

# Japan watching

process developed by Nittetsu Chemical Engineering Corp. and the NSC-Takahax process, it is now possible to design economical, compact and large-capacity desulfurization installations, which also prevent secondary pollution.

## MITI estimates crude steel capacity to reach 144 million tons in 1975

The Heavy Industry Bureau of the Ministry of International Trade and Industry is now reviewing the projected capacities of blast furnaces and converters for the period from Fiscal 1972 to 1975 by a method which is a simplification of the formula adopted by the Japan Iron and Steel Federation.

According to MITI, the steel industry will have a crude steel capacity in Fiscal 1975 of 144 million metric tons, including 26 million tons by the open hearth and electric furnaces, as against a demand amounting to 127 million tons for an excess of 17 million tons between capacity and demand.

The pig iron blending ratio in basic oxygen converters is expected to be about 81%, 4 to 5% lower than at present.

## 'Sea mining' of manganese

Japanese technology will be utilized by an international syndicate for scooping up manganese nodule from the Pacific Ocean.

The syndicate, composed of 25 leading companies from Japan, the U.S., Canada, Australia, France and West Germany, is planning a joint project for collection of the manganese nodule from the sea bottom, 5,000 meters deep, of the Pacific southeast of Hawaii. A bucket system developed by Commander Yoshio Masuda of the Marine Data Work United, Japan Defense Agency, will be used.

The manganese nodule comprises metallic lump ores containing manganese, nickel, cobalt, iron, copper and lead. The total deposit of such lump ores is estimated at 400 billion tons.

## USSR and Japan—1-2 in casting

The Japanese steel industry is now continuously casting approximately 25% of their crude steel production. There are 63 casting machines with 146 strands in operation in the country. Japan is second to Russia in number of casting machines. The USSR has 73 machines with 173 strands. The U.S. has 58 machines and 152 strands. The major machine installations in Japan are shown in the table.

Major continuous casting machine installations

Works	No. of strands	Ladle Capacity (tons)	Kind of Products	Year of Start	Type
<b>Nippon Steel Corp.</b>					
Muroran	2 or 1	50	Bloom or Slab	1965	Hitachi
Hikari	1	60	Slab	1966	Concast
Yawata (No. 1)	6	75	Billet	1967	Olsson
Yawata (No. 2)	6	75	Billet	1968	Olsson
Hikari	1	50	Bloom	1968	Concast
Kamaishi	4	90	Bloom	1969	Hitachi
Nagoya	2	250	Slab	1970	Mannesmann
Hirohata	2	100	Slab	1970	Mannesmann
Kimitsu	2	250	Slab	1970	Mannesmann
Tobata	2	180	Slab	1970	USSR
Muroran	4	120	Bloom	1971	Hitachi
Oita	6	365	Slab	1972	Mannesmann
<b>Nippon Kokan KK</b>					
Keihin	1	250	Slab	1967	Mannesmann
Fukuyama (No. 4)	2	250	Slab	1970	Mannesmann
Fukuyama (No. 3)	2	250	Slab	1971	Mannesmann
Fukuyama (No. 2)	2	250	Slab	1971	Concast
<b>Sumitomo Metal Industries Ltd.</b>					
Kokura	6	70	Billet	1967	Concast
Wakayama (No. 1)	1	50	Slab	1969	Concast
Wakayama (No. 2)	2	160	Slab	1971	Concast
<b>Kawasaki Steel Corp.</b>					
Mizushima (No. 1)	8	180	Bloom	1968	Concast
Mizushima (No. 2)	2	200	Slab	1970	Concast
Chiba (No. 1)	1	85	Slab	1971	Concast
<b>Kobe Steel Ltd.</b>					
Kobe (No. 1)	8	85	Slab	1966	USSR
Kobe (No. 2)	4 or 2	85	Bloom or Slab	1967	USSR

## Chauvinism lives in the East

Kawasaki Steel reports a work force of 39,447 people as of April 30, 1972. The company reported that wage and salary payments rose 10.1% over the previous year.

Kawasaki also reported that it built or rebuilt 446 homes for married men and apartments to house over 1600 bachelors. According to the report, Kawasaki Steel now owns over 8200 houses and enough apartments to accommodate over 11,000 bachelors.

## Largest continuous casting mill

Sumitomo Metal Industries, Ltd. recently announced that installation of what is claimed to be the largest continuous casting mill in the world has been completed at the Kashima Works. The Concast mill has an annual production capacity of 1,200,000 metric tons of crude steel and cost about \$3 million. The two strands are capable of producing slabs 2.3 meters wide, 30 cm thick, and 10 meters long. Casting speed is 2.5 meters per minute. The ladles feeding the casting machines have a capacity of 250 tons.

By putting this new mill at Kashima into operation, Sumitomo has raised the amount of continuously cast steel to 20% of total crude steel production. There are two smaller units in operation at the Wakayama Works and one at the Kokura Works.

## 180,000 Nm<sup>3</sup>/hr coke-oven gas desulfurization unit being designed by Nippon Steel's EMF Division

A coke-oven gas desulfurization installation with 180,000 Nm<sup>3</sup>/hr capacity is being designed for use at Nippon Steel's Nagoya Works. Actual construction is scheduled to begin in March 1973, with completion slated for August 1973.

The installation will utilize the NSC-Takahax process. The large-capacity unit is being designed to treat the entire volume of coke-oven gas at the Nagoya Works and will include facilities for the treatment of waste solution.

The NSC-Takahax process was developed by Nippon Steel on the basis of the engineering data and operations of the 1,500 Nm<sup>3</sup>/hr experimental plants at Kimitsu and Hirohata Works.

Patented by Tokyo Gas Co., Ltd., the Takahax process for the removal of hydrogen sulfide from gas uses a nonpoisonous catalyst and operates at normal temperatures. The hydrogen sulfide contained in coke-oven gas is absorbed by an alkaline solution and then changed into fine-grained solid sulfur by use of a catalyst (1,4-naphthoquinone-2-sulphonic acid soda). The extremely fine-grained quality of the solid sulfur suspended in the solution prevents the system from clogging.

The hydrogen cyanide contained in coke-oven gas is absorbed together with the hydrogen sulfide to become rhodanate. Since rhodanate, when it accumulates in the solution, adversely affects its absorbability, part of the solution must be split from the system for treatment.

Through the combination of the waste solution treatment