERVE AUXILIARY XFMR							
242.121	13.8 KV TRANSFORMER	1 EA	361,000	1 LT	2700 MH	33,402	3,340	
242.122	4.16 KV TRANSFORMER	1 EA	344,000	1 LT	2400 MH	29,690	2,969	
242.12	RESERVE AUXILIARY XFMR		705,000		5100 MH	63,092	6,309	774,401
242.13	FOUNDATIONS FOR XFMRS							
242.131	EXCAVATION WORK							
242.1311	EARTH EXCAVATION							
242.1312	ROCK EXCAVATION							
242.1313	CONCRETE FILL							
242.1314	FILL + BACKFILL							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
242.1315	DEWATERING							
	242.131 EXCAVATION WORK							
242.132	SUBSTRUCTURE CONCRETE							
242.1321	FORMWORK			6300 SF	2520 MH	27,827	6,300	
242.1322	REINFORCING STEEL			55 TN	1375 MH	17,757	22,000	
242.1323	CONCRETE			1060 CY	795 MH	8,117	37,100	
242.1324	EMBEDDED STEEL			10 TN	1250 MH	15,034	15,000	
242.1325	FLOOR FINISH							
242.1326	WATERPROOFING							
242.1327	CONSTRUCTION JOINTS			2000 SF	2000 MH	22,084	2,000	
242.1328	RUBBING CONCRETE SURFACES			6000 SF	180 MH	1,833	60	
	242.132 SUBSTRUCTURE CONCRETE				8120 MH	92,657	82,460	175,117
242.133	CRUSHED STONE FILL			300 CY	300 MH	2,936	1,800	
	242.13 FOUNDATIONS FOR XFMRS				8420 MH	95,643	84,260	179,903
	2.2.1 STATION SERV&STARTUP XFMR		1,372,000		22020 MH	263,886	101,084	1,736,970
242.2	UNIT SUBSTATIONS							
242.21	LOAD CENTER SWITCHGEAR							
242.211	GENERAL PLANT SWITCHGEAR							
242.2111	COOLING TOWER	8 EA	192,000	1 LT	2800 MH	34,638	3,464	
242.2112	BALANCE OF PLANT-NO CT	24 EA	864,000	1 LT	9600 MH	118,758	11,876	
	242.211 GENERAL PLANT SWITCHGEAR		1,056,000		12400 MH	153,396	15,340	1,224,736

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
242.212	PRECIPITATOR SWITCHGEAR	10 EA	115,000	1 LT	3500 MH	43,298	4,330	
	242.21 LOAD CENTER SWITCHGEAR		1,171,000		15900 MH	196,694	19,670	1,387,364
242.22	LOAD CENTER TRANSFORMERS							
242.221	GENERAL PLANT LD CTR XFMRS							
242.2211	COOLING TOWER	6 EA	76,000	1 LT	3200 MH	39,586	3,959	
242.2212	BALANCE OF PLT 13800-480V	12 EA	138,000	1 LT	4800 MH	59,378	5,938	
242.2213	BALANCE OF PLT 4160-480V	12 EA	132,000	1 LT	3600 MH	44,534	4,453	
	242.221 GENERAL PLANT LD CTR XFMRS		346,000		11600 MH	143,493	14,350	503,848
242.222	PRECIPITATOR LD CTR XFMRS	10 EA	204,000	1 LT	4000 MH	49,482	4,948	
	242.22 LOAD CENTER TRANSFORMERS		550,000		15600 MH	192,980	19,298	762,278
242.23	MISCELLANEOUS XFMRS	1 LT	15,000	1 LT	800 MH	9,896	990	
	242.2 UNIT SUBSTATIONS		1,736,000		32300 MH	399,570	39,958	2,175,528
242.3	AUXILIARY POWER SOURCES							
242.31	BATTERY SYSTEMS							
242.311	STATION BATTERIES							
242.3111	BATTERIES	2 EA	58,000	1 LT	1200 MH	14,844	1,484	
	242.311 STATION BATTERIES		58,000		1200 MH	14,844	1,484	74,328
242.312	BATTERY CHARGERS							
242.3121	CHARGERS	3 EA	22,500	1 LT	451 MH	5,579	558	

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	242.312 BATTERY CHARGERS		22,500		451 MH	5,579	558	28,637
	242.31 BATTERY SYSTEMS		80,500		1651 MH	20,423	2,042	102,965
242.32	EMERGENCY DIESEL GEN SYS							
242.321	DIESEL GENERATOR UNITS	2 EA	135,000	1 LT	1400 MH	17,319	1,732	
242.322	DIESEL GEN SUBSYSTEMS	2 EA	6,700	1 LT	600 MH	7,931	793	
	242.32 EMERGENCY DIESEL GEN SYS		141,700		2000 MH	25,250	2,525	169,475
242.34	INVERTERS							
242.341	GENERAL PLANT INVERTERS	2 EA	50,000	1 LT	600 MH	7,423	742	
	242.34 INVERTERS		50,000		600 MH	7,423	742	58,165
	242.3 AUXILIARY POWER SOURCES		272,200		4251 MH	53,096	5,309	330,605
	242. STATION SERVICE EQUIPMENT		3,380,200		58571 MH	716,552	146,351	4,243,103
243.	SWITCHBOARDS							
243.1	CONTROL PANELS							
243.11	GEN+AUX POWER SYS CTRL PNL	1 LT	250,000	1 LT	4500 MH	55,669	5,567	
243.12	CONSOLES							
243.13	VERTICAL PANELS							
243.14	GEN PROTECTIVE RELAY PANEL	1 LT	240,000	1 LT	4200 MH	51,957	5,196	
	243.1 CONTROL PANELS		490,000		8700 MH	107,626	10,763	608,389
243.2	AUX.POWER & SIGNAL BOARDS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
243.21	POWER DISTRIBUTION PANELS							
243.211	AC PANELS	2 EA	7,000	1 LT	200 MH	2,475	248	
	243.21 POWER DISTRIBUTION PANELS		7,000		200 MH	2,475	248	9,723
243.22	BATTERY CNTRL+DC DIST PNL							
243.221	DC PANELS	1 EA	21,000	1 LT	330 MH	4,082	408	
243.223	MISC.PUSHBUTTONS,PNLS+FUSE			1 LT	1300 MH	15,984	50,000	
243.224	BATTERY FUSES							
	243.22 BATTERY CNTRL+DC DIST PNL		21,000		1630 MH	20,066	50,408	91,474
	243.2 AUX.POWER & SIGNAL BOARDS		28,000		1850 MH	22,541	50,656	101,197
	243. SWITCHBOARDS		518,000		10530 MH	130,167	61,419	709,586
244.	PROTECTIVE EQUIPMENT							
244.1	GENRL STATION GROUND SYS							
244.11	EQUIPMENT GROUNDING SYSTEM			1 LT	22000 MH	270,499	126,000	
244.12	YARD + STRUCTURE GROUNDING			1 LT	21000 MH	258,204	110,000	
	244.1 GENRL STATION GROUND SYS				43000 MH	528,703	236,000	764,703
244.2	FIRE DETECTION+SUPPRESSION			1 LT	5100 MH	66,098	35,000	
244.3	LIGHTNING PROTECTION			1 LT	1300 MH	15,984	25,000	
244.4	CATHODIC PROTECTION			1 LT	19000 MH	233,612	300,000	
244.5	HEAT TRACING + FREEZE PROT			1 LT	17000 MH	209,022	75,000	
	244. PROTECTIVE EQUIPMENT				85400 MH	1,053,419	671,000	1,724,419

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
245.	ELECT.STRUC +WIRING CONTNR							
245.1	UNDERGROUND DUCT RUNS							
245.11	DUCT BANKS							
245.111	PVC DUCT			125000 LF	27500 MH	338,124	200,000	
245.112	STEEL CONDUIT			6250 LF	1376 MH	16,919	14,063	
245.113	STRUCTURAL WORK							
245.1131	EXCAVATION WORK							
245.1132	SUBSTRUCTURE CONCRETE							
245.11321	FORMWORK			70000 SF	26000 MH	309,168	70,000	
245.11322	REINFORCING STEEL			220 TN	5500 MH	71,023	82,500	
245.11323	CONCRETE			4900 CY	3675 MH	37,527	156,800	
	245.1132 SUBSTRUCTURE CONCRETE				37175 MH	417,738	309,300	727,038
	245.113 STRUCTURAL WORK				37175 MH	417,738	309,300	727,038
	245.11 DUCT BANKS				66051 MH	772,781	523,363	1,296,144
	245.1 UNDERGROUND DUCT RUNS				66051 MH	772,781	523,363	1,296,144
245.2	CABLE TRAY			80000 LF	200000 MH	2,459,080	1,185,600	
245.3	CONDUIT			435000 LF	304500 MH	3,743,950	978,750	
	245. ELECT.STRUC +WIRING CONTNR				570551 MH	6,975,811	2,687,713	9,663,524
246.	POWER & CONTROL WIRING							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
246.1	GENERATOR CIRCUITS WIRING							
246.11	MAIN GENERATOR BUS DUCT	1260 LF	485,100	1 LT	16381 MH	201,412	20,141	
246.12	DG UNIT BUS DUCT							
	246.1 GENERATOR CIRCUITS WIRING		485,100		16381 MH	201,412	20,141	706,653
246.2	STATION SERVICE PWR WIRING							
246.21	HIGH VOLTAGE BUS+CABLE							
246.211	BUS DUCT							
246.2111	15 KV BUS DUCT							
246.2112	8 KV BUS DUCT							
246.2113	5 KV BUS DUCT							
	246.211 BUS DUCT							
246.212	CABLE							
246.2121	15 KV CABLE			22800 LF	9119 MH	112,121	276,564	
246.2122	8 KV CABLE							
246.2123	5 KV CABLE			74200 LF	25969 MH	319,298	1,032,864	
	246.212 CABLE				35088 MH	431,419	1,309,428	1,740,847
	246.21 HIGH VOLTAGE BUS+CABLE				35088 MH	431,419	1,309,428	1,740,847
246.22	LOW VOLTAGE BUS+CABLE							
246.221	BUS DUCT							
246.222	CABLE							

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246.2221	LOW VOLTAGE POWER CABLE			688000 LF	68800 MH	845,923	488,480	
	246.[illegible]22 CABLE				68800 MH	845,923	488,480	1,334,403
	246.22 LOW VOLTAGE BUS+CABLE				68800 MH	845,923	488,480	1,334,403
	246.2 STATION SERVICE PWR WIRING				103868 MH	1,277,342	1,797,908	3,075,250
246.3	CONTROL CABLE			2300 MF	230000 MH	2,827,942	3,065,900	
246.4	INSTRUMENT WIRE			900 MF	99000 MH	1,217,244	720,000	
	246. POWER & CONTROL WIRING		485,100		449269 MH	5,523,943	5,603,949	11,612,989
	24 . ELECTRIC PLANT EQUIPMENT		9,009,600		1243552 MH	15,256,320	9,256,952	33,523,072

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
25	MISCELLANEOUS PLANT EQUIPT							
251.	TRANSPORTATION & LIFT EQPT							
251.1	CRANES & HOISTS							
251.11	TURBINE BUILDING CRANE							
251.111	TG OVERHEAD TRAVELING CRAN	1 EA	380,000	1 LT	4125 MH	53,364	5,336	
251.112	HEATER BAY CRANE							
	251.11 TURBINE BUILDING CRANE		380,000		4125 MH	53,364	5,336	438,700
251.14	INTAKE STRUCTURE CRANE							
251.15	CIRC WATER PUMPHOUSE CRANE							
251.16	MISC.CRANES,HOISTS+MONORLS			1 LT	3000 MH	38,811	83,850	
251.161	10 TON CRANE							
251.162	5 TON CRANES							
	251.16 MISC.CRANES,HOISTS+MONORLS				3000 MH	38,811	83,850	122,661
251.17	DIESEL BUILDING CRANES	2 EA	43,000	1 LT	800 MH	10,350	1,035	
	251.1 CRANES & HOISTS		423,000		7925 MH	102,525	90,221	615,746
251.2	RAILWAY EQUIPMENT							
251.21	DIESEL LOCOMOTIVE	1 EA	400,000	1 LT	100 MH	986	99	
	251.2 RAILWAY EQUIPMENT		400,000		100 MH	986	99	401,085
251.3	ROADWAY EQUIPMENT							

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251.34	BULLDOZERS	2 EA	400,000	1 LT	100 MH	986	99	
	251.3 ROADWAY EQUIPMENT		400,000		100 MH	986	99	401,085
	251. TRANSPORTATION & LIFT EQPT		1,223,000		8125 MH	104,497	90,419	1,417,916
252.	AIR,WATER+STEAM SERVICE SY							
252.1	AIR SYSTEMS							
252.11	COMPRESSED AIR SYSTEM							
252.111	ROTATING MACHINERY							
252.1111	AIR COMPRESSORS + MOTORS	3 EA	70,950	1 LT	2551 MH	33,715	3,372	
252.11111	AIR COMPRESSORS							
252.11112	AIR COMPRESSOR MOTOR							
	252.1111 A.C COMPRESSORS + MOTORS		70,950		2551 MH	33,715	3,372	108,037
	252.111 ROTATING MACHINERY		70,950		2551 MH	33,715	3,372	108,037
252.113	TANKS AND PRESSURE VESSELS							
252.1131	AIR RECEIVERS	2 EA	4,300	1 LT	200 MH	2,616	262	
252.1132	AIR DRYERS	2 EA	15,050	1 LT	352 MH	4,555	456	
	252.113 TANKS AND PRESSURE VESSELS		19,350		552 MH	7,171	718	27,239
252.115	PIPING							
252.1151	2IN + SMALLER							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
252.11511	CS/NNS			72100 LB	9630 MH	124,810	41,730	
	252.1151 ZIN + SMALLER				9630 MH	124,810	41,730	166,540
252.1152	2.5IN + LARGER							
252.11521	CS/NNS	3440 LB	5,160	1 LT	516 MH	6,688	669	
	252.1152 2.5IN + LARGER		5,160		516 MH	6,688	669	12,517
	252.115 PIPING		5,160		10146 MH	131,498	42,399	179,057
252.116	VALVES	1 LT	21,500					
252.1161	GATE							
252.1162	CHECK							
252.1163	GLOBE							
252.1165	RELIEF							
	252.116 VALVES		21,500					21,500
252.117	PIPING - MISC ITEMS							
252.1171	HANGERS + SUPPORTS	7100 LB	10,650					
252.1172	INSULATION							
252.1173	SPECIALTIES							
	252.117 PIPING - MISC ITEMS		10,650					10,650
252.118	INSTRUMENTATION+CONTROL	1 LT	18,350	1 LT	141 MH	1,725	86	
	252.11 COMPRESSED AIR SYSTEM		145,960		13390 MH	174,109	46,575	366,644
	252.1 AIR SYSTEMS		145,960		13390 MH	174,109	46,575	366,644

