

# VTV VIJAY TANKS & VESSELS



**VIJAY TANKS & VESSELS PRIVATE LIMITED**

93, L. B. Shastri Marg, Mulund (West), Bombay 400 080



Maximum weight and size of vessel transportable	: Maximum weight— 50 tonnes Maximum size— 4.2 m dia × 15 m long or 2.7 m dia × 30 m long.
Method of edge preparation	: Carbon and low alloy steel by oxy-acetylene flame cutting followed by grinding ; stainless steel and aluminium by plasma arc/shearing/arc air cutting followed by grinding.
Testing facilities	: Gamma-ray, X-ray, magnetic particle/ fluorescent magnetic particle, ultrasonic, dye penetrant, impact, hardness, tensile, elongation and bend testing facilities, pneumatic and vacuum testing, high pressure/high speed hydrostatic testing facilities available.
Tube expansion facilities	: Pneumatic, hand operated and electric torque controlled tube expanders available.
Pickling facility	: Bath size— 10 m × 3 m × 3 m with 3 compartments.

#### LIST OF MACHINERY

1. Plate bending rolls—45 mm × 3 m
2. Hydraulic presses for dishing and flanging dished ends for pressure vessels of
  - (i) 1,000 tonnes capacity
  - (ii) 500 tonnes capacity
  - (iii) 300 tonnes capacity
  - (iv) 200 tonnes capacity
3. Forging furnace
4. Normalising furnace
5. Stress relieving furnace
6. Guillotine shear for cutting plates upto 12 mm thick
7. Submerged arc welding machines
8. Plasma arc cutting machines
9. TIG welding machines
10. MIG welding machines

11. Automatic girth welders for large field erected tanks
12. Welding rectifiers
13. Motorised positioners
14. Lathes—6 nos. of different sizes
15. Radial drilling machines
16. Pillar drills
17. Air compressors
18. Overhead cranes
19. Other workshop machinery
20. Roof air-lifting apparatus
21. Perlite expanders

#### ITEMS MANUFACTURED

Pressure vessels  
 Cryogenic tanks—liquid oxygen, LNG, ethylene etc.  
 Spheres for storage of ammonia, LPG, chlorine etc.  
 Columns and Towers  
 Heat exchangers—fixed/floating heads  
 Gas holders—Dry/Wet seal  
 Floating roof tanks

#### (II) Container & Electrical Divisions at Powai

Total Area — 220,000 sq. ft.  
 Covered Area — 25,000 sq. ft.  
 Facilities available and products handled—

1. Complete drum plant for making drums upto 50 kg, bitumen drums upto 180 kg and lube oil barrels upto 205 litres.
2. Electrical division manufacturing distribution transformers, power transformers, furnace transformers, welding rectifiers etc.
3. General steel fabrication jobs.

#### (III) Bitumen Drum Plant & Electrical Divisions at Thiruvottiyur Works, Madras

Total Area — 130,000 sq. ft.  
 Covered Area — 25,000 sq. ft.  
 Facilities available and products handled—

1. Drum plant for making bitumen drums & lube oil barrels.
2. Electrical division manufacturing distribution transformers, power transformers, furnace transformers, welding rectifiers etc.
3. General steel fabrication jobs.

#### (IV) Construction Division located at Mulund, Bombay

Controls 15 erection sites throughout India and overseas manned by a team of experienced management personnel adequately equipped with heavy lift derricks, cranes and other construction equipment.

## A partial list of clients served by VTV

#### INDIAN OIL CORPORATION LTD. PIPELINE DIVISION, SALAYA TERMINAL

Eight 90,000 m<sup>3</sup> crude oil floating roof tanks with ring wall foundations.

#### HALDIA REFINERY

Tank farm of 20 floating roof tanks and 77 cone roof tanks aggregating 15,000 MT of steel work—including 5 crude oil floating roof tanks of 43,000 m<sup>3</sup> (70 m dia × 10.8 m high).  
 Steel work for a 100 metre long × 30 metre wide maintenance repair shop.  
 6 Pressure vessels for Dewaxing Unit.

#### MADRAS REFINERY

Tank farm of 15 floating roof and 65 cone roof tanks aggregating 12,000 MT of steel work including 4 crude oil floating roof tanks of 46,000 m<sup>3</sup> (64 m dia × 14.64 m high).  
 1,000 m<sup>3</sup> LPG storage sphere.  
 Two 160 m<sup>3</sup> LPG storage bullets.

#### COCHIN REFINERY

8 Floating roof and 2 cone roof tanks including 3 crude oil floating roof tanks of 51,000 m<sup>3</sup> (66.75 m dia × 14.64 m high).  
 700 m<sup>3</sup> LPG storage sphere.

#### GUJARAT REFINERY

Tank farm of 110 floating roof and 60 cone roof tanks—including 4 crude oil floating roof tanks of 30,000 m<sup>3</sup> (56 m dia × 12.2 m high).  
 900 m<sup>3</sup> LPG storage sphere.  
 Erection of first one million TPA atmospheric unit including heaters, piping and chimneys.  
 5 Process vessels.  
 Crude and vacuum heaters, 110 km of yard and process piping for 3 million tonne expansion unit.

#### HINDUSTAN PETROLEUM REFINERY

1,350 m<sup>3</sup> cracked LPG storage sphere.  
 Three 400 m<sup>3</sup> LPG storage bullets.

5 m dia × 52 m high crude distillation column.  
 37 Cone roof tanks, 5 floating roof tanks, stainless steel cyclones and 15 pressure vessels.  
 Bulk asphalt storage and handling facilities at Shakurbasti installation—tanks, heaters, pumphouse and all connected civil works.

#### KENYA PIPELINE COMPANY, NAIROBI

Tank farm of 4 floating roof tanks, 4 dome roof tanks and 18 cone roof tanks.

#### OIL REFINERIES ADMINISTRATION, IRAQ

8 Floating roof and 13 cone roof tank materials.

#### STATE COMPANY OF GLASS INDUSTRIES, IRAQ

Nine 100 m<sup>3</sup> LPG storage bullets.  
 Six cone roof tank materials.

#### IRAQ PUBLIC CEMENT COMPANY

5 Cone roof tank materials.

#### KUWAIT NATIONAL PETROLEUM COMPANY

Supply and erection of 2 dome roof tanks and 1 cone roof tank including civil works.

#### KUWAIT CHEMICAL FERTILIZER COMPANY

Supply and erection of 1 cone roof acid storage tank including civil works.

#### INDIAN PETROCHEMICAL CORPORATION LTD.

8 Spheres for storage of Butane, Butadiene etc.  
 137 Pressure vessels including 7 hydrogen bullets each of 50 m<sup>3</sup> capacity, design pressure 45 KSC.  
 2 Wet seal gas holders.  
 14 Columns including a 4.75 m dia × 40 m high, 4 m dia × 25 m high, 3.5 m dia × 33 m high and 2 m dia × 38 m high column.

### **INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION**

Oil terminal facilities at Port Blair, Andaman Islands consisting of 3 storage tanks, civil works pumphouse and pipeline manifold, 14" dock-line, internal roads, truck and drum filling facilities, office building and warehouse.

Bulk storage depots at Ahmedabad, Indore, Palghat, Salem, Trichy, Mangalore, Madurai, Tirunelveli and Calicut consisting of vertical and underground storage tanks, office building, pumphouse, stores/warehouse, roads, gantry for wagon loading/unloading, truck loading facility, drum filling arrangements.

Tank farms at Wadala, Shakurbasti, Willingdon Island, Ernakulam, Tondiarpet, Korukkupet, Garhara, Sabarmati, Sanatnagar and Tadepalli installations aggregating 8,000 MT of steel work.

40 Nos 200 KL underground storage tanks for aviation service at Palam, Bareilly, Poona and Santacruz airports.

Pipeline network at Wadala, Shakurbasti, Willingdon Island, Ernakulam and Tondiarpet installations including pumphouse manifold.

### **BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL**

Three Deaerators.  
Three 120 m<sup>3</sup> capacity LPG bullets.  
Air receiver and other pressure vessels.

### **BHABHA ATOMIC RESEARCH CENTRE**

2 Carbon moly steel columns.  
3 Carbon steel columns and pressure vessels.  
3 U tube heat exchangers with clad steel and carbon moly steel shells and stainless steel tubes.  
3 Purge towers.

### **TRAVANCORE COCHIN CHEMICALS LIMITED**

Four 50 m<sup>3</sup> chlorine storage tanks.  
Two heat exchangers.  
2,000 m<sup>3</sup> brine clarifier tank.  
22 Pressure/process vessels.

Erection of complete equipment, Mercury Cell House and piping for 100 tonne per day Caustic Soda Plant and pre-commissioning tests.

### **COCHIN FERTILIZERS LIMITED**

10,000 MT double walled ammonia storage tank.  
5,000 MT double walled ammonia storage tank.  
Reformer gas boiler shell.  
95 Pressure vessels, tanks, bins and other process equipments.  
3 Floating roof tanks.  
2 Cone roof tanks.  
Fabricated pipework.  
2 S.S. tube bundles.

### **INDIAN FARMERS FERTILIZER CO-OPERATIVE LIMITED, KALOL & KANDLA**

10,000 MT single walled ammonia storage tank.  
2 Floating roof tanks, 12 cone roof tanks including two 6,500 m<sup>3</sup> phosphoric acid storage tanks.  
2 Stainless steel tanks and 3 pressure vessels.

### **SOUTHERN PETROCHEMICALS INDUSTRIES CORPORATION**

Three 10,000 m<sup>3</sup> floating roof and 8 cone roof tanks including civil works.

### **GUJARAT STATE FERTILIZERS COMPANY LIMITED**

2,500 m<sup>3</sup> ammonia storage sphere with insulation and instrumentation.  
2 Floating roof and one cone roof tanks.  
Erection of chimney and piping, equipments, construction of pumphouse and compressor house.

### **MANGALORE CHEMICALS & FERTILIZERS LIMITED**

2 Floating roof tanks, 4 cone roof tanks and 3 stainless steel tanks.  
30 m high flue gas stack.

### **OIL AND NATURAL GAS COMMISSION**

40 Cone roof tanks.

### **BARAUNI REFINERY**

7 Floating roof tanks including 2 hard top floaters with dome roof.  
7 Cone roof tanks including one scroll tank.  
Installation of 3 km underground piping.

### **OIL INDIA LIMITED**

One floating roof tank.

### **PLASTIC RESINS & CHEMICALS LIMITED**

Two 125 m<sup>3</sup> spheres for storage of inert gases.  
4 Gas holders (single and double lift, wet sealed), one of 4,000 m<sup>3</sup> capacity.  
5 Distillation columns with bubble cap trays.  
5 Process towers.  
Flare stack, air intake stack and acid purge stack.  
18 Heat exchangers.  
72 Pressure vessels.  
5 Floating roof tanks.  
12 Cone roof tanks.  
Hot well.

### **GUJARAT ALKALIES AND CHEMICALS LIMITED**

2 Wet seal gas holders.  
Hydrogen cooler and chlorine liquifier.  
2,600 m<sup>3</sup> brine clarifier tank.  
14 Pressure and process vessels.

### **ASHOK PAPER MILLS LIMITED**

Two 50 m<sup>3</sup> chlorine storage tanks.  
One wet seal gas holder.

### **NAGPAL AMBADI PETROLEUM REFINING LIMITED**

92 Cone roof tanks.  
14 Pressure vessels.

### **FERTILIZER CORPORATION OF INDIA**

12 Cone roof tanks.  
6 Stainless steel tanks.  
2 S.S. heat exchangers.  
10 Pressure vessels.  
9 Carbon steel heat exchangers.

Reformer gas boiler shell.  
Boiler feed water heater from 1 chrome  $\frac{1}{2}$  moly steel.

### **NATIONAL ORGANIC CHEMICAL INDUSTRIES LIMITED**

400 m<sup>3</sup> high pressure liquid ethylene storage sphere including field stress relief and cold insulation.  
500 m<sup>3</sup> high pressure liquid propylene storage sphere.  
8 Storage tanks.  
15 Pressure vessels.

### **POLYOLEFINS INDUSTRIES LTD.**

2 Stainless steel reactor vessels.

### **BOKARO STEEL PLANT**

2,000 Tonne liquid oxygen double walled tank with instrumentation and perlite insulation.

### **HINDUSTAN STEEL LIMITED, ROURKELA**

1,000 Tonne liquid oxygen double walled tank with instrumentation and perlite insulation.  
Four 100 m<sup>3</sup> gaseous oxygen storage vessels.  
Liquid oxygen and gaseous oxygen piping network.  
2 Floating roof tanks and 1 cone roof tank.

