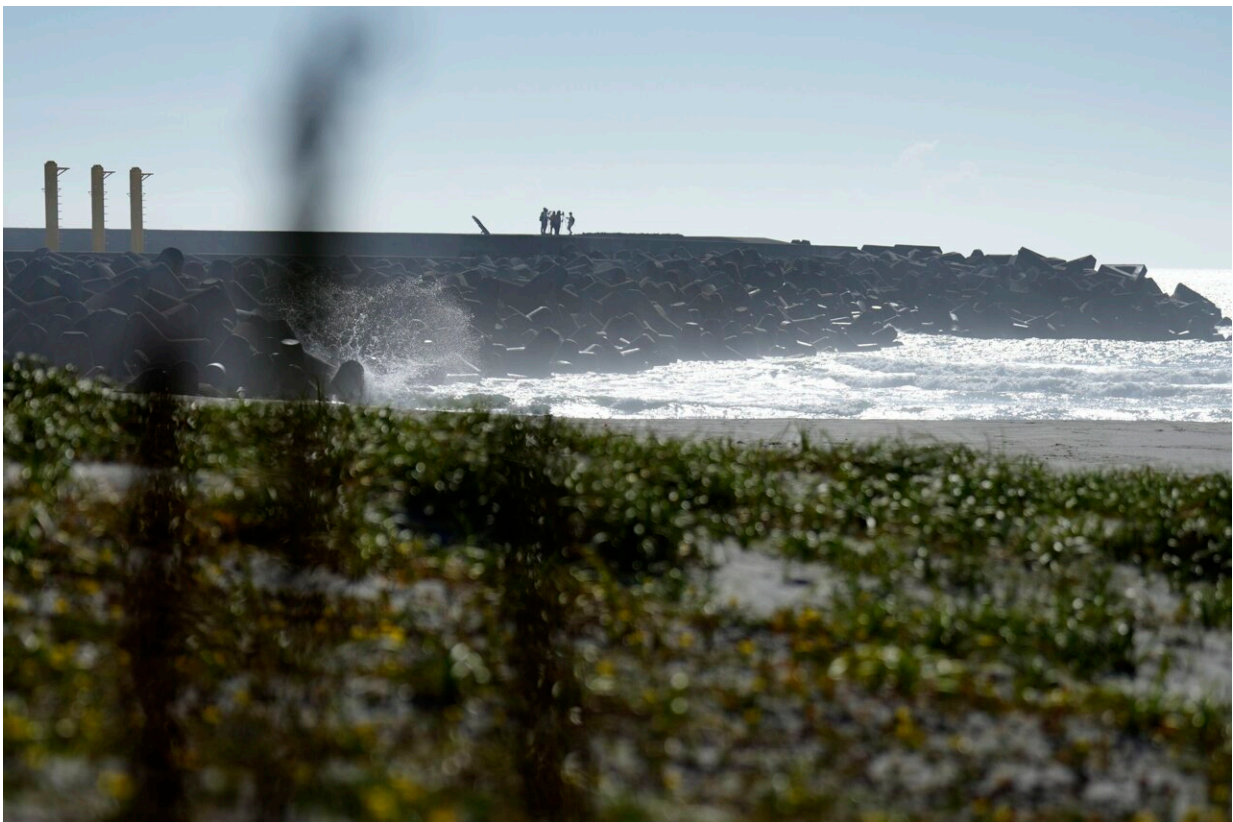


Japan's Fukushima nuclear plant begins releasing treated radioactive wastewater into the sea

August 24 2023, by Mari Yamaguchi



Journalists film the Fukushima Daiichi nuclear power plant, damaged by a massive March 11, 2011, earthquake and tsunami, from the nearby Ukedo fishing port in Namie town, northeastern Japan, Thursday, Aug. 24, 2023. The Fukushima Daiichi nuclear power plant will start releasing treated and diluted radioactive wastewater into the Pacific Ocean as early as Thursday. Credit: AP Photo/Eugene Hoshiko

The tsunami-wrecked [Fukushima Daiichi nuclear power plant](#) 's operator says it began releasing its first batch of treated radioactive water into the Pacific Ocean on Thursday—a controversial step, but a milestone for Japan's battle with the growing radioactive water stockpile.

In a [live video](#) from a [control room](#) at the plant, Tokyo Electric Power Company Holdings showed a staff member turn on a seawater pump with a click of a mouse, marking the beginning of the controversial project that is expected to last for decades.

"Seawater Pump A activated," the main operator said, confirming the release was underway. TEPCO later confirmed that the seawater pump was activated at 1:03 p.m. (0403 GMT), three minutes after the final step began.