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
252.2	WATER SYSTEMS							
252.21	SERVICE WATER SYSTEM							
252.211	ROTATING MACHINERY							
252.2111	SERVICE WATER PUMP & MOTOR	3 EA	162,000	1 LT	1441 MH	19,045	1,905	
252.21111	SERVICE WATER PUMP							
252.21112	SERVICE WATER PUMP MOTOR							
	252.2111 SERVICE WATER PUMP & MOTOR		162,000		1441 MH	19,045	1,905	182,950
	252.211 ROTATING MACHINERY		162,000		1441 MH	19,045	1,905	182,950
252.215	PIPING							
252.2151	2IN & SMALLER							
252.21511	CS/NNS			1690 LB	507 MH	6,573	2,197	
	252.2151 2IN & SMALLER				507 MH	6,573	2,197	8,770
252.2152	2.5IN & LARGER							
252.21521	CS/NNS	59580 LB	89,370	1 LT	8937 MH	115,830	11,583	
	252.2152 2.5IN & LARGER		89,370		8937 MH	115,830	11,583	216,783
	252.215 PIPING		89,370		9444 MH	122,403	13,780	225,553
252.216	VALVES	1 LT	45,000					
252.2161	GATE							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
252.2162	CHECK							
252.2163	GLOBE							
252.2166	BUTTERFLY							
	252.216 VALVES		45,000					45,000
252.217	PIPING-MISC ITEMS							
252.2171	HANGERS AND SUPPORTS	12200 Lb	18,300					
252.2172	INSULATION							
252.2173	SPECIALTIES							
252.2174	PIPE TRENCHING							
	252.217 PIPING-MISC ITEMS		18,300					18,300
252.218	INSTRUMENTATION & CONTROL	1 LT	9,700	1 LT	480 MH	5,869	293	
	252.21 SERVICE WATER SYSTEM		324,370		11365 MH	147,317	15,978	487,665
252.22	YARD FIRE PROTECTION							
252.221	ROTATING MACHINERY							
252.2211	DIESEL ENGINE FIRE PUMPS	1 EA	20,000	1 LT	251 MH	3,317	332	
252.2212	MOTOR DRIVEN FIRE PUMPS	2 EA	21,700	1 LT	400 MH	5,286	529	
252.22121	FIRE PUMP							
252.22122	FIRE PUMP MOTOR							
	252.2212 MOTOR DRIVEN FIRE PUMPS		21,700		400 MH	5,286	529	27,515
252.2213	JOCKEY PUMP + MOTOR	1 EA	2,150	1 LT	51 MH	673	67	

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
252.22131	JOCKEY PUMP							
252.22132	JOCKEY PUMP MOTOR							
	252.2213 JOCKEY PUMP + MOTOR		2,150		51 MH	673	67	2,890
	252.221 ROTATING MACHINERY		43,850		702 MH	9,276	926	54,054
252.225	PIPING							
252.2252	2.5IN + LARGER							
252.22521	CS/NWS	793200 LB	1,169,890	1 LT	118989 MH	1,542,142	154,214	
252.22522	CS/NWS	81480 LB	130,368	1 LT	12223 MH	158,412	15,841	
	252.2252 2.5IN + LARGER		1,320,258		131212 MH	1,700,554	170,055	3,190,867
	252.225 PIPING		1,320,258		131212 MH	1,700,554	170,055	3,190,867
252.226	VALVES	1 LT	75,000					
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							
	252.22629 SPECIAL VALVES							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	252.2262 E-RATED VALVES							
	252.226 VALVES		75,000					75,000
252.227	PIPING - MISC ITEMS							
252.2271	HANGERS + SUPPORTS	17000 LB	25,500					
252.2272	INSULATION							
252.2273	SPECIALTIES							
252.22731	HOSE HOUSES	10 EA	17,415	1 LT	900 MH	11,665	1,167	
252.22732	FIRE HYDRANTS	10 EA	9,675	1 LT	900 MH	11,534	1,153	
	252.2275 SPECIALTIES		27,090		1800 MH	23,199	2,320	52,609
	252.227 PIPING - MISC ITEMS		52,590		1800 MH	23,199	2,320	78,109
252.228	INSTRUMENTATION+CONTROL	1 LT	6,820	1 LT	57 MH	690	35	
	252.22 YARD FIRE PROTECTION		1,496,516		133771 MH	1,733,725	173,338	3,405,581
252.24	POTABLE WATER SYSTEM							
252.245	PIPING							
252.2451	2IN + SMALLER							
252.24511	GALV/NNS			1200 LB	360 MH	4,667	1,560	
252.24512	CU/NNS			1150 LF	265 MH	3,433	2,300	
	252.2451 2IN + SMALLER				625 MH	8,100	3,860	11,960
252.2452	2.5IN + LARGER							

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252.24521	GALV/NNS	20880 LB	33,408	1 LT	3133 MH	40,605	4,061	
	252.2452 2.5IN + LARGER		33,408		3133 MH	40,605	4,061	78,074
	252.245 PIPING		33,408		3758 MH	48,705	7,921	90,034
252.246	VALVES	1 LT	2,500					
252.2461	GATE							
252.2462	CHECK							
252.2465	GLOBE							
252.2465	SAFETY/RELIEF							
252.2469	SPECIAL VALVES							
252.24691	SAFETY SHOWER							
252.24692	EYE WASH							
252.24693	HOSE BIBBS							
	252.2469 SPECIAL VALVES							
	252.246 VALVES		2,500					2,500
252.247	PIPING-MISC ITEMS							
252.2471	HANGERS + SUPPORTS	4400 LB	6,600					
252.2472	INSULATION							
252.2473	SPECIALTIES							
	252.247 PIPING-MISC ITEMS		6,600					6,600
252.248	INSTRUMENTATION + CONTROL	1 LT	1,000	1 LT	51 MH	424	31	
	252.24 POTABLE WATER SYSTEM		43,508		3809 MH	49,329	7,952	100,789

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	252.2 WATER SYSTEMS		1,866,396		148945 MH	1,930,371	197,266	3,994,035
252.3	AUXILIARY STEAM SYSTEM							
252.31	AUXILIARY BOILER SYSTEM							
252.312	HEAT TRANSFER EQUIPMENT							
252.3121	AUXILIARY BOILERS	2 EA	860,000	1 LT	6000 MH	77,621	7,762	
	252.312 HEAT TRANSFER EQUIPMENT		860,000		6000 MH	77,621	7,762	945,383
252.315	PIPING							
252.3151	2IN + SMALLER							
252.31511	CS/NNS			1430 LB	428 MH	5,547	1,859	
	252.3151 2IN + SMALLER				428 MH	5,547	1,859	7,405
252.3152	2.5IN + LARGER							
252.31521	CS/NNS	33860 LB	50,790	1 LT	5078 MH	65,816	6,582	
	252.3152 2.5IN + LARGER		50,790		5078 MH	65,816	6,582	123,188
	252.315 PIPING		50,790		5506 MH	71,363	8,441	130,594
252.316	VALVES	1 LT	30,000					
252.3161	GATE							
252.3162	CHECK							
252.3163	GLOBE							
	252.316 VALVES		30,000					30,000

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
252.317	PIPING - MISC .TEMS							
252.3171	HANGERS + SUPPORTS	7000 LB	10,500					
252.3172	INSULATION							
252.3173	SPECIALTIES							
	252.317 PIPING - MISC ITEMS		10,500					10,500
	252.31 AUXILIARY BOILER SYSTEM		951,240		11506 MH	148,984	16,203	1,116,477
252.32	AUX BOILER FEEDWATER SYS							
252.321	ROTATING MACHINERY							
252.3211	AUX FW PUMPS + MOTORS							
252.32111	AUX FW PUMPS							
252.32112	AUX FW MOTORS							
	252.3211 AUX FW PUMPS + MOTORS							
	252.321 ROTATING MACHINERY							
252.325	PIPING							
252.3251	2 IN + SMALLER							
252.32511	CS/NNS			370 LB	111 MH	1,441	481	
	252.3251 2 IN + SMALLER				111 MH	1,441	481	1,922
252.3252	2.5 IN + LARGER	2230 I	3,345	1 LT	335 MH	4,343	434	
252.32521	CS/NNS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	252.3252 2.5 IN + LARGER		3,345		335 MH	4,343	434	8,122
	252.325 PIPING		3,345		446 MH	5,784	915	10,044
252.326	VALVES	1 LT	7,000					
252.3261	GATE							
252.3262	CHECK							
252.3265	GLOBE							
	252.326 VALVES		7,000					7,000
252.327	PIPING - MISC. ITEMS							
252.3271	HANGERS + SUPPORTS	500 LB	750					
252.3272	INSULATION							
252.3275	SPECIALTIES							
	252.327 PIPING - MISC. ITEMS		750					750
	252.32 AUX BOILER FEEDWATER SYS		11,095		446 MH	5,784	915	17,794
252.33	AUX FUEL OIL SYSTEM							
252.331	ROTATING MACHINERY							
252.3311	FUEL OIL PUMPS + MOTORS	3 EA	2,400	1 LT	151 MH	1,996	200	
252.33111	FUEL OIL PUMP							
252.33112	FUEL OIL PUMP MOTOR							
	252.3311 FUEL OIL PUMPS + MOTORS		2,400		151 MH	1,996	200	4,596

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	252.331 ROTATING MACHINERY		2,400		151 MH	1,996	200	4,596
252.335	PIPING							
252.3351	21" + SMALLER							
252.33511	CS/Alx			870 LB	261 MH	3,365	1,131	
	252.3351 21" + SMALLER				261 MH	3,365	1,131	4,516
252.3352	2.5IN + LARGER							
252.33521	CS/SS	4000 LB	6,000	1 LT	600 MH	7,776	778	
	252.3352 2.5IN + LARGER		6,000		600 MH	7,776	778	14,554
	252.335 PIPING		6,000		861 MH	11,161	1,909	19,070
252.336	VALVES	1 LT	6,500					
252.3362	CHECK							
252.3366	PLUG							
	252.336 VALVES		6,500					6,500
252.337	PIPING - MISC ITEMS							
252.3371	HANGERS + SUPPORTS	1000 LB	1,500					
252.3372	INSULATION							
252.3373	SPECIALTIES							
	252.337 PIPING - MISC ITEMS		1,500					1,500
	252.33 AUX FUEL OIL SYSTEM		16,400		1012 MH	13,157	2,109	31,666

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
252.34	AUX DEAR + MAKEUP SYSTEM							
252.341	ROTATING MACHINERY							
252.3411	CONDENSATE RETURN PUMP+MT	3 EA	4,500	1 LT	180 MH	2,379	238	
252.34111	CONDENSATE RETURN PUMPS							
252.34112	CONDENSATE RETURN PUMP MT							
252.3411	CONDENSATE RETURN PUMP+MT		4,500		180 MH	2,379	238	7,117
252.341	ROTATING MACHINERY		4,500		180 MH	2,379	238	7,117
252.343	TANKS AND PRESSURE VESSELS							
252.3431	DEAERATOR							
252.343	TANKS AND PRESSURE VESSELS							
252.345	PIPING							
252.3451	2 IN + SMALLER							
252.34511	CS/NNS			54 LB	16 MH	207	70	
252.3451	2 IN + SMALLER				16 MH	20.	70	277
252.3452	2.5 IN + LARGER							
252.34521	CS/NNS	9270 LB	13,905	1 LT	1391 MH	18,024	1,802	
252.3452	2.5 IN + LARGER		13,905		1391 MH	18,024	1,802	33,731
252.345	PIPING		13,905		1407 MH	18,231	1,872	34,008

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
252.346	VALVES	1 LT	5,000					
252.3461	GATE							
252.3462	CHECK							
252.3463	GLOBE							
	252.346 VALVES		5,000					5,000
252.347	PIPING - MISC. ITEMS							
252.3471	HANGERS + SUPPORTS	1800 LB	2,700					
252.3472	INSULATION							
252.3473	SPECIALTIES							
	252.347 PIPING - MISC. ITEMS		2,700					2,700
	252.34 AUX GEAR + MAKEUP SYSTEM		26,135		1587 MH	20,610	2,110	48,825
252.35	AUX CHEM FEED SYSTEM							
252.351	ROTATING MACHINERY							
252.3511	CHEM FEED PUMPS + MOTORS	4 EA	24,400	1 LT	200 MH	2,643	264	
252.35111	CHEM FEED PUMP							
252.35112	CHEM FEED PUMP MOTOR							
	252.3511 CHEM FEED PUMPS + MOTORS		24,400		200 MH	2,643	264	27,307
	252.351 ROTATING MACHINERY		24,400		200 MH	2,643	264	27,307
252.353	TANKS AND PRESSURE VESSELS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
252.3531	CHEM FEED TANKS	2 EA	3,660	1 LT	60 MH	785	79	
	252.353 TANKS AND PRESSURE VESSELS		3,660		60 MH	785	79	4,524
252.355	PIPING							
252.3551	2 IN + SMALLER							
252.35511	SS/NS			240 LB	193 MH	2,499	1,200	
	252.3551 2 IN + SMALLER				193 MH	2,499	1,200	3,699
252.3552	2.5 IN + LARGER							
	252.355 PIPING				193 MH	2,499	1,200	3,699
252.356	VALVES	10 EA	2,581					
252.3561	GATE							
252.3562	CHECK							
252.3563	GLOBE							
252.3569	SPECIAL VALVES							
252.35691	NEEDLE							
	252.3569 SPECIAL VALVES							
	252.356 VALVES		2,581					2,581
252.357	PIPING - MISC ITEMS							
252.3571	HANGERS + SUPPORTS	40 LB	60					
252.3572	INSULATION							
252.3573	SPECIALTIES							