### **NATIONAL FERTILIZERS LTD., Bhatinda & Panipat Projects**

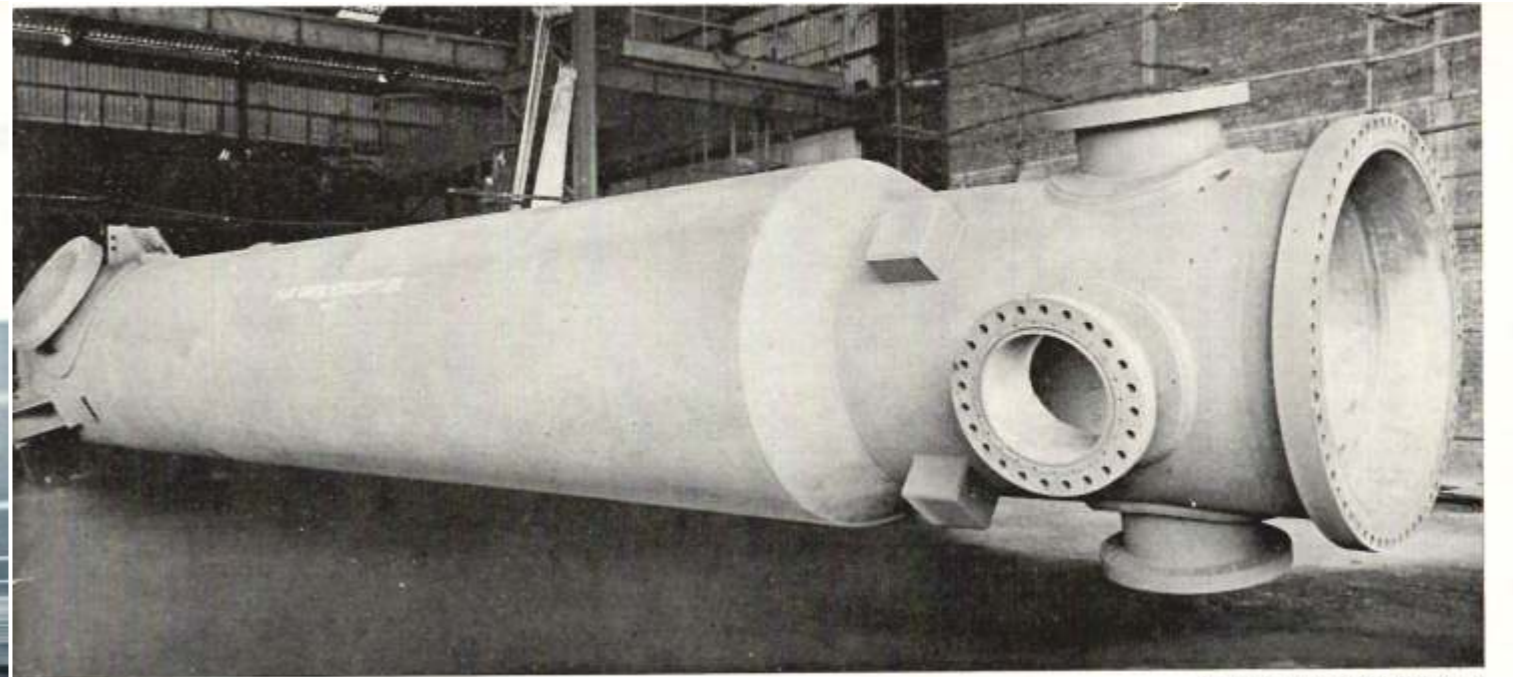
Two 2,500 m<sup>3</sup> liquid ammonia storage spheres.  
4 Stainless steel columns including two 1.8 m dia x 25 m high columns.  
4 Carbon steel columns.  
6 Stainless steel tanks.  
6 Pressure vessels.  
20 Carbon steel storage tanks.

### **BONGAIGAON REFINERY & PETROCHEMICALS LTD.**

31 Floating roof tanks.  
12 Cone roof tanks.  
75 km of yard and process piping.

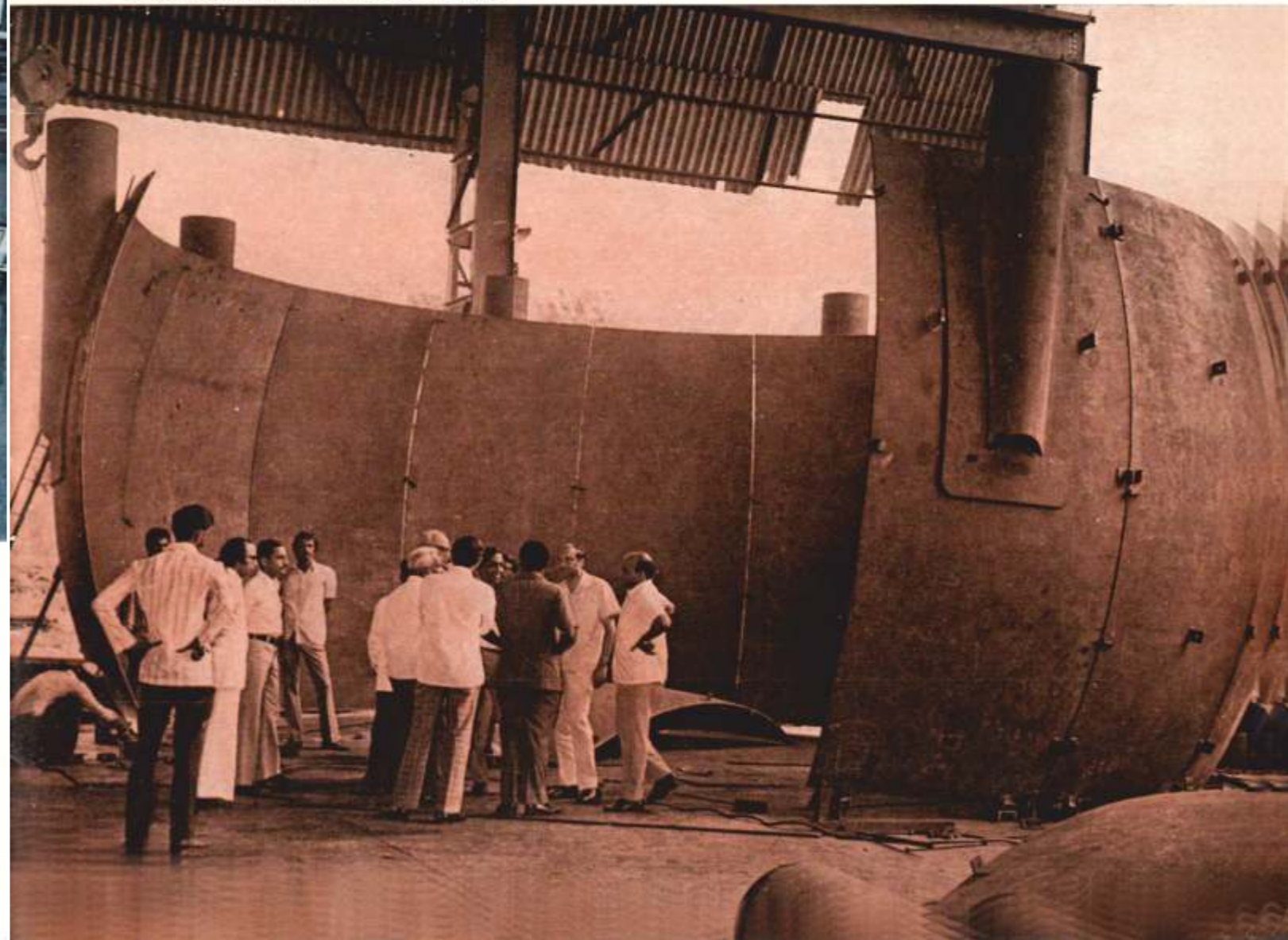


*Engineering section*

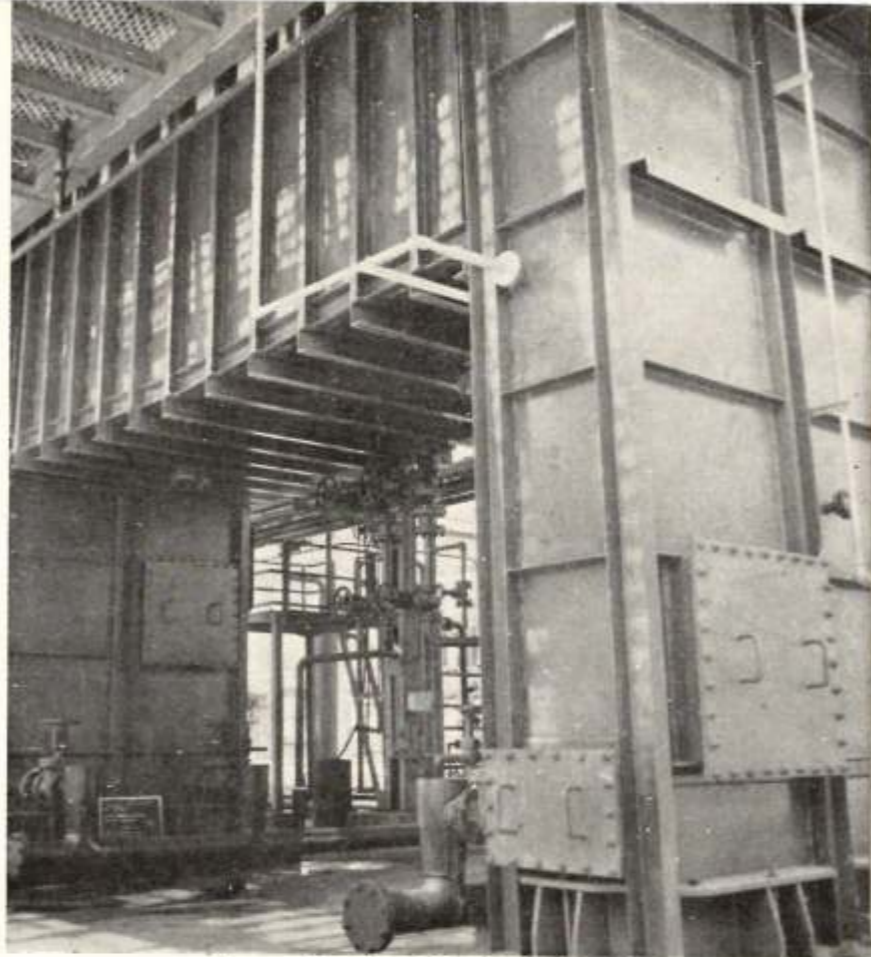


*Reformer gas boiler shell*

*Mock assembly of sphere petals at shop*

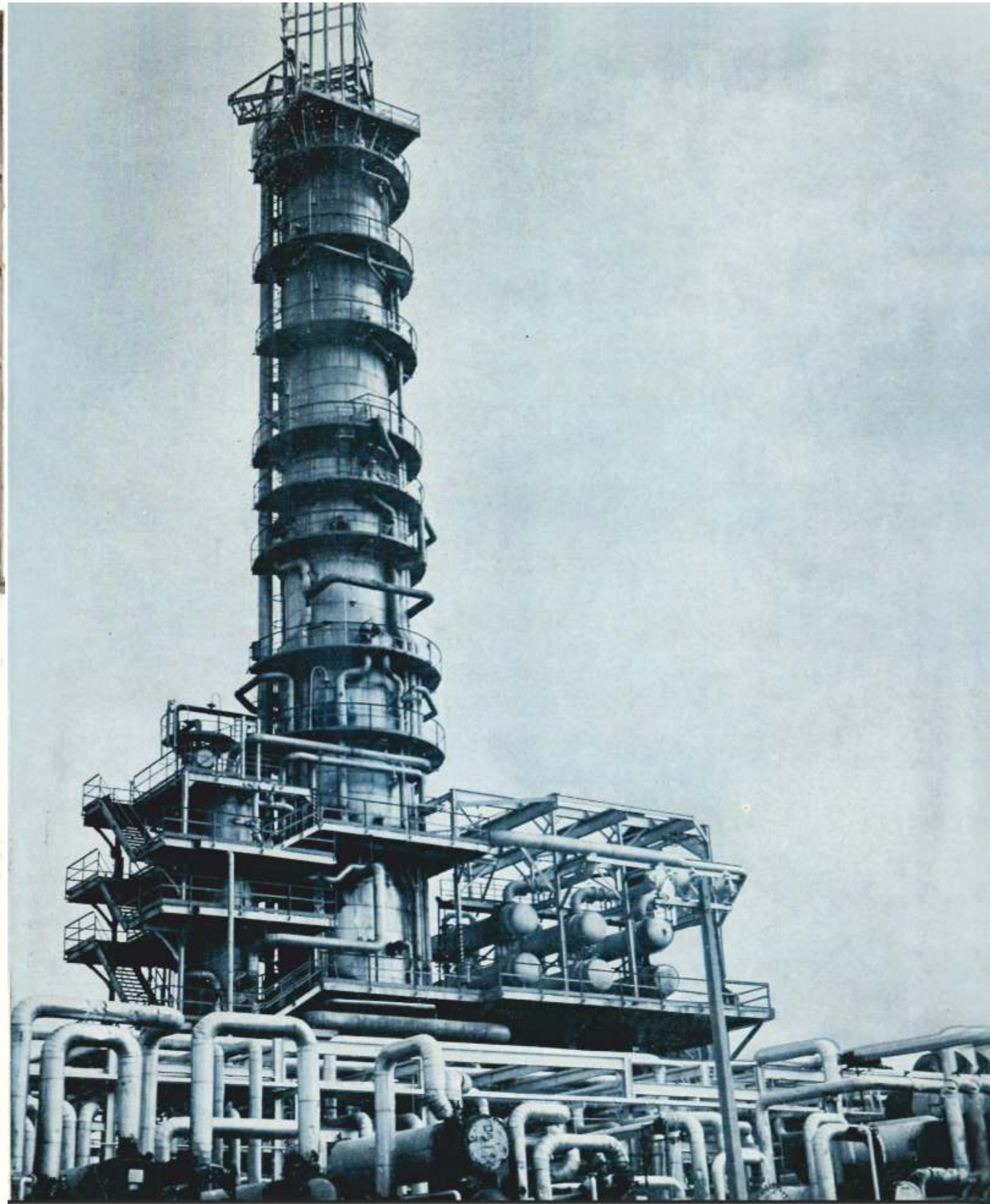


*170' high air intake stack  
at Plastic Resins & Chemicals*



*Hot well at Plastic Resins & Chemicals*

*5 m dia x 52 m high  
crude distillation column at  
Hindustan Petroleum Refinery*





