



STEAM GENERATING SYSTEMS • ENERGY RECOVERY SYSTEMS
POLLUTION CONTROL SYSTEMS
1422 EAST AVENUE
ERIE, PA., U. S. A. 16503 • TELEPHONE (814) 452-6421

PROPOSAL-CONTRACT

7-11-1971

NO. P-23970

DATE February 15, 1971

TO. American Smelting and Refining Co.
120 Broadway
New York, New York

For: El Paso, Texas
Requisition CE-70-EP-23

For and in consideration of the hereinafter named amount,

The ERIE CITY ENERGY DIV., ZURN INDUSTRIES, INC. (hereinafter called the COMPANY) proposes to furnish to the PURCHASER, in accordance with the following specifications and general conditions, the machinery, material and/or equipment (hereinafter referred to as "equipment") and/or services described below:

Three (3) Two Drum Open pass energy recovery boilers, designed for 550 psig pressure in accordance with the latest ASME Code and the State Laws of Texas. The units are designed to operate in conjunction with exhaust gases from three copper converters.

The boilers shall be complete with fixtures, fittings and components listed herein.

Each energy recovery boiler shall include:

- One (1) Set boiler drums.
- One (1) Set boiler tubes.
- One (1) Set water wall tubes.
- One (1) Set water wall headers.
- One (1) Set boiler structures.
- One (1) Steam purifier.
- One (1) Set of refractory and insulation materials.
- One (1) Set of soot blowers.
- One (1) Set hoppers and ductwork
- One (1) set steam trim.

Complete field erection is offered as an alternate.

PROPOSAL SUMMARY

No.	Item	Furnished By		Shop Assembled	Field Installed By	
		Company	Purchaser		Company	Purchaser
1.	Steam Generator Pressure Parts	X			E F F X	
2.	Steam Purifier	X				
3.	Superheater					
4.	Attemperator					
5.	Economizer					
6.	Air Heater					
7.	Inner Casing	X			X	
8.	Outer Casing					
9.	Boiler Structures	X			X	
10.	Accessory Structures					
11.	Platforms and Ladders					X
12.	Hoppers	X			X	
13.	Air Ducts					
14.	Gas Ducts					X
15.	Stack					X
16.	Windbox					
17.	Burner					
18.	Burner Piping					
19.	Safety Controls					
20.	Combustion Controls					
21.	Feedwater Regulator					X
22.	Instruments					X
23.	Panelboard					X
24.	Trim Piping	X			X	
25.	Fuel Oil Pump Set					
26.	F.D. Fan					
27.	F.D. Fan Drive					
28.	I.D. Fan					
29.	I.D. Fan Drive					
30.	Starters					
31.	Dust Collector					X
32.	Soot Blowers	X			X	
33.	Stoker					
34.	Refractory	X			X	
35.	Insulation	X			X	
36.	Lagging					
37.	Erection Supervision	Alt.				
38.	Field Erection Labor	Alt.				
39.	Service Representative	Per diem				
40.	Test Engineer					
41.	Freight	X				
42.	Hauling					
43.	Wiring					
44.						
45.						
46.						
47.						
48.						
49.						
50.						
51.						

GENERAL CONDITIONS

This proposal, including any drawings submitted pertaining thereto, is the property of the COMPANY; it contains confidential information and is loaned to the PURCHASER on condition that he and his representatives have, by receiving it, agreed not to, without permission, reproduce or copy it, in whole or in part, or to furnish information from it to others, or to make any use of it that is, or may be, injurious to the COMPANY and to return it upon request. In the event this proposal becomes a contract the PURCHASER may retain the proposal for use in connection with the equipment covered by this contract and for that purpose make such copies thereof as may be necessary.

INFORMATION TO BE FURNISHED BY THE PURCHASER

- The PURCHASER shall furnish the COMPANY with all information, instructions and drawings requisite to the execution of the work.

INFORMATION TO BE FURNISHED BY THE COMPANY

The COMPANY shall furnish the PURCHASER with sets of the general arrangement drawings in accordance with which the equipment will be fabricated, and such arrangement drawings shall be for the PURCHASER's information. Such drawings remain the property of the COMPANY, and all rights therein are reserved by the COMPANY. The PURCHASER shall check and promptly return one set of the drawings with its approval in writing noted thereon.

The COMPANY shall also furnish the PURCHASER with copies of operating instructions including such technical information requisite to the installation of the equipment furnished and putting it into service. The equipment should not be operated without such instructions being readily available to the operator and without his complying precisely therewith. Additional copies of instructions may be obtained from the COMPANY at \$ per copy.

SHIPPING DATE

The shipment of the equipment hereunder shall start 7 months (hereinafter called the contract shipping date) after receipt of the acceptance of this proposal, or the final approval of all drawings and contract details, whichever date may be the later. As the COMPANY and the PURCHASER both have responsibilities which affect delivery, the shipping date proposed is based on the following indicated conditions;

Allowing 45 days for preparation of drawings and 15 days for approval of drawings, we can and will make shipment in days from receipt of order and sufficient information to start engineering.

Approval of our standard drawings within 5 days will allow us to make shipment in days.

If drawing approval is waived, shipment can be made in days from receipt of order and sufficient information to proceed.

TRANSPORTATION CHARGES

Transportation charges from point of shipment to point of free delivery of common carrier shall be paid by the

In the event of change in transportation rates or taxes thereon prior to delivery, and provided that the contract price includes transportation charges to be paid by the COMPANY, such contract price shall be adjusted to cover the additional or reduced cost to the COMPANY due to such change in transportation rates or taxes.

The type of transportation and the routing shall be controlled by the

LIABILITY FOR DELAYED SHIPMENT OR ERECTION

The COMPANY shall not be liable for any loss or damage resulting from delay in shipment or in erection (if the COMPANY has assumed any obligations with respect to erection hereunder) caused by fires, floods, strikes, riots, thefts, accidents, acts of the Government, or any other cause whatsoever beyond the reasonable control of the COMPANY which may delay or prevent delivery or erection of the equipment to be furnished hereunder.

PROTECTION OF EQUIPMENT

Unless erection of the equipment is to be performed by the COMPANY and, in any case, in the event of delay in or postponed erection arising from causes beyond the control of the COMPANY, the PURCHASER shall protect the equipment against damage from weather or other causes, and shall be responsible for any charges in connection with storage or reconditioning.

RESPONSIBILITY FOR WATER TREATMENT

The treatment of feedwater and the conditioning of boiler water are beyond the control of the COMPANY. Therefore, the COMPANY shall not be held responsible for damage due to the presence of oil, grease, scale or deposits on the internal surfaces of the equipment; or for damage resulting from foaming caused by chemical conditions of the water; or for damage resulting from corrosion or caustic embrittlement.

CONSEQUENTIAL OR OTHER DAMAGES

The COMPANY shall not be liable in any event for loss of anticipated profits, loss by reason of plant shut-down, non-operation or increased expense of operation of other equipment, or other consequential loss or damage of any nature.

GENERAL CONDITIONS (Cont.)