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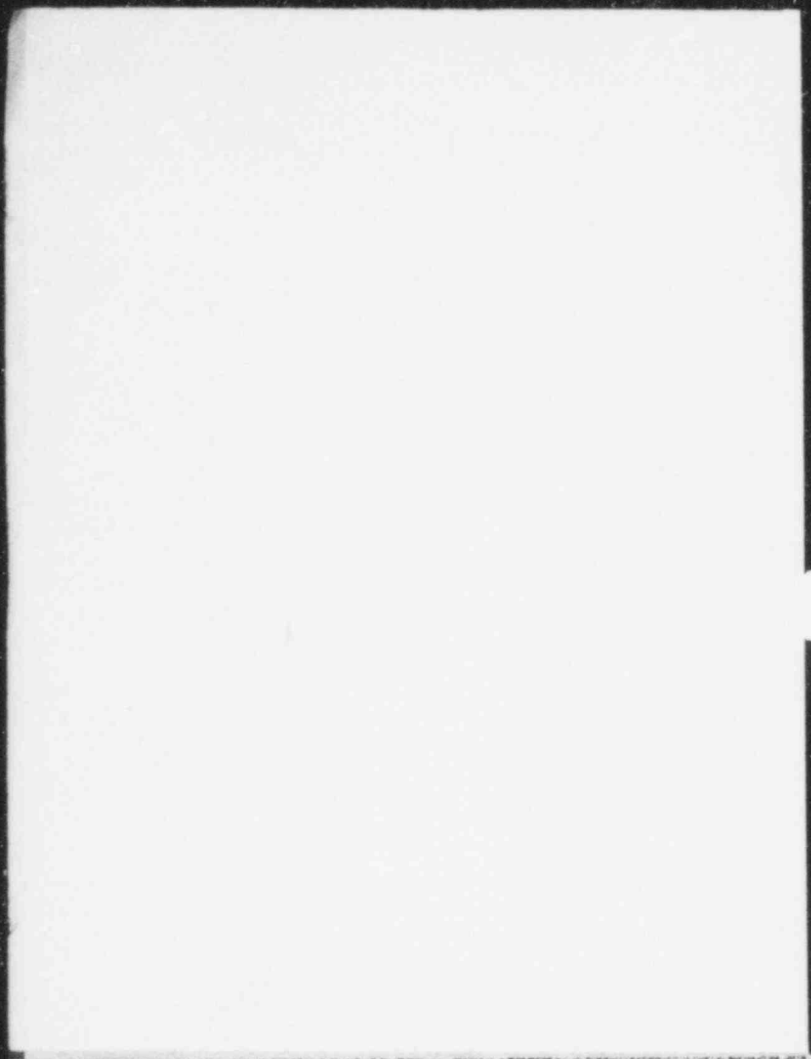
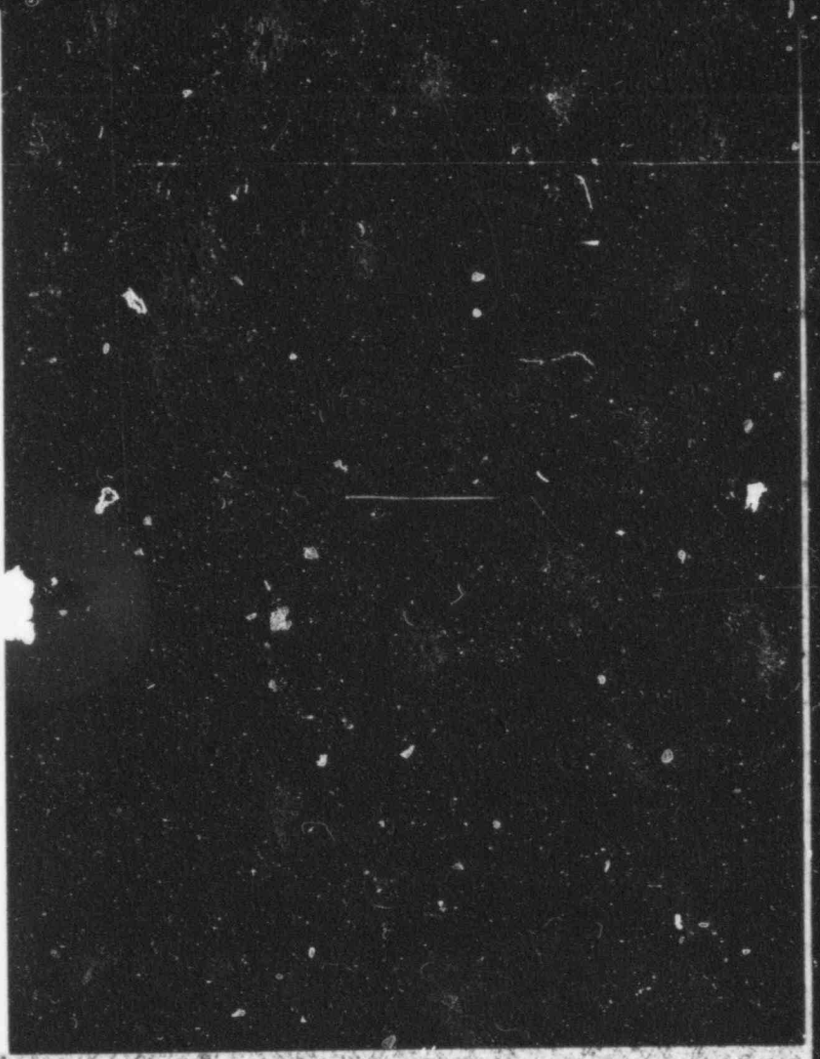
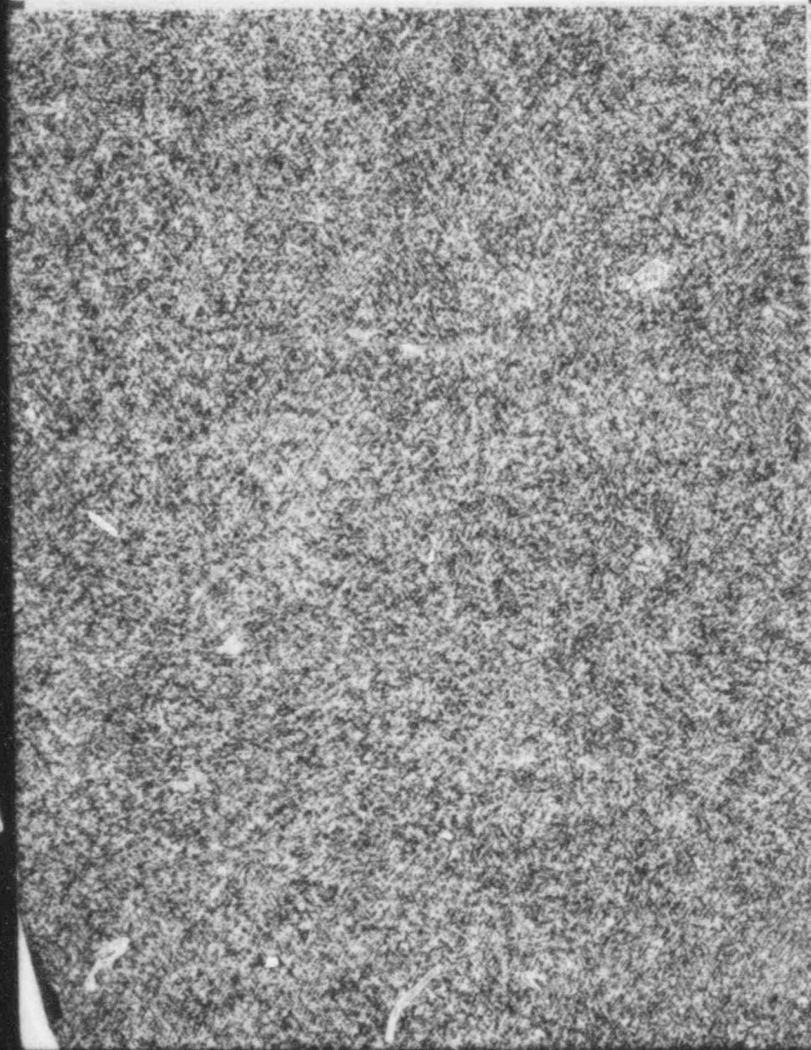
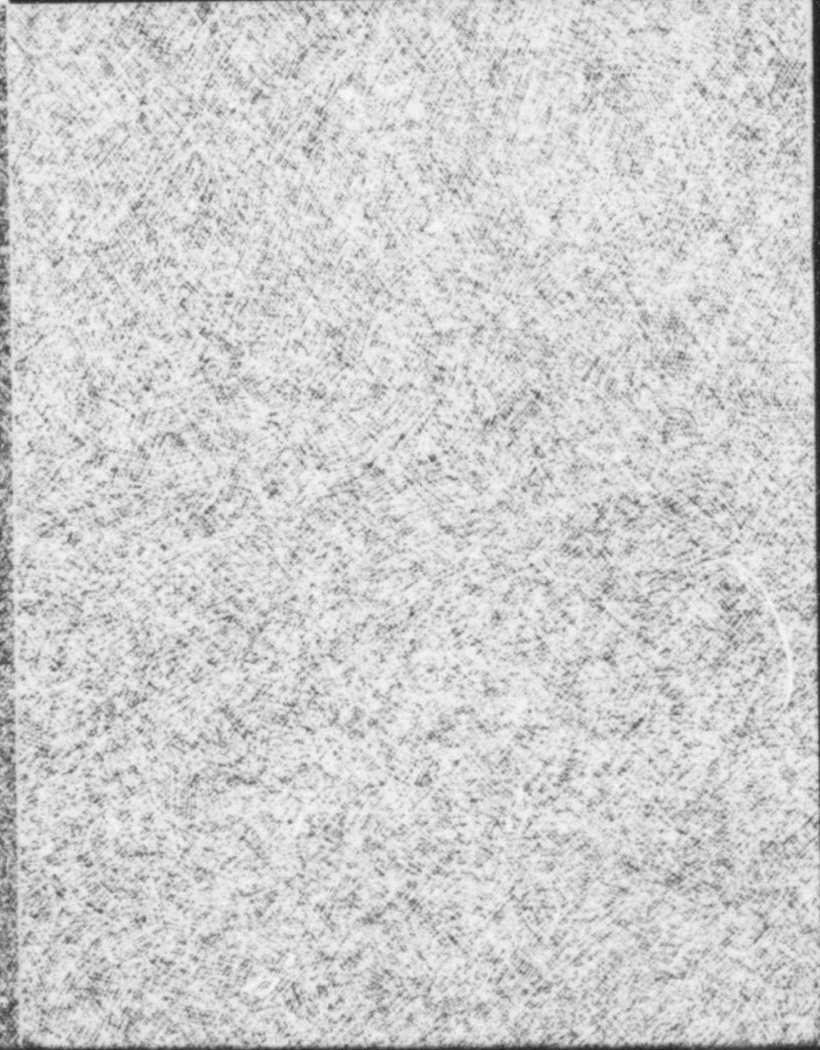
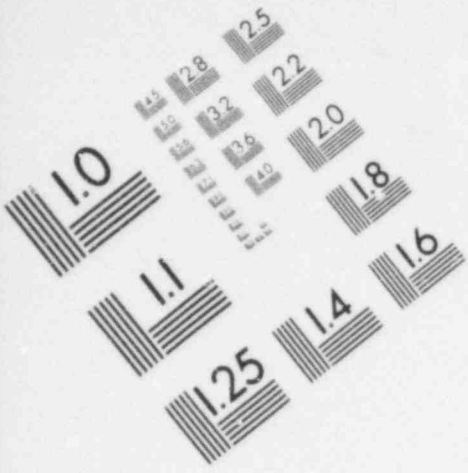
ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	252.357 PIPING - MISC ITEMS		60					60
	252.35 AUX CHEM FEED SYSTEM		30,701		453 MH	5,927	1,543	38,171
252.36	AUX.STEAM+CONDENSATE RETRN							
252.361	ROTATING MACHINERY							
252.3611	HEATING DRAIN TANK PUMP+MT	2 EA	4,800	1 LT	151 MH	1,996	200	
252.36111	HEATING DRAIN TANK PUMP							
252.36112	HEATING DRAIN TANK PUMP MT							
	252.3611 HEATING DRAIN TANK PUMP+MT		4,800		151 MH	1,996	200	6,996
	252.361 ROTATING MACHINERY		4,800		151 MH	1,996	200	6,996
252.363	TANKS AND PRESSURE VESSELS							
252.3631	HEATING DRAIN TANK	1 EA	2,700	1 LT	52 MH	678	68	
	252.363 TANKS AND PRESSURE VESSELS		2,700		52 MH	678	68	3,446
252.365	PIPING							
252.3651	2 IN + SMALLER							
252.36511	CS/NNS			54 LB	16 MH	207	70	
	252.3651 2 IN + SMALLER				16 MH	207	70	277
252.3652	2.5 IN + LARGER							
252.36521	CS	4970 LB	7,45[illegible]	1 LT	745 MH	9,656	966	