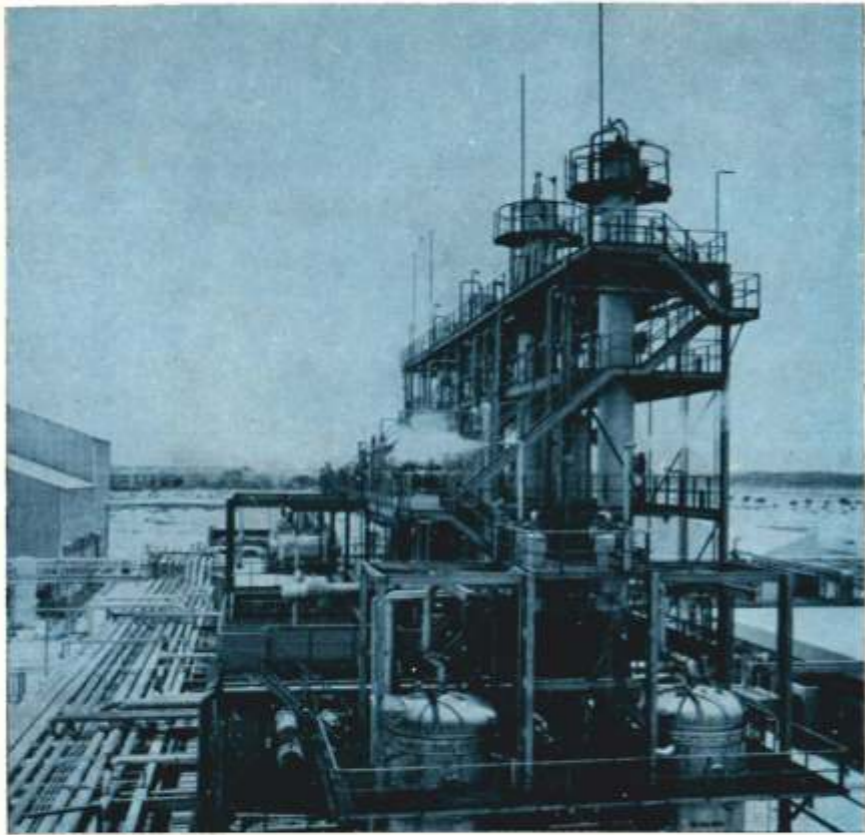
Double lift gas holder  
for Plastic Resins & Chemicals



100 m<sup>3</sup> Gaseous oxygen vessels  
designed to ASME Section VIII Division 2  
for a pressure of 34 kg./cm<sup>2</sup>g.

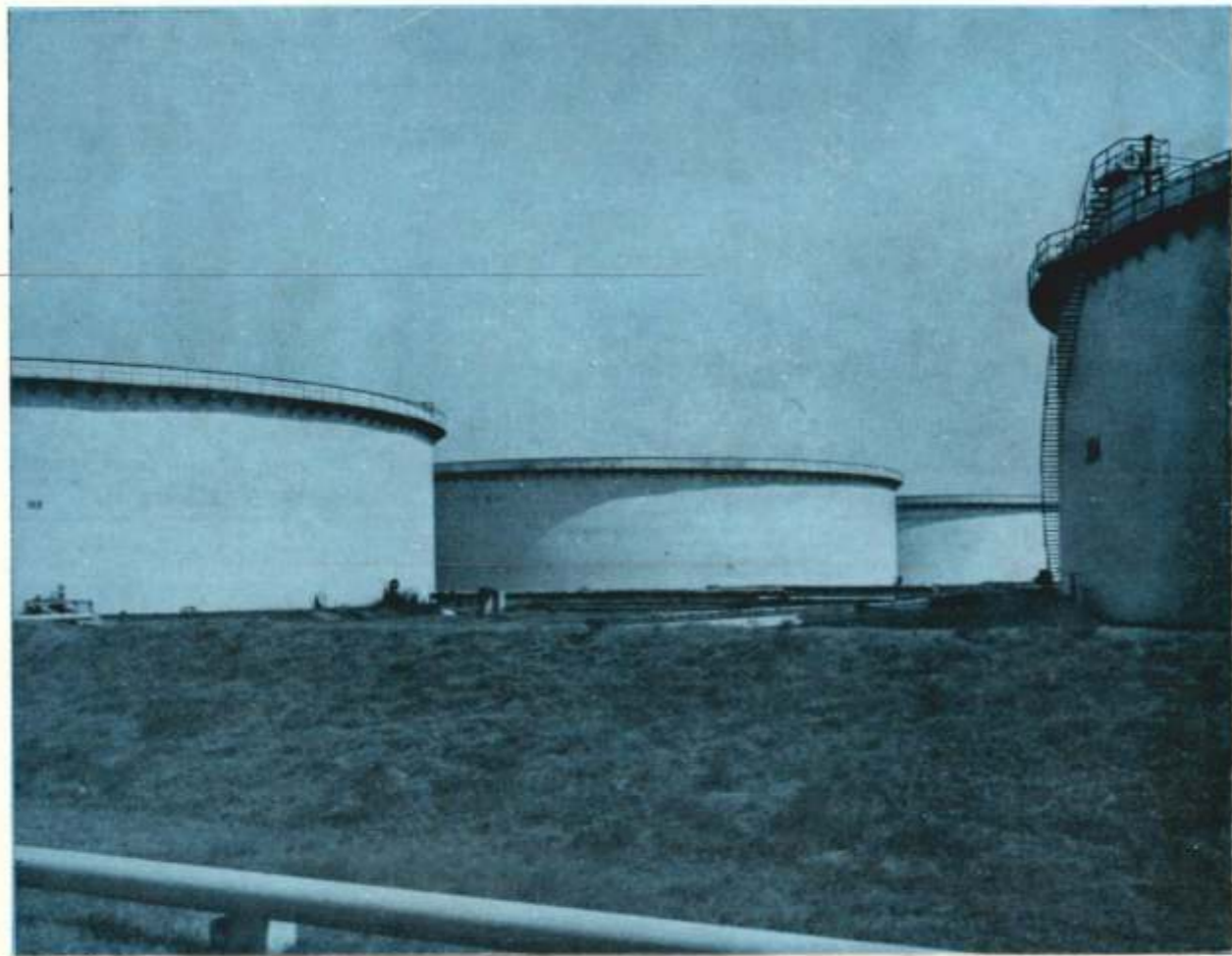
1,000 tonne liquid oxygen double walled <sup>sphere</sup> tank at  
Rourkela Steel Plant, stored at -183°C in  
aluminium alloy inner sphere with expanded perlite insulation



