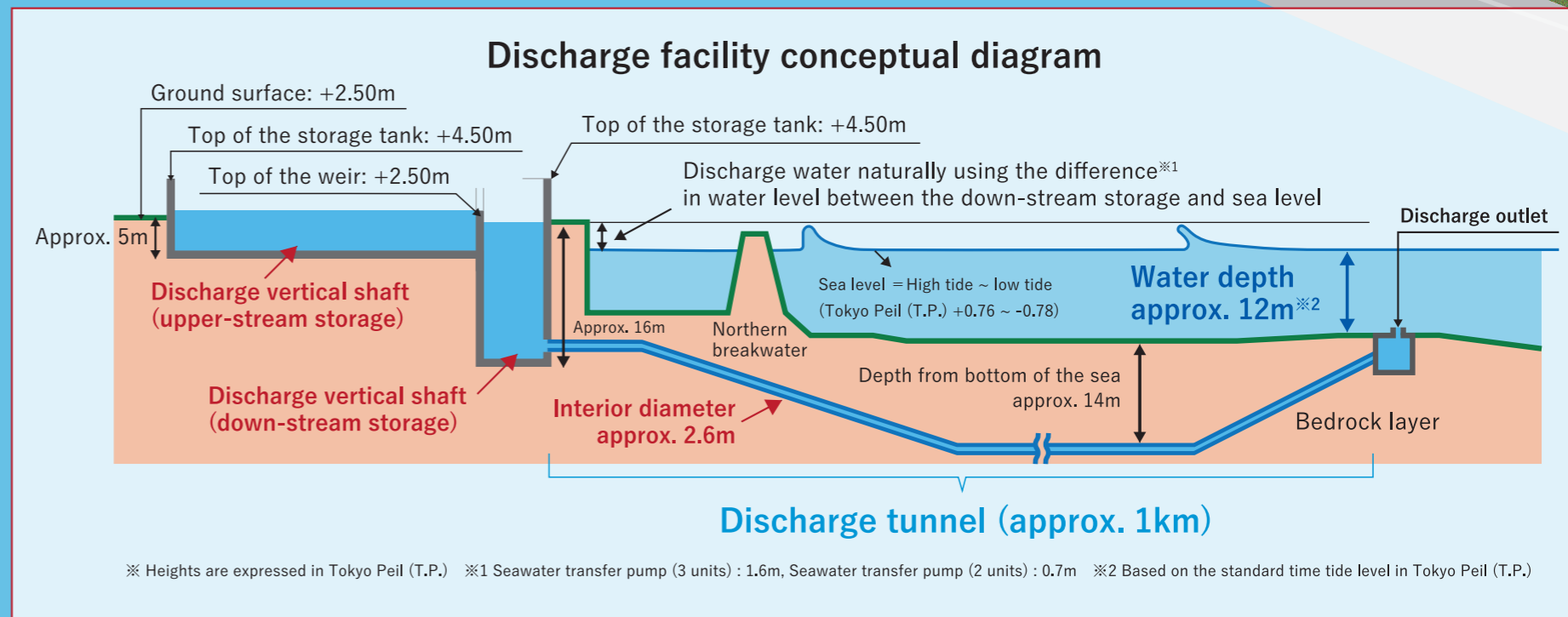
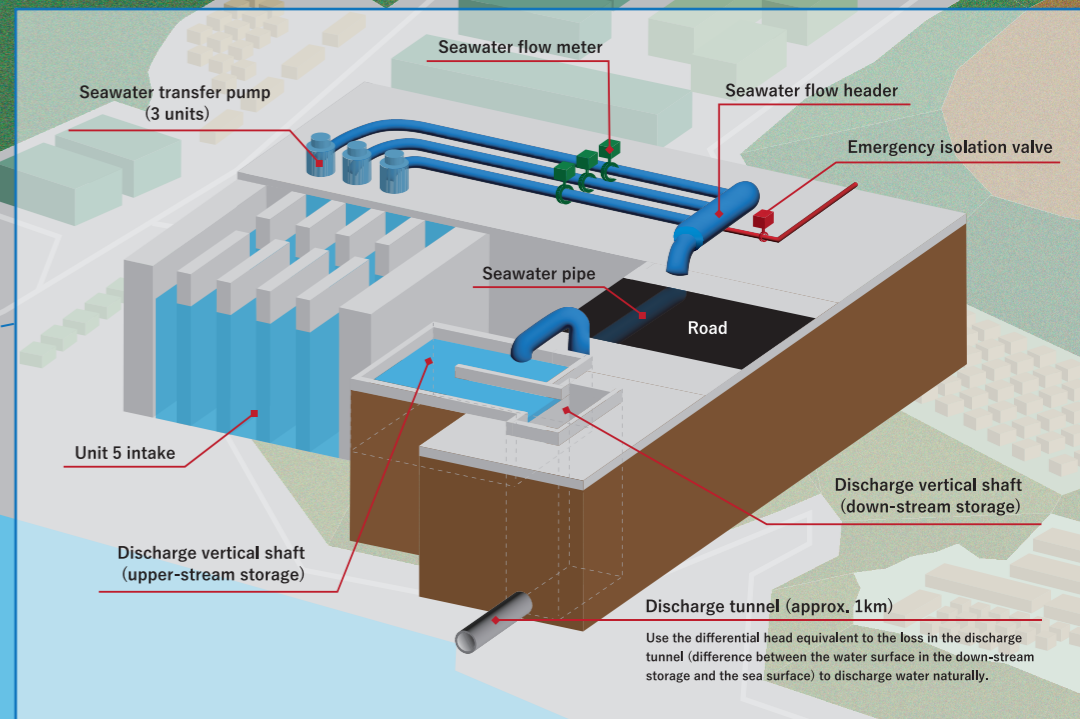
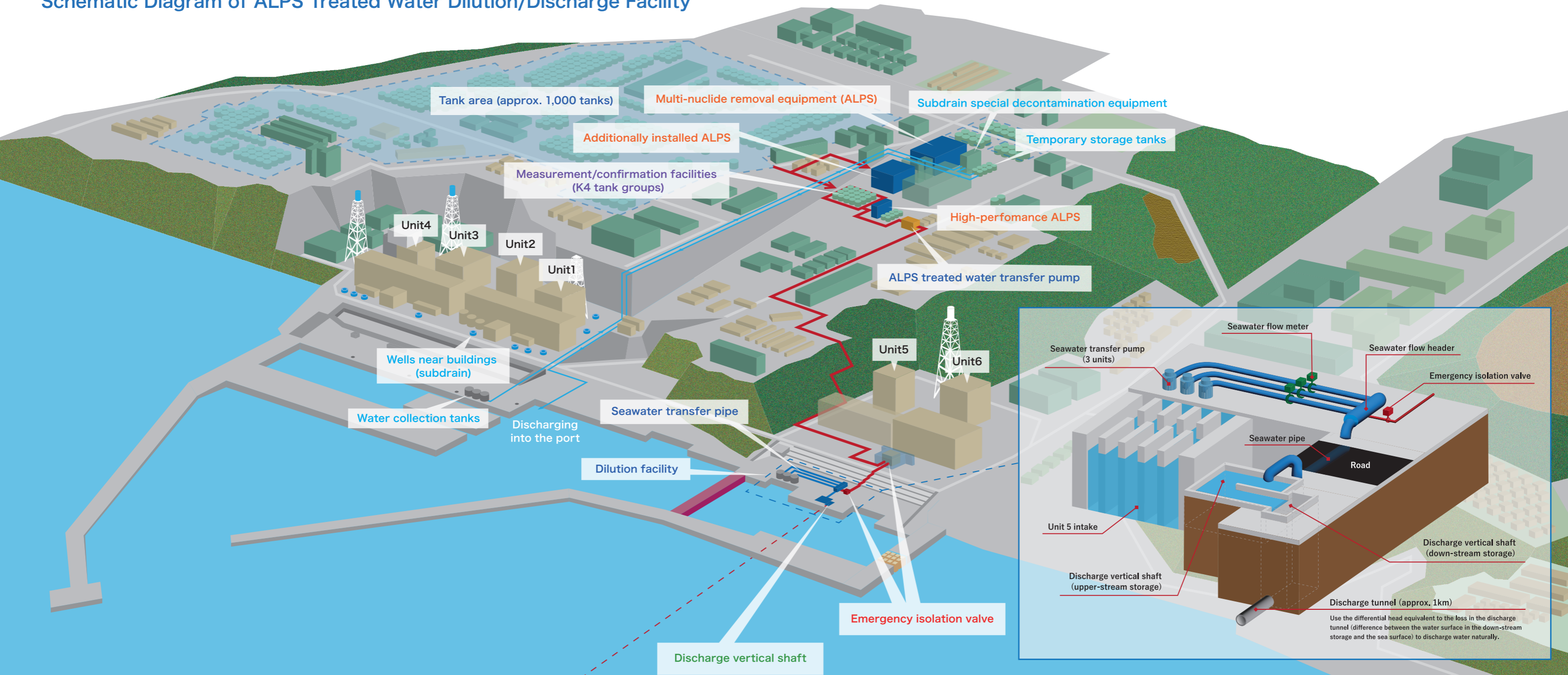


# Schematic Diagram of ALPS Treated Water Dilution/Discharge Facility



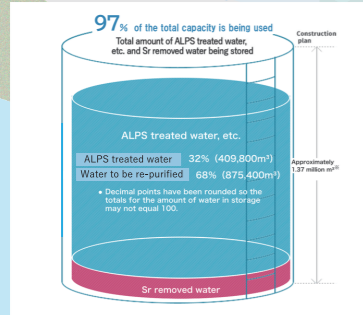
Discharge outlet

Discharge tunnel

# Overall View of ALPS Treated Water Dilution/Discharge Facility (3D schematic diagram)

[The tritium concentration in the tank]  
Less than approx. 150,000 ~ 2,160,000 Bq/L (As of April 2021)  
The tritium concentration of ALPS treated water to be discharged into the sea is set to a maximum of 1 million Bq/L.

Approx. 1,330,000m<sup>3</sup>  
(as of May, 2023)



[ALPS treated water]  
Water treated with multi-nuclide removal equipment (ALPS) so that the concentrations of radioactive materials other than tritium sufficiently satisfy the regulatory standard value for safety (sum of the ratios to regulatory concentration limits excluding tritium, is less than 1)