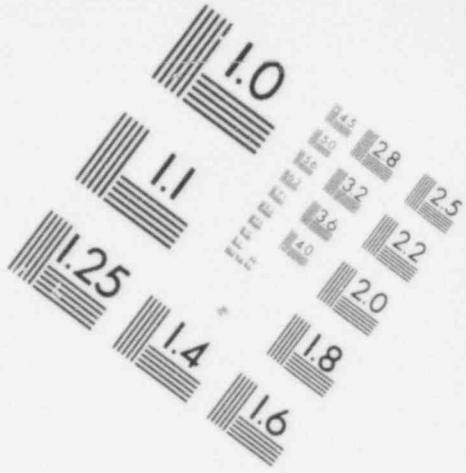
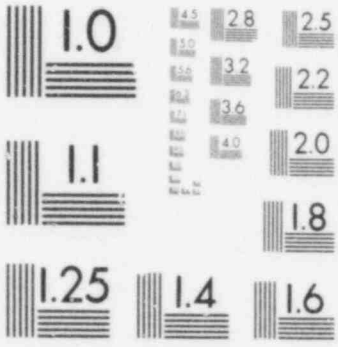
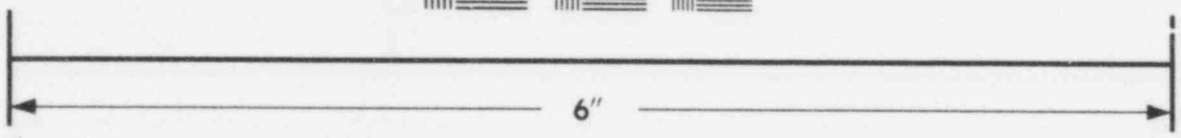
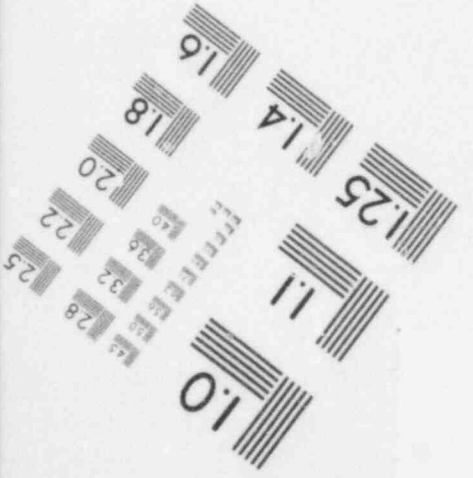
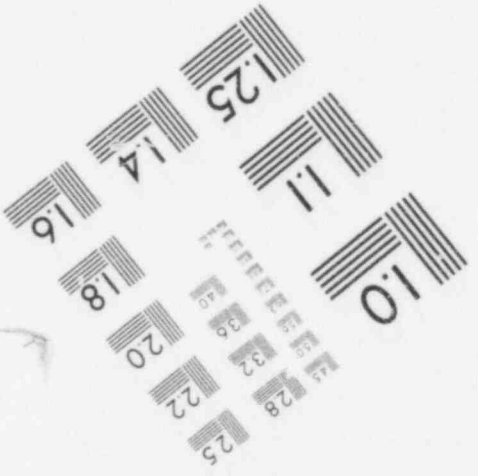


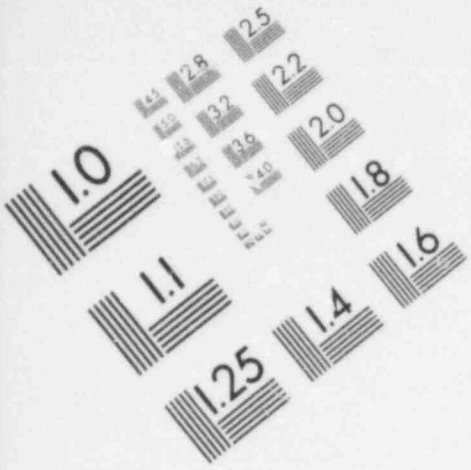
IMAGE EVALUATION TEST TARGET (MT-3)











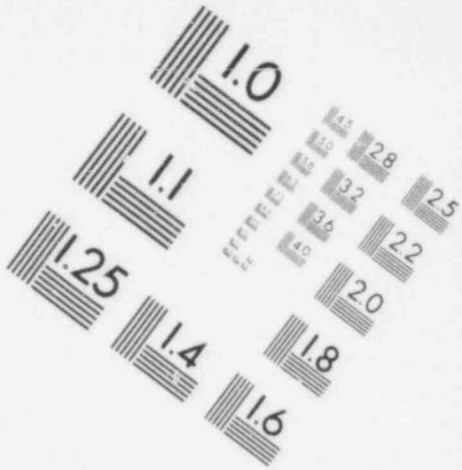
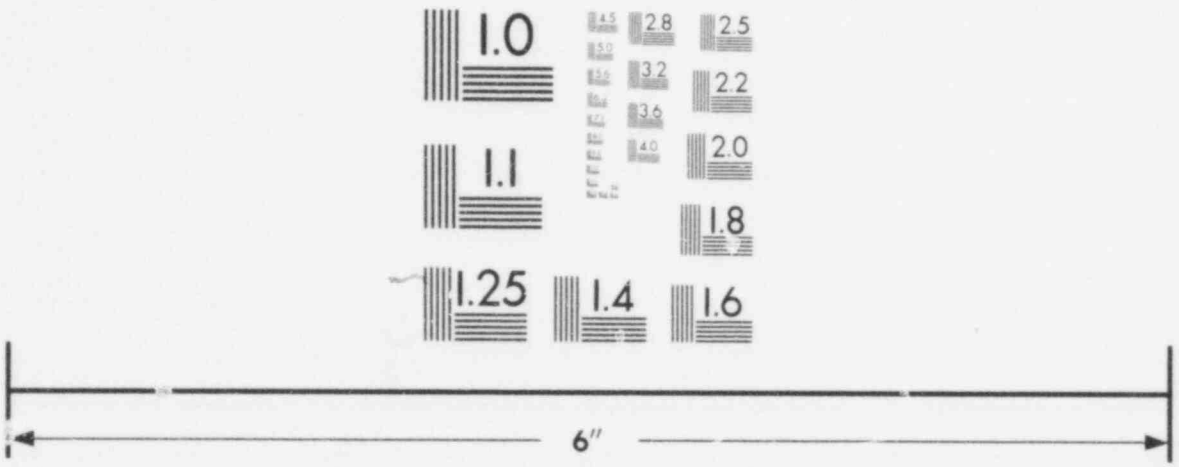
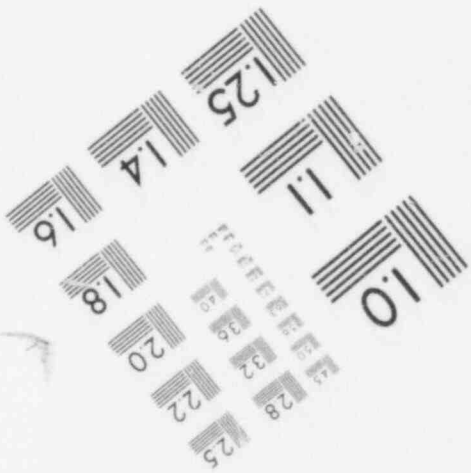


IMAGE EVALUATION TEST TARGET (MT-3)





ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	252.3652 2.5 IN + LARGER		7,455		745 MH	9,656	566	18,077
	252.365 PIPING		7,455		761 MH	9,863	1,036	18,354
252.366	VALVES	1 LT	3,300					
252.3661	GATE							
252.3662	CHECK							
252.3663	GLOBE							
	252.366 VALVES		3,300					3,300
252.367	PIPING - MISC.ITEMS							
252.3671	HANGERS + SUPPORTS	1000 LB	1,500					
252.3672	INSULATION							
252.3673	SPECIALTIES							
	252.367 PIPING - MISC.ITEMS		1,500					1,500
	252.36 AUX.STEAM+CONDENSATE RETRN		19,755		964 MH	12,537	1,304	33,596
252.37	AUX BOILER STACKS + DUCT							
252.38	AUX BOILER BLOWDOWN							
252.383	TANKS AND PRESSUR VESSELS							
252.3831	AUX BOILER BLOWDOWN TANK	1 EA	5,000	1 LT	100 MH	1,308	131	
	252.383 TANKS AND PRESSURE VESSELS		5,000		100 MH	1,308	131	6,439
252.385	PIPING							

714001

PLANT CODE 610 | COST BASIS 07/76

UNITED ENGINEERS & CONSTRUCTORS INC.
2.5/1.7 IN HG AV - MIDDLETOWN,USA
1232 MWE COAL FIRED FOSSIL PLANT

08/10/77

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
252.3851	2 IN + SMALLER							
252.38511	CS/NNS			410 LB	123 MH	1,592	533	
	252.3851 2 IN + SMALLER				123 MH	1,592	533	2,125
252.3852	2.5 IN + LARGER							
	252.385 PIPING				123 MH	1,592	533	2,125
252.386	VALVES	1 LT	200					
252.3861	GATE							
252.3862	CHECK							
252.3869	SPECIAL VALVES							
252.38691	BLOWDOWN							
	252.3869 SPECIAL VALVES							
	252.386 VALVES		200					200
252.387	PIPING - MISC ITEMS							
252.3871	HANGERS + SUPPORTS	80 LB	120					
252.3872	INSULATION							
252.3873	SPECIALTIES							
	252.387 PIPING - MISC ITEMS		120					120
	252.38 AUX BOILER BLOWDOWN		5,320		223 MH	2,900	664	8,884
252.39	AUX STEAM SYS COMPLETE I+C	1 LT	85,000	1 LT	680 MH	8,313	416	
	252.3 AUXILIARY STEAM SYSTEM		1,145,656		16871 MH	218,212	25,264	1,389,142

714 002

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
252.4	PLANT FUEL OIL SYSTEM							
252.41	ROTATING MACHINERY							
252.411	FUEL OIL UNLOAD PUMP+MOTOR	1 EA	1,200	1 LT	59 MH	779	78	
252.4111	FUEL OIL UNLOADING PUMP							
252.4112	FUEL OIL UNLOAD PUMP MOTOR							
	252.411 FUEL OIL UNLOAD PUMP+MOTOR		1,200		59 MH	779	78	2,057
	252.41 ROTATING MACHINERY		1,200		59 MH	779	78	2,057
252.43	TANKS AND PRESSURE VESSELS							
252.431	PLANT FUEL OIL STORAGE TK			1 EA	1919 MH	25,100	18,300	
	252.43 TANKS AND PRESSURE VESSELS				1919 MH	25,100	18,300	43,400
252.45	PIPING							
252.451	2 IN + SMALLER							
252.4511	CS/NNS							
	252.451 2 IN + SMALLER							
252.452	2.5 IN + LARGER							
252.4521	CS/NNS	920 LB	1,380	1 LT	138 MH	1,786	179	
	252.452 2.5 IN + LARGER		1,380		138 MH	1,786	179	3,345
	252.45 PIPING		1,380		138 MH	1,786	179	3,345

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
252.46	VALVES	1 LT	1,800					
252.468	PLUG							
	252.46 VALVES		1,800					1,800
252.47	PIPING-MISC ITEMS							
252.471	HANGERS + SUPPORTS	180 LB	270					
252.472	INSULATION							
252.473	SPECIALTIES							
	252.47 PIPING-MISC ITEMS		270					270
252.49	FOUNDATIONS/SKIDS							
252.491	PLANT FUEL OIL STG TK FNDT							
252.4911	EXCAVATION WORK							
252.49111	EARTH EXCAVATION			200 CY	50 MH	536	200	
252.49112	BACKFILL			250 CY	75 MH	746	250	
	252.4911 EXCAVATION WORK				[illegible] MH	1,282	450	1,732
252.4912	CONCRETE WORK							
252.49121	FORMWORK			1300 CY	520 MH	5,742	1,300	
252.49122	REINFORCING STEEL			3 TN	75 MH	970	1,125	
252.49123	CONCRETE			50 CY	88 MH	898	1,600	
	252.4912 CONCRETE WORK				683 MH	7,610	4,025	11,635
252.4913	COMPACTED SAND BED			250 CY	250 MH	2,488	1,500	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
252.4914	DIKE			400 CY	400 MH	3,980	1,200	
	252.491 PLANT FUEL OIL STG TK FNDT				1458 MH	15,360	7,175	22,535
	252.49 FOUNDATIONS/SKIDS				1458 MH	15,360	7,175	22,535
	252.4 PLANT FUEL OIL SYSTEM		4,650		3574 MH	43,025	25,732	73,407
	252. AIR,WATER+STEAM SERVICE SY		3,162,672		162780 MH	2,365,717	294,839	5,823,228
253.	COMMUNICATIONS EQUIPMENT							
253.1	LOCAL COMMUNICATIONS SYS							
253.11	G.P.PURPOSE TELEPHONE SYS			1 LT	3000 MH	36,886	35,475	
253.12	SOUND POW TELEPHONE SYS							
253.15	PA + INTERCOM SYS.			1 LT	12900 MH	153,693	107,500	
	253.1 LOCAL COMMUNICATIONS SYS				15500 MH	190,579	142,975	333,554
253.2	SIGNAL SYSTEMS							
253.21	FIRE DETECTION SYSTEM	1 LT	100,000	1 LT	950 MH	116,807	11,681	
253.211								
253.212								
	253.21 FIRE DETECTION SYSTEM		100,000		9500 MH	116,807	11,681	228,488
	253.2 SIGNAL SYSTEMS		100,000		9500 MH	116,807	11,681	228,488
	253. COMMUNICATIONS EQUIPMENT		100,000		25000 MH	307,386	154,656	562,042
254.	FURNISHINGS + FIXTURES							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
254.1	SAFETY EQUIPMENT							
254.11	PORTABLE FIRE EXTINGUISHRS			100 EA	200 MH	1,864	8,600	
	254.1 SAFETY EQUIPMENT				200 MH	1,864	8,600	10,464
254.2	CHEMICAL LAB + INSTR SHOP							
254.223	INSTRUMENT SHOP APPARATUS	1 LT	50,000		152 MH	1,966		
254.23	SPEC LAB FURNITURE+FIXTURE	1 LT	99,975	1 LT	750 MH	8,700	870	
	254.2 CHEMICAL LAB + INSTR SHOP		149,975		902 MH	10,665	870	161,511
254.3	OFFICE EQUIP+FURNISHINGS							
254.31	OFFICE FURNITURE	1 LT	110,725					
	254.3 OFFICE EQUIP+FURNISHINGS		110,725					110,725
254.4	CHANGE ROOM EQUIPMENT							
254.41	LOCKERS+BENCHES	1 LT	18,275	1 LT	80 MH	928	93	
	254.4 CHANGE ROOM EQUIPMENT		18,275		80 MH	928	93	19,296
254.5	ENVIRONMENT MONIT E IP							
254.52	METEOROLOGICAL MONIT.EQUIP	1 LT	80,900	1 LT	700 MH	8,606	861	
254.53	WATER QUALITY MONITORING	1 LT	50,000	1 LT	416 MH	5,087	509	
254.54	THERMAL EFFLUENT MONITOR	1 LT	30,000	1 LT	251 MH	3,068	307	
254.56	AIR QUALITY MONITORING	1 LT	30,000	1 LT	251 MH	3,068	307	
	254.5 ENVIRONMENT MONIT EQUIP		190,900		1618 MH	19,831	1,984	212,715
254.6	DINING FACILITIES							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
254.61	CAFETERIA EQUIPMENT	1 LT	183,825	1 LT	3920 MH	45,472	4,547	
	254.6 DINING FACILITIES		183,825		3920 MH	45,472	4,547	233,844
	254. FURNISHINGS + FIXTURES		653,700		6720 MH	78,761	16,094	748,555
255.	WASTE WATER TREATMENT EQPT							
255.1	ROTATING MACHINERY							
255.11	GROUP I -							
255.111	BATCH WASTE TRANS PUMP+MTR	2 EA	5,250	1 LT	300 MH	3,965	397	
255.1111	BATCH WASTE TRANSFER PUMP							
255.1112	BATCH WASTE TRANS PUMP MTR							
	255.111 BATCH WASTE TRANS PUMP+MTR		5,250		300 MH	3,965	397	9,612
255.112	SLUDGE FEED PUMP + MOTOR	2 EA	2,100	1 LT	120 MH	1,586	159	
255.1121	SLUDGE FEED PUMP							
255.1122	SLUDGE FEED PUMP MOTOR							
	255.112 SLUDGE FEED PUMP + MOTOR		2,100		120 MH	1,586	159	3,845
255.113	FILTRATE SUMP PUMP + MOTOR	2 EA	3,000	1 LT	100 MH	1,322	132	
255.1131	FILTRATE SUMP PUMP							
255.1132	FILTRATE SUMP PUMP MOTOR							
	255.113 FILTRATE SUMP PUMP + MOTOR		3,000		100 MH	1,322	132	4,454
255.114	LIME SLURRY PUMP + MOTOR	1 EA	1,250	1 LT	51 MH	673	67	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
255.1141	LIME SLURRY PUMP							
255.1142	LIME SLURRY PUMP MOTOR							
	255.114 LIME SLURRY PUMP + MOTOR		1,250		51 MH	673	67	1,990
255.115	REGENERATION WASTE PMP+MTR	2 EA	2,500	1 LT	100 MH	1,322	132	
255.1151	REGENERATION WASTE PUMP							
255.1152	REGENERATION WASTE PMP MTR							
	255.115 REGENERATION WASTE PMP+MTR		2,500		100 MH	1,322	132	3,954
255.116	HOLDING TANK BLOWER +MOTOR	2 EA	130,000	1 LT	959 MH	12,674	1,267	
255.1161	HOLDING TANK BLOWER							
255.1162	HOLDING TANK BLOWER MOTOR							
	255.116 HOLDING TANK BLOWER +MOTOR		130,000		959 MH	12,674	1,267	143,941
255.117	ROT DRUM VAC FILT PUMP+MTR	2 EA	240,000	1 LT	280 MH	3,700	370	
255.1171	ROTARY DRUM VACUUM PUMP							
255.1172	ROTARY DRUM MOTOR							
255.1173	VACUUM PUMP MOTOR							
	255.117 ROT DRUM VAC FILT PUMP+MTR		240,000		280 MH	3,700	370	244,070
	255.11 GROUP I -		384,100		1910 MH	25,242	2,524	411,966
255.12	GROUP II							
255.121	SULFURIC ACID FEED PMP+MTR	2 EA	1,800	1 LT	100 MH	1,322	132	
255.1211	SULFURIC ACID FEED PUMP							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR MH	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
255.1212	SULFURIC ACID FEED PMP MTR							
	255.121 SULFURIC ACID FEED PMP+MTR		1,600		100 MH	1,322	132	3,254
255.122	CAUSTIC FEED PUMP + MOTOR	2 EA	1,800	1 LT	100 MH	1,322	132	
255.1221	CAUSTIC FEED PUMP							
255.1222	CAUSTIC FEED PUMP MOTOR							
	255.122 CAUSTIC FEED PUMP + MOTOR		1,800		100 MH	1,322	132	3,254
255.123	LIME SLRY TNK AGITATOR+MTR	1 EA	3,630	1 LT	51 MH	673	67	
255.1231	LIME SLRY TANK AGITATOR							
255.1232	LIME SLRY TNK AGITATOR MTR							
	255.123 LIME SLRY TNK AGITATOR+MTR		,600		51 MH	673	67	4,340
255.124	REGENER TANK AGITATOR+MTR	1 EA	4,500	1 LT	59 MH	764	76	
255.124	REGENERATION TANK AGITATOR							
255.1242	REGENER TANK AGITATOR MTR							
	255.124 REGENER TANK AGITATOR+MTR		4,500		59 MH	764	76	5,340
255.125	PH ADJUST TNK AGITATOR+MTR	1 EA	3,500	1 LT	52 MH	671	67	
255.1251	PH ADJUST TANK AGITATOR							
255.1252	PH ADJUST TNK AGITATOR MTR							
	255.125 PH ADJUST TNK AGITATOR+MTR		3,500		52 MH	671	67	4,238
255.126	SLUDGE CONVEYOR + MOTOR	1 EA	5,200	1 LT	100 MH	1,293	129	
255.1261	SLUDGE CONVEYOR							

