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Quake resistance design of Turkey nuclear plant questioned

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TOKYO (Kyodo) — Japanese research firms commissioned by the government have given a questionably low estimate for the maximum amount of lateral shaking from earthquakes that could affect a nuclear power plant in Turkey being **built by a Japanese-French joint venture**, sources privy to the matter said Saturday.

The assumed "peak ground acceleration" — ground motion caused by an earthquake and one of the factors in assessing quake intensity — for **the plant in the Black Sea province of Sinop in quake-prone Turkey is estimated at a significantly lower level than that for Japanese power plants in a possible attempt to reduce the construction cost**, the sources said.

While the peak ground acceleration for the Sinop plant is estimated at around 400 gal, experts said the estimate, given the topography and geography around Sinop, should be "at least 500 gal based on Japanese standards."

For instance, the assumed ground acceleration is 620 gal for Kyushu Electric Power Co.'s Sendai nuclear power plant in southwestern Japan and 856 gal for Kansai Electric Power Co.'s Oi nuclear power plant on the Sea of Japan coast.

The assessment was part of a study commissioned by the Agency for Natural Resources and Energy under the Ministry of Economy, Trade and Industry to examine potential nuclear power plant construction deals involving Japanese companies in Turkey and Vietnam.

Tokyo-based Japan Atomic Power Co. contracted to undertake the 2.4-billion-yen (\$20.52 million) study and outsourced the ground acceleration estimate and assessment of active fault zones around the planned construction site to other Japanese research firms.

Japan Atomic Power told Kyodo News it "cannot disclose details of the study." The agency said it has "not received a report" about the matter.

A joint venture of Japan's Mitsubishi Heavy Industries Ltd. and French nuclear giant Areva

SA was granted in 2013 the exclusive negotiating right for construction of the Sinop plant.

The administration of Prime Minister Shinzo Abe is eager to export Japanese nuclear technology to emerging economies such as Turkey and India as part of the country's growth strategy.

The consortium plans to build four pressurized water reactors with an output of 1.1 million kilowatts each. Mitsubishi Heavy Industries says a contract with the Turkish government is expected to be sealed this year with operation of the first reactor starting in 2023.

According to Japanese researchers, some active faults are suspected around the envisioned plant site. In 1968, a quake of magnitude 6 occurred west of the site and some Turkish researchers warn of the possibility of a major earthquake occurring in the region. Local residents are protesting the construction plan.

In the wake of the 2011 nuclear disaster at the Fukushima Daiichi power plant, triggered by a magnitude-9.0 earthquake and ensuing tsunami, **Japan has put in place stricter rules for operating nuclear plants. But using these same safety standards for nuclear plant contracts overseas would mean a sharp rise in construction costs.**

Japan had won a contract to build a nuclear plant in Vietnam, but the Southeast Asian country decided last year to scrap the costly construction plan.