FIELD ERECTED STEAM GENERATORS

WARRANTY AND LIMITATION OF LIABILITY OF COMPANY

The COMPANY shall repair or shall replace f.o.b. point of shipment, any parts of said equipment (except parts of the superheater or reheater which deteriorate or fail because of gas side corrosion, including superheater or reheater tubes, the supports or spacers) which within one year from the date of initial operation are found to be defective in design, workmanship, or material and shall repair or shall replace any erection work (if erected by the COMPANY) found to be defective within said period of one year; provided said equipment is operated by the PURCHASER in accordance with generally approved practice and in accordance with the conditions of service, if any, herein specified, and provided the PURCHASER notifies the COMPANY in writing as soon as such defect becomes apparent. No other warranty, other than title, shall be implied from the manufacture, sale, furnishing or erection of any of the said equipment to be furnished hereunder, or its use, except as may be otherwise specifically provided herein. The COMPANY shall have no other liability or obligation of any kind or nature, arising from defective design, workmanship or material, or from defects in erection work (if erected by the COMPANY). The COMPANY shall not be responsible for work done, equipment or parts furnished, or repairs made by others, or for any loss, damages, or expense arising from such work, equipment, parts or repairs.

PATENTS

The COMPANY shall defend at its own expense any suit or action brought against the PURCHASER based on a claim that the equipment, or any part thereof, furnished hereunder constitutes an infringement of any patent of the United States, if notified promptly in writing and given authority, information and assistance for the defense of same, and the COMPANY shall pay all costs awarded therein against the PURCHASER. In case the equipment or any part thereof is in such suit held to constitute infringement and its use is enjoined, the COMPANY shall, at its own expense, either procure for the PURCHASER the right to continue using said equipment; or replace same with non-infringing equipment; or modify it so it becomes non-infringing; or remove said equipment and refund the purchase price and the transportation and installation costs thereof.

RISK OF LOSS OR DAMAGE

Risk of loss of or damage to the equipment called for and furnished under the terms of this Contract shall pass to the PURCHASER upon delivery of the equipment or any portion thereof by the COMPANY to a common carrier at a point of origin in the case of shipments f.o.b. point of origin, and when equipment arrives at destination in the case of shipment f.o.b. point of destination.

When the equipment is ready for shipment and shipment is delayed or postponed through any causes beyond the control of the COMPANY, the PURCHASER shall arrange for storage of the equipment covered by this Contract other than at the works of the COMPANY, or when equipment is ready for erection and erection is delayed or postponed through any causes beyond the control of the COMPANY, the PURCHASER shall protect the equipment against damage from the weather or other causes, and in any case the PURCHASER shall assume the risk of loss or damage and shall be responsible for any charges in connection with storage or reconditioning.

INSURANCE

From the date that risk of loss of and damage to the equipment passes to the PURCHASER as provided above, and until the equipment is finally accepted and the Contract Price paid in full, or until all obligations of the COMPANY hereunder have terminated, the PURCHASER shall provide and maintain insurance in the names of the PURCHASER and the COMPANY as interest may appear, to the total value of the equipment and of all work performed in the erection thereof against risk of fire, lightning, wind storm, aircraft and explosion, including inherent and boiler explosion and proceeds of such insurance shall be applied to the cost of repairing and replacing the equipment and work destroyed or damaged.

BACKCHARGES AND ALLOWANCES

The COMPANY shall not be called upon to make any allowance for material, labor, repairs or alterations made for its account unless authorized by it in writing.

FOUNDATIONS

The COMPANY shall provide the PURCHASER with general arrangement drawings showing the equipment with reference to foundations, including loading diagrams and showing location of anchor bolts in the foundations. The COMPANY shall not be responsible for the depth of the footings, size or accuracy of the foundations or the character of the materials selected for such construction. Adequate foundations, having plan measurements in accordance with such drawings including foundation bolts and plates, concrete work, all grouting and excavation, shall be furnished in place in due time by the PURCHASER. The COMPANY shall not be responsible for any damages, or repairs necessary to the equipment furnished by it, caused by or resulting from defects in or settlement of the foundations.

STEEL WORK

Unless otherwise stated, any supporting steel to be furnished by the COMPANY as specified in this Proposal will be designed to support the equipment which the COMPANY proposes to furnish and will be designed in accordance with the latest Rules of the American Institute of Steel Construction. If the COMPANY is required to increase the size or weight of its supporting structures to conform to other than these Rules or because of additional loadings imposed by the PURCHASER, the PURCHASER shall reimburse the COMPANY for the additional steel required.

LIABILITY AND DAMAGE TO PERSONS OR PROPERTY

1. **Liability Agreement.** The COMPANY shall be responsible for any loss by reason of the liability imposed upon it by law for damages:

- (a) because of bodily injuries, including death at any time resulting therefrom, accidentally sustained by any person or persons, and
- (b) because of accidental injuries to or destruction of property

occurring prior to the completion of the work contemplated by this proposal and due to any negligent act or omission of the COMPANY or of its employees, or of its sub-contractors, or of such sub-contractors' employees in connection with the performance of such work; but this agreement shall not include such injuries to any person or persons or injury to or destruction of any property due to any negligent act or omission of the PURCHASER, or of his employees, or of any employee paid by the PURCHASER who may be utilized by the COMPANY to do all or any part of the work called for under this proposal.

2. **Insurance Agreement.** The COMPANY shall provide and maintain at its own expense until completion of the work the following forms of insurance in respect to its own employees:

Workmen's Compensation Insurance including *Employer's Liability Insurance* in accordance with the laws of the state in which the COMPANY may be required to pay compensation;

Public Liability Insurance with an individual limit of not less than \$100,000.00 and a total limit for any one accident of not less than \$200,000.00 (but not in respect of any employee paid directly by the PURCHASER but utilized by the COMPANY).

3. **Liability for Damage to Persons or Property if Caused by Employees of the PURCHASER.** If the PURCHASER furnishes workmen for the unloading, transportation, loading, handling or erection of the equipment to be furnished by the COMPANY hereunder, or if the COMPANY or its Erection Supervisor utilizes workmen paid directly by the PURCHASER, to perform the work covered by this Contract, then the PURCHASER shall indemnify and hold harmless the COMPANY from any and all liability, claims, suits or expenses in connection with bodily injuries including death at any time resulting therefrom and in connection with any damage to or loss of property, sustained by any person or persons including such workmen, occurring during the performance of such work, except such injury, death, damage or loss as may result from the negligent acts or omissions of the COMPANY or its employees. The PURCHASER shall at his own expense defend any and all suits brought against the COMPANY alleging any such injury, death, damage or loss, even if such suit or suits are groundless, false, or fraudulent.