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UNITED ENGINEERS & CONSTRUCTORS INC.
2.5/1.7 IN HG AV - MIDDLETOWN,USA
1232 MWE COAL FIRED FOSSIL PLANT

08/10/77

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
255.1262	SLUDGE CONVEYOR MOTOR							
	255.126 SLUDGE CONVEYOR + MOTOR		5,200		100 MH	1,293	129	6,622
	255.12 GROUP II		20,400		462 MH	6,045	603	27,046
	255.1 ROTATING MACHINERY		404,500		2372 MH	31,287	3,127	438,914
255.3	TANKS AND PRESSURE VESSELS							
255.31	BATCH HOLDING TANK			2 EA	20700 MH	270,750	193,200	
255.32	LIME SLURRY HOLDING TANK	1 EA	6,500	1 LT	100 MH	1,308	131	
255.33	API SEPARATOR TANK	1 EA	18,000	1 LT	181 MH	2,367	237	
255.34	CAUSTIC STORAGE TANK	1 EA	7,200	1 LT	71 MH	926	93	
255.35	SULFURIC ACID STORAGE TANK	1 EA	7,200	1 LT	71 MH	926	93	
255.36	REGENERANT HOLDING TANK			1 EA	1000 MH	13,080	9,800	
255.37	PH ADJUSTMENT TANK	1 EA	6,500	1 LT	85 MH	1,113	111	
	255.3 TANKS AND PRESSURE VESSELS		45,400		22208 MH	290,470	203,665	539,535
255.5	PIPING							
255.51	2 IN + SMALLER							
255.511	CS/NNS			860 LB	258 MH	3,344	1,118	
	255.51 2 IN + SMALLER				258 MH	3,344	1,118	4,462
255.52	2.5 IN + LARGER							
255.521	CS/NNS	38130 LB	57,195	1 LT	5721 MH	74,143	7,414	
	255.52 2.5 IN + LARGER		57,195		5721 MH	74,143	7,414	138,752

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	255.5 PIPING		57,195		5979 MH	77,487	8,532	143,214
255.6	VALVES	1 LT	44,000					
255.61	GATE							
	255.6 VALVES		44,000					44,000
255.7	PIPING-MISC ITEMS							
255.71	HANGERS AND SUPPORTS	7800 LB	11,700					
	255.7 PIPING-MISC ITEMS		11,700					11,700
255.8	WASTE WATER T + C	1 LT	20,100	1 LT	400 MH	4,859	244	
255.91	BATCH WASTE HOLD TNK FOUND							
255.911	EXCAVATION WORK							
255.9111	EXCAVATION-EARTH			2000 CY	500 MH	5,845	2,000	
	255.911 EXCAVATION WORK				500 MH	5,845	2,000	7,845
255.913	SUBSTRUCTURE CONCRETE							
255.9131	FORMWORK			6000 SF	2400 MH	26,502	6,000	
255.9132	REINFORCING STEEL			10 TN	251 MH	3,240	3,750	
255.9133	CONCRETE			200 CY	151 MH	1,542	6,400	
	255.913 SUBSTRUCTURE CONCRETE				2802 MH	31,284	16,150	47,434
	255.91 BATCH WASTE HOLD TNK FOUND				3302 MH	37,129	18,150	55,279
255.92	LIME SLURRY HOLD TNK FOUND							

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SD ENGINEERS & CONSTRUCTORS INC.
1.7 IN HG AV - MIDDLETOWN,USA
COAL FIRED FOSSIL PLANT

5/10/77

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
255.921	EXCAVATION WORK							
255.923	SUBSTRUCTURE CONCRETE							
255.9231	FORMWORK			60 SF	24 MH	265	60	
255.9232	REINFORCING STEEL			1 TN	25 MH	322	375	
255.9233	CONCRETE			5 CY	4 MH	42	160	
	255.923 SUBSTRUCTU : CONCRETE				53 MH	629	595	1,224
	255.92 LIME SLURRY HOLD TNK FOUND				53 MH	629	595	1,224
255.93	PH ADJUSTMENT TANK FOUND							
255.931	EXCAVATION WORK							
255.933	SUBSTRUCTURE CONCRETE							
255.9331	FORMWORK			60 SF	24 MH	265	60	
255.9332	REINFORCING STEEL			1 TN	25 MH	322	375	
255.9333	CONCRETE			5 CY	4 MH	42	160	
	255.933 SUBSTRUCTURE CONCRETE				53 MH	629	595	1,224
	255.93 PH ADJUSTMENT TANK FOUND				53 MH	629	595	1,224
255.94	DEWATERING MACHINE FOUND							
255.941	EXCAVATION WORK							
255.9411	EXCAVATION-EARTH			30 CY	7 MH	74	30	
255.9414	BACKFILL-EARTH			12 CY	4 MH	40	12	
	255.941 EXCAVATION WORK				11 MH	114	42	156

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
255.943	SUBSTRUCTURE CONCRETE							
255.9431	FORMWORK			120 SF	48 MH	531	120	
255.9432	REINFORCING STEEL			1 TN	25 MH	322	375	
255.9435	CONCRETE			6 CY	5 MH	51	192	
	255.943 SUBSTRUCTURE CONCRETE				78 MH	904	687	1,591
	255.94 DEWATERING MACHINE FOUND				89 MH	1,018	729	1,747
255.95	CAUSTIC + ACID TANKS FOUND							
255.951	EXCAVATION WORK							
255.9511	EXCAVATION-EARTH			100 CY	25 MH	267	100	
255.9514	BACKFILL-EARTH			20 CY	6 MH	59	20	
	255.951 EXCAVATION WORK				31 MH	326	120	446
255.953	SUBSTRUCTURE CONCRETE							
255.9531	FORMWORK			1200 SF	480 MH	5,300	1,200	
255.9532	REINFORCING STEEL			5 TN	125 MH	1,614	1,875	
255.9533	CONCRETE			65 CY	49 MH	499	2,080	
	255.953 SUBSTRUCTURE CONCRETE				654 MH	7,413	5,155	12,568
	255.95 CAUSTIC + ACID TANKS FOUND				685 MH	7,739	5,275	13,014
255.96	MISC PUMP FOUNDATIONS							
255.961	EXCAVATION WORK							

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255.9611	EXCAVATION-EARTH			57 CY	14 MH	150	57	
255.9614	BACKFILL-EARTH			22 CY	8 MH	81	27	
	255.961 EXCAVATION WORK				22 MH	231	84	315
255.963	SUBSTRUCTURE CONCRETE							
255.9631	FORMWORK			650 SF	260 MH	2,87_	650	
255.9632	REINFORCING STEEL			3 TN	75 MH	970	1,125	
255.9633	CONCRETE			29 CY	21 MH	213	928	
255.9634	EMBEDDED STEEL			1 TN	126 MH	1,515	1,400	
	255.963 SUBSTRUCTURE CONCRETE				482 MH	5,568	',103	9,671
	255.96 MISC PUMP FOUNDATIONS				504 MH	5,799	4,187	9,986
255.97	BATCH WASTE TNK BLDW FOUND							
255.971	EXCAVATION WORK							
255.9711	EXCAVATION-EARTH			120 CY	30 MH	320	120	
255.9714	BACKFILL-EARTH			40 CY	12 MH	118	40	
	255.971 EXCAVATION WORK				42 MH	438	160	598
255.973	SUBSTRUCTURE CONCRETE							
255.9731	FORMWORK			525 SF	210 MH	2,318	525	
255.9732	REINFORCING STEEL			4 TN	100 MH	1,291	1,500	
255.9733	CONCRETE			75 CY	56 MH	571	2,400	
	255.973 SUBSTRUCTURE CONCRETE				366 MH	4,180	4,425	8,605

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	255.97 BATCH WASTE TNK BLOW FOUND				408 MH	4,618	4,585	9,203
255.98	REGENERAT WASTE TANK FOUND							
255.981	EXCAVATION WORK							
255.9811	EXCAVATION-EARTH			20 CY	5 MH	53	20	
255.9814	BACKFILL-EARTH			10 CY	3 MH	31	10	
	255.981 EXCAVATION WORK				8 MH	84	30	114
255.983	SUBSTRUCTURE CONCRETE							
255.9831	FORMWORK			120 SF	43 MH	531	120	
255.9832	REINFORCING STEEL			1 TN	25 MH	322	375	
255.9833	CONCRETE			12 CY	9 MH	91	384	
	255.983 SUBSTRUCTURE CONCRETE				82 MH	944	879	1,823
	255.98 REGENERAT WASTE TANK FOUND				90 MH	1,023	909	1,937
255.99	BATCH WST TRANS PUMP FOUND							
255.991	EXCAVATION WORK							
255.9911	EXCAVATION-EARTH			120 CY	30 MH	320	120	
255.9914	BACKFILL-EARTH			40 CY	12 MH	118	40	
	255.991 EXCAVATION WORK				42 MH	438	160	598
255.993	SUBSTRUCTURE CONCRETE							
255.9931	FORMWORK			525 SF	210 MH	2,313	525	

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
255.9932	REINFORCING STEEL			4 TN	100 MH	1,291	1,500	
255.9933	CONCRETE			75 CY	56 MH	571	2,400	
	255.993 SUBSTRUCTURE CONCRETE				366 MH	4,180	4,425	8,605
	255.99 BATCH WST TRANS PUMP FOUND				408 MH	4,619	4,585	9,203
	255. WASTE WATER TREATMENT EQPT		582,695		36551 MH	467,340	255,178	1,305,413
	25 . MISCELLANEOUS PLANT EQUIPT		5,722,267		259176 MH	3,323,701	811,186	9,857,154