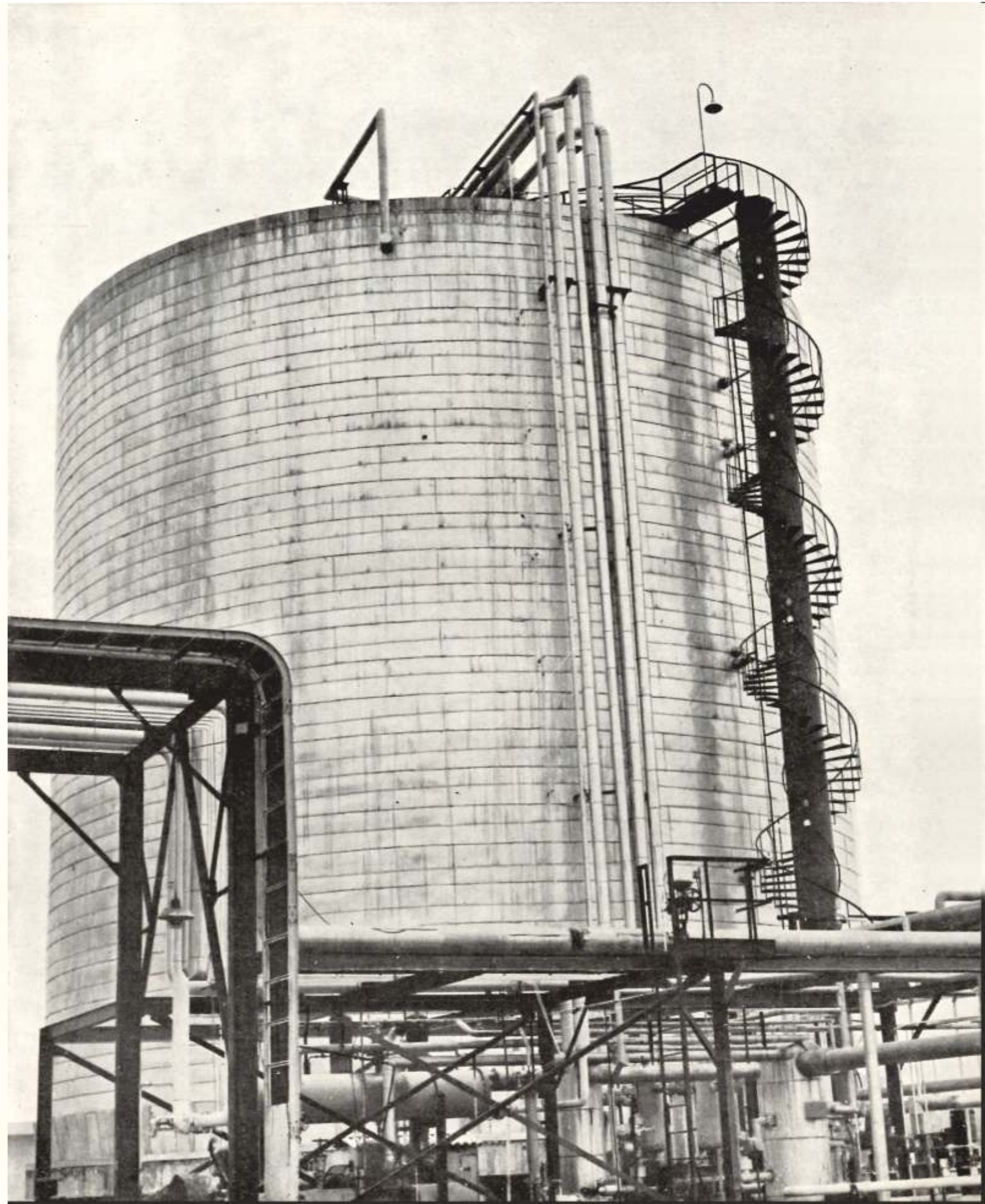


5,000 tonne  
liquid ammonia  
storage tank ▶

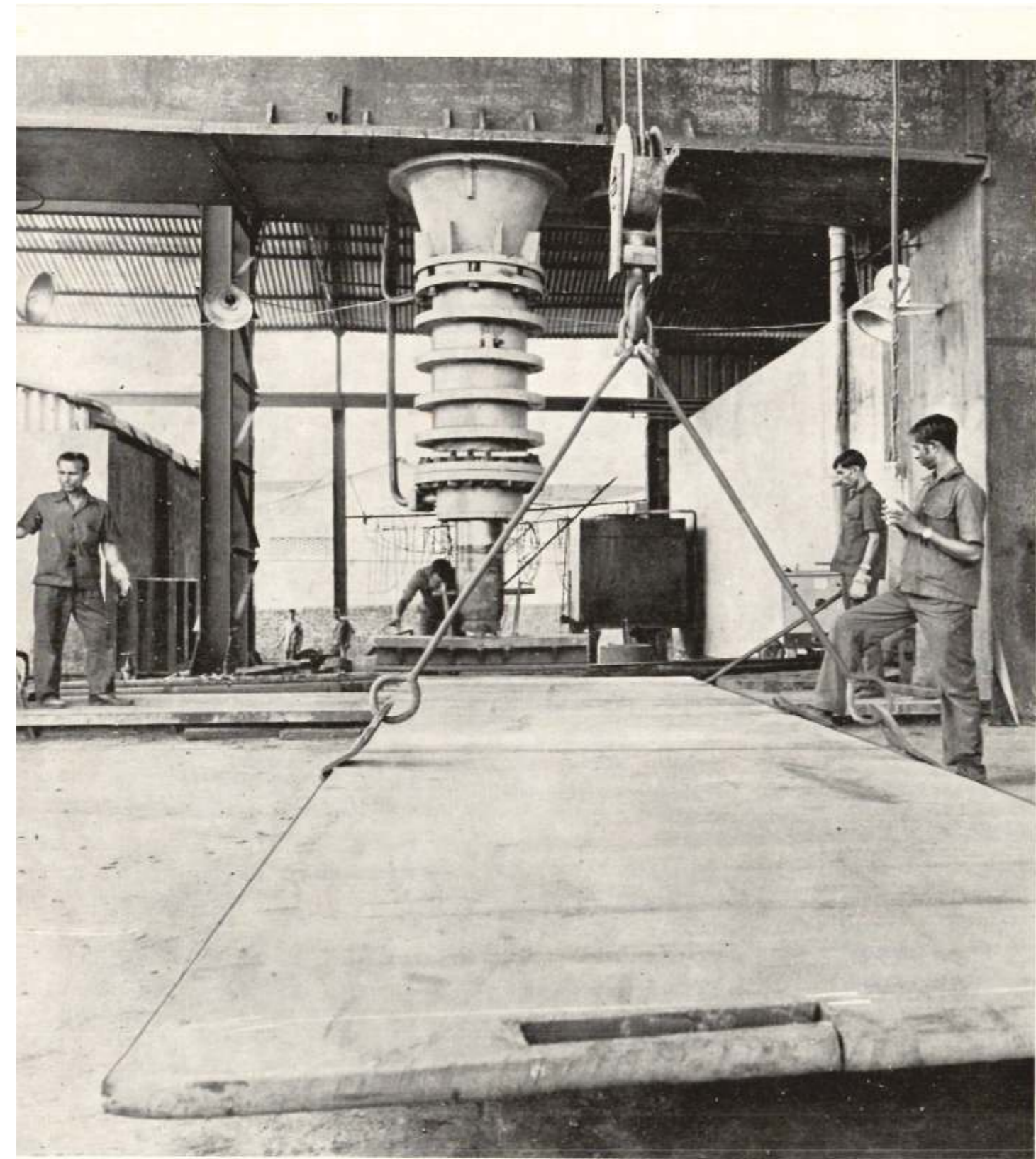
Columns and vessels  
at Plastic Resins  
& Chemicals



Crude oil tanks for Madras Refinery

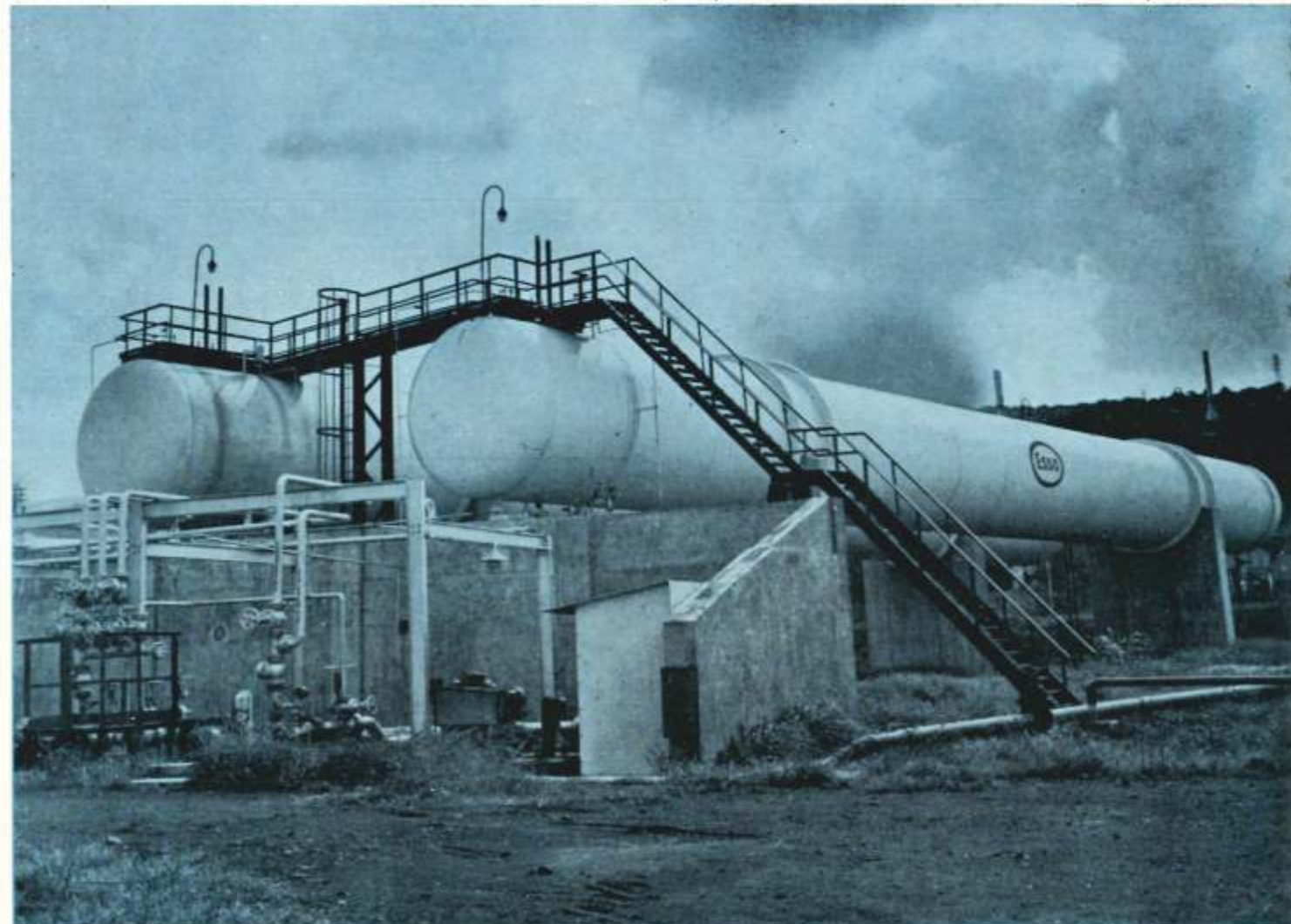




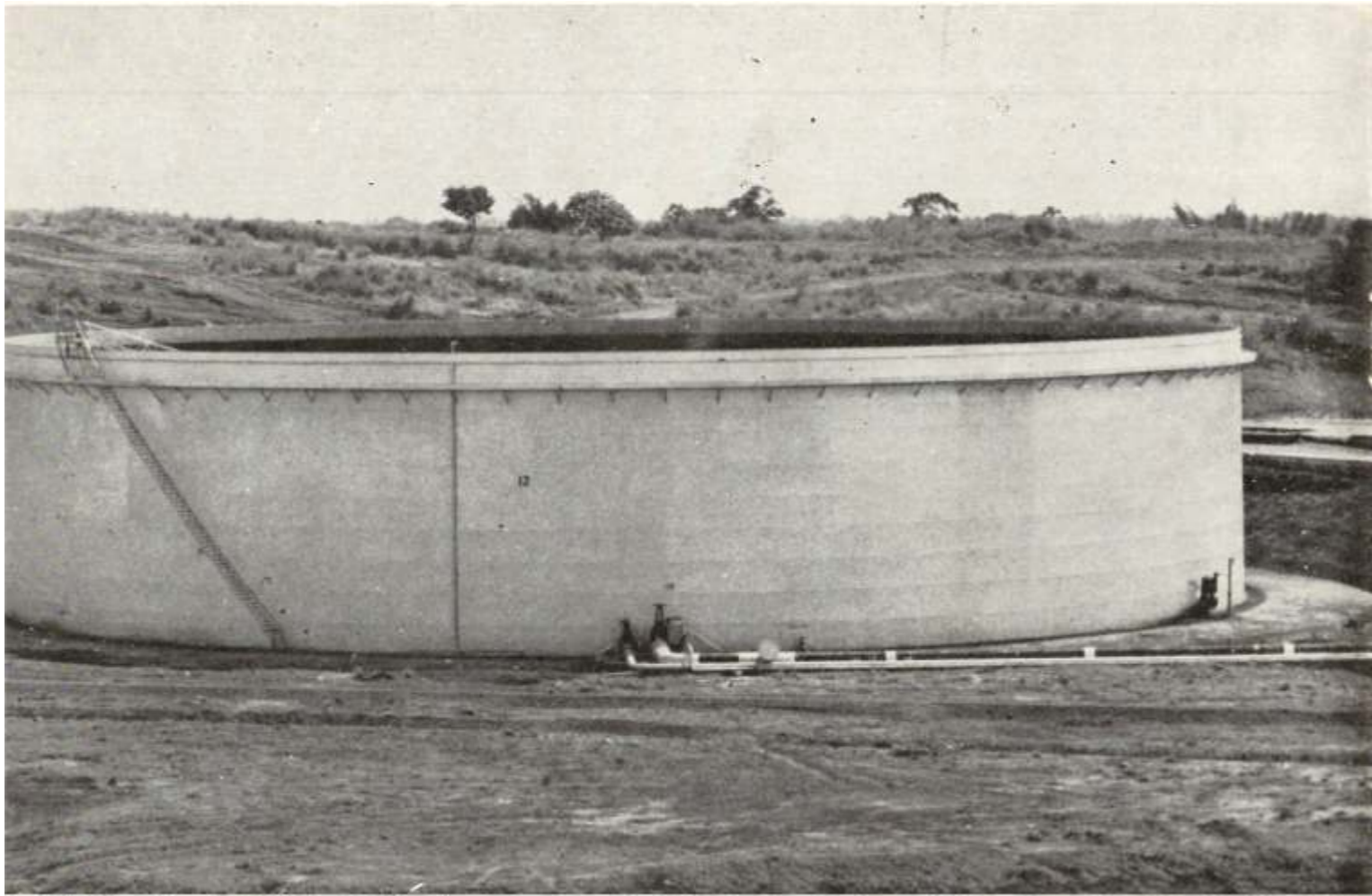


*1,000 tonne hydraulic press specially fabricated for pressing sphere petals*

*Three of 2,500 barrel capacity LPG bullets for Hindustan Petroleum Corporation*

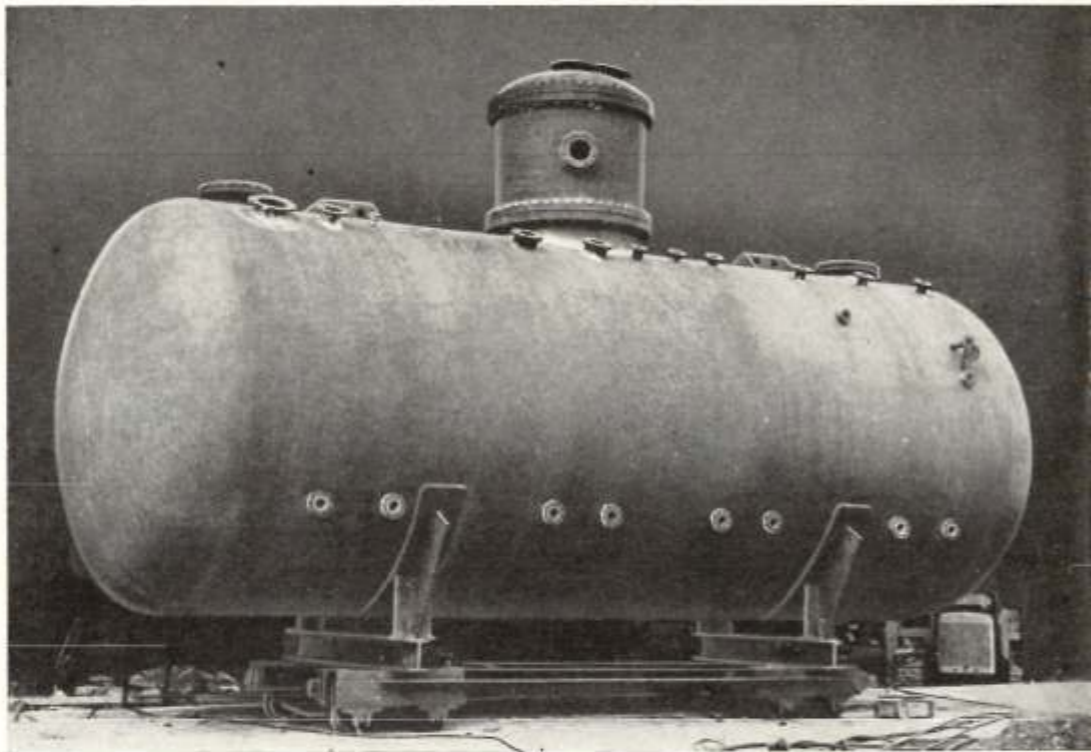






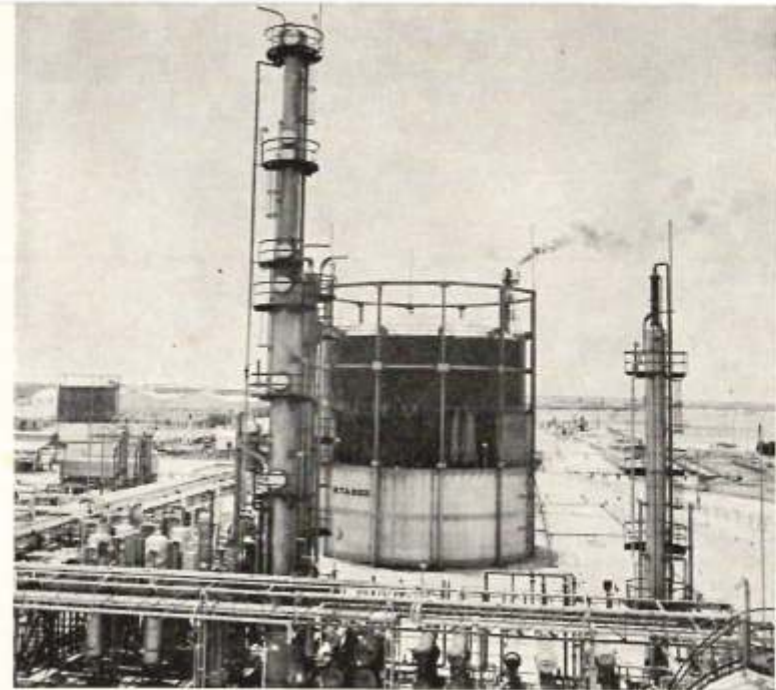
320,000 barrel crude oil floating roof tank

