Hitachi Zosen to build temporary coffering upstream of Tsuruta Dam

Hitachi Zosen Corporation has been awarded a contract for construction of the temporary coffering for Tsuruta Dam in Kagoshima Prefecture by Kyushu Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism.

As the Sendaigawa river basin, in which Tsuruta Dam (completed in March 1966) is located, suffered extensive flood damage during the record-breaking torrential rains in 2006, a program of Devastating River Disaster projects was adopted throughout the river basin. In conjunction with these projects, redevelopment work of Tsuruta Dam was duly commenced in fiscal year 2007, in order to improve the flood control capacity for mitigating the flood damage.

The temporary coffering, used to build additional discharge equipment, is installed upstream of the dam body. It provides a work area for excavating the dam body without lowering the water level, while the dam is in service. This technique is essential for redevelopment of existing dams.

In this project, high technical capabilities are demanded. That is, not only to construct one of the largest coffering in Japan which sustains high water depth and water pressure, but also to minimize leakage of dam water during reconstruction work in order to ensure safety of workers inside the coffering and improve quality of construction. Moreover, as installation of the temporary coffering is underwater construction work at depths of up to 65 meters, the specialized diving technique known as saturation diving* will be used for optimum efficiency of work and safety of the divers.

* Saturation diving ensures safety during prolonged diving at high water depth.

The history of Hitachi Zosen's hydraulic gates dates back to 1923. Since then, Hitachi Zosen has had extensive delivery record of hydraulic gates, steel penstocks and other hydraulic facilities in Japan and overseas. As for dam redevelopment projects, starting with Japan's first delivery of temporary coffering for Yoroihata Dam at Semboku City in Akita Prefecture in 1990, Hitachi Zosen has experienced a large number of temporary coffering. In this way, Hitachi Zosen is helping to promote effective and efficient use of the existing dam facilities.

The following is a summary of this project.

1. **Client:** Kyushu Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism
2. **Location:** Koshi, Satsuma-cho, Satsuma-gun, Kagoshima Prefecture
3. **Delivery:** End of March 2015
4. **Value:** ¥5,570 million (tax excluded)