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
26 .	MAIN COND HEAT REJECT SYS							
261.	STRUCTURES							
261.1	MAKEUP WTR INT + DISCH STR							
261.11	INTAKE STRUCTURE							
261.111	EXCAVATION WORK							
261.1111	EARTH EXCAVATION			560 CY	140 MH	1,636	560	
261.1112	ROCK EXCAVATION			790 CY	632 MH	7,389	3,160	
261.1113	SHEETING (TEMP COFFERDAM)			14 TN	280 MH	3,842	2,380	
261.1114	STRCT STL (TEMP COFFERDAM)			2 TN	30 MH	412	1,450	
261.1115	PUMPING			1 LT	1375 MH	17,475	15,000	
	261.111 EXCAVATION WORK				2957 MH	30,754	22,550	53,304
261.112	BEARING PILES (STEEL)							
261.113	SUBSTRUCTURE CONCRETE							
261.1131	FORMWORK			6835 SF	2776 MH	30,189	6,835	
261.1132	REINFORCING STEEL			45 TN	1125 MH	14,526	16,875	
261.1133	CONCRETE			455 CY	341 MH	3,481	14,560	
261.1134	EMBEDDED STEEL			7 TN	876 MH	10,535	9,800	
261.1135	CONCRETE FINISH			4550 SF	46 MH	470	46	
261.1136	WATERPROOFING							
261.1137	CONSTRUCTION JOINTS							
261.1138	RUBBING CONCRETE SURFACES							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	261.113 SUBSTRUCTURE CONCRETE				5122 MH	59,201	48,116	107,317
261.114	SUPERSTRUCTURE							
261.1141	CONCRETE WORK							
261.1142	STRUCTURAL + MISC. STEEL							
261.11421	STRUCTURAL STEEL			6 TN	90 MH	1,171	4,350	
261.11422	GRATING (GALV)			100 SF	17 MH	223	300	
261.11423	HANDRAIL			60 LF	36 MH	468	600	
	261.1142 STRUCTURAL + MISC. STEEL				143 MH	1,862	5,250	7,112
261.1143	EXTERIOR WALLS							
261.11431	CONCRETE							
261.11432	MASONRY			1375 SF	344 MH	3,925	3,850	
	261.1143 EXTERIOR WALLS				344 MH	3,925	3,850	7,775
261.1144	ROOF DECK							
261.11441	METAL ROOF DECK			965 SF	57 MH	744	965	
	261.1144 ROOF DECK				57 MH	744	965	1,709
261.1145	ROOFING + FLASHING							
261.11451	B.U. ROOFG, INSULTN, + FLA			965 SF	68 MH	917	1,206	
	261.1145 ROOFING + FLASHING				68 MH	917	1,206	2,123
261.1146	INTERIOR WALLS							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
261.11461	CONCRETE WALLS							
261.11462	MASONRY WALLS			250 SF	63 MH	719	700	
261.11463	PARTITIONS							
	261.1146 INTERIOR WALLS				63 MH	719	700	1,419
261.1147	DOORS + WINDOWS							
261.11471	ROLLING STEEL DOORS							
261.11472	PERSONNEL DOORS			15 SF	105 MH	1,218	1,800	
261.11473	SASH + GLAZING							
	261.1147 DOORS + WINDOWS				105 MH	1,218	1,800	3,018
261.1149	PAINTING							
261.11491	CONCRETE							
261.11492	STEELWORK			6 TN	40 MH	365	48	
261.11493	METAL DECK			965 SF	19 MH	182	97	
261.11494	HANDRAIL			60 LF	12 MH	115	6	
	261.1149 PAINTING				71 MH	680	151	831
	261.114 SUPERSTRUCTURE				851 MH	10,065	13,922	23,987
261.117	BULKHEAD							
261.1171	STEEL SHEETING			32 TN	320 MH	4,390	11,200	
261.1172	STRUCTURAL STEEL			2 TN	30 MH	339	1,450	
261.1173	GRAVEL FILL			265 CY	80 MH	796	1,325	
261.1174	DREDGING			11500 CY	2300 MH	28,704	23,000	

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261.1175	RIP-R ... (ICK)			10 CY	15 MH	149	100	
261.1176	CHA.N LINK FENCE(7FT HIGH)			262 LF	79 MH	736	1,703	
	261.117 BULKHEAD				2824 MH	35,164	38,778	73,942
261.118	PROTECTIVE DOLPHINS							
261.1181	WOOD PILES			675 LF	135 MH	1,852	2,700	
	261.118 PROTECTIVE DOLPHINS				135 MH	1,852	2,700	4,552
261.119	BUILDING SERVICES							
261.1191	FLOOR DRAINS + PIPING			6 EA	660 MH	8,554	6,000	
261.1192	HEATING + VENTILATING							
261.11921	AXIAL WALL FANS	1 EA	1,500	1 LT	41 MH	529	53	
261.11922	ELECTRIC UNIT HEATERS	2 EA	1,500	1 LT	100 MH	1,230	123	
261.11923	INSTRUMENTATION + CONTROL	1 LT	1,500	1 LT	12 MH	146	7	
	261.1192 HEATING + VENTILATING		4,500		153 MH	1,905	183	6,588
	261.119 BUILDING SERVICES		4,500		813 MH	10,459	6,183	21,142
	261.11 INTAKE STRUCTURE		4,500		12702 MH	147,495	132,249	284,244
261.12	DISCHARGE STRUCTURE							
261.121	EXCAVATION WORK							
261.1211	EARTH EXCAVATION			80 CY	20 MH	215	80	
261.1212	BACKFILL			80 CY	24 MH	239	80	
261.1213	DREDGING			2000 CY	400 MH	4,992	4,000	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	261.121 EXCAVATION WORK				444 MH	5,446	4,160	9,606
261.122	BEARING PILES (STEEL)			200 LF	60 MH	823	2,400	
261.127	RIP-RAP (12 IN. THICK)			45 CY	68 MH	678	450	
261.128	MARKER PILES (WOOD)			240 LF	48 MH	657	960	
	261.12 DISCHARGE STRUCTURE				620 MH	7,606	7,970	15,576
	261.1 MAKEUP WTR INT + DISCH STR	4,500			13322 MH	155,101	140,219	299,820
261.2	CIRC WATER PUMP HOUSE							
261.21	BUILDING STRUCTURE							
261.211	EXCAVATION WORK							
261.2111	EARTH EXCAVATION			1150 CY	298 MH	3,191	1,190	
261.2112	ROCK EXCAVATION			3100 CY	2480 MH	26,561	12,400	
261.2113	CONCRETE FILL							
261.2114	BACKFILL			190 CY	57 MH	566	190	
261.2115	PUMPING			1 LT	375 MH	3,495	3,000	
	261.211 EXCAVATION WORK				3210 MH	33,813	16,780	50,593
261.213	SUBSTRUCTURE CONCRETE							
261.2131	FORMWORK			720 SF	289 MH	3,192	720	
261.2132	REINFORCING STEEL			75 TN	1875 MH	24,214	28,125	
261.2133	CONCRETE			770 CY	578 MH	5,905	24,640	
261.2134	EMBEDDED STEEL			6 TN	750 MH	9,020	8,400	
261.2135	FLOOR FINISH			8400 SF	85 MH	869	84	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
261.2136	WATERPROOFING			7000 SF	140 MH	1,305	700	
261.2137	CONSTRUCTION JOINTS			360 SF	360 MH	3,974	360	
261.2138	RUBBING CONCRETE SURFACES							
261.2139	WIRE FABRIC			5000 SF	100 MH	1,291	600	
	261.213 SUBSTRUCTURE CONCRETE				6177 MH	49,773	63,629	113,399
261.214	SUPERSTRUCTURE							
261.2141	CONCRETE WORK							
261.21411	FORMWORK							
261.214111	FORMWORK-WOOD			34500 SF	13800 MH	152,385	34,500	
261.214112	FORMWORK-METAL							
	261.21411 FORMWORK				13800 MH	152,385	34,500	186,885
261.21412	REINF. STEEL			130 TN	3900 MH	50,362	48,750	
261.21413	CONCRETE			1300 CY	2275 MH	23,232	41,600	
261.21414	EMBEDDED STEEL			7 TN	876 MH	10,535	9,800	
261.21415	FLOOR FINISH			5600 SF	55 MH	562	56	
261.21416	WATERPROOFING			8100 SF	162 MH	1,510	810	
261.21417	RUBBING CONCRETE SURFACES			3250 SF	98 MH	913	33	
261.21418	CONSTRUCTION JOINTS			840 SF	840 MH	9,277	840	
	261.2141 CONCRETE WORK				22006 MH	248,776	136,389	385,165
261.2142	STRUCT + MISC. STEEL							
261.21421	STRUCT. STEEL			50 TN	750 MH	9,763	36,250	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
261.21423	MISC. FRAMES, ETC.			3 TN	150 MH	1,953	3,300	
261.21425	FLOOR GRATING (GALV.)			840 SF	143 MH	1,861	2,520	
261.21426	STAIR TREADS			8 EA	6 MH	78	280	
261.21427	HANDRAILS			200 LF	120 MH	1,564	2,000	
	261.2142 STRUCT + MISC. STEEL				1169 MH	15,219	44,350	59,569
261.2143	EXTERIOR WALLS							
261.21431	CONCRETE WALLS							
261.21432	METAL SIDING(INSULATED)			2750 SF	550 MH	6,276	11,000	
	261.2143 EXTERIOR WALLS				550 MH	6,276	11,000	17,276
261.2144	ROOF DECK							
261.21441	METAL ROOF DECK			2800 SF	167 MH	2,176	2,800	
	261.2144 ROOF DECK				167 MH	2,176	2,800	4,976
261.2145	ROOFING + FLASHING							
261.21451	B.U. ROOFING, FLASHING+INS			2800 SF	196 MH	2,642	3,500	
	261.2145 ROOFING + FLASHING				196 MH	2,642	3,500	6,142
261.2146	INTERIOR WALLS + PARTIT.							
261.21461	CONCRETE WALLS							
261.21462	MASONRY WALLS			1080 SF	270 MH	3,081	3,024	
261.21463	PARTITIONS							
	261.2146 INTERIOR WALLS + PARTIT.				270 MH	3,081	3,024	6,10

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261.2147	DOORS + WINDOWS							
261.21471	ROLLING STEEL DOORS			144 SF	72 MH	835	2,016	
261.21472	PERSONNEL DOORS			140 SF	98 MH	1,137	1,680	
261.21473	SASH + GLAZING			80 SF	32 MH	371	960	
	261.2147 DOORS + WINDOWS				202 MH	2,343	4,656	6,999
261.2149	PAINTING							
261.21491	CONCRETE							
261.21492	STEELWORK			3 TN	15 MH	144	18	
261.21493	METAL DECK			2800 SF	56 MH	536	280	
261.21494	HANDRAIL			200 LF	40 MH	383	20	
	261.2149 PAINTING				111 MH	1,063	318	1,381
	261.214 SUPERSTRUCTURE				24671 MH	281,576	206,037	487,613
	261.21 BUILDING STRUCTURE				32058 MH	365,159	286,446	651,605
261.22	BUILDING SERVICE							
261.221	PLUMBING + DRAINS							
261.2211	ROOF DRAINS & PIPING							
261.22111	DRAINS			8 EA	79 MH	1,028	1,600	
261.22115	PIPING (ALL 2.5 IN + LGR)							
261.221151	GALV STEEL/NNS	9120 LB	14,592	1 LT	1367 MH	17,716	1,772	
	261.22115 PIPING (ALL 2.5 IN + LGR)		14,592		1367 MH	17,716	1,772	34,080

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	261.2211 ROOF DRAINS & PIPING		14,592		1446 MH	18,744	3,372	36,708
261.2212	FLOOR DRAINS & PIPING							
261.22121	DRAINS			30 EA	300 MH	3,889	6,000	
261.22125	PIPING (ALL 2.5 IN + LGR)							
261.221251	CI/NNS	23440 LB	5,157	1 LT	469 MH	6,077	608	
261.221252	PVC/NNS	300 LF	3,300	1 LT	121 MH	1,565	157	
	261.22125 PIPING (ALL 2.5 IN + LGR)		8,457		590 MH	7,642	765	16,864
	261.2212 FLOOR DRAINS & PIPING		8,457		890 MH	11,531	6,765	26,753
	261.221 PLUMBING + DRAINS		23,049		2336 MH	30,275	10,137	63,461
261.222	HEATING, VENT, + AIR COND	1 LT	30,000	1 LT	216 MH	2,793	279	
261.2221	ROTATING MACHINERY							
261.22211	PROPELLER FAN + MOTOR							
261.222111	PROPELLER FAN							
261.222112	PROPELLER FAN MOTOR							
	261.22211 PROPELLER FAN + MOTOR							
	261.2221 ROTATING MACHINERY							
261.2222	HEAT TRANSFER EQUIPMENT							
261.22221	ELECTRIC UNIT HEATERS+MTR							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
261.222211	ELECTRIC UNIT HEATERS							
261.222212	ELECTRIC UNIT HTR MOTORS							
	261.22221 ELECTRIC UNIT HEATERS+MTR							
	261.2222 HEAT TRANSFER EQUIPMENT							
261.2226	VALVES + DAMPERS							
261.22269	SPECIAL VALVES + DAMPERS							
261.222691	INTAKE LOUVERS							
	261.22269 SPECIAL VALVES + DAMPERS							
	261.2226 VALVES + DAMPERS							
	261.222 HEATING, VENT, + AIR COND		30,000		216 MH	2,793	279	33,072
261.224	LIGHTING & SERVICE POWER			2500 SF	750 MH	9,222	4,500	
261.228	INSTRUMENTATION + CONTROL	1 LT	2,000	1 LT	16 MH	196	10	
	261.c2 BUILDING SERVICE		55,049		3318 MH	42,486	14,926	112,461
	261.2 CIRC WATER PUMP HOUSE		55,049		35376 MH	407,645	301,372	764,066
261.3	MAKEUP WTR PRETREATMNT BLG							
261.31	BUILDING STRUCTURE							
261.311	EXCAVATION WORK							
261.3111	EARTH EXCAVATION			2630 CY	657 MH	7,037	2,630	
261.3112	ROCK EXCAVATION			280 CY	224 MH	2,401	1,120	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
261.3113	CONCRETE FILL			70 CY	71 MH	726	2,240	
261.3114	FILL + BACKFILL			2275 CY	683 MH	6,799	2,275	
261.3115	DEWATERING							
	261.311 EXCAVATION WORK				1635 MH	16,963	8,765	25,228
261.313	SUBSTRUCTURE CONCRETE							
261.3131	FORMWORK			2200 SF	880 MH	9,717	2,200	
261.3132	REINFORCING STEEL			22 TN	551 MH	7,113	8,250	
261.3133	CONCRETE			430 CY	323 MH	3,298	13,760	
261.3134	EMBEDDED STEEL			560 LB	34 MH	407	392	
261.3135	FLOOR FINISH			6760 SF	68 MH	695	68	
261.3136	WATERPROOFING			6760 SF	135 MH	1,258	676	
261.3137	CONSTRUCTION JOINTS			70 SF	70 MH	773	70	
261.3138	RUBBING CONCRETE SURFACES			285 SF	9 MH	91	3	
	261.313 SUBSTRUCTURE CONCRETE				2070 MH	23,352	25,419	48,771
261.314	SUPERSTRUCTURE							
261.3141	CONCRETE WORK							
261.31411	FORMWORK							
261.314111	FORMWORK-WOOD			186 SF	140 MH	1,548	186	
261.314112	FORMWORK-METAL			3550 SF	212 MH	2,761	3,195	
	261.31411 FORMWORK				352 MH	4,309	3,381	7,690
261.31412	REINFORCING STEEL			8 TN	280 MH	3,615	3,000	