Deaerator class I vessel  
for power plants

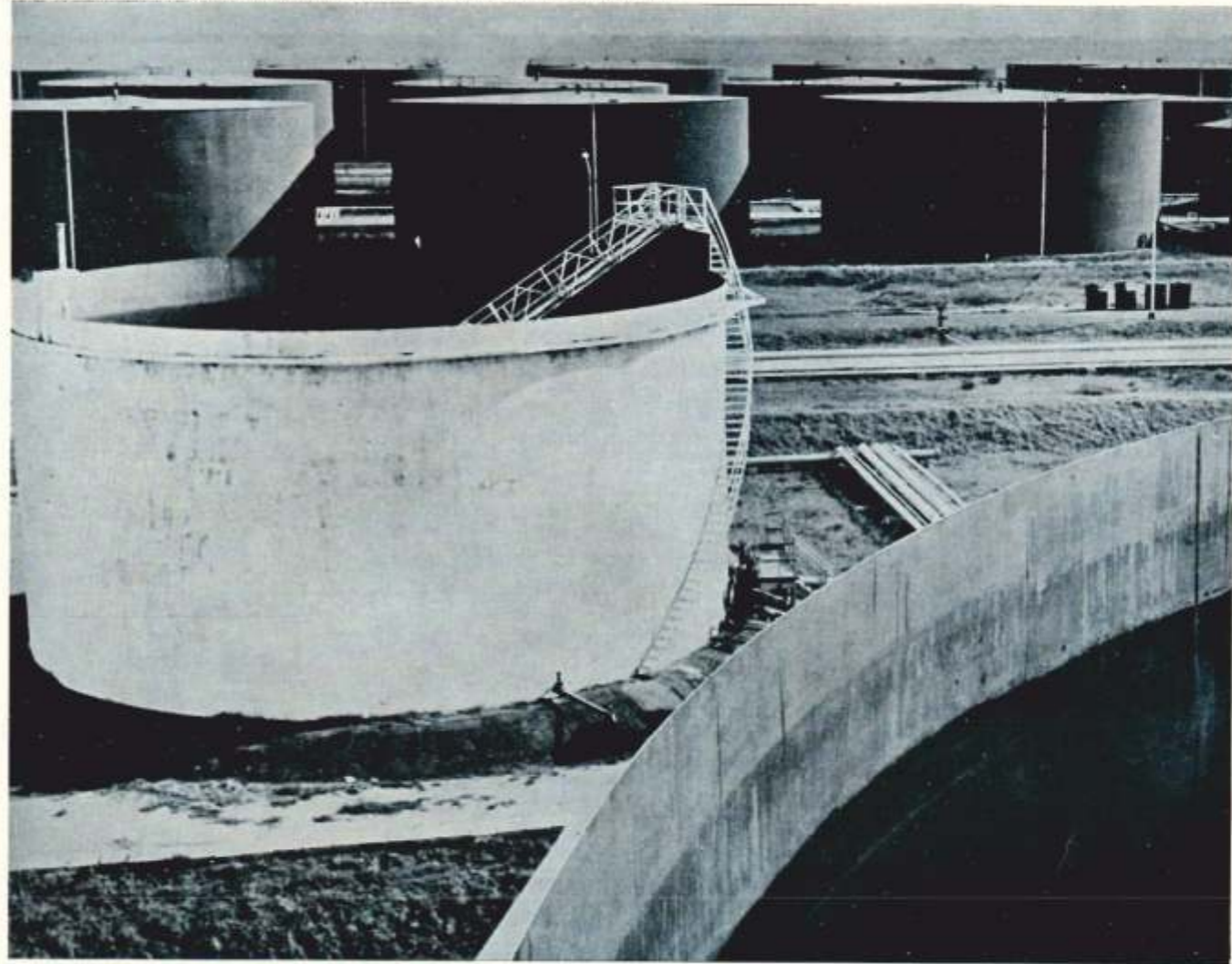


Previous page—  
Construction of  
complete tank farm  
in a grass root refinery  
at Haldia

Gas holder and distillation columns  
at Plastic Resins & Chemicals



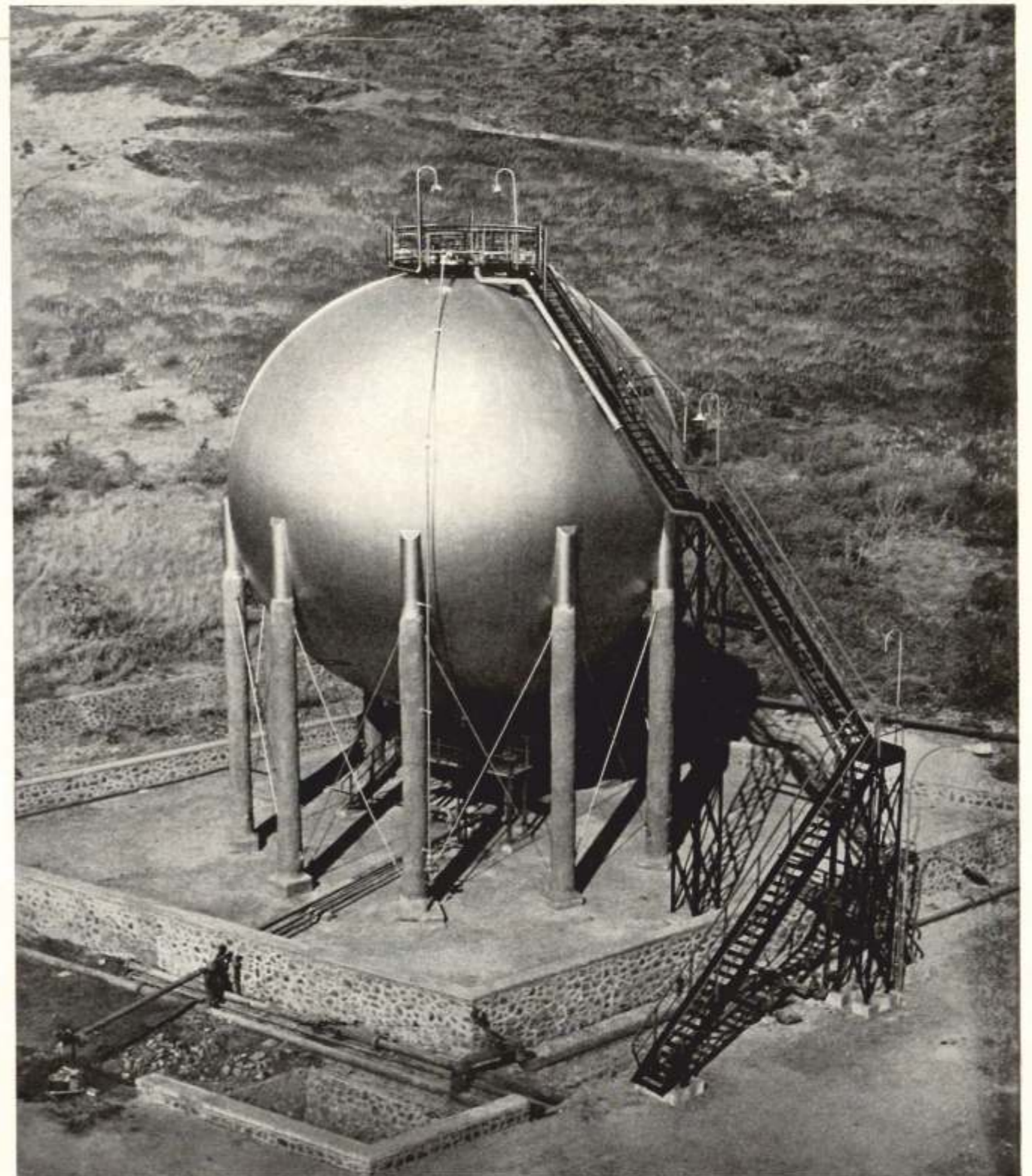
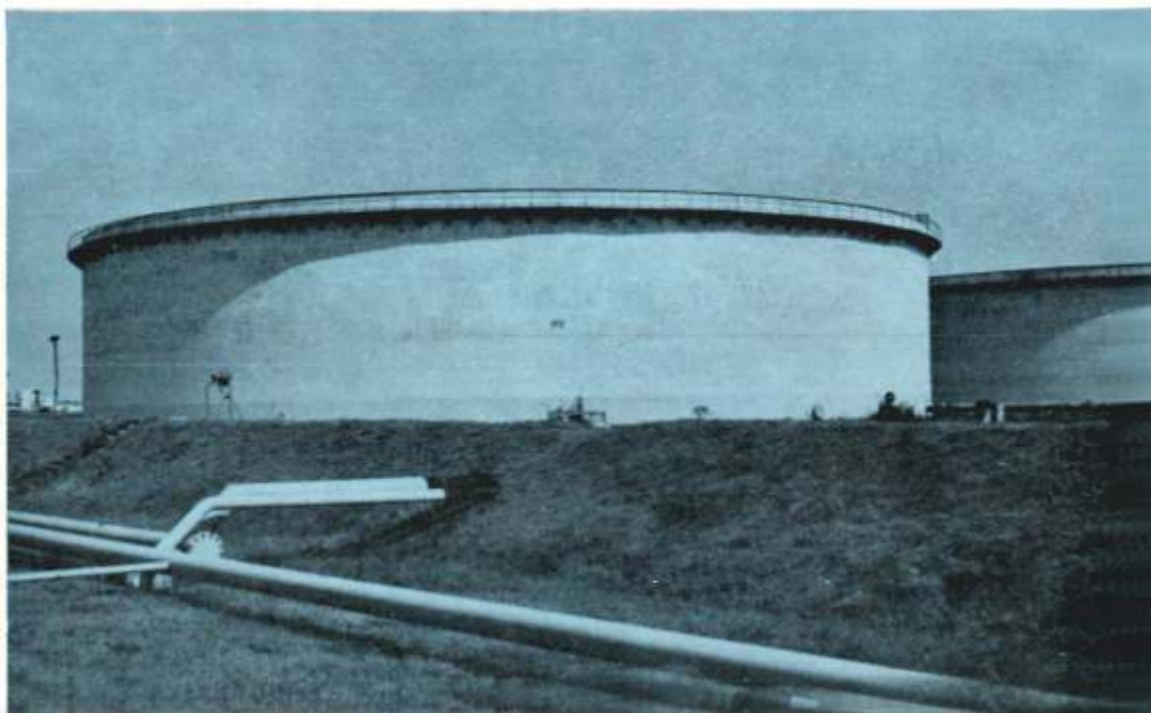
A view of floating roof and fixed roof tanks at Madras Refinery