TEPCO said an additional wastewater release pump was activated 20 minutes after the first. Plant officials said everything was moving smoothly so far.

Japanese fisher groups have opposed the plan for fear it will further damage to the reputation of their seafood. Groups in China and South Korea have also raised concern, making it a political and diplomatic issue.

But the Japanese government and TEPCO say the water must be released to make room for the plant's decommissioning and to prevent accidental leaks. They say the treatment and dilution will make the wastewater safer than international standards and its environmental impact will be negligibly small.



This aerial view shows the tanks, seen foreground, which contain treated radioactive wastewater at the Fukushima Daiichi nuclear power plant in Fukushima, northern Japan, on Aug. 22, 2023. The operator of the tsunami-wrecked Fukushima Daiichi nuclear power plant will begin releasing the first batch of treated and diluted radioactive wastewater into the Pacific Ocean later Thursday, Aug. 24, 2023, utility executives said. Credit: Kyodo News via AP

Tony Hooker, director of the Center for Radiation Research, Education, Innovation at the University of Adelaide, said the water released from the Fukushima plant is safe. "It certainly is well below the World Health Organization drinking water guidelines," he said. "It's safe."

"It's a very political issue of disposing radiation into the sea," he said. "I understand people's concerns and that's because we as scientists have not explained it in a very good way, and we need to do more education."

Still, some scientists say the long-term impact of the low-dose radioactivity that remains in the water needs attention.

In a statement Thursday, International Atomic Energy Agency Director General Rafael Mariano Grossi said, "IAEA experts are there on the ground to serve as the eyes of the international community and ensure that the discharge is being carried out as planned consistent with IAEA safety standards."



This aerial view shows the tanks containing treated radioactive wastewater at the Fukushima Daiichi nuclear power plant in Fukushima, northern Japan, on Aug. 22, 2023. The operator of the tsunami-wrecked Fukushima Daiichi nuclear power plant will begin releasing the first batch of treated and diluted radioactive wastewater into the Pacific Ocean later Thursday, Aug. 24, 2023, utility executives said. Credit: Kyodo News via AP

The United Nations agency also said it would launch a webpage to provide live data about the discharge, and repeated its assurance that the IAEA would have an on-site presence for the duration of the release.

The water release begins more than [12 years after the March 2011 nuclear meltdowns](#), caused by a massive earthquake and tsunami. It marks a milestone for the plant's battle with an ever-growing [radioactive water](#) stockpile that TEPCO and the government say has hampered the daunting task of removing the fatally toxic melted debris from the reactors.

The pump activated Thursday afternoon sent the first batch of the diluted, treated water from a mixing pool to a secondary pool 10 minutes later. It then moves through a connected undersea tunnel to go out 1 kilometer (0.6 miles) off the coast. Officials said the water moves at a walking speed and will take about 30 minutes to exit from the tunnel.



The Fukushima Daiichi nuclear power plant, damaged by a massive March 11, 2011, earthquake and tsunami, is seen from the nearby Ukedo fishing port in Namie town, northeastern Japan, Thursday, Aug. 24, 2023. The Fukushima Daiichi nuclear power plant will start releasing treated and diluted radioactive wastewater into the Pacific Ocean as early as Thursday. Credit: AP Photo/Eugene Hoshiko

