

DEMOLITION, REMOVAL AND CLOSURE OF
MITCHELL POWER PLANT, CRESAP (near Moundsville), WEST VIRGINIA

A 1994 COST ESTIMATE

PREPARED FOR

AMERICAN ELECTRIC POWER COMPANY

BY

CLEVELAND WRECKING COMPANY

ESTIMATE NO. 3-4205
MARCH 1, 1994

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History, Description and Assumptions

Location:	Cresap (Moundsville) West Virginia
County:	Marshall
Site Area:	Approximately 400 acres
Asbestos Insulation:	Assumption none in boilers, but approximately 2771 cu. yds. on piping and equipment.
Main Boilers Mfg.:	2 each - Foster Wheeler at 800 mg. watt each driving 1 each Westinghouse and 1 each General Electric turbines and generators.
River and Coal Handling:	River - Both loading and discharge facilities Rail - Unload - Truck - Unload.
Cooling:	Reinforced Concrete Cooling Towers.
Smoke Stacks:	Reinforced Concrete
Turbine Generators Mfg.:	1 each - Westinghouse and 1 each General Electric
Dirt Available on Site	None (Fill required 700,000 cubic yards)
Precipitators:	One per Boiler
Tanks Below Grade:	Yes 55 Net Tons
Rail Facilities:	Yes Approximately 6864 net tons of rail
Fly Ash Ponds:	Yes Assumed full at retirement.

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Assumptions

Assumptions as to site condition at time of start of demolition and closure of facility:

1. All coal and other fuels will have been consumed by owners' operation.
2. No environmental costs have been considered, other than asbestos containing materials (ACM.) & lead requirement.
3. All structure demolition will be to an elevation equal to 2 feet below existing surrounding grade with the exception of slabs on grade which will remain and will be covered with 2 feet of earth and rough graded.
4. Available clean hard debris (concrete, brick, tile, etc.) will be used as fill in basements, ponds and other below grade depressions or excavations on the property.
5. Hard debris from demolition will be utilized as fill with the balance of earth fill to be purchased and hauled in.
6. Fine grading, seeding and mulching, planting, etc. will be performed by others.
7. All materials and equipment such as scrap steel, copper, brass, cupra-nickel, etc. and motors, turbines, generators, conveyor, etc.) for the purpose of this study are treated as scrap, with no resale allowance credits taken into consideration.
8. Any PCB's contained in fluorescent light ballasts, rectifiers and/or transformers will be removed and disposed of by others.

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Proposed Method of Demolition

For the purpose of this study, we have included in the 'Quantitative Unit Cost Pricing Sheet the approximate cubic yardage of asbestos bearing insulation on pipes and equipment. It is further assumed for the purpose of this study that the refractory in the boilers are not ARCM contaminated.

Also included in the quantitative Unit Cost Pricing Sheet is an amount of \$241,551.00 contingency to cover compliance with the new Federal Lead Law in effect, although it is to be assumed that Federal, State and Local Lead Laws will become more stringent in the future.

ACM insulation contained in boiler refractory on pipe and equipment inside the buildings will be accomplished by hand and machine vacuum under negative air by utilizing part of the boiler house and generator room as containment structures. Insulated piping outside the building will be by 'glove bag' method: all in accordance with current 1994 West Virginia and Federal Environmental Protection Agency and/or OSHA rules and regulations

Concrete turbine foundations that are below grade (2 ft. below surrounding grade) will remain in place.

Concrete blocks hollow tiles and brick in a size not to exceed 2 feet x 2 feet x 2 feet in individual size will be used as fill in below grade basements and/or depressions. In addition, an amount of earth fill (638,000) cu yd. will have to be hauled into the site from outside plant property location to bring basement depressions, etc. to an even surrounding grade level.

There is a possibility that some or all of the built-up roofing on the main building contains asbestos, but for the purpose of this study, it is not included in the 'Quantitative Unit Cost Pricing Sheet'.

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ESTIMATE NO. 3-4205
"QUANTITATIVE UNIT COST PRICING SHEET"
COST ESTIMATE FOR MITCHELL POWER PLANT

<u>QUANTITY</u>	<u>UNIT</u>	<u>DESCRIPTION</u>	<u>UNIT PRICE</u>	<u>EXTENSION</u>
2,771	Cu. Yd.	ACM Insulation on pipe & equipment	\$660.00	\$1,828,860
1,460	Cu. Yd.	Refractory Debris in Boilers	50.00	73,000
2,250	N/TON	Structural Steel (Outside Buildings Unloading Stations, Site Buildings, etc.)	110.00	247,500
28,000	N/TON	Structural steel in Boiler House & Turbine Room.	100.00	2,800,000
6,592	N/TON	Steel in Boilers	121.00	797,632
1,400	N/TON	Turbines & Generators (incl. Copper Content 260,000#)	220.00	308,000
795	N/TON	Fans & Blower	165.00	131,175
875	N/TON	Surfaces Condensers (incl. Admiralty tubes 560,000#)	220.00	192,500
265	N/TON	Heat Exchanger	165.00	43,725
400	N/TON	Air Heater	165.00	66,000
2,000	N/TON	Electrostatic Precipitators	275.00	550,000
2,120	N/TON	Coal Pulverizers with Feeders	165.00	349,800
950	N/TON	Coal Bunker Steel	220.00	209,000
1,000	N/TON	Auxiliary Boiler	121.00	121,000
195	N/TON	Tanks located inside bldgs...	275.00	53,625
400	N/TON	Tanks located outside bldgs..	220.00	88,000

