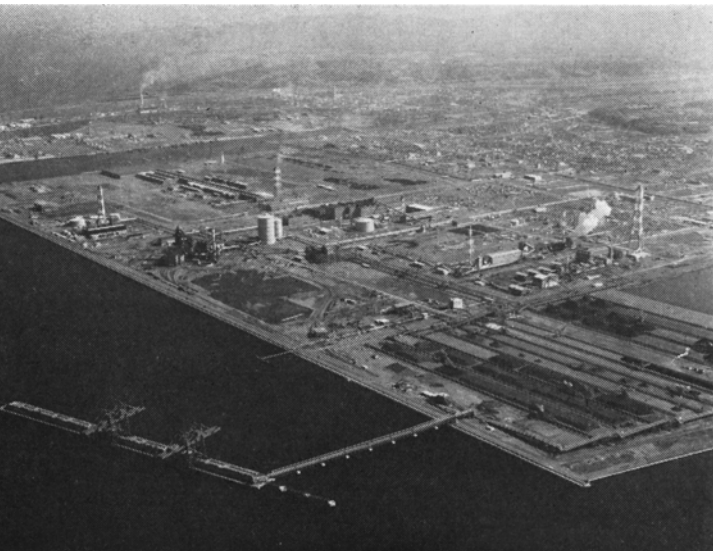


# Japan watching



*Aerial view of Oita Works*

## Oita Works Making Steel

Nippon Steel's eighth integrated steel plant is producing crude steel. Oita No. 1 blast furnace was blown in April 19, 1972. The new furnace, 4158 cm, second only to Fukuyama No. 4 (4197 cm) has a production target of 10,000 metric tons daily. The new furnace will operate at 35.5 psi top pressure with blast temperatures of 1250°C (2280°F). The furnace will utilize oil and injection, adjustable throat armor and evaporative stone cooling.

Two 300-ton BOF vessels will provide 3.5 million tons of crude steel to three two-strand mannesman type slab casters. The newest Nippon plant does not have a slabbing machine. The three slab casters have a capacity of 3.6 million tons annually.

The new plant has a green belt of trees 50 meters wide and 4650 meters long around the perimeter. Besides appearance, the green belt of trees hopefully will absorb a considerable portion of dust, iron particles and other impurities and return them to the soil.

Oita's unloading facilities are unique. A 620-meter off-shore berth is connected to the shore by a 400-meter bridge. Two unloaders operate on the 45-meter wide berth. Raw materials are loaded on a belt conveyor to the mainland at rates of 6500 tons per hour. The off-shore berth can handle three vessels up to 300,000 DWT simultaneously.

The original plans of Oita call for a second blast furnace, additional steel making furnaces and three more twin slab casters. This would raise plant capacity to 7,000,000 tons. However due to the current economic situation in Japan, Nippon Steel has not stated when the second phase will come into being. Japan's economic situation was influential in the six-month delay in start-up of the Oita complex, originally scheduled to begin operations last November.

## Two Japanese blast furnaces in South America

Nippon Steel Corporation has signed a \$19.5 million contract to construct a 2830 cubic meter blast furnace (100,000 cu ft) at the Volta Redonda Works of Companhia Siderurgica Nacional (CSN), Brazil's national steel company. The furnace will be built with a four column support system, the

Nippon top charging system, and stoves for high temperature hot blast. Nippon will also build a BOF shop with two 250-ton vessels for CSN. When completed, the new iron-making-steelmaking complex will have a capacity of 2.5 million metric tons of crude steel. Ishikawajima Heavy Industries (IHI) will build a 2700 cubic meter furnace (97,000 cu ft) for Usiminas, near Belo Horizonte. The Usiminas furnace is scheduled to be blown in mid-1974. The CSN furnace should be on stream by March 1975.

## Nippon Steel Engineering & Consulting Division and Equipment Engineering & Technology Center

Nippon Steel Corporation has established an Engineering & Consulting Division and an Equipment Engineering & Technology Center as well as strengthening the Steel Construction & Fabrication Department.

The newly established Engineering & Consulting Division comprises the Planning & Coordination Department, Project Sales & Cooperation Department and Overseas Technical Cooperation Department.

The Planning & Coordination Department will plan and conduct surveys on engineering projects and will coordinate the overall activities of the Division.

The Project Sales & Cooperation Department will handle the sales and planning of projects mainly for social development, such as pollution control, new urban transport systems and urban development.

The Overseas Technical Cooperation Department will offer engineering services for the construction of steel plants as well as give guidance on plant operation.

The new Engineering & Consulting Division is headed by director Makato Okaki, who will serve concurrently as head of the Engineering, Machinery & Foundry Division.

With its contingent of 400 engineers, the Equipment Engineering & Technology Center will carry out the engineering of orders obtained by the Engineering & Consulting Division, as well as handle engineering and technical problems at steelworks of Nippon Steel throughout Japan.

The Engineering, Machinery & Foundry Division will continue designing, manufacturing, and selling machinery and equipment with particular emphasis on steel plant equipment.

## FRP stack sets height record

The tallest stack ever fabricated of fiberglass reinforced polyester (FRP) has been in service since late 1971 at the Mitsui Mining and Smelting Co. plant at Omuta, on Kyushu Island, Japan. The 9-ft diameter cylinder carries a corrosive mixture of gases to 525 ft above ground level.

In designing the structure, engineers had to consider restrictive wind and earthquake loadings as well as the presence of SO<sub>2</sub> in the stack gas. Mild steel would be subject to attack, and exotic alloys would be prohibitively expensive.

For light weight and high corrosion resistance, the designers specified Atlac 382 polyester, made in Japan by Kao-Atlas Company Ltd., an affiliate of ICI America, Inc. They supported it in a steel framework resembling a half-scale model of the Eiffel Tower. This design complies with the wind and earthquake loading standards of this location in Japan.

The 459-ft FRP portion was fabricated by Orient Co., Ltd., who also fabricated a fume scrubber and associated ductwork of the same material.

## Kawasaki Steel Makes Dust Pellets

A \$10 million plant will go on stream next spring at Kawasaki's Mizushima Works. The function of the plant may be the answer to what's to be done with BOF dust caught in the waste gas cleaning system. According to Kawasaki officials, the new plant will process 1000 tons of dust daily in a grate kiln pelletizing plant.

The plant will produce 650 tons of 3/8-in. green balls with an iron content in excess of 75% every day. The company reports that zinc and lead contents which have long plagued blast furnace use of BOF fines, will be reduced to 0.02% and 0.01% respectively.

At present Kawasaki has a plant capable of processing 6500 tons per month operating at the Chiba Works. This plant has been in operation since May 1968.