

## **Almost 130,000 Cubic Meters of Water Already Treated at Fukushima Daiichi NPS, Making Cold Shutdown of Units 1 to 3 Likely by Year-end**

On October 17, Japan's Government-TEPCO Integrated Response Office released a report on the progress made under the so-called "roadmap" toward restoration from the accident at the Fukushima Daiichi Nuclear Power Station (NPS) of the Tokyo Electric Power Co., Inc. (TEPCO). Step 2 of the roadmap aims for a situation in which "the release of radioactive materials is under control and the radiation dose is significantly held down," and the recent report clearly states that it will be accomplished by the end of the year.

Since publishing the first roadmap last April, TEPCO has released monthly progress reports, the latest being the sixth. In September, Japan's Minister for Nuclear Accidents Goshi Hosono said that efforts would be made to complete Step 2 by the end of the year, with Step 1 (namely, steadily reducing the radiation dose) having been completed in July. Reflecting progress toward reaching "cold shutdown" (a state in which the temperature of the water within the reactor goes below 100°C at normal atmospheric pressure), Step 2 is expected to be completed by the end of the year.

Among the ten specific goals laid forth by Step 2, three have already been attained: dealing with the spent fuel pool (cited in the previous report), accumulated water, and tsunami reinforcement. Regarding the so-called "circulation cooling" of the reactors—a process involving the treatment of the highly-radioactive water accumulated in the NPS, and reusing it to cool the reactors—about 128,140 tons of water had been treated as of October 13. The water will continue to be treated so as to let the plant withstand torrential rains and or long-term suspension of treatment facilities, all toward the attainment of cold shutdown.

As of October 15, the temperatures in the lower areas of the reactor pressure vessels of the three reactors were well below 100°C: 74°C in Unit 1, 83°C in Unit 2, and 73°C in Unit 3. The total volume of the radioactive materials being released from the primary containment vessels (PCVs) had been reduced to about 1 billion Bq/hour (a provisional figure), only around 1/8,000,000<sup>th</sup> the level registered at the time of the accident more than seven months ago.

Mitigation efforts have also progressed, in line with the roadmap. Work will start at the end of October to build water shielding walls around the facilities to prevent groundwater from leaking into the sea and causing further contamination. Also, Unit 1's reactor building cover will be completely installed by the end of the month.

Meanwhile, workers' living and working environments have been improved, including the establishment of on-site rest stations, given the severe environment at the site. To arrange for their long-term healthcare, a database is being established for the workers, along with inspection guidelines according to their exposure doses.

### **New Dust Collector in Operation at Fukushima Daiichi NPS**



(Photo by TEPCO)

A new dust-collecting system has been introduced at the Fukushima Daiichi Nuclear Power Station (NPS) of the Tokyo Electric Power Co., Inc. (TEPCO). (See photo) Described as a “huge vacuum cleaner,” it is a combination of a number of special-purpose vehicles.

Featuring caterpillar treads on a backhoe (left end) with a large mounted suction hose, the vehicle can traverse difficult roads. In tests in an environment where the dose level was about 1.5mSv/hr, vacuuming and filtering using the new dust-collecting system reduced radiation doses by 44%, confirming the system’s effectiveness.

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