4. **Responsibility of PURCHASER for Operation of Equipment Prior to Final Acceptance:** With respect to all preliminary operations, demonstration of capacity and performance guarantees, representatives of the COMPANY are authorized only to advise and consult with the PURCHASER or its representatives and no representative of the COMPANY is licensed to operate the equipment. In the event the PURCHASER shall operate the equipment specified hereunder prior to final acceptance, the PURCHASER shall indemnify and save harmless the COMPANY against any loss or expense and against any liability imposed upon the COMPANY for any injury to person or damage to property, including the equipment, furnished by the COMPANY, resulting from the operation of such equipment by the PURCHASER prior to final acceptance, except any such loss, expense or liability for injury or damage resulting from the negligent acts or omissions of the COMPANY or its agents or employees.

5. **Notification of Claims.** The PURCHASER shall notify the COMPANY immediately, by Registered Mail addressed to the COMPANY at Erie, Pennsylvania, of all claims brought against the PURCHASER for which the COMPANY may be liable, and the COMPANY shall notify the PURCHASER immediately, by Registered Mail addressed to the PURCHASER at New York, New York of all claims brought against the COMPANY for which the PURCHASER may be liable.

6. **Shop Assembly:** Any shop assembly done at the COMPANY's plant or any assemblies which are shop fabricated will be in accordance with nationally recognized standards. In the event local unions at the point of installation raise objections concerning any part of the shop assembled unit, any repiping, rewiring or any other reassembly necessary to satisfy local unions' requests shall be done by the PURCHASER at his own expense after COMPANY has been notified in writing by PURCHASER.

DESIGN DATA

Continuous steam output	lbs/hr.	<u>42,700</u>	Operation B
Peak steam output	lbs/hr.	<u>49,700</u>	Operation C
Blowdown	lbs/hr.	<u>-</u>	
Steam temperature	°F	<u>Sat.</u>	
Feedwater temperature	°F	<u>220</u>	
Ambient air temperature	°F	<u>60</u>	
Design pressure	PSIG	<u>550</u>	
Operating pressure	PSIG	<u>475</u>	
* Oil pressure	PSIG	<u>-</u>	
* Oil temperature	°F	<u>-</u>	
* Gas pressure	PSIG	<u>-</u>	
* Current, motors	phase	<u>3</u> hertz <u>60</u> volts <u>220/440</u>	
* Current, controls	phase	<u>-</u> hertz <u>-</u> volts <u>-</u>	
Elevation	feet	<u>3900</u>	
* Indoor/Outdoors			
* Steam source for soot blowers by Erie City/PSIG			
* Steam source for soot blowers by Erie City/PSIG			

STEAM GENERATOR DATA

Waterwall heating surface (Flat Proj. Area)	sq. ft.	<u>2640</u>
Boiler heating surface	sq. ft.	<u>12010</u>
Total heating surface	sq. ft.	<u>14650</u>
Superheater heating surface	sq. ft.	<u>-</u>
Economizer heating surface	sq. ft.	<u>-</u>
Air heater heating surface	sq. ft.	<u>-</u>
 Furnace volume	cu. ft.	<u>9000</u>
 Diameter top drum	in I.D.	<u>66</u>
Diameter bottom drum	in I.D.	<u>48</u>

	Diameter (in O.D.)	Thickness (in.)	Quantity
Furnace waterwall tubes *	<u>3-1/4"</u>	<u>.165</u>	<u>206</u>
Feeder tubes *	<u>3-1/4"</u>	<u>.135</u>	<u>As required</u>
Boiler convection tubes *	<u>2-1/2"</u>	<u>.150</u>	<u>980</u>
Superheater tubes	<u>-</u>	<u>-</u>	<u>-</u>
Economizer tubes	<u>-</u>	<u>-</u>	<u>-</u>
Air heater tubes	<u>-</u>	<u>-</u>	<u>-</u>
 Side waterwall headers	<u>10-3/4"</u>	<u>Per Code</u>	<u>4</u>
Front and rear waterwall headers	<u>10-3/4"</u>	<u>Per Code</u>	<u>2</u>
Superheater headers	<u>-</u>	<u>-</u>	<u>-</u>
Economizer headers	<u>-</u>	<u>-</u>	<u>-</u>

Steam Generator Dimensions are as shown on Drawing No. 2DP-1451

* At Erie City point of connection.

** If outdoor installation protection of the firing end and boiler front shall be furnished and installed by Purchaser.

* Tubes welded into headers and rolled into drums.

ERIE CITY - PROPOSAL - CONTRACT

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Proposal
Form 184
2M 12-70

ASARCO ELP 0007333

CONSTRUCTION

The pressure parts furnished under this proposal shall be designed and constructed in accordance with the latest edition of the ASME Boiler Code. This code also provides rules for the construction of certain piping, valves or other equipment connected to the pressure parts furnished by the COMPANY which are not normally a part of the boiler manufacturer's proposal. However, before the Certificate of Field Assembly Inspection can be signed by an authorized inspector certifying that the complete unit conforms with the Code, it will be necessary for the PURCHASER of his Contractor to furnish to the field inspector a Partial Data Report as required by Par. P-332-d of the ASME Power Boiler Code covering such piping, valves, connections or other equipment which are not furnished by the Company but are included in the scope of the Code requirements.

All drums specified herein shall be WELDED.

All welded drums shall be strictly in accordance with the latest ASME Code for fusion welding, x-raying and stress relieving. All inlet and outlet openings shall be of the welded type. Tube holes drilled from solid after drums are welded.

Each drum shall be supplied with 12" x 16" two flanged manholes as given on data sheet, equipped with pressed steel manhole plates, yokes and gaskets.

Suspension Frame

Each boiler or battery of boilers shall be suitably supported, entirely independent of brickwork, by a structural steel frame. The several members of the framing included in this proposal are enumerated in the following list:

	Furnished by		Furnished by
Columns	Company	Arch Steel	
Main Girders	Company	Front Wall Supports	Company
Roof Cover Plates	Company	Rear Wall Supports	Company
Wall Binders	Company	Side Wall Supports	Company
Rear Soot Hoppers	Company	Rear Steel Panel	

The setting height from floor line to center line lower drum shall be 37 ft. 9 in.

	Over-all Height	Furnace Width	Over-all Width	Length
Setting Dimensions	64'-6"	12'-2-3/4"	20'-0" approx.	32'-0"
Proposal drawing no.	2DP-1451			

Proposal
Form 114A
3M-4-69

TUBES

All tubes shall be electric resistance welded steel of the gauge and size as specified on the data sheet. All tube bends shall be made on such a radius that a turbine tube cleaner can readily pass through them. The tubes shall enter the drums radially.

TESTING

When drums and tubes are shop assembled, the entire pressure vessel is hydrostatically tested and properly stamped before shipment. No further hydrostatic test in the field is necessary. If any field test of a shop assembled boiler is required, such test shall be made only at PURCHASER'S expense.

When pressure vessel is assembled and erected in the field, it shall be submitted to a hydrostatic test in accordance with the provisions of the A.S.M.E. Boiler Code and properly stamped.

Services of the required inspector to witness the field test, water required for the test, means to introduce it into the boiler and provision for drainage where test water is released, shall be provided by the PURCHASER.

FIXTURES

The proposal includes the following equipment:

Baffles complete	None
Doors	Access, observation, lance doors and furnace clean out doors.