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<u>QUANTITY</u>	<u>UNIT</u>	<u>DESCRIPTION</u>	<u>UNIT PRICE</u>	<u>EXTENSION</u>
1,050	N/TON	Miscellaneous Mechanical Equipment (Screens Compressor, Overhead Cranes, Crushers, Car Dumpers)	\$165.00	\$173,250
890	N/TON	Conveyors outside main Buildings (Drop)	110.00	97,900
200	N/TON	Conveyors inside main bldgs..	220.00	44,000
170	N/TON	Pumps & Motors	220.00	37,400
2,670	N/TON	Transformers (including 320,400# Copper Breakage)	248.00	662,160
1,520	N/TON	Sheet Metal Duct Work	220.00	334,400
4,050	N/TON	Steel Piping	121.00	490,050
860	N/TON	Steel Valves	121.00	104,060
2,000	N/TON	River Cells, Intake, etc. (Piles down to mud line)	385.00	770,000
6,864	N/TON	Railroad Rails (457,554 L. Ft.)	110.00	755,040
84	N/TON	Electrical Switch Gear	275.00	23,100
985	N/TON	Steel Stack Lining	110.00	108,350
750	N/TON	Underground Steel Pipe	220.00	165,000
55	N/TON	Underground Steel Tanks	330.00	18,150
185,940	Sq. Ft.	Aluminum Bldg... Siding	.20	37,188
6,283	Cu. Yd.	Reinforced Concrete Smoke Stack (Shoot)	20.00	125,660
48,120	Cu. Yd.	Reinforced Concrete Cooling Towers (Shoot)	20.00	962,400

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<u>QUANTITY</u>	<u>UNIT</u>	<u>DESCRIPTION</u>	<u>UNIT PRICE</u>	<u>EXTENSION</u>
1,010	Cu. Yd.	Reinforced Concrete Fly Ash Silo (Shoot)	20.00	\$20,200
356	Cu. Yd.	Reinforced Concrete Structural Slabs Suspended	\$110.00	39,160
4,000	Cu. Yd.	Heavy Reinforced Concrete Foundations	165.00	660,000
500	Cu Yd.	Miscellaneous Concrete Foundations	85.00	42,500
280	Cu Yd.	Concrete Block Bldg.. Walls	11.00	3,080
1,500	Cu Yd.	Gnite Lining (Coal Bunkers, Steel Duct, etc.)	125.00	187,500
6,400,000	Bd. Ft.	Railroad Ties - Haul Offsite to certified landfill for disposal 6,400 M Bd. Ft. x \$110 . 00		704,000
1,600,000	Bd. Ft.	Contaminated Wood (Treated Handle as above 1600 M Bd Ft. x \$110.00.00		176,000
400	Cu Yd.	Non-Asbestos Insulation on equipment.	200.00	80,000
400	Acre	Area to seed & mulch = 1,742,000 so. ft. x \$0.05	.05	87,100
		Move in and out demolition equipment and mobilization	Lump Sum	80,000
		Job Sanitary Facilities for 24 months 4 each e \$60.00 per wk. - 5240 00 x 104 Wks.		24,960

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<u>QUANTITY</u>	<u>UNIT</u>	<u>DESCRIPTION</u>	<u>UNIT PRICE</u>	<u>EXTENSION</u>
		Travel & Per Diem Allowance for Personnel 6 x \$350 00 x 104 weeks		\$218,400
		Wrecking and Highway Demolition Permits		2,500
		Development of "fill" Earth off Site Borrow Location (For 638,000 cu yds.+ or -)	Lump Sum	319,000
62,049	Cu Yd	Hard Demolition Debris, Place in Bldg.. Basement and Site Depressions	1.00	62,049
638,000	Cu Yd.	Haul in and Place in site Basement & Depressions Earth fill from "Borrow Site"	9.00	5,742,000

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<u>QUANTITY</u>	<u>UNIT</u>	<u>DESCRIPTION</u>	<u>UNIT PRICE</u>	<u>EXTENSION</u>
		Demolition and Red Lead Contingencies 3% of Steel Wrecking Cost \$8,051,707.00		\$ 241,551
		10 Year Environmental Well Monitoring.	Lump Sum	250,000
Sub-Total				\$ 21,707,925
		\$500 00 Per Week Job Utilities x 104		52,000
Total				\$21,759,925
		Estimated Contractors Overhead 10%		2,175,993
Total				\$23,935,918
		Less Salvage Allowance		(5,501,842)
Total				\$18,434,076
		Bidders Estimated Profit 10%		1,843,408
Estimated Cost of Project				\$20,277,484

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<u>SALVAGE VALUE</u>				
560,000	Lbs.	Admiralty Condenser Tube Scrap	\$.30	\$ 168,000
260,000	Lbs.	Copper Scrap (Turbines & Generators)	.35	91,000
320,400	Lbs.	Copper "Breakage" from Transformer	.35	112,140
96,689	Lbs	Aluminum (Siding)	.28	27,073
66,465	N/TON	#1 & #2 Mixed Steel Scrap	80.00	5,317,200
1,520	N/TON	#2 Light Steel Scrap (Metal Duct)	50.00	76,000
Total				\$5,791,413
Less breakage 5%				(289,571)
Total Salvage Allowance				\$5,501,842

NOTE: Above Unit Prices taken from American Metal Market - Publication of Friday, March 18, 1994 - Volume 102 Number 53.

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RECOMMENDATIONS

As all pricing, estimating, costing and salvage returns are predicated on 1994 existing laws, Federal, State and Local, and the conditions of these laws affect the removal of this facility, we should like to point out that especially in the realm of asbestos abatement, every effort should be made for the removal of hazardous materials as quickly as possible prior to changes in the 1993-1994 existing laws. It is our belief that rather than the asbestos abatement laws and the lead containment laws becoming easier, they will become extremely more stringent as to removal and disposal of asbestos and other hazardous materials. because of this, a direct dollar impact should be expected the longer the matter of asbestos and other hazardous materials is not addressed.