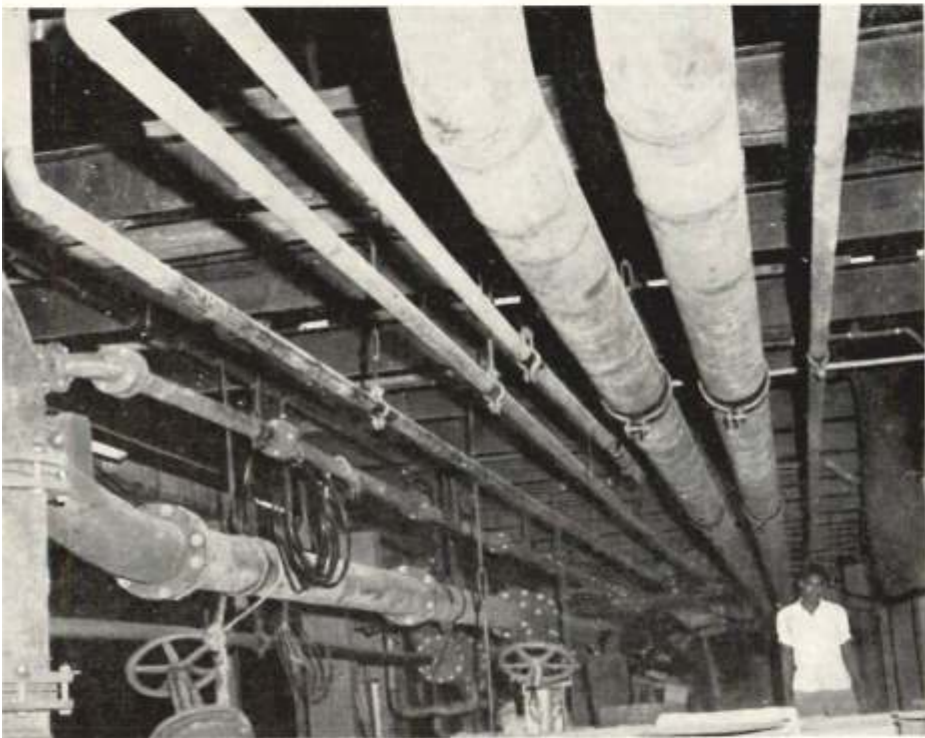
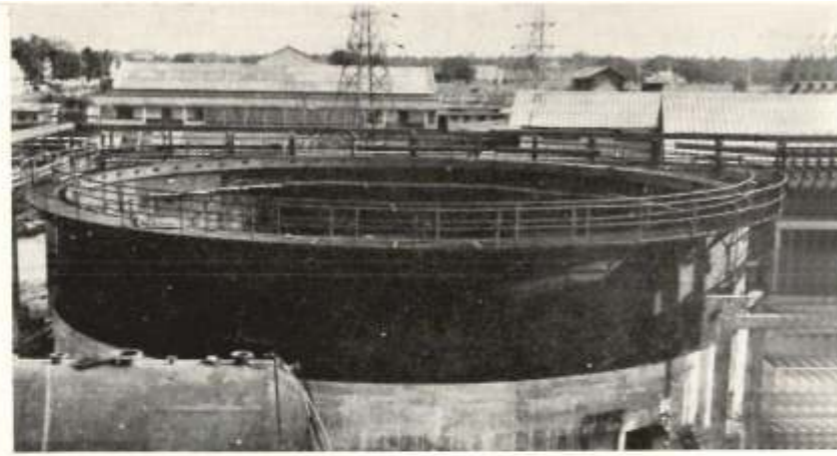


*Mock fit-up of sphere petals in progress at shop*

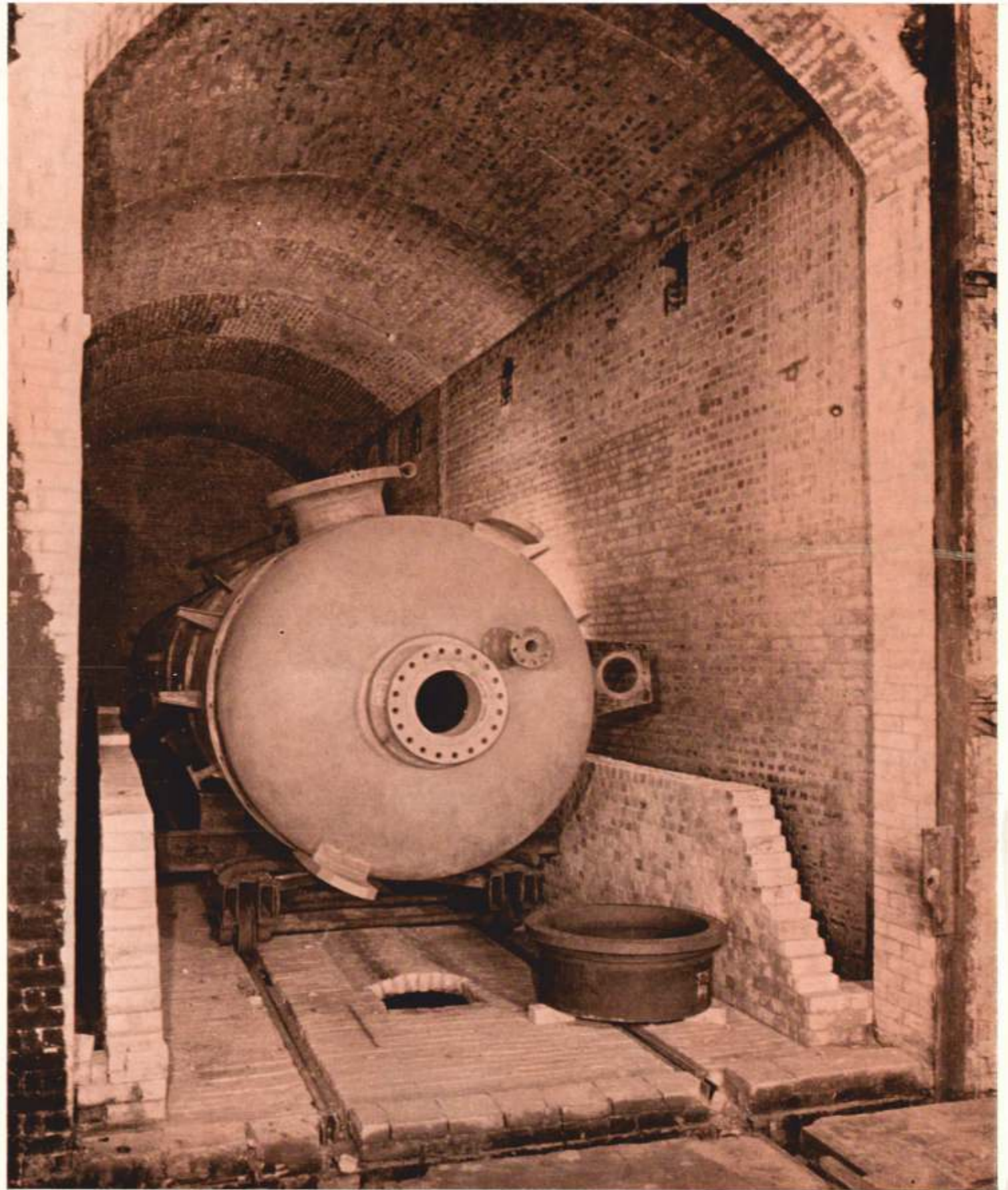
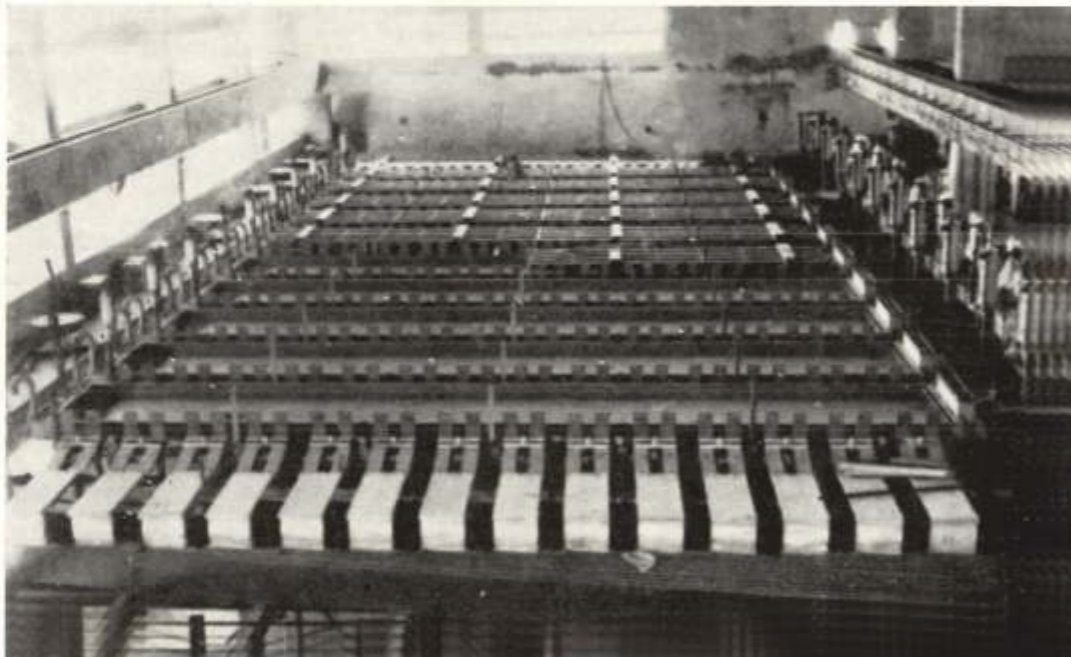
*One of the four 300,000 barrel capacity crude tanks for Madras Refinery*



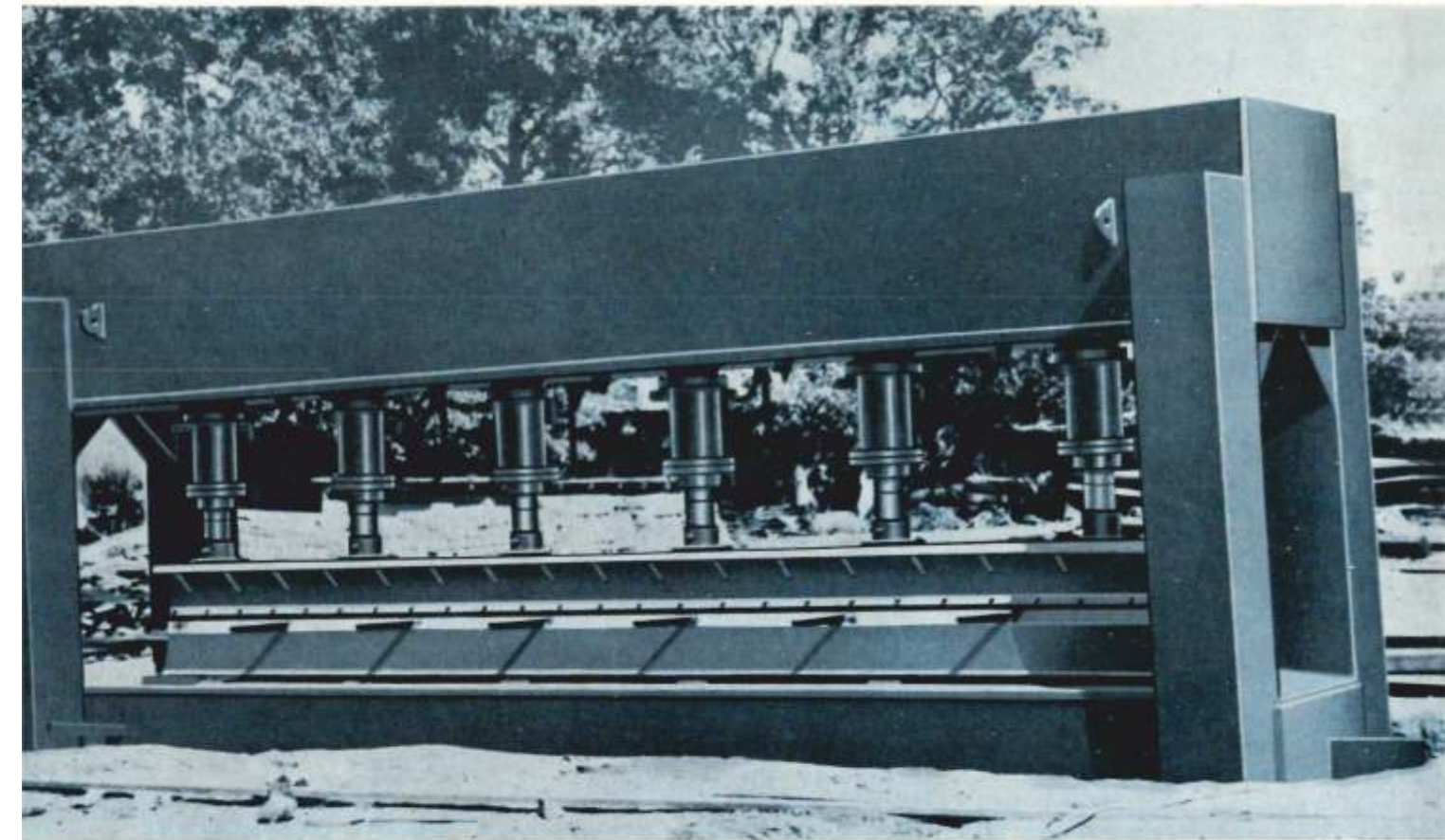
*1,350 m high pressure LPG storage sphere at Hindustan Petroleum Corporation*