BRICKWORK and INSULATION

All brickwork and insulation in connection with the setting shall be provided by the COMPANY.

All boiler foundations by PURCHASER

See Page 9

FURNACE CONSTRUCTION

The furnace water walls will be of Erie City membrane wall construction. This construction utilizes a 1/4" x 3/8" bar set between the tubes and welded on both sides to form a gas tight welded wall panel. The welded panels complete with headers are built up in the shop for field assembly. This construction assures a tight structural wall which will eliminate any possibility of casing corrosion. The front wall to the roof, the side walls and the rear wall to the screen area will be membrane wall construction.

SETTING, INSULATION AND WEATHERPROOFING

The setting and insulation specification is as follows:

Furnace Side walls, furnace roof and front wall	3" of medium temp. insulation
Outside row of tubes in convection and superheater zone	High temp. castable refractory 3/16" seal welded inner casing 3" med. temp. insulation.
Boiler Hopper	No refractory lining 3" External insulation
Furnace Floor	9" #1 Firebrook backed with 4-1/2" Insulating firebrick
All drum heads, and exposed drum shells	2-1/2" medium temp. block insulation
Inlet and outlet box and exposed water wall headers	Super high temp. castable

The insulated surfaces of the side wall, front wall, roof, hoppers, exposed drum shell and heads shall be backed with expanded metal wired on the outside. A layer of insulating cement 3/4" thick shall be applied over the expanded metal. The surface shall be covered with a brush coat of asphaltic primer and a 1/8" thick coat (wet) of E.T. Insulkote or equal followed by a layer of glass fabric (Durasmesh or equal) and covered by a second coat of 1/8" thick (wet) E.T. Insulkote or equal trowelled to a smooth finish on the outside of the application of an asphalt base paint furnished by others.

All materials furnished by Company as commercially available for field installation by others.

PRESSURE PARTS CONSTRUCTION

The pressure parts furnished under this proposal shall be designed and constructed in accordance with the latest edition of the A.S.M.E. Boiler Code, and applicable Data Report Forms described therein. This Code also provides rules for the construction of certain piping, valves or other equipment connected to the pressure parts furnished by the COMPANY which are not normally a part of the boiler manufacturer's proposal.

All Drums and Headers shall be fabricated strictly in accordance with the latest A.S.M.E. Code for fusion welding, X-raying and stress relieving. All inlet and outlet openings shall be of the welded type. Tube holes will be drilled from solid after drums and headers are welded.

Each drum shall be supplied with either one or two 12" x 16" flanged manholes equipped with steel manhole plates, yokes and gaskets.

HYDROSTATIC TESTING

When drums and tubes are shop assembled, the entire pressure vessel is hydrostatically tested and properly stamped before shipment. No further hydrostatic test in the field is necessary. If any field test of a shop assembled boiler is required, such test shall be made only at PURCHASER'S expense.

When pressure vessel is assembled and erected in the field, it shall be submitted to a hydrostatic test in accordance with the provisions of the A.S.M.E. Boiler Code and properly stamped.

Services of the required inspector to witness the field test, water required for the test, means to introduce it into the boiler and provision for drainage where test water is released, shall be provided by the PURCHASER.

STRUCTURES

Erie City shall furnish all structural steel necessary to support equipment furnished. All structural steel will receive one shop coat of paint.

CASING

Inner casing on the convection section sidewalls and the non welded sections of the furnace will be 3/16" stiffened steel. Casing panels will be seal welded in the field to assure a gas tight construction.

HOPPERS

A trough type soot hopper will be located below the boiler convection zone. The hopper will be constructed of 3/16" 400 series stainless steel and will not be lined internally.

STEAM PURIFIER

- One (1) Erie City vortex and chevron type steam purifier designed to produce steam with an average solid content not to exceed 1 PPM when boiler water concentrations are in accordance with ABMA Standards. This steam purity is based on the steaming rate for the Operation C condition and on the basis of a constant load.

SOOT BLOWERS

- One (1) Set of soot blowers for each boiler, Copes-Vulcan or equal, consisting of the following equipment:

Five (5) Model T30-Mark IE electric motor driven long retractable blowers each having blowing lance travel of approximately 12'-3". Each blower is equipped with a 3" O.D. alloy lance, stainless steel feed pipe, cast steel mechanically operated soot blower head, wall box with air seal and aspirator, local pushbutton station and with motor starters. One blower will be a combination retractable and wall deslagger.

Eleven (11) Model RW5E furnace wall deslaggers with 12" nozzle travel. Each blower is equipped with chrome alloy swivel tube and nozzle block, mechanically operated soot blower head of cast steel construction, wall box with air seal and aspirator, local pushbutton station and with motor starter.

- One (1) Model EC-15 automatic sequential control panel consisting of a totally enclosed insert type case, 16" wide, 21-1/2" high and approximately 10" deep. Control and indicating devices consist of a toggle switch for each soot blower, master electrical switch, reset and emergency retract pushbutton stations, and 3-position selector switch for steam control valve.

Soot blowers are designed to operate with air at 250 PSIG and 400° F. Air heater and compressor to be provided by Purchaser.

STEAM COIL

A steam coil will be placed in the lower boiler drum to help maintain saturation temperature in the unit when it is cycled off the line. Controls, piping and valves for steam coil are to be furnished by Purchaser.

TRIM LIST

FURNISHED BY	NO. & SIZE	ITEM	SPECIFICATION	SHOP ASSEMBLED	FIELD INST BY
ERIE CITY	PUR.			ERIE CITY	BY
X		1	Water column	Reliance W630-EA17	X
			Aux. low water cutoff		
			Aux. low water cutoff drain valve		
X		1	Water column drain valve	3/4" Edward 848Y	X
X		2	Water gauge	Reliance FG907 W/illuminator	X
X		2	Water gauge drain valve	3/4" Edward 848Y	X
X		1	Steam gauge	6" Ashcroft 1010	X
X		1	Steam gauge shutoff valve	1/2" Edward 848Y	X
			Steam gauge test connection		
X		1 set	Safety valves	Consolidated 1811 Per Code	X
X		1	Feedwater stop valve	2" Edward 828	X
X		1	Feedwater check valve	2" Edward 858	
			Feedwater regulator control valve		
			Feedwater regulator isolation valves		
			Feedwater regulator bypass valve		
			Feedwater regulator drain valve		
			Feedwater regulator shutoff valve		
X		1	Steam drum vent valve	1-1/2" Edward 848	X

PIPING: The piping for each boiler shall consist of connections between the blowoff outlet and the blowoff valve placed immediately outside of the setting, the necessary steam and water connections for the water column and the steam gauge piping. This piping shall be furnished by _____ Company.

NOTE: Trade or manufacturers' names and figure numbers listed above are to indicate quality furnished, and the Erie City Iron Works reserves the right to substitute equipment of equal quality without notice.

It shall be the responsibility of the PURCHASER to make provisions in the piping downstream of all boiler valves to absorb movement of nozzles and other connections, due to thermal expansion.