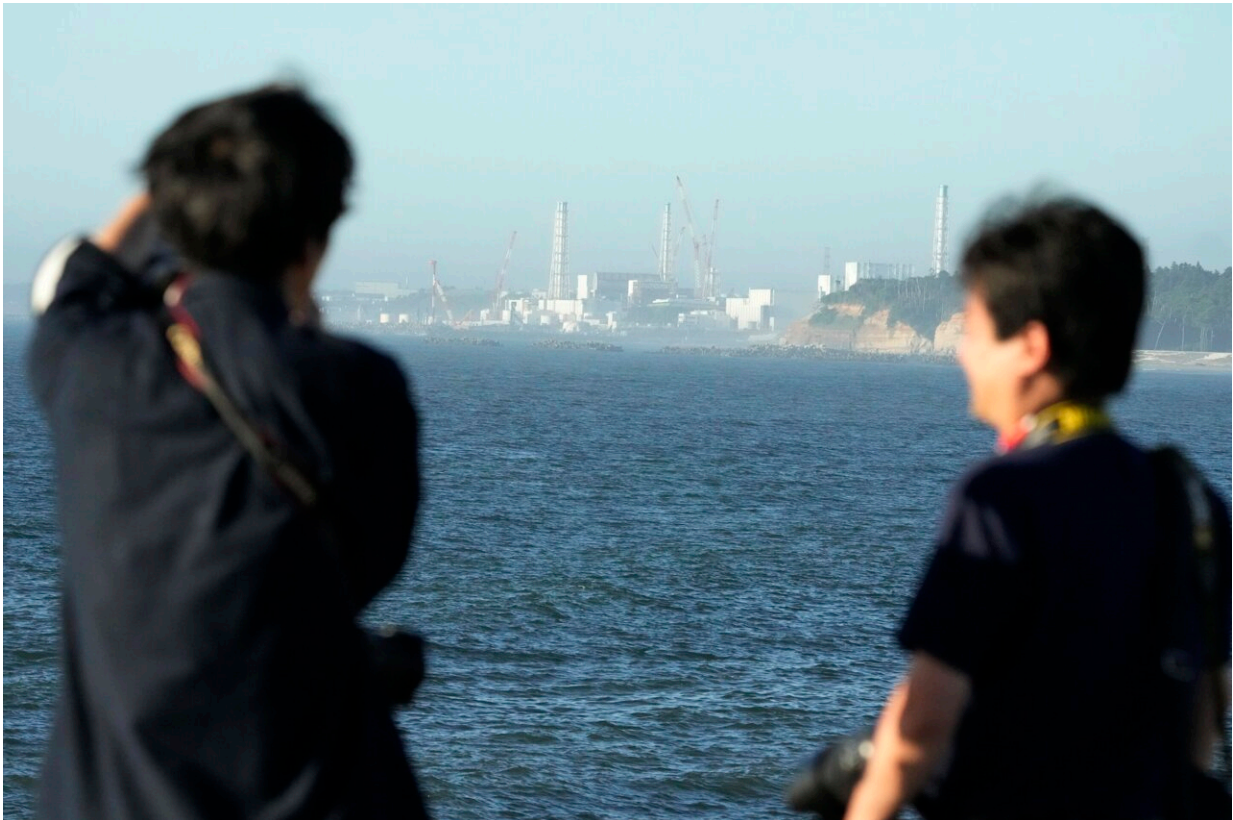
The operator checked data and the progress on a set of four monitors that show the water volume, pump conditions and any alerts.

TEPCO executive Junichi Matsumoto said Thursday's release was planned to start small in order to ensure safety.

The wastewater is collected and partly recycled as cooling water after

treatment, with the rest stored in around 1,000 tanks, which are already filled to 98% of their 1.37-million-ton capacity. Those tanks, which cover much of the plant complex, must be freed up to build the new facilities needed for the decommissioning process, officials said.

Final preparation for the release began Tuesday, when just one ton of treated water was sent from a tank for dilution with 1,200 tons of seawater, and the mixture was kept in the primary pool for two days for final sampling to ensure safety, Matsumoto said. A batch of 460 tons was to be sent to the mixing pool Thursday for the actual discharge.



The Fukushima Daiichi nuclear power plant, damaged by a massive March 11, 2011, earthquake and tsunami, is seen from the nearby Ukedo fishing port in Namie town, northeastern Japan, Thursday, Aug. 24, 2023. The Fukushima Daiichi nuclear power plant will start releasing treated and diluted radioactive

wastewater into the Pacific Ocean as early as Thursday. Credit: AP
Photo/Eugene Hoshiko

Fukushima's fisheries, tourism and economy—which are still recovering from the disaster—worry the release could be the beginning of a new hardship.

Fukushima's current fish catch is only about one-fifth its pre-disaster level, in part due to a decline in the fishing population. China has tightened radiation testing on Japanese products from Fukushima and nine other prefectures, halting exports at customs for weeks, Fisheries Agency officials said.

Prime Minister Fumio Kishida said the release is indispensable and could not be postponed. He noted an experimental removal of a small amount of the melted debris from the No. 2 reactor is set for later this year using a remote-controlled giant robotic arm.

In 2021, the Japanese government announced plans to release the treated water to the sea. Then, on Sunday, Kishida made a rushed visit to the plant before meeting with fisheries representatives and pledging to support their livelihoods until the release ends.