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1232 MWE COAL FIRED FOSSIL PLANT

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
261.31413	CONCRETE			79 CY	139 MH	1,420	2,528	
261.31414	EMBEDDED STEEL			560 LB	34 MH	407	392	
261.31415	FLOOR FINISH			3552 SF	35 MH	356	36	
261.31416	WATERPROOFING							
261.31417	RUBBING CONCRETE SURFACES							
261.31418	CONSTRUCTION JOINTS			23 SF	23 MH	254	23	
	261.3141 CONCRETE WORK				663 MH	10,361	9,360	19,721
261.3142	STRUCTURAL + MISC STEEL							
261.31421	STRUCTURAL STEEL			152 TN	2280 MH	29,679	110,200	
261.31423	MISCELLANEOUS FRAMES,ETC.			1 TN	50 MH	651	1,100	
261.31425	FLOOR GRATING (GALV.)			170 SF	29 MH	376	510	
261.31426	STAIR TREADS			30 EA	23 MH	302	1,050	
261.31427	HANDRAIL			50 LF	30 MH	389	500	
	261.3142 STRUCTURAL + MISC STEEL				2412 MH	31,397	113,360	144,757
261.3143	EXTERIOR WALLS							
261.31431	CONCRETE WALLS							
261.31432	MASONRY WALLS							
261.31433	METAL INSULATED SIDING			5175 SF	1035 MH	13,472	20,700	
261.31434	WINDOW WALL							
	261.3143 EXTERIOR WALLS				1035 MH	13,472	20,700	34,172
261.3144	ROOF DECK							
261.31441	METAL ROOF DECK							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
261.31442	PRECAST CONCRETE PANELS			6820 SF	545 MH	7,094	6,866	
261.31443	CONCRETE FILL			85 CY	171 MH	1,747	2,720	
261.31444	REINFORCING STEEL			6 TN	180 MH	2,323	2,250	
	261.3144 ROOF DECK				896 MH	11,164	13,836	25,000
261.3145	ROOFING + FLASHING							
261.31451	B.U. ROOFING,INSUL.+FLASH.							
261.31452	B.U. ROOF+FLASH(NO INSUL)			6820 SF	341 MH	4,597	6,820	
	261.3145 ROOFING + FLASHING				341 MH	4,597	6,820	11,417
261.3146	INTERIOR WALLS + PARTITION							
261.31461	CONCRETE WALLS							
261.31462	CONCRETE BLOCK			560 SF	140 MH	1,597	840	
261.31463	METAL PARTITIONS							
261.31464	PLASTER 3D PARTITIONS							
	261.3146 INTERIOR WALLS + PARTITION				140 MH	1,597	840	2,437
261.3147	DOORS + WINDOWS							
261.31471	ROOLING STEEL DOORS			495 SF	248 MH	3,229	6,930	
261.31472	PERSONNEL DOORS			170 SF	119 MH	1,380	2,040	
261.31473	SASH + GLAZING							
	261.3147 DOORS + WINDOWS				367 MH	4,609	8,970	13,579
261.3148	WALLS,FLOORS+CEILG FINISHS							
261.3149	PAINTING							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
261.31491	CONCRETE			10540 SF	211 MH	2,019	1,054	
261.31492	STEELWORK			125 TN	625 MH	5,981	750	
261.31493	METAL DECK			4320 SF	86 MH	823	432	
261.31494	SPECIAL METALLIC PAINT			2420 SF	48 MH	459	1,210	
261.31495	HANDRAIL			50 LF	10 MH	96	5	
261.31496	EPOXY			10885 SF	216 MH	2,086	5,443	
	261.3149 PAINTING				1196 MH	11,464	8,894	20,358
	261.314 SUPERSTRUCTURE				7252 MH	88,651	182,780	271,441
	261.31 BUILDING STRUCTURE				10957 MH	128,976	216,464	345,440
261.32	BUILDING SERVICES							
261.321	PLUMBING & DRAINS							
261.3211	ROOF DRAINS + PIPING							
261.32111	DRAINS			4 EA	40 MH	517	800	
261.32115	PIPING (ALL 2.5 IN+LARGER)							
261.321151	GALV STEEL/NNS	5700 LB	9,120	1 LT	855 MH	11,081	1,108	
	261.32115 PIPING (ALL 2.5 IN+LARGER)		9,120		855 MH	11,081	1,108	21,309
	261.3211 ROOF DRAINS + PIPING		9,120		895 MH	11,598	1,908	22,626
261.3212	FLOOR DRAINS + PIPING							
261.32121	DRAINS			4 EA	40 MH	517	800	
261.32125	PIPING (ALL 2.5 IN+LARGER)							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
261.321251	CS/NNS	3840 LB	5,760	1 LT	576 MH	7,466	747	
261.321252	CI/NNS	3600 LB	792	1 LT	73 MH	947	95	
261.32125	PIPING (ALL 2.5 IN+LARGER)		6,552		649 MH	8,413	842	15,807
261.3212	FLOOR DRAINS + PIPING		6,552		689 MH	8,930	1,642	17,124
261.321	PLUMBING + DRAINS		13,672		1584 MH	20,526	3,550	39,750
261.322	HEATING, VENT, + AIR COND							
261.3221	ROTATING MACHINERY							
261.32211	ROOF VENTILATORS + MOTORS	3 EA	6,000	1 LT	300 MH	3,881	388	
261.322111	ROOF VENTILATORS							
261.322112	ROOF VENTILATORS MOTORS							
261.32211	ROOF VENTILATORS + MOTORS		6,000		300 MH	3,881	388	10,269
261.3221	ROTATING MACHINERY		6,000		300 MH	3,881	388	10,269
261.3222	HEAT TRANSFER EQUIPMENT							
261.32221	ELECTRIC UNIT HEATER+MOTOR	3 EA	3,750	1 LT	91 MH	1,118	112	
261.322211	ELECTRIC UNIT HEATER							
261.322212	ELECTRIC UNIT HEATER+MOTOR							
261.32221	ELECTRIC UNIT HEATER+MOTOR		3,750		91 MH	1,118	112	4,980
261.3222	HEAT TRANSFER EQUIPMENT		3,750		91 MH	1,118	112	4,980
261.3226	VALVES + DAMPERS							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
261.32269	SPECIAL VALVES							
261.322691	INTAKE LOUVERS	3 EA	3,000	1 LT	93 MH	1,201	120	
	261.32269 SPECIAL VALVES		3,000		93 MH	1,201	120	4,321
	261.3226 VALVES + DAMPERS		3,000		93 MH	1,201	120	4,321
261.3223	INSTRUMENTATION + CONTROL	1 LT	2,000	1 LT	16 MH	196	20	
	261.322 HEATING, VENT, + AIR COND		14,750		500 MH	6,346	640	21,786
261.324	LIGHTING + SERVICE POWER			5000 SF	1503 MH	18,443	9,000	
	261.32 BUILDING SERVICES		30,422		3584 MH	45,367	15,190	88,979
	261.3 MAKEUP WTR PRETREATMNT BLG		30,422		14541 MH	174,343	229,654	434,419
261.4	CHLORINATION BUILDING							
261.41	BUILDING STRUCTURE							
261.411	EXCAVATION WORK							
261.4111	EARTH EXCAVATION			31 CY	7 MH	74	31	
261.4114	BACKFILL			24 CY	7 MH	68	24	
	261.411 EXCAVATION WORK				14 MH	142	55	197
261.413	SUBSTRUCTURE CONCRETE							
261.4131	FORMWORK			160 SF	65 MH	717	160	
261.4132	REINF.STEEL			1 TN	25 MH	322	375	
261.4133	CONCRETE			7 CY	5 MH	51	224	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
261.4134	EMBEDDED STEEL							
261.4135	FLOOR FINISH			60 SF			1	
261.4136	WATERPROOFING							
261.4137	CONSTRUCTION JOINTS			30 SF	30 MH	531	30	
261.4138	RUBBING CONCRETE SURFACES							
261.4139	WIRE FABRIC			60 SF	1 MH	13	7	
	261.413 SUBSTRUCTURE CONCRETE				126 MH	1,434	797	2,231
261.414	SUPERSTRUCTURE							
261.4141	CONCRETE WORK							
261.4142	STRUCT. + MISC. STEEL							
261.41421	STRUCT. STEEL							
261.41423	MISC. FRAMES, ETC.			1 TN	50 MH	651	1,100	
	261.4142 STRUCT. + MISC. STEEL				50 MH	651	1,100	1,751
261.4143	EXTERIOR WALLS							
261.41432	MASONRY			230 SF	56 MH	662	644	
	261.4143 EXTERIOR WALLS				56 MH	662	644	1,306
261.4144	ROOF DECK							
261.41441	METAL ROOF DECK			100 SF	6 MH	78	100	
	261.4144 ROOF DECK				6 MH	78	100	178
261.4145	ROOFING + FLASHING							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
261.41451	B.U.ROOFING,FLASHING+INSUL			100 SF	7 MH	94	--	
	261.4145 ROOFING + FLASHING				7 MH	94	125	219
261.4147	DOORS + WINDOWS							
261.41472	PERSONNEL DOORS			50 SF	35 MH	406	600	
261.41473	SASH + GLAZING			25 SF	10 MH	116	300	
	261.4147 DOORS + WINDOWS				45 MH	522	900	1,422
261.4149	PAINTING							
261.41492	STEELWORK			1 TN	5 MH	45	6	
261.41493	METAL DECK			100 SF	2 MH	12	10	
	261.4149 PAINTING				7 MH	57	16	83
	261.414 SUPERSTRUCTURE				173 MH	2,074	2,885	4,959
	261.41 BUILDING STRUCTURE				313 MH	3,650	3,737	7,387
261.424	LIGHTING + SERVICE POWER							
	261.4 CHLORINATION BUILDING				313 MH	3,650	3,737	7,387
	261. STRUCTURES	89,921			63552 MH	740,739	674,982	1,505,692
262.	MECHANICAL EQUIPMENT							
262.1	HEAT REJECTION SYSTEM							
262.11	WATER INTAKE EQUIPMENT							
262.111	ROTATING MACHINERY							

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
262.1111	SCREEN WASH PUMP+MOTOR	2 EA	2,500	1 LT	159 MH	2,101	210	
262.11111	SCREEN WASH PUMP							
262.11112	SCREEN WASH PUMP MOTOR							
	262.1111 SCREEN WASH PUMP+MOTOR		2,500		159 MH	2,101	210	4,811
	262.111 ROTATING MACHINERY		2,500		159 MH	2,101	210	4,811
262.114	PURIFICATION+FILTRATION EQ							
262.1141	RAVELING SCREENS	2 EA	74,000	1 LT	2900 MH	37,510	3,752	
262.1142	TRASH RACK	2 EA	9,700	1 LT	360 MH	4,687	469	
262.1143	TRASH RAKE	1 LT	42,000	1 LT	800 MH	10,350	1,035	
262.1144	STOP LOGS			40 EA	600 MH	5,592	1,300	
262.1145	SCREEN WASH STRAINER	1 EA	5,750	1 LT	79 MH	1,024	102	
	262.114 PURIFICATION+FILTRATION EQ		131		4753 MH	59,171	6,658	197,279
262.115	PIPING-SCREEN WASH							
262.1151	2 IN. + SMALLER							
262.1152	2.5 IN. + LARGER							
262.11521	CS/NVS	1620 LB	2,730	1 LT	273 MH	3,539	354	
	262.1152 2.5 IN. + LARGER		2,730		273 MH	3,539	354	6,623
	262.115 PIPING-SCREEN WASH		2,730		273 MH	3,539	354	6,623
262.116	VALVES-SCREEN WASH	1 LT	12,900					
262.1162	CHECK							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
262.1166	BUTTERFLY							12,900
	262.116 VALVES-SCREEN WASH		12,900					
262.117	PIPING-MISC ITEMS							
262.1171	HANGERS + SUPPORTS	270 LB	405					
262.1172	INSULATION							
262.1173	SPECIALTIES							405
	262.117 PIPING-MISC ITEMS		405					
	262.11 WATER INTAKE EQUIPMENT		149,955		5171 MH	64,811	7,222	222,018
262.12	CIRCULATING WATER SYSTEM							
262.121	ROTATING MACHINERY							
262.1211	CIRCULATING WATER PUMP+MTR	4 EA	1,796,000	1 LT	10800 MH	142,742	14,274	
262.12111	CIRC WATER PUMP							
262.12112	CIRC WATER PUMP MOTOR							
	262.1211 CIRCULATING WATER PUMP+MTR		1,796,000		10800 MH	142,742	14,274	1,953,016
	262.121 ROTATING MACHINERY		1,796,000		10800 MH	142,742	14,274	1,953,016
262.125	PIPE							
262.1251	2 IN + SMALLER							
262.1252	2.5 IN + LARGER							
262.12521	CONCRETE/NNS	2127 LF	679,632	1 LT	8254 MH	105,730	10,578	