In the event local unions at the point of installation raise objections concerning any part of the unit, any repiping, rewiring or any other reassembly necessary to satisfy the local unions' requests shall be done by the PURCHASER at his own expense.

Proposal
Form 181B
2M-7-69

ERIE CITY - PROPOSAL - CONTRACT

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ASARCO ELP 0007339

TRIM LIST (Cont.)

FURNISHED BY		NO. & SIZE	ITEM	SPECIFICATION	SHOP ASSEMBLED	FIELD INST. BY	
ERIE CITY	PUR.					ERIE CITY	PUR.
X		1	Drum blowoff valves	1-1/2" Edward 641/643		X	
X		4	Header blowoff valves	1-1/2" Edward 641/643		X	
X		1	Chemical feed valve	3/4" Edward 848		X	
			Chemical feed shutoff valve				
X		1	Continuous blowdown regulator valve	3/4" Hancock 5525W		X	
			Continuous blowdown shutoff valve				
			Soot blower main header shutoff valve				
			Soot blower drain valve				
			Superheater drain valve				
			Superheater vent valve				
			Superheater thermometer				
			Economizer drain valve				
			Economizer vent valve				
			Non-return valve				

PIPING: The piping for each boiler shall consist of connections between the blowoff outlet and the blowoff valve placed immediately outside of the setting, the necessary steam and water connections for the water column and the steam gauge piping. This piping shall be furnished by _____.

NOTE: Trade or manufacturers' names and figure numbers listed above are to indicate quality furnished, and the COMPANY reserves the right to substitute equipment of equal quality without notice.

It shall be the responsibility of the PURCHASER to make provisions in the piping downstream of all boiler valves to absorb movement of nozzles and other connections, due to thermal expansion.

In the event local unions at the point of installation raise objections concerning any part of the unit, any repiping, rewiring or any other reassembly necessary to satisfy the local unions' requests shall be done by the PURCHASER at his own expense.

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ASARCO ELP 0007340

STANDARD GENERAL PERFORMANCE FORM

CONDITIONS

1.1 The CO₂ or excess air in gas leaving the furnace shall be determined by sampling uniformly across the width of the furnace. There shall be no delayed combustion beyond the furnace outlet.

1.2 The draft loss through the boiler is the draft loss from a point immediately in front of the highest point at which the combustion gases leave the furnace to a point immediately in front of the boiler damper.

1.3 Water: The allowable concentration in the boiler water shall not exceed: Total Solids 2500 ppm, Total Alkalinity 500 ppm, Suspended Solids 150 ppm.

Chemicals used for internal treatment should be supplied to the boiler preferably through a separate boiler connection, used exclusively for that purpose, and in such a manner so as to prevent deposits on drum internals which would interfere with proper operation.

The allowable concentrations above are minimal for boiler water control and in no way shall be construed as the controlling criteria for any specific installation.

Feedwater and boiler water control for any specific installation shall be the responsibility of the equipment operator and/or their feedwater consultant. Treatment should be such as to prevent deposits on the heating surfaces of the boiler as well as the drum internals. Internal treatment should be supplied to the boiler through a separate boiler connection, used exclusively for that purpose.

1.4 Samples of water for testing shall be taken from the continuous blowdown, if installed, otherwise through a suitably located sampling pipe. Samples shall be taken through a cooling coil to prevent flashing. Sampling and determination of boiler water conditions shall be under the methods contained in ASTM Special Technical Publication No. 148.

1.5 Responsibility: The treatment of feedwater and the conditioning of boiler water are beyond the control of the COMPANY. Therefore, the COMPANY shall not be held responsible for damage, direct or consequential, due to conditions caused by feedwater or boiler water treatment such as the presence of oil, grease, scale or deposits on the internal surfaces of the equipment; or for damage resulting from foaming caused by chemical conditions of the water; or for damage resulting from corrosion or caustic embrittlement. The COMPANY shall not be responsible for carry-over resulting from the presence of oil, grease or other foam-inducing materials.

1.6 Test Procedures for Solids in Steam: Samples of condensed steam for determination of solids shall be obtained in accordance with the method specified in the latest edition of ASTM D-1066 entitled "Tentative Method for Sampling Steam."

There are two commonly accepted methods for the determination of solids in steam. These are:—

1. Electrical conductivity method for dissolved solids.
2. Gravimetric method for total solids.

Because of the normally small difference in the total and dissolved solids, and the complexity, time and degree of skill involved in the gravimetric determination, it is usual to accept the electrical conductivity method of testing.

The electrical conductivity determination of dissolved solids in the condensed steam shall be made in accordance with ASTM D-1125-50 T, Tentative Method on Electrical Conductivity of Water. Remove dissolved gases from the sample as completely as possible by mechanical means without contaminating the sample with any added material which will increase its conductivity. The conductivity shall be corrected to compensate for residual ammonia, carbon dioxide or other gases remaining in the sample and the dissolved solids shall be calculated from this corrected conductivity. For measuring performance by the electrical conductivity method, the average of ten determinations made at regular intervals throughout the test period shall be used.

The Sodium Flame Photometer method is recommended for measuring the maximum solids carry over in the steam.

The gravimetric determination of total solids in the condensed steam may be made in accordance with Method A of the latest edition of ASTM D-1069 entitled "Test for Suspended and Dissolved Solids in Industrial Waters," or a similar method embodying the essential principles of that specification. For measuring performance by the gravimetric method, the results shall be expressed as the average of three determinations made upon a composite sample which shall be taken throughout the entire test period.

STANDARD GENERAL PERFORMANCE FORM

CONDITIONS

The performance data are based on the conditions as stated in paragraphs 1 to 8 inclusive submitted herewith and made a part of this proposal.

1. The general arrangement of equipment furnished by the COMPANY, and the general design and arrangement of related equipment furnished by others, shall be not less favorable than indicated below:

The equipment shall have been erected in accordance with the COMPANY'S plans and specifications, properly maintained and operated by the PURCHASER, and shall be in operating condition satisfactory to the COMPANY. The heat absorbing surfaces shall be clean inside and out.

2. (Balanced Draft Unit). There shall be sufficient draft available at the boiler outlet to dispose of the gaseous products of combustion evolved at the rating specified and in addition giving draft in the furnace at the entrance of the first pass of inches static water gauge as measured at a point immediately in front of the highest point at which the combustion gases leave the furnace and the dampers shall be sufficiently tight so a furnace draft of inches water gauge can be maintained at minimum rating.

2a. (Pressurized Unit). There shall be sufficient forced draft fan capacity available to provide the necessary air for combustion at a pressure at the burner windbox required to overcome all of the resistance through the unit including the breeching and stack. Means shall be provided to control the furnace pressure (and the supply of air if Forced Draft Fan furnished by PURCHASER) at minimum ratings.