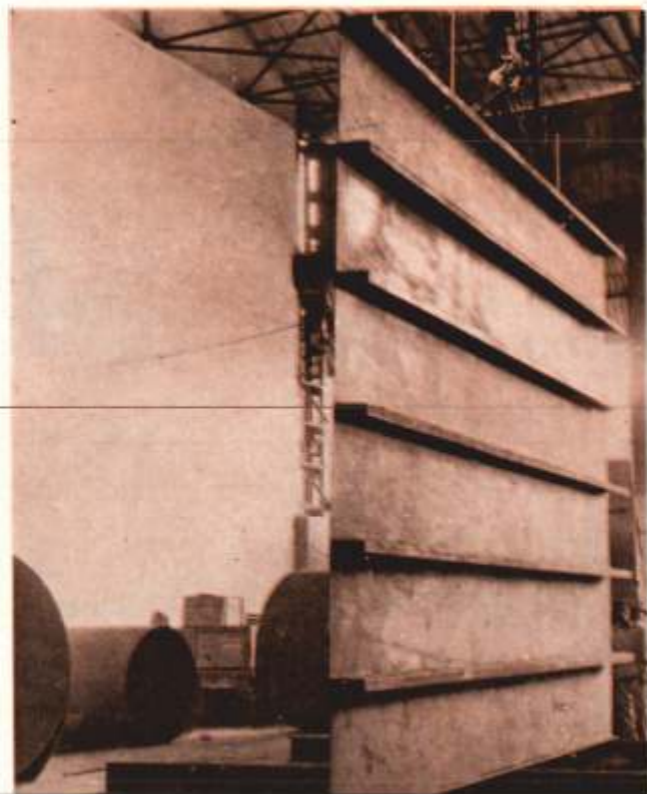
*Erection of complete equipment and piping for a 100 tonne per day caustic soda plant for Travancore Cochin Chemicals Ltd., Cochin, consisting of 22 nos. mercury cells, 4 nos. chlorine storage tanks, pressure vessels, 24 m dia brine clarifier tank, chlorine liquifier, hydrogen cooler etc.*



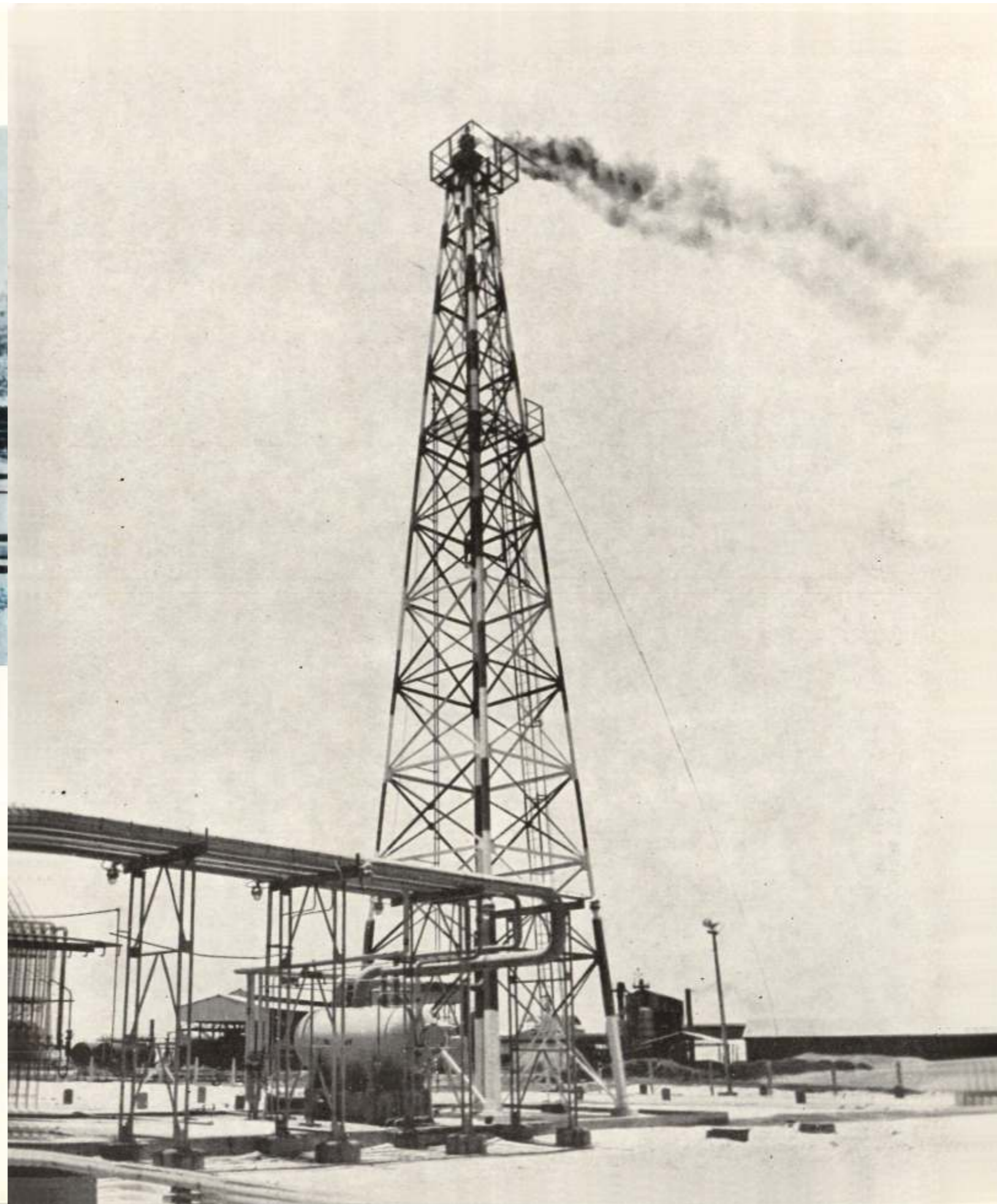
*A 65' long stress relieving furnace*



*30' long, 6 ram hydraulic press  
specially fabricated for bending  
dry seal gas holder plates*

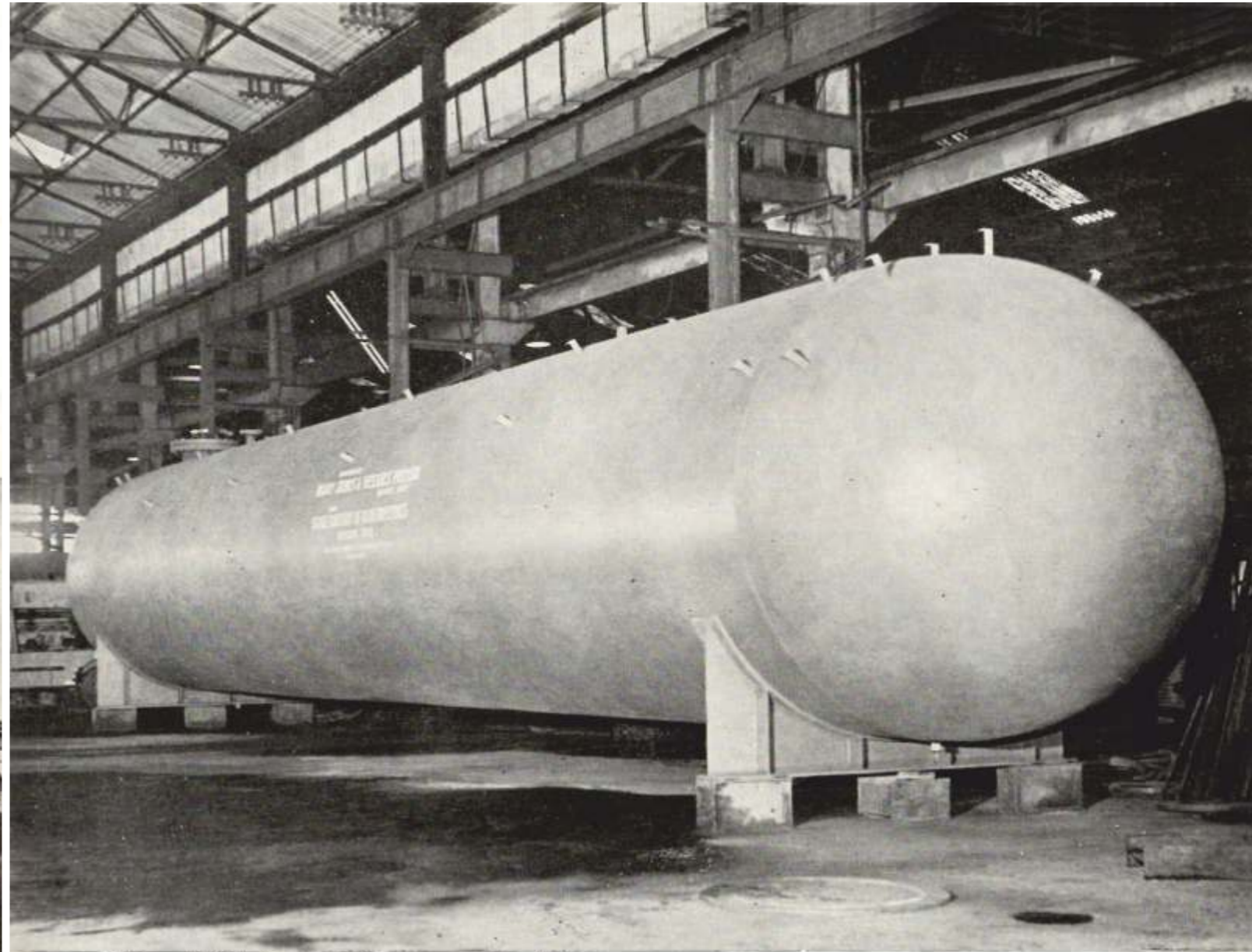
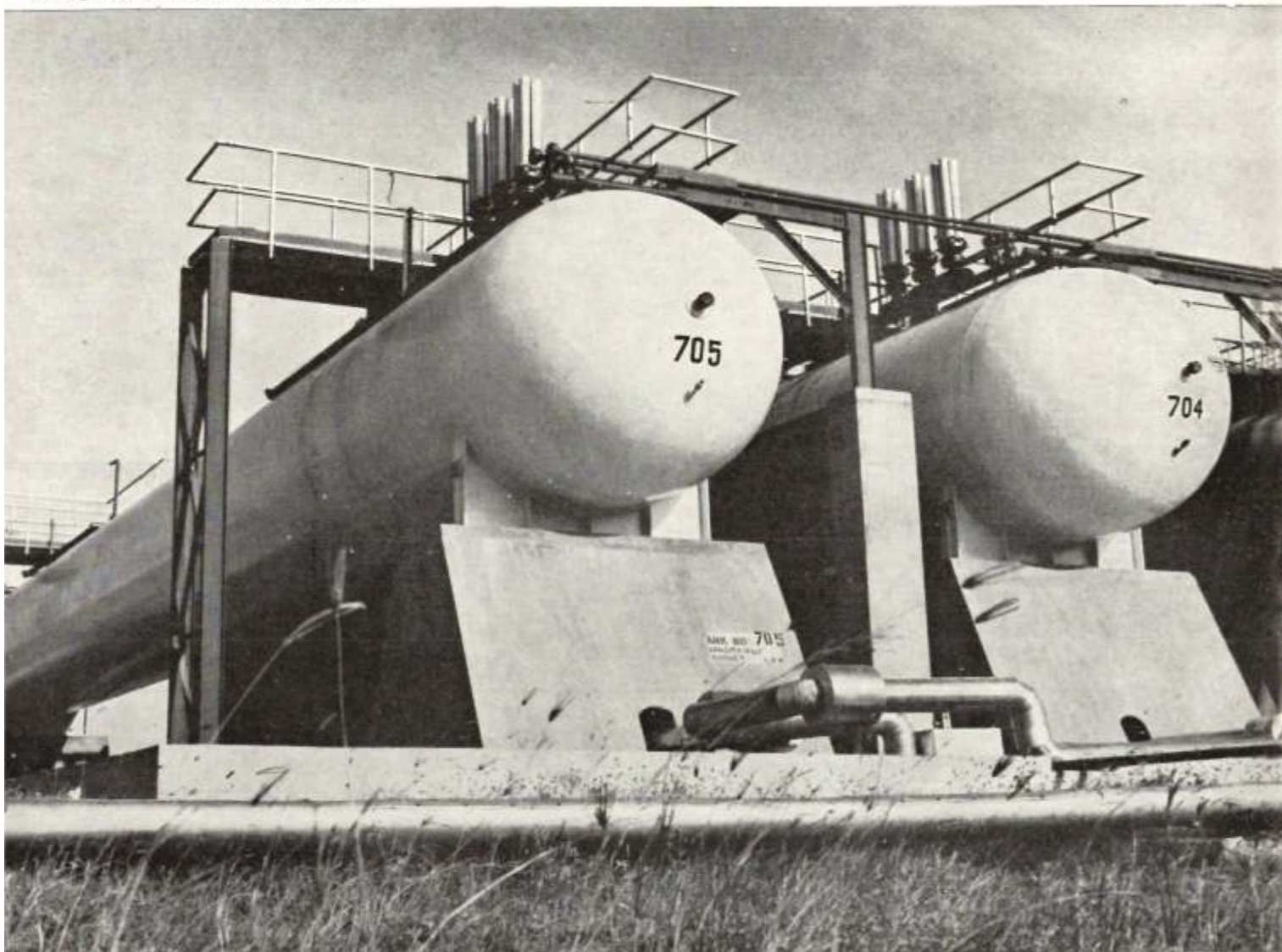