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
262.12522	CS/NNS	106000 LB	159,000	1 LT	15900 MH	206,071	20,607	
	262.1252 2.5 IN + LARGER		838,832		24154 MH	311,851	31,185	1,181,868
	262.125 PIPE		838,832		24154 MH	311,851	31,165	1,181,868
262.126	VALVES							
262.1266	BUTTERFLY	5 EA	269,600	1 LT	751 MH	9,731	973	
	262.126 VALVES		269,600		751 MH	9,731	973	300,304
262.127	PIPING / MISC. ITEMS							
262.1271	HANGERS + SUPPORTS							
262.1272	INSULATION							
262.1273	SPECIALTIES							
262.1274	PIPE TRENCHING							
262.12741	EXCAVATION							
262.127411	EARTH EXCAVATION			10260 CY	3320 MH	35,559	13,280	
262.127412	ROCK EXCAVATION			10790 CY	8632 MH	92,452	43,160	
	262.12741 EXCAVATION				11952 MH	128,011	56,440	184,451
262.12742	BACKFILL			17430 CY	5229 MH	52,040	17,430	
262.12743	COMPACTED SAND BED			1630 CY	1630 MH	16,221	9,780	
262.12744	SUBSTRUCTURE CONCRETE							
262.127441	FORMWORK			3610 SF	1524 MH	16,829	3,610	
262.127442	REINF STEEL			12 TN	300 MH	3,875	4,500	

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
262.127443	CONCRETE			470 CY	353 MH	3,605	15,040	
	262.1274- SUBSTRUCTURE CONCRETE				2177 MH	24,309	23,350	47,659
	262.1274 PIPE TRENCHING				20988 MH	220,561	107,000	327,5>
	262.127 PIPING / MISC. ITEMS				20988 MH	220,561	107,000	327,[illegible]1
262.128	INSTRUMENTATION + CONTROL	1 LT	5,350	1 LT	45 MH	548	27	
262.129	SKIDS / FOUNDATIONS							
262.1291	CHLORINATION SYSTEM	1 LT	52,675	1 LT	1300 MH	16,817	1,682	
262.1292	SULPHURIC ACID FEED SYSTEM							
262.12921	ROTATING MACHINERY							
262.129211	SULFURIC ACID FEED PUMP+MT	2 EA	1,075	1 LT	100 MH	1,32[illegible]	132	
262.129212	SULF ACID FEED PUMP MOTOR				100 MH	1,322	132	2,529
	262.12921 ROTATING MACHINERY		[illegible]075					
262.12923	TANKS AND PRESSURE VESSELS							
262.1292[illegible]	PIPING							
262.129251	2 IN + SMALLER-CS/NNS			820 LB	246 MH	3,190	1,066	
262.129252	2.5 IN + LARGER				246 MH	3,190	1,066	4,256
	262.12925 PIPING							
262.12926	VALVES	1 LT	1,075		346 MH	4,512	1,198	7,860
	262.1292 SULPHURIC ACID FEED SYSTEM		2,150					
	262.129 SKIDS / FOUNDATIONS		54,825		1646 MH	21,329	2,880	, 034

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	262.12 CIRCULATING WATER SYSTEM		2,984,607		58384 MH	706,782	156,339	3,847,728
262.13	COOLING TOWERS							
262.132	HEAT XFER EQUIPMENT							
262.1321	COOLING TOWERS(CT)-MAIN	2 EA	7,094,000	1 LT	91667 MH	1,185,867	118,589	
	262.132 HEAT XFER EQUIPMENT		7,094,000		91667 MH	1,185,867	118,589	8,398,476
262.138	INSTRUMENTATION + CONTROL	1 LT	53,950	1 LT	451 MH	5,514	276	
	262.13 COOLING TOWERS		7,147,950		92118 MH	1,191,401	118,865	8,458,276
262.15	MAIN CT, MAKEUP+BLOWDN SYS.							
262.151	MAKE-UP WATER SYSTEM							
262.1511	ROTATING MACHINERY							
262.15111	MAKE-UP PUMP + MOTOR	2 EA	242,000	1 LT	800 MH	10,574	1,057	
262.151111	MAKE-UP PUMP							
262.151112	MAKE-UP PUMP MOTOR							
	262.15111 MAKE-UP PUMP + MOTOR		242,000		800 MH	10,574	1,057	253,631
	262.1511 ROTATING MACHINERY		242,000		800 MH	10,574	1,057	253,631
262.1515	PIPING							
262.15151	2IN.+ SMALLER							
262.15152	2.5IN + LARGER							

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
262.151521	CONCRETE/NNS	1400 LF	33,600	1 LT	1260 MH	16,148	1,615	
262.15152	2.5IN + LARGER		33,600		1260 MH	16,148	1,615	51,363
262.1515	PIPING		33,600		1260 MH	16,148	1,615	51,363
262.1516	VALVES	14 EA	107,282	1 LT	140 MH	1,794	179	
262.15162	CHECK VALVES							
262.15163	GLOBE VALVES							
262.15166	BUTTERFLY VALVES							
262.1516	VALVES		107,282		140 MH	1,794	179	109,255
262.1517	PIPING - MISC. ITEMS							
262.15171	HANGERS + SUPPORTS							
262.15172	INSULATION							
262.15173	SPECIALTIES							
262.15174	PIPE TRENCHING							
262.151741	EXCAVATION			13770 CY	3443 MH	36,876	13,770	
262.151742	BACKFILL			13320 CY	3996 MH	59,768	13,320	
262.151743	COMPACTED SAND BED			240 CY	240 MH	2,388	1,440	
262.15174	PIPE TRENCHING				7679 MH	79,032	28,530	107,562
262.1517	PIPING - MISC. ITEMS				7679 MH	79,032	28,530	107,562
262.1518	INSTRUMENTATION + CONTROL	1 LT	6,760	1 LT	51 MH	624	31	
262.151	MAKE-UP WATER SYSTEM		389,642		9930 MH	108,172	31,412	529,226

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
262.152	BLOWDN SYSTEM							
262.1525	PIPING							
262.15251	2 IN. + SMALLER							
262.15252	2.5 IN. + LARGER							
262.152521	CONCRETE/ANN	1470 LF	14,700	1 LT	295 MH	3,778	378	
262.15252	2.5 IN. + LARGER		14,700		295 MH	3,778	378	18,856
262.1525	PIPING		14,700		295 MH	3,778	378	18,856
262.1526	VALVES	2 EA	32,250	1 LT	40 MH	513	51	
262.15260	BUTTERFLY							
262.1526	VALVES		32,250		40 MH	513	51	32,814
262.1527	PIPING-MISC ITEMS							
262.15271	HANGERS + SUPPORTS							
262.15272	INSULATION							
262.15273	SPECIALTIES							
262.15274	PIPE TRENCHING							
262.1527	PIPING-MIS ITEMS							
262.1528	INSTRUMENTATION & CON L	1 LT	2,000	1 LT	16 MH	196	10	
262.152	BLOWDN SYSTEM		48,950		351 MH	4,487	439	53,876
262.153	MAKEUP WTR PRETREATMNT SYS	1 LT	736,000	1 LT	32000 MH	413,981	82,796	
262.15	MAIN CT.MAKEUP+BLOWDN SYS.		1,174,592		42281 MH	526,640	114,647	1,815,879

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
262.1	HEAT REJECTION SYSTEM		11,457,134		197954 MH	2,469,634	397,073	14,343,841
262.	MECHANICAL EQUIPMENT		11,457,134		197954 MH	2,469,634	397,073	14,343,841
26 .	MAIN COND HEAT REJECT SYS		11,547,105		261506 MH	3,430,373	1,072,055	15,849,533

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
2	TOTAL DIRECT COSTS		215,387,419		8675173 MH	10e,036,453	62,729,521	386,153,393

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
9 .	TOTAL INDIRECT COSTS							
91 .	CONSTRUCTION SERVICES							
911.	TEMPORARY CONSTRUCTION FAC							
911.1	TEMPORARY BUILDINGS							
911.11	FIELD OFFICE,SHOPS,WHSE.			1 LT	65000 MH	767,000	850,000	
911.12	JANITOR SERVICES			1 LT	45000 MH	888,000	100,000	
911.13	GUARDS - SECURITY			1 LT	195000 MH	1,365,000	100,000	
	911.1 TEMPORARY BUILDINGS				355000 MH	3,020,000	1,050,000	4,070,000
911.2	TEMPORARY FACILITIES							
911.21	ROADS,PARKING,LAYDOWN AREA			1 LT	100000 MH	1,025,000	500,000	
911.22	TEMPORARY ELECTRICAL SUCE			1 LT	170000 MH	2,091,000	2,245,000	
911.23	TEMPORARY MECH. & PIPING			1 LT	135000 MH	1,748,000	1,010,000	
911.24	TEMPORARY HEAT			1 LT	40000 MH	440,000	400,000	
911.25	BARGE UNLOAD.FAC. - NONE							
911.26	GENERAL CLEANUP			1 LT	290000 MH	2,711,000	135,000	
911.27	SNOW REMOVAL-INCL.IN911.21							
	911.2 TEMPORARY FACILITIES				735000 MH	8,015,000	4,290,000	12,305,000
	911. TEMPORARY CONSTRUCTION FAC				1090000 MH	11,035,000	5,340,000	16,375,000
912.	CONSTRUCTION TOOLS & EQUIP							
912.1	MAJOR EQUIPMENT							

ACCT NO	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
912.11	PURCHASE MAJOR EQUIPMENT	1 LT	7,200,000					
912.12	RENTAL INCL. IN 912.11							
912.13	EQUIPMENT MAINTENANCE			1 LT	180000 MH	2,215,000	1,225,000	
912.14	FUEL + LUBRICANTS			1 LT			285,000	
	912.1 MAJOR EQUIPMENT		7,200,000		180000 MH	2,215,000	1,510,000	10,925,000
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	FUEL&LUB.-INCL. IN 912.14							
	912.2 MISCELLANEOUS VEHICLES							
912.3	PURCHASE OF SMALL TOOLS			1 LT			2,060,000	
912.4	EXPENDABLE SUPPLIES			1 LT			2,060,000	
	912. CONSTRUCTION TOOLS & EQUIP		7,200,000		180000 MH	2,215,000	5,630,000	15,045,000
913.	PAYROLL INSURANCE & TAXES							
913.1	SOCIAL SECUR. TAX .055 X L	1 LT	6,671,000					
913.2	STATE+FED.UNEMPLOY.035 X L	1 LT	4,246,000					
913.3	WORKMENS COMP.INS .040 X L	1 LT	4,852,000					
913.4	P.L.+P.D. INS. .005 X L	1 LT	606,000					
	913. PAYROLL INSURANCE & TAXES		16,375,000					16,375,000
914.	PERMITS,INS. & LOCAL TAXES							

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914.1	BUILDERS ALL RISK INS			1 LT			650,000	
914.2	FEES & PERMITS							
914.3	STATE & LOCAL SALES TAXES							
	914. PERMITS,INS. & LOCAL TAXES						650,000	650,000
915.	TRANSPORTATION							
	91 . CONSTRUCTION SERVICES	23,575,000			1270000 MH	13,250,000	11,620,000	48,445,000

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
92 .	HOME OFFICE ENGRG.&SERVICE							
921.	HOME OFFICE SERVICES							
921.1	SALARIES	740000 MH	7,015,000					
921.11	ENGINEERING AND DESIGN							
921.13	PURCHASING & EXPEDITING							
921.14	ESTIMATING & COST CONTROL							
921.16	PLANNING AND SCHEDULING							
921.17	REPRODUCTION							
	921.1 SALARIES		7,015,000					7,015,000
921.2	EXPENSES	1 LT	1,060,000					
921.3	DIRECT PAYROLL COST	1 LT	1,755,000					
921.4	OVERHEAD LOADING	1 LT	4,820,000					
921.5	OUTSIDE CONSULTANTS SVCS.							
921.6	FEE FOR H/O SERVICES	1 LT	1,350,000					
	921. HOME OFFICE SERVICES		16,000,000					16,000,000
922.	HOME OFFICE Q/A							
923.	HOME OFFICE CONSTRCTN MGMT							
923.1	SALARIES	40000 MH	480,000					
923.2	DIRECT PAYROLL COST	1 LT	120,000					
923.3	OVERHEAD LOADING	1 LT	330,000					
923.4	EXPENSES	1 LT	70,000					
	923. HOME OFFICE CONSTRCTN MGMT		1,000,000					1,000,000

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
92 .	HOME OFFICE ENGRG.&SERVICE		17,000,000					17,000,000

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
93 .	FIELD OFFICE ENGRG&SERVICE							
931.	FIELD OFFICE EXPENSES							
931.1	OFFICE FURNITURE & EQUIP.			1 LT			70,000	
931.2	TELEPHONE & COMMUNICATIONS			1 LT			210,000	
931.3	OFFICE SUPPLIES			1 LT			670,000	
931.4	FIRST AID & MEDICAL EXP.			1 LT			50,000	
	931. FIELD OFFICE EXPENSES						1,000,000	1,000,000
932.	FIELD JOB SUPERVISION							
932.1	SALARIES	875000 MH	7,438,000					
932.3	DIRECT PAYROLL COST	1 LT	1,859,000					
932.4	OVERHEAD LOADING	1 LT	1,395,000					
932.5	RELOCATION EXPENSE-ALLWNCE	1 LT	538,000					
932.6	FEE FOR CONSTR SRVCS	1 LT	1,070,000					
932.61	HOME OFFICE							
932.62	FIELD							
	932.6 FEE FOR CONSTR SRVCS		1,070,000					1,070,000
	932. FIELD JOB SUPERVISION		12,300,000					12,300,000
933.	FIELD QA/QC							
933.1	SALARIES	19000 MH	146,000					
933.2	DIRECT PAYROLL COST	1 LT	37,000					
933.3	OVERHEAD LOADING	1 LT	27,000					

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
933.4	EXPENSES	1 LT	10,000					
	933. FIELD QA/QC		220,000					220,000
934.	PLANT STARTUP & TEST							
934.1	SALARIES	23000 MH	242,000					
934.2	DIRECT PAYROLL COST	1 LT	60,000					
934.3	OVERHEAD LOADING	1 LT	45,000					
934.4	EXPENSES	1 LT	33,000					
	934. PLANT STARTUP & TEST		380,000					380,000
	93 . FIELD OFFICE ENGRG&SERVICE		12,900,000				1,000,000	13,900,000

ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
9	TOTAL INDIRECT COSTS		53,475,000		1270000 MH	13,250,000	12,620,000	79,345,000

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ACCT NO.	ACCOUNT DESCRIPTION	FACTORY QUANTITY	FACTORY COSTS	SITE QUANTITY	SITE LABOR HRS	SITE LABOR COST	SITE MATERIAL COST	TOTAL COSTS
	TOTAL BASE COST				9945173 MH			465,498,393

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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