3. Ambient air conditions:

Temperature of boiler room air, degrees F	80
Relative humidity of boiler room air, per cent	60%
Barometric pressure, inches Hg	29.921
Weight of water per pound of air—pound	0.013

TESTS

4. Performance tests (if required) shall be run within thirty (30) days after the PURCHASER shall have received notice from the COMPANY that the equipment furnished is ready for testing, it being understood that the COMPANY may require preliminary tests. Tests shall be conducted only on one representative unit mutually agreed upon by the PURCHASER and the COMPANY. The PURCHASER, at his own expense, shall make all preparations, furnish all operating and testing personnel and incur all expenses connected with such tests, and shall give to the COMPANY at least fifteen (15) days' notice of the date or dates on which tests will be made.

The COMPANY'S representative shall have access to the records at all times, and the test shall be conducted in a manner to satisfy the COMPANY that the specified performance conditions are being maintained. A complete copy of test data and results shall be furnished to the COMPANY.

The equipment shall be considered as accepted if tests show that the guarantees if made have been fulfilled, or if the PURCHASER shall fail to have said equipment tested within period mentioned. In case of failure to meet performance guarantees, the COMPANY reserves the right to change or replace the equipment furnished so that guaranteed performance will be obtained.

Performance tests (if required) and performance calculations shall be made in accordance with the applicable Short Test Form in the latest edition of the A.S.M.E. Test Code for Stationary Steam Generating Units, and the measure of performance shall be the results of such tests. Performance calculations shall be based on the steam tables in the latest edition of "Thermodynamic Properties of Steam" by Keenan & Keyes.

	<u>PERFORMANCE</u>		
	<u>A</u>	<u>B</u>	<u>C</u>
Pounds of steam per hour	33,650	42,700	49,700
Steam Pressure Boiler outlet PSIG	475	475	475
Steam temperature Boiler outlet °F.	Sat	Sat	Sat
Temp. Gas Entering Furnace (°F)	1378	1554	1623
Temp. Gas entering slag screen (°F)	1060	1150	1200
Gas Temp. entering convection section (°F)	1000	1100	1160
Temp. gas leaving boiler (°F)	565	600	610
Temp. F.W. to Boiler (°F)	220	220	220
Total draft loss ("H ₂ O Max.)	.43	.48	.55
Steam purity	1 PPM	1 PPM	1 PPM
Gas Flow rate #/hr.	167,738	179,472	195,839

GENERAL

7. It is recognized that the performance of the equipment covered in this proposal cannot be exactly predicted for every possible operating condition. In consequence, any predicted performance data submitted are intended to show probably operating results which may be closely approximated but which cannot be guaranteed except as expressly stated in the guarantee clause or clauses in this proposal.

8. Any performance curves submitted are for the PURCHASER's convenience and the performance indicated thereon is not offered by the COMPANY, nor to be construed by the PURCHASER, as a proposal of contract obligation.

START-UP SERVICE

SERVICES

A Service Representative to assist in initial start-up, field adjustment of the burner, and instruction of operating personnel is to be furnished by the COMPANY for no more than ~~one round trip and~~ ~~one~~ ~~consecutive~~ ~~8 hour~~ ~~working~~ ~~days~~ ~~to~~ ~~adjust~~ ~~and~~ ~~calibrate~~ ~~their~~ ~~equipment~~ ~~, observe~~ ~~start-up~~ ~~, and~~ ~~train~~ ~~PURCHASER's~~ ~~operators~~. Additional service can be furnished at the request of the PURCHASER at the per diem rate in effect at time service is rendered plus travel time and travel expense.

The Service Representative shall report for duty on the day requested by the PURCHASER, provided the PURCHASER gives notice in writing fifteen days in advance of the date required, such notice to be addressed to the COMPANY at Erie, Pennsylvania. It shall be assumed that the receipt of this notice from the PURCHASER indicates that the equipment will be ready for full plant load operation on all fuels upon the arrival of the Service Representative, with all field fuel, water, and steam piping, wiring, flue gas ducts, etc. completed.

The PURCHASER shall furnish all facilities, including soda ash or its equivalent, fuel and labor for boiling out, drying out and starting up the equipment to be furnished hereunder.

Service included above is based on one round trip only.

RESPONSIBILITY

With respect to all preliminary operations, initial start-up, demonstration of capacity and performance guarantees, representatives of the COMPANY are authorized only to advise and consult with the PURCHASER or its representatives and no representative of the COMPANY is licensed to operate the equipment. In the event the PURCHASER shall operate the equipment specified hereunder prior to final acceptance, the PURCHASER shall indemnify and save harmless the COMPANY against any loss or expense and against any liability imposed upon the COMPANY for any injury to person or damage to property, including the equipment furnished by the COMPANY, resulting from the operation of such equipment by the PURCHASER prior to final acceptance, except any such loss, expense or liability for injury or damage resulting from the negligent acts or omissions of the COMPANY or its agents or employees.

The COMPANY is not responsible for corrosion or erosion due to corrosive agents or non-combustible residue (ash) in the fuel or fuels or maintenance resulting from combustion of the fuel. The PURCHASER should exercise diligence in this regard, checking fuel analysis with supplier, investigating possibility of using helpful additives, and operating soot blowing equipment if required for the time periods as outlined in the maintenance manual.

The PURCHASER shall provide all fluid and gaseous fuels clean and free from debris and foreign matter, at point of connection to burner piping.

STANDARD CONDITIONS

Unless otherwise noted, the equipment offered is only for the fuel or fuels, electric characteristics, and operating pressure and safety valve setting hereinbefore given and for standard installation requirements. These requirements include indoor installation in continental United States, elevation not to exceed 1000 ft. above sea level, gas available for ignition system, oil supply not more than 18 ft. of lift (or equivalent run) from unit, gas pressure regulator for each boiler by PURCHASER, adequate fuel piping and resistance beyond flue gas outlet not to exceed 0.2" H₂O.

NOTIFICATION OF CLAIMS

The PURCHASER shall notify the COMPANY immediately, by Registered Mail addressed to the COMPANY at Erie, Pennsylvania, of all claims brought against the PURCHASER for which the COMPANY may be liable, and the COMPANY shall notify the PURCHASER immediately by Registered Mail addressed to the PURCHASER of all claims brought against the COMPANY for which the PURCHASER may be liable.

SUPPLIER SERVICES

A control and instrument manufacturer's Service Representative is included for ~~one~~ round trip (s) and ~~one~~ consecutive 8 hour working days to adjust and calibrate their equipment, observe start-up, and train PURCHASER's operators. Additional service is available on a per diem basis of rate in effect at time service is rendered plus all expenses.

WORKING HOURS AND DAYS

The working hours and days of a Service Representative shall not exceed five days or shifts per week, Monday through Friday, exclusive of legal holidays, with each working day or shift not to exceed eight hours duration. Any hours or days worked in excess of this shall be considered overtime. The PURCHASER shall pay for overtime at the rate of one and one-half times the per diem rate in effect at the time service is rendered.

COMPLETE ERECTION

(ERECTION LABOR FURNISHED)

1. ERECTION SUPERVISOR

The unloading, handling and erection of the equipment to be furnished hereunder, shall be supervised by a competent man (or men) to be furnished by the COMPANY, together with his (or their) traveling and living expenses.

2. ERECTION EQUIPMENT

The COMPANY shall furnish all rigging necessary for unloading, handling and erecting the equipment specified hereunder, and all tools necessary for fitting parts into place, aligning, expanding and otherwise completing the erection of said equipment. All erection equipment to be furnished by the COMPANY shall remain the property of the COMPANY and shall be returned to it on the completion of the work. Erection equipment not returned shall be paid for by the PURCHASER.

3. LABOR FOR ERECTION

The COMPANY shall furnish the necessary labor to unload, handle and erect the equipment to be furnished hereunder. The COMPANY may employ such labor as the PURCHASER may specify provided such labor is satisfactory to the COMPANY.

4. FACILITIES TO BE FURNISHED BY PURCHASER

The PURCHASER shall furnish at the job site of erection all fuel, water, steam, compressed air and electricity for power and light, as required, for unloading, handling and erecting the equipment to be furnished hereunder. Electric outlets for power and light shall be provided by the PURCHASER at various sides and at various elevations of the unit to be erected, at points as will be designated necessary by the COMPANY's Supervisor. The COMPANY will furnish extension cords for portable light adjacent to and inside the unit. The PURCHASER shall provide and maintain all stationary illumination at the site, whether of a temporary or permanent nature. The PURCHASER shall pay all costs for piping, wiring or otherwise making any of these facilities available for use at immediate job location, including meters and service connections. The PURCHASER shall furnish sanitary facilities for the workmen.

The PURCHASER shall provide in place and in due time the necessary heated and lighted buildings, trenches and covers, hand rails and guards, bins, hoppers (or alterations to any of the foregoing in accordance with the COMPANY's drawings) and all other equipment and labor not specified hereunder.

The PURCHASER shall provide railway siding with suitable storage space acceptable to the COMPANY within 200 feet of and with free, direct, and unobstructed access to the site of erection including any necessary right-of-way, together with such openings in walls, pavements, floors, or roofs, as may be required for the erection of the equipment specified hereunder.

The PURCHASER shall install such flooring and stairs either temporary or permanent, adjacent to the site of erection as may be required for the most efficient erection of the equipment and shall also furnish overhead protection to prevent damage from the elements, or other causes, to the equipment and men engaged in the erection work and provide temporary heat and enclosures to protect COMPANY's workmen from the weather.

This proposal does not include the cost of changing PURCHASER's existing steel work or the drilling of existing or new steel work furnished by the PURCHASER to accommodate the new equipment proposed hereunder. If such changes or drilling are required, the work shall be done by the PURCHASER at his own expense, or if the PURCHASER desires the COMPANY to perform this work, the COMPANY will perform same upon receipt of written order from the PURCHASER to do so, at actual cost plus 15%.

5. DATE ERECTION SUPERVISOR SHALL REPORT

The Erection Supervisor shall report for duty on the day requested by the PURCHASER provided the PURCHASER gives notice in writing eight days in advance of the date required, such notice to be addressed to the COMPANY at Erie, Pennsylvania. It shall be assumed that the receipt of this notice from the PURCHASER indicates that the equipment, site and foundations will be ready for the start of erection upon arrival of the Erection Supervisor, otherwise the PURCHASER shall pay an additional amount for the period of time between arrival of Supervisor and date of starting erection at the per diem rate of _____ dollars.

COMPLETE ERECTION No. 2

6. WORKING DAYS DEFINED

(a) **Erection Supervisor.** The working days and hours of an Erection Supervisor shall not exceed five days (or shifts) per week, Monday through Friday, with each working day (or shift) of not exceeding eight hours duration. Any days or hours worked in excess of this shall be considered overtime and shall not be performed without a written order from the PURCHASER with his reason therefor.

(b) **Labor.** The working days and hours of labor shall not exceed five days (or shifts) per week, Monday through Friday, with each working day (or shift) of not exceeding eight hours duration. Any working time in excess of eight hours per day (or shift), Monday through Friday, exclusive of holidays, or in excess of such lesser number of hours per day (or shift) as may prevail locally for the type of labor involved, and any work on Saturdays, Sundays or holidays, shall be considered overtime work and shall not be performed without a written order from the PURCHASER with his reason therefor.

7. OVERTIME RATES

(a) **Erection Supervisor.** All work performed by the Erection Supervisor(s) on Sundays and holidays shall be paid for by the PURCHASER in addition to the purchase price at the per diem rate in effect at time service is rendered and two (2) times this rate. Similarly all work performed on Saturdays as well as all overtime performed on Mondays through Fridays, except when any of these days are holidays, shall be paid for at the rate of the difference between the per diem rate in effect at time service is rendered and one and one-half (1½) times this rate.

(b) **Labor.** All overtime of labor shall be paid for by the PURCHASER in addition to the purchase price at the difference between the total cost of straight time work and the total cost of overtime work for the overtime period involved, plus 15 percent of such difference plus a loss of efficiency factor. Total cost shall include all payroll cost for the labor, Workmen's Compensation, Public Liability, Unemployment Insurance, both State and Federal, and other insurance as required by statute or by the PURCHASER, at premium rates for classifications applicable to operations of the COMPANY; also Old Age Benefit Taxes and any other taxes or levies of the United States Government, or any political subdivision thereof, payable by the COMPANY and imposed or assessed on payrolls or otherwise in connection with the work. Except where local conditions require otherwise, the overtime rate for labor shall be not less than two (2) times the straight time rate for work performed on Sundays and holidays, and not less than two (2) times the straight time rate for work performed on Saturdays or overtime work on Mondays through Fridays, except when any of these days are holidays.

8. DRYING AND BOILING OUT

The PURCHASER shall furnish all facilities including soda ash or its equivalent, fuel and labor for drying, boiling out and starting up the equipment to be furnished hereunder. If drying and boiling out supervision is included, it shall be performed by the start-up engineer.

9. BRICKWORK AND INSULATION

The Erection Supervisor shall supervise the installation of brickwork, insulation, and lagging but only if this work is included in this contract.

10. HAULING

Hauling of equipment between free delivery point of common carrier and placing at job site, if required, shall be paid for by the PURCHASER.

11. CHANGE IN SCOPE OF ERECTION

In the event the PURCHASER elects to furnish the labor for complete erection of the equipment covered hereunder, the general conditions clauses included in the COMPANY's standard form of contract governing supervision of erection only, shall be substituted for these clauses.

PRICE AND TERMS — (FORM B)

The contract price shall be **per quotation.**

dollars (\$ _____),
or as per accompanying letter and as stated in the acceptance of the proposal, payable in New York exchange free from collection charges to the COMPANY and to be paid as follows, payments to be prorated as shipments go forward:

- 70 % net cash on value of shop fabricated material on shipment, or on presentation of sight draft with bill of lading attached, at the option of the COMPANY.
- 25 % net cash on value of shop fabricated material 30 days from date of shipment.
- 95 % net cash at the end of each month on percent of field labor completed for that month.
- 5 % net cash on completion of erection. (If start up is required the final 5 % shall be due and payable upon satisfactory completion of same. If through no fault of the COMPANY the completion of the start-up is delayed then the final 5 % shall be due and payable 30 days from the date of notice from the COMPANY that the equipment furnished by the COMPANY is ready to start up.)