Fishermen arrange their fishing net at Ukedo fishing port in Namie town, northeastern Japan, on Thursday, Aug. 24, 2023, near the Fukushima Daiichi nuclear power plant, damaged by a massive March 11, 2011, earthquake and tsunami. The Fukushima Daiichi nuclear power plant will start releasing treated and diluted radioactive wastewater into the Pacific Ocean as early as Thursday. Credit: AP Photo/Eugene Hoshiko



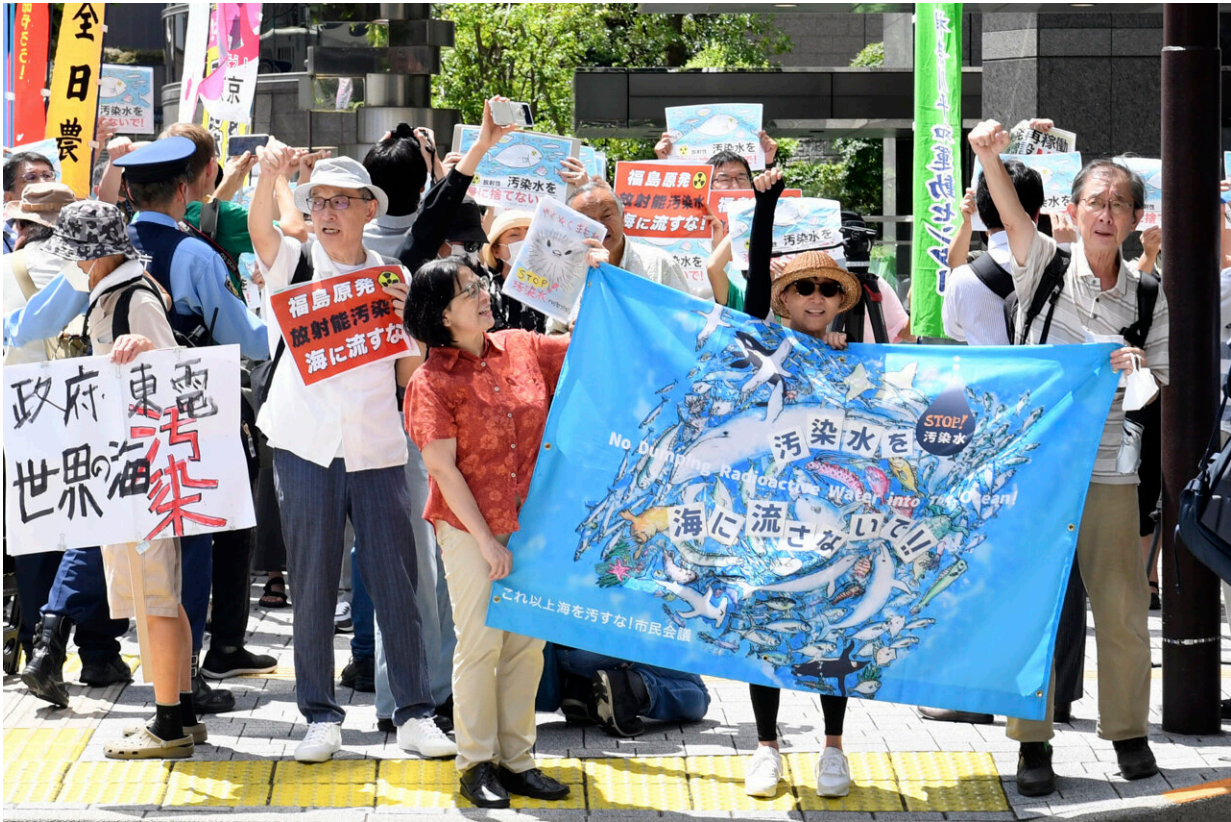
The Fukushima Daiichi nuclear power plant, damaged by a massive March 11, 2011, earthquake and tsunami, is seen from the nearby Ukedo fishing port in Namie town, northeastern Japan, Thursday, Aug. 24, 2023. The Fukushima Daiichi nuclear power plant will start releasing treated and diluted radioactive wastewater into the Pacific Ocean as early as Thursday. Credit: AP Photo/Eugene Hoshiko



The Fukushima Daiichi nuclear power plant, damaged by a massive March 11, 2011, earthquake and tsunami, is seen from the nearby Ukedo fishing port in Namie town, northeastern Japan, Thursday, Aug. 24, 2023. The Fukushima Daiichi nuclear power plant will start releasing treated and diluted radioactive wastewater into the Pacific Ocean as early as Thursday. Credit: AP Photo/Eugene Hoshiko



The Fukushima Daiichi nuclear power plant, damaged by a massive March 11, 2011, earthquake and tsunami, is seen from the nearby Ukedo fishing port in Namie town, northeastern Japan, Thursday, Aug. 24, 2023. The Fukushima Daiichi nuclear power plant will start releasing treated and diluted radioactive wastewater into the Pacific Ocean as early as Thursday. Credit: AP Photo/Eugene Hoshiko