*Trial assembly of dry seal  
gas holder plates*

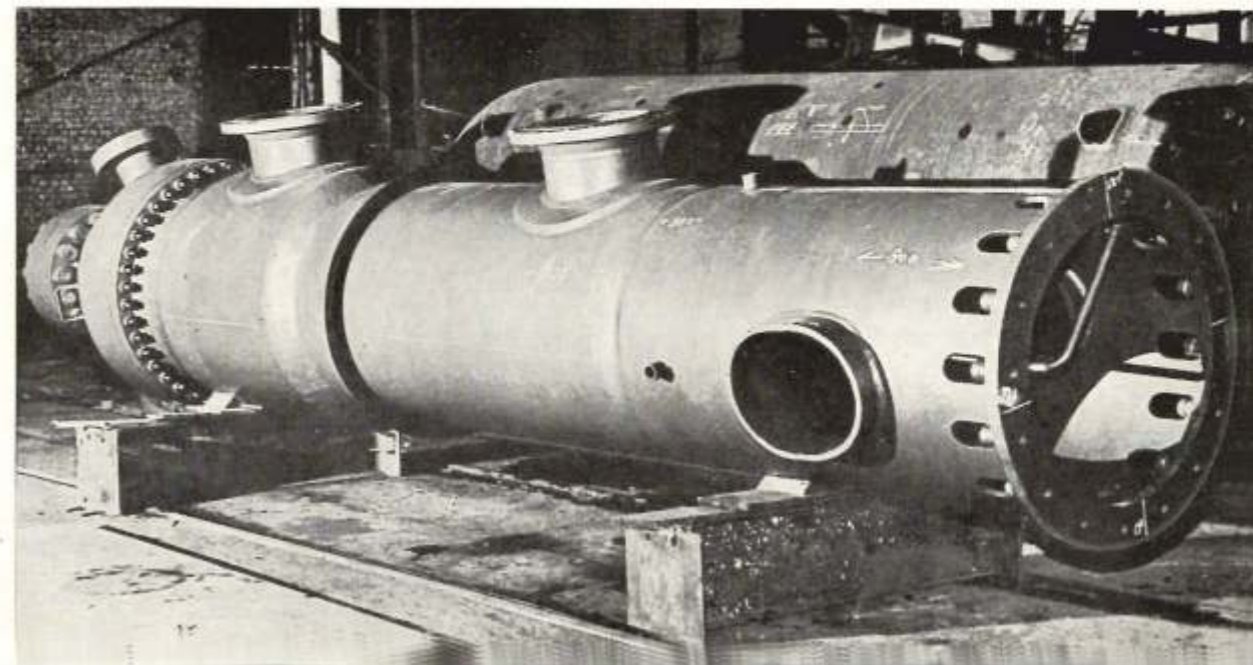


*50 m high flare stack  
at Plastic Resins  
& Chemicals* ▶

*Two of the 1,000 barrel capacity storage bullets for Madras Refinery*



*50 tonne LPG bullet—nine of them exported to IRAQ*



*Boiler feed water heater  
fabricated out of  
1 chrome 1/2 moly steel*

ORIGINAL

NO. 72

# American Petroleum Institute

Certificate Of Authority To Use Official API Standard 620 Symbol  
On Large, Welded, Low-Pressure Storage Tanks

THE AMERICAN PETROLEUM INSTITUTE hereby grants to

Vijay Tanks & Vessels Private Limited

Bombay, India

the right to use the official symbol **LΦW** on tanks under the conditions specified

in the official publication of the American Petroleum Institute entitled *API Standard 620: Recommended Rules for Design and Construction of Large, Welded, Low-Pressure Storage Tanks*, with the understanding that the use of this symbol shall constitute a guarantee that the tanks so marked comply with latest edition of said rules, and with the further understanding that tanks which fail to comply will not be so marked.

The American Petroleum Institute reserves the right to revoke this authorization to use the official symbol for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

Issued at Washington, D.C., February 16, 1971



AMERICAN PETROLEUM INSTITUTE,

*Charles M. Nelson*

Secretary.

ORIGINAL

NO. 513

# American Petroleum Institute

Certificate of Authority To Use Official Monogram

THE AMERICAN PETROLEUM INSTITUTE hereby grants to

Vijay Tanks & Vessels Private Limited

Bombay, India

the right to use the official monogram **Φ** on tanks under the conditions specified

in the official publication of the American Petroleum Institute entitled *API Standard 650: Welded Steel Tanks for Oil Storage* with the understanding that the use of this monogram shall constitute a representation that the material so marked complies with the latest edition of said specification, and with the further understanding, that material which fails to comply will not be so marked.

The American Petroleum Institute reserves the right to revoke this authorization to use the official monogram, for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

Issued at Washington, D.C., February 16, 1971



AMERICAN PETROLEUM INSTITUTE,

*Charles M. Nelson*

Secretary.



## VTV's main work centres and activities

### (I) Pressure Vessel Works at Mulund, Bombay

Total Area	390,000 sq. ft.
Covered Area	100,000 sq. ft.
Maximum thickness of plates which can be rolled	: 50 mm
Maximum width of plates which can be rolled	: 3 m
(i) Maximum thickness which can be hot dished or formed	: 125 mm
(ii) Maximum thickness which can be cold dished or formed	: 100 mm
Maximum thickness which can be welded and radiographed	: 100 mm
Maximum lifting capacity	: 50 MT
Maximum size of vessel which can be stress relieved	: 4.2 m dia × 20 m long
Type of materials which can be welded	: Carbon steel, low alloy steel, stainless steel, clad steel, aluminium and aluminium alloys and non-ferrous materials.
Type of welding which can be done	: Manual shielded metallic arc welding, gas welding, automatic submerged arc welding, metallic inert gas welding and tungsten inert gas welding.
Codes of construction	: ASME Section VIII Division I and II, BS 1500, BS 1515, API 620, API 650, TEMA and IS Codes.
Type of heads manufactured	: Elliptical, torispherical and hemispherical. Elliptical heads are hot forged in a single piece in the following sizes : 1400 mm, 1300 mm, 1200 mm, 1000 mm, 900 mm, 800 mm, 700 mm, 650 mm, 600 mm, 500 mm, 450 mm, 400 mm, 300 mm, 200 mm and 150 mm.

## Twenty years of steady growth

Vijay Tanks & Vessels Private Limited, Engineers and Constructors, have, since their inception 20 years ago, emerged as specialists in design and construction of large field erected floating roof tanks, cryogenic tanks, spheres, gas holders, pressure vessels, process columns and heat exchangers for the Refinery, Fertilizer, Petro-chemical, Power, Paper and Steel Industries.

The Company's impressive assignments that have earned for it a distinctive position in its field of activity include—

A 1,000 tonne liquid oxygen storage tank with handling facilities for Rourkela Steel Plant.

Crude oil storage facilities at Indian Oil's Salaya Terminal consisting of 8 floating roof tanks each of 90,000 m<sup>3</sup> capacity and connected civil works.

Tank farm of 26 storage tanks for Kenya Pipeline Co. Ltd. at their Nairobi Terminal which included floating roof, dome roof and cone roof tanks.

170 petroleum storage tanks, 135 km of yard and process piping, six fired heaters for crude and vacuum distillation units for Indian Oil's Gujarat Refinery.

10,000 tonne single wall ammonia storage tank including design of foundation, insulation and base heating system for IFFCO.

Crude distillation column 5 m dia x 55 m high with internals for Hindustan Petroleum Corporation's Refinery at Bombay.

1,350 m<sup>3</sup> high pressure LPG sphere for Hindustan Petroleum Corporation, Bombay.

2,500 m<sup>3</sup> liquid ammonia storage sphere with cold insulation for Gujarat State Fertilizers, Baroda.

400 m<sup>3</sup> liquid ethylene storage sphere, post-weld heat treated and insulated, for National Organic Chemical Industries Limited, Bombay.

8 spheres, 14 distillation columns, 7 hydrogen storage bullets and 130 pressure vessels for Indian Petrochemical Corporation, Baroda.

Design and construction of large crude oil floating roof tanks have been the Company's exclusive privilege in India. Lists of contracts handled by the Company appended to this brochure lend credence to its leadership.

VTV has the American Petroleum Institute's recognition for tanks to their specification of API 650 and API 620. As holders of licence for floating roof and cryogenic tanks from the world's renowned tank builders, Graver Tank & Mfg. Co., El Monte, California, VTV keeps abreast of contemporary advance in technology in tank design and construction.

## Key note—self-reliance

Self-reliance has led the Company to develop its own fabrication machinery— heavy plate benders, welding rectifiers, forging presses, positioners, TIG and MIG welding machines, automatic girth welders, perlite expanders, air lifting devices etc. Their largest hydraulic press can cold-form steel plates upto 100 mm thickness.

The Company has three works—two at Bombay and one at Madras. The main unit where pressure vessels are manufactured is located on a 9 acre land on the main Agra Road, Mulund, Bombay, where a covered area of 60,000 sq. ft. is housing metal fabrication facilities. Second factory is at Powai, Bombay on a 3 acre land with a covered area of 25,000 sq. ft. housing the Drum/Barrel Plant as well as the Electrical Division manufacturing distribution transformers, welding rectifiers etc. The unit at Madras is located on a 5 acre land with a covered area of 25,000 sq. ft. where lube oil barrels and bitumen drums are being manufactured.

VTV today offers the experience, the skills and the staff to assume responsibility for every project phase—from design to on stream completion. Head-quartered at Bombay, VTV has a well-knit field organisation, staffed with engineering, purchasing and construction personnel to work simultaneously at numerous project sites in India and abroad.

The Company employs about 2,000 men and 200 supervisory staff at works and construction

sites to take care of their commitments. The Company has also developed a strong team of young dedicated engineers, currently 70 of them, who play a significant role in the Company's impressive growth.

## Sound financial standing

VTV's working funds exceed 50 million rupees with annual turnover around 180 million rupees.

Bankers are Dena Bank, Bombay and State Bank of India, Bombay.

VTV's growth is largely due to its attitude towards its clients and its progressive personnel policy. Timely execution of jobs with a high standard of workmanship to earn client's satisfaction is the Company's constant endeavour. This dedicated effort has paid its dividend in the form of steady and healthy growth.

VTV enjoys an excellent record of on-time job executions, largely due to combined efforts of its engineering, procurement and construction groups.

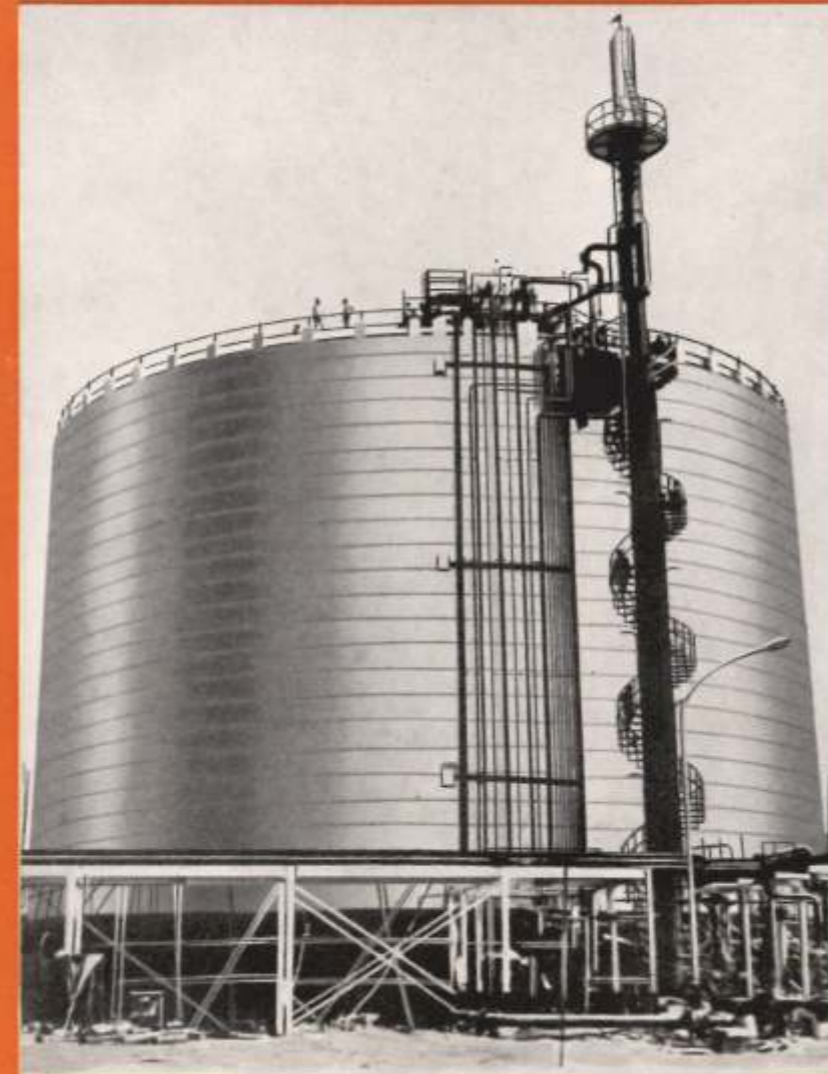
VTV's diversified activities include two new projects—

- (1) the formation of Marine Equipment Division for making hatch covers for ships and,
- (2) the making of paper and pulp machinery.

The pages of this brochure will convey, in a general way, the range and depth of VTV's capability.



*50 M<sup>3</sup> high pressure hydrogen storage vessel for Indian Petrochemicals*



*10,000 tonne liquid ammonia storage tank for Indian Farmers Fertilizer—Kalol, complete with flare stack (including design for base-heating)*