

- Based on the government's basic policy, on August 25 of this year we made an announcement pertaining to the status of review on the detailed design and operation of equipment used to handle water treated with multi-nuclide removal equipment (hereinafter referred to as, "ALPS treated water") so as to minimize the impact of harmful rumors and prioritize safety.
- As part of this process the concentrations of tritium, the 62 nuclides, and carbon-14 contained in ALPS treated water being stored in facilities used for measurement and confirmation purposes (K4 tank group) are being measured to confirm at the stage prior to diluted discharge that ALPS treated water has been purified to the point where concentrations of the 62 nuclides and carbon-14 fall below government regulations for discharge into the environment.

<Already announced>

- Thorough measurement/confirmation of radiation concentrations of ALPS treated water will be performed using water sampled from the K4 tank group (approximately 30,000m<sup>3</sup>).
- The K4 tank group will be split into three separate groups (approximately 10,000m<sup>3</sup> each) that will be used for receiving, measurement/confirmation, and discharge preparation. When taking measurements, water to be analyzed shall be sampled upon circulating/agitating the water in the tank to ensure homogenization.
- In preparation for circulation demonstration experiments involving 10 linked tanks scheduled for February of next year, we plan to perform agitation demonstration experiments on November 23 in order to examine the operation and effectiveness of agitators installed in each tank, with the preparations to be started on November 18.
- We will continue to listen earnestly to the opinions of regional residents and officials, and suitably reflect these opinions in the design and operation of equipment.

# Agitation demonstration experiment details

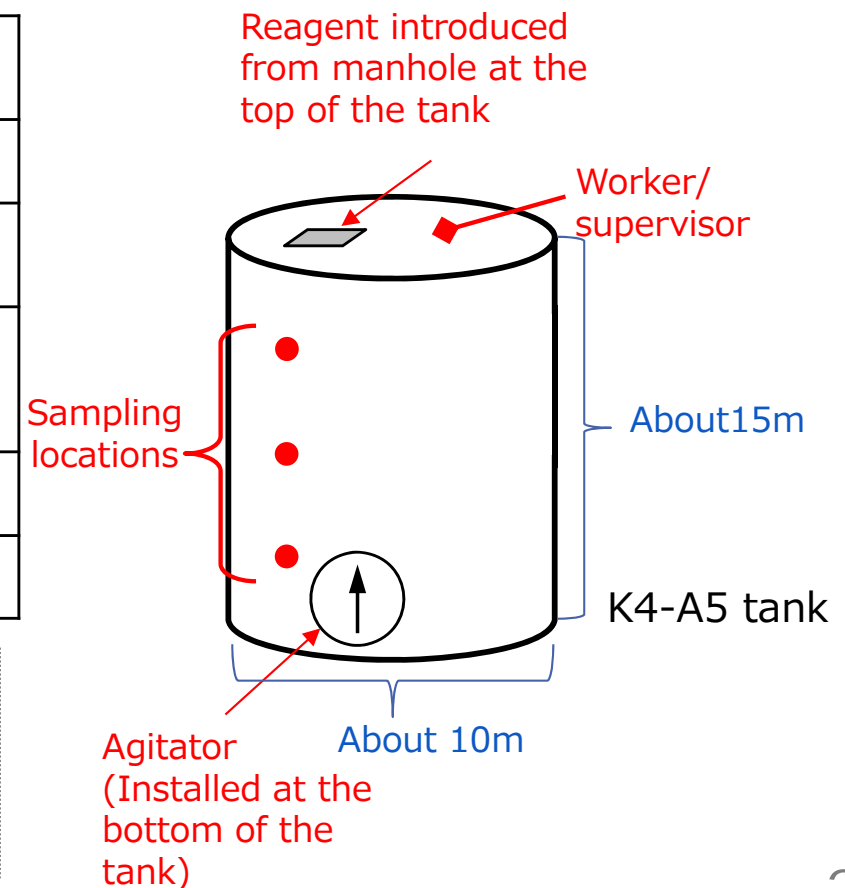
- During the agitation demonstration experiment, agitators will be newly installed at the bottom of the tanks. The operation of the agitators will then be examined along with the degree to which a reagent (tracer) added to the tank is mixed into the water.
- In February of next year we plan to preform a circulation demonstration experiment using the K4-B group that will target eight nuclides<sup>※1</sup> and the aforementioned reagent for analysis.