Protester holds a sign during a rally against the treated radioactive water release from the damaged Fukushima nuclear power plant, in front of Tokyo Electric Power Company Holdings (TEPCO) headquarters, Thursday, Aug. 24, 2023, in Tokyo. The operator of the tsunami-wrecked Fukushima Daiichi nuclear power plant will begin releasing the first batch of treated and diluted radioactive wastewater into the Pacific Ocean later Thursday, utility executives said. Credit: AP Photo/Norihiro Haruta



Tokyo Electric Power Company Holdings executive Junichi Matsumoto, center, who is in charge of the treated water release from the Fukushima Daiichi nuclear power plant, announces that the first batch of treated and diluted radioactive wastewater will be released into the Pacific Ocean later Thursday from the plant, in the Okuma town on the northeastern coast of Japan, Thursday, Aug. 24, 2023. The operator of the tsunami-wrecked Fukushima Daiichi nuclear power plant will begin releasing the first batch of treated and diluted radioactive wastewater into the Pacific Ocean later Thursday, the utility executives said. Credit: AP Photo/Mari Yamaguchi



Members of an environmental group shout slogans during a rally to demand the stop of the Japanese government's decision to release treated radioactive water into the sea from the damaged Fukushima nuclear power plant, in Seoul, South Korea, Thursday, Aug. 24, 2023. The letters read " Stop to release radioactive water." Credit: AP Photo/Lee Jin-man



This aerial view shows the Fukushima Daiichi nuclear power plant in Fukushima, northern Japan, Thursday, Aug. 24, 2023. The operator of the tsunami-wrecked Fukushima Daiichi nuclear power plant says it has begun releasing its first batch of treated radioactive water into the Pacific Ocean — a controversial step, but a milestone for Japan's battle with the growing radioactive water stockpile. Credit: Kyodo News via AP



The Fukushima Daiichi nuclear power plant is seen in Namie, Fukushima prefecture, northern Japan, Thursday, Aug. 24, 2023. The operator of the tsunami-wrecked Fukushima Daiichi nuclear power plant says it has begun releasing its first batch of treated radioactive water into the Pacific Ocean — a controversial step, but a milestone for Japan's battle with the growing radioactive water stockpile. Credit: Kyodo News via AP



People protest at a beach toward the Fukushima Daiichi nuclear power plant, damaged by a massive March 11, 2011, earthquake and tsunami, in Namie town, northeastern Japan, Thursday, Aug. 24, 2023. The operator of the tsunami-wrecked Fukushima Daiichi nuclear power plant says it began releasing its first batch of treated radioactive water into the Pacific Ocean on Thursday — a controversial step, but a milestone for Japan's battle with the growing radioactive water stockpile. Credit: AP Photo/Eugene Hoshiko



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Protesters hold signs during a rally to denounce to release treated radioactive water into the sea from the damaged Fukushima nuclear power plant, outside of a building which houses Japanese Embassy, in Seoul, South Korea, Thursday, Aug. 24, 2023. The operator of the tsunami-wrecked Fukushima Daiichi nuclear power plant says it has begun releasing its first batch of treated radioactive water into the Pacific Ocean — a controversial step, but a milestone for Japan's battle with the growing radioactive water stockpile. Credit: AP Photo/Lee Jin-man



People protest at a beach toward the Fukushima Daiichi nuclear power plant, damaged by a massive March 11, 2011, earthquake and tsunami, in Namie town, northeastern Japan, Thursday, Aug. 24, 2023. The operator of the tsunami-wrecked Fukushima Daiichi nuclear power plant says it began releasing its first batch of treated radioactive water into the Pacific Ocean on Thursday — a controversial step, but a milestone for Japan's battle with the growing radioactive water stockpile. Credit: AP Photo/Eugene Hoshiko

The hurried timeline raised skepticism that it was made to fit Kishida's busy political schedule in September. But Economy and Industry Ministry officials say they wanted the release to start as early as possible and have good safety records ahead of the fall fishing season.

The March 2011 earthquake and tsunami destroyed the plant's cooling

systems, causing three reactors to melt. Highly contaminated cooling water applied to the damaged reactors has leaked continuously to building basements and mixed with groundwater.

TEPCO plans to release 31,200 tons of the treated [water](#) by the end of March 2024, which would empty only 10 tanks because of the contaminated production of wastewater at the plant, though the pace will later pick up.

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