Notwithstanding any of the above provisions, when the equipment is ready for shipment and shipment is deferred beyond the contract shipping date through no fault of the COMPANY, 70 % of the difference between the contract price and the COMPANY's estimated cost of erection shall be due on the contract shipping date; 25 % of said difference shall be due 30 days from date of actual shipment and the balance of the contract price shall be due on completion of erection. In the event of shipment being so deferred for six months beyond the contract shipping date, 30 % of the said difference between the contract price and the COMPANY's estimated cost of erection shall be due and payable at the expiration of such period of six months, and any further obligations of the COMPANY under this contract, of whatever nature, shall thereupon terminate.

If, through no fault of the COMPANY, erection is delayed short of abandonment or whole or partial postponement, an adjustment shall be made of any additional costs to the COMPANY due to such delay and the COMPANY shall be paid such additional costs by the PURCHASER.

If, through no fault of the COMPANY, erection is abandoned or wholly or partially postponed (and in any event a delay of more than three months shall be deemed such an abandonment or postponement) any further obligations of the COMPANY under this contract for erection shall thereupon terminate, a proportionate adjustment of the COMPANY's estimated cost of erection shall be made and the balance remaining unpaid on the contract price for erection, after giving effect to such adjustment, shall become due and payable.

If, at any time after erection is abandoned or postponed, the PURCHASER is ready to install and erect the equipment, the COMPANY, at the PURCHASER's request will reinstate this contract upon agreement by the PURCHASER to accept adjustment by the COMPANY to reflect changes in cost and other conditions and to accept the COMPANY's rescheduling of erection.

Our price is based on the COMPANY's ability to obtain sufficient and satisfactory labor to adequately perform the field work on a straight time basis. Because of the present unsettled labor market, the COMPANY is unable to predict with any degree of certainty the availability of field workmen on a straight time basis.

Should the work be performed on any other basis by reason of availability of labor, work rules, or any other cause not in the control of the COMPANY, the premium cost involved shall be for the PURCHASER's account.

SUPPLEMENTARY CONDITIONS

TAXES

The prices provided for herein are exclusive of any present or future Federal, State, Municipal or other sales or use tax with respect to the material or equipment or services covered hereby and of any other present or future excise tax upon or measured by the gross receipts from this transaction or any allocated portion thereof or by the gross value of the material or equipment covered hereby and of any present or future property tax or other similar charge with respect to the material or equipment covered hereby. If the COMPANY is required by applicable law or regulation to pay or collect any such tax or taxes on account of this transaction or the material or equipment or services covered hereby, then such amount of tax shall be paid by the PURCHASER in addition to the prices herein provided for.

PERMITS AND APPROVAL OF PLANS AND SPECIFICATIONS REQUIRED BY STATE OR MUNICIPAL REGULATIONS

It is mutually agreed that where State laws or Municipal ordinances require permits to install equipment covered by this proposal, or the approval of the plans and specifications for this installation, the PURCHASER assumes the responsibility for securing the approval of said plans and specifications from the proper State or Municipal authorities and for any required fees. If any changes are required in the equipment covered by this proposal to meet the approval of said State or Municipal authorities, the PURCHASER shall inform the COMPANY of such changes and shall reimburse it for changes actually made to comply with the requirements of said authorities.

TITLE AND RIGHT OF POSSESSION

The title and right to possession of the property called for and furnished under the terms of this contract, and any replacements thereof or substitutions therefor, and the right to use the same under the patents of the COMPANY, if any, shall remain in the COMPANY until all payments due hereunder, and payments of any judgments thereon, shall have been fully made in cash. The equipment herein specified shall remain the personal property of the COMPANY, notwithstanding the manner of its annexation to realty, until fully paid for in cash, and the PURCHASER agrees to perform all acts which may be necessary to perfect and assure retention of title to the said equipment in the COMPANY.

Any payments made on account of the purchase price shall in case of any default in payment be deemed to be for the use and wear of such equipment. The acceptance of notes (or any renewal thereof) or any security for the purchase price shall not operate as a waiver or transfer of title or right of possession. If any payments due to the COMPANY hereunder shall have been in default for sixty (60) days after the due date, all unpaid installments shall become due and payable, and the COMPANY, in addition to any other remedies then available to it, reserves the right on ten (10) days' notice to the PURCHASER to remove the equipment furnished hereunder, using all reasonable care to avoid damage to the property of the PURCHASER but without liability for any damage resulting therefrom.

LIMITATIONS OF PROPOSAL

The price and terms quoted in this proposal are subject to acceptance by the PURCHASER within a period of fifteen (15) days from the date hereof, except that the COMPANY shall have the right to withdraw its proposal at any time before formal acceptance by the PURCHASER and approval in writing by an officer of the COMPANY.

EXECUTION OF CONTRACT

This proposal is made in duplicate and shall become a contract between the PURCHASER and the COMPANY when accepted by the PURCHASER and approved in writing by an executive officer of the COMPANY, and when so accepted it shall be binding upon the parties hereto and upon their respective heirs, executors, successors and assigns. When so accepted and approved, it shall be effective for all purposes as of the date of the proposal.

There are no understandings between the parties hereto as to the subject matter of this proposal other than as herein set forth. All previous communications between the parties hereto, either verbal or written, are hereby abrogated and withdrawn and the acceptance of this proposal with the specification and drawings referred to herein constitutes the whole agreement between the parties hereto. The contract cannot be assigned nor may the general conditions be modified except by a duly approved supplementary agreement signed by both parties. Any provisions of a purchase order or specification which may be issued after this Proposal has been accepted by the PURCHASER and which are additions to or in conflict with the provisions of this Proposal shall not be binding on the COMPANY unless duly approved in writing by both parties to the contract.

ARBITRATION

Any controversy or claim arising out of or relating to this contract or the breach thereof, shall be settled by arbitration, in accordance with the Rules, then obtaining, of the American Arbitration Association, and judgment upon the award rendered may be entered in any court having jurisdiction thereof.

LOCATION

The equipment sold in this contract is to be affixed to the foundations located at: El Paso Plant
American Smelting & Refin

This contract is made in Erie, Pennsylvania.

Respectfully submitted,

ERIE CITY ENERGY DIV.
ZURN INDUSTRIES, INC.

By
District Sales Agent/Sales Engineer

THE FOREGOING PROPOSAL IS HEREBY ACCEPTED, EFFECTIVE FOR ALL PURPOSES AS OF
THE DATE OF THIS PROPOSAL.

EXECUTED BY THE PARTIES THISday of.....19.....

.....
Purchaser

By.....(Seal)

Title.....

APPROVED AS OF THE ABOVE DATE

By.....(Seal)

Title.....

ERIE CITY ENERGY DIV.
ZURN INDUSTRIES, INC.