※1 : Primary seven nuclides (Cs-134, Cs-137, Sr-90, I-129, Ru-106, Co-60, Sb-125) and tritium

Implementation Date	November 23, 2021
Test period	Approximately 8 hours
Sampling	9 times in total. (Prior to testing and at approximately 30min intervals thereafter)
Sample amount	1L for each sampling (sampled from three depths (top (11.6m), middle (7.6m), bottom (2.6m)))
Analysis target	Reagent <sup>※2</sup>
Tanks sampled	K4-A5

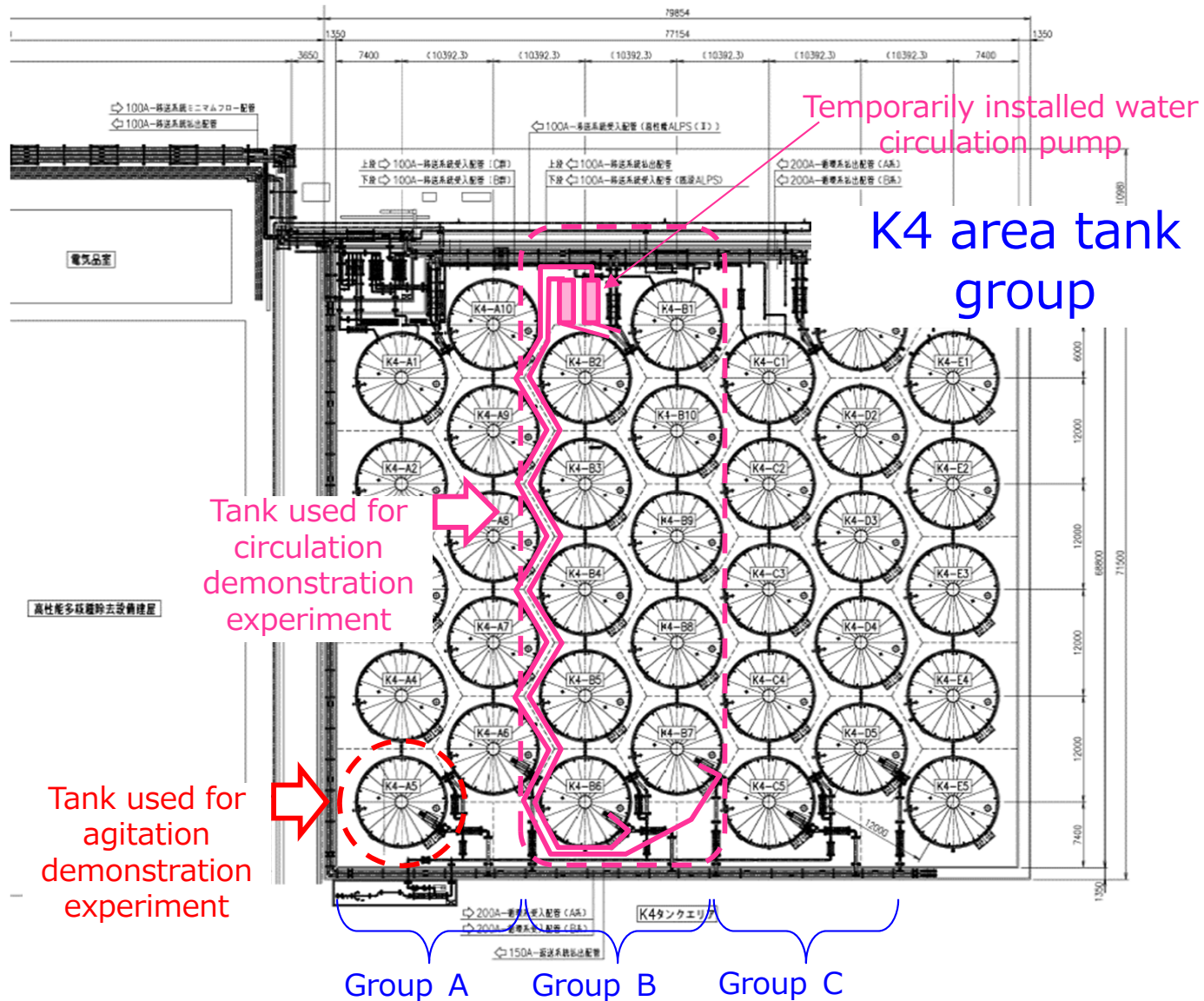
※2 : Since there is not a large difference in concentration of tritium within the sample tanks, a reagent that does not exist inside the tank (trisodium orthophosphate<sup>※3</sup>) will be introduced in order to examine concentration distribution.

※3 : The amount of trisodium orthophosphate introduced will be 1/100 that allowed by waste water regulations (average daily amount of phosphorus allowed in waste water: 8ppm) stipulated by ordinance of Fukushima Prefecture



# (Reference) Location of tanks used for the experiment

- Tank K4-A5 will be used for the agitation demonstration experiment
- Tank K4-B will be used for the circulation demonstration experiment (Scheduled for the middle of February)



## (Reference) Agitator specifications

- Model: Submersible Mixer for Agitation Purposes (Upright, top discharge type)
- Motor output: 1.5kW
- Rated flow: 9.6m<sup>3</sup>/min
- Mass: 69 kg



(Top view of agitator)



(Side view of agitator)

Agitator  
(Installed at the bottom of the tanks)

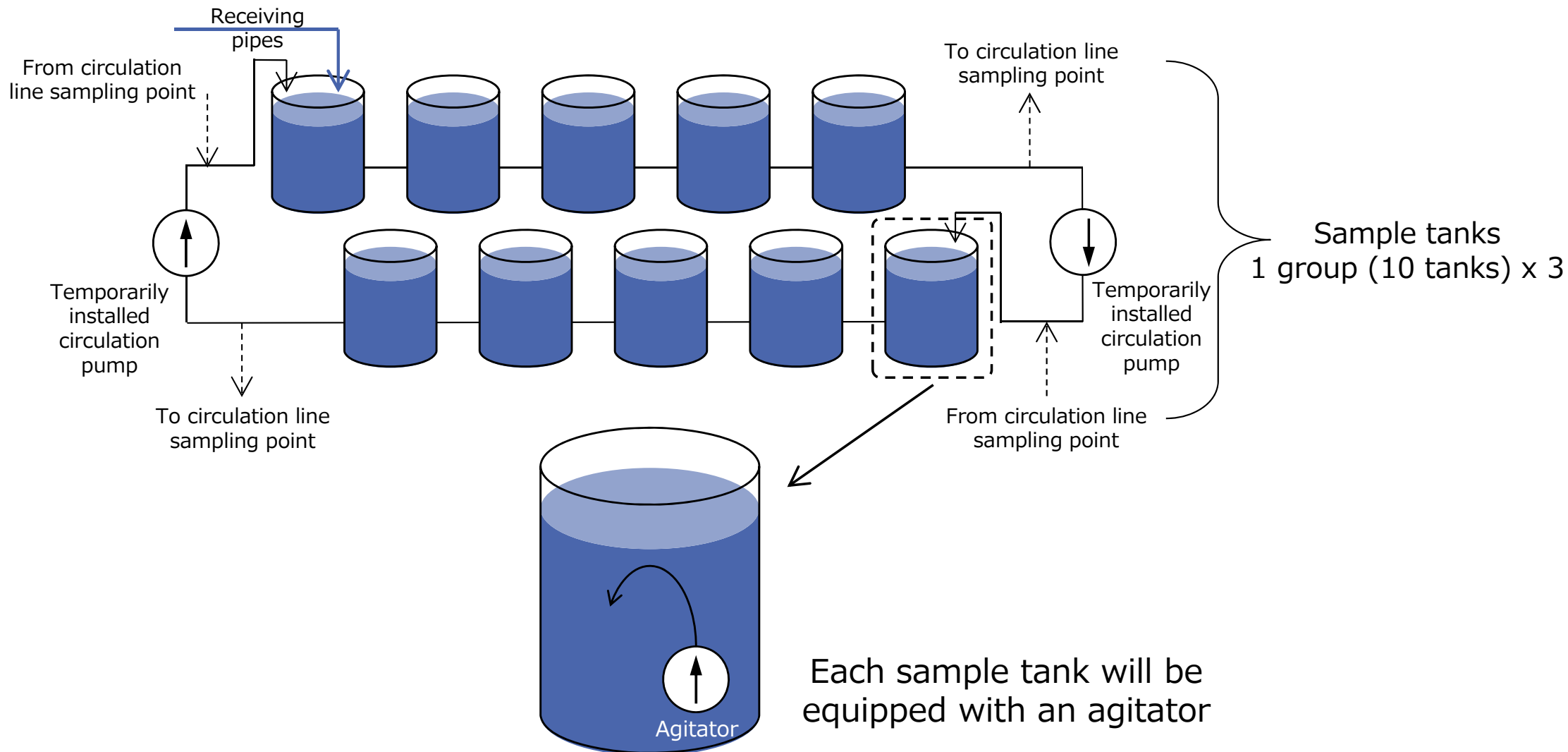
# (Reference) Schedule

- Agitator demonstration experiment preparations shall begin on November 18.
- The agitator demonstration experiments shall be performed on November 23.

Details	Year	2021					
	Month	11					
	Date	18	19	20	21	22	23
	Day	Thu.	Fri.	Sat.	Sun.	Mon.	Tue
Agitator equipment brought in		—					
Agitator connection, rotation check		—					
Agitator installation			—				
Agitator test run (no tracer)			—	—			
Agitator installation and adjustment					•••••	•••••	
<b>Agitation demonstration experiment</b>							—

# (Reference) Sampling tank configuration

- 10 sampling tanks shall be connected to create one group.
- Each sampling tank will be equipped with an agitator that mixes the water in the tank.
- Two circulation pumps will be used to circulate the water in the ten tanks that make up the tank group.



# (Reference) Water sampler overview

- The water sampler will be lowered through the manhole at the top of the tank to take water samples from different depths (one liter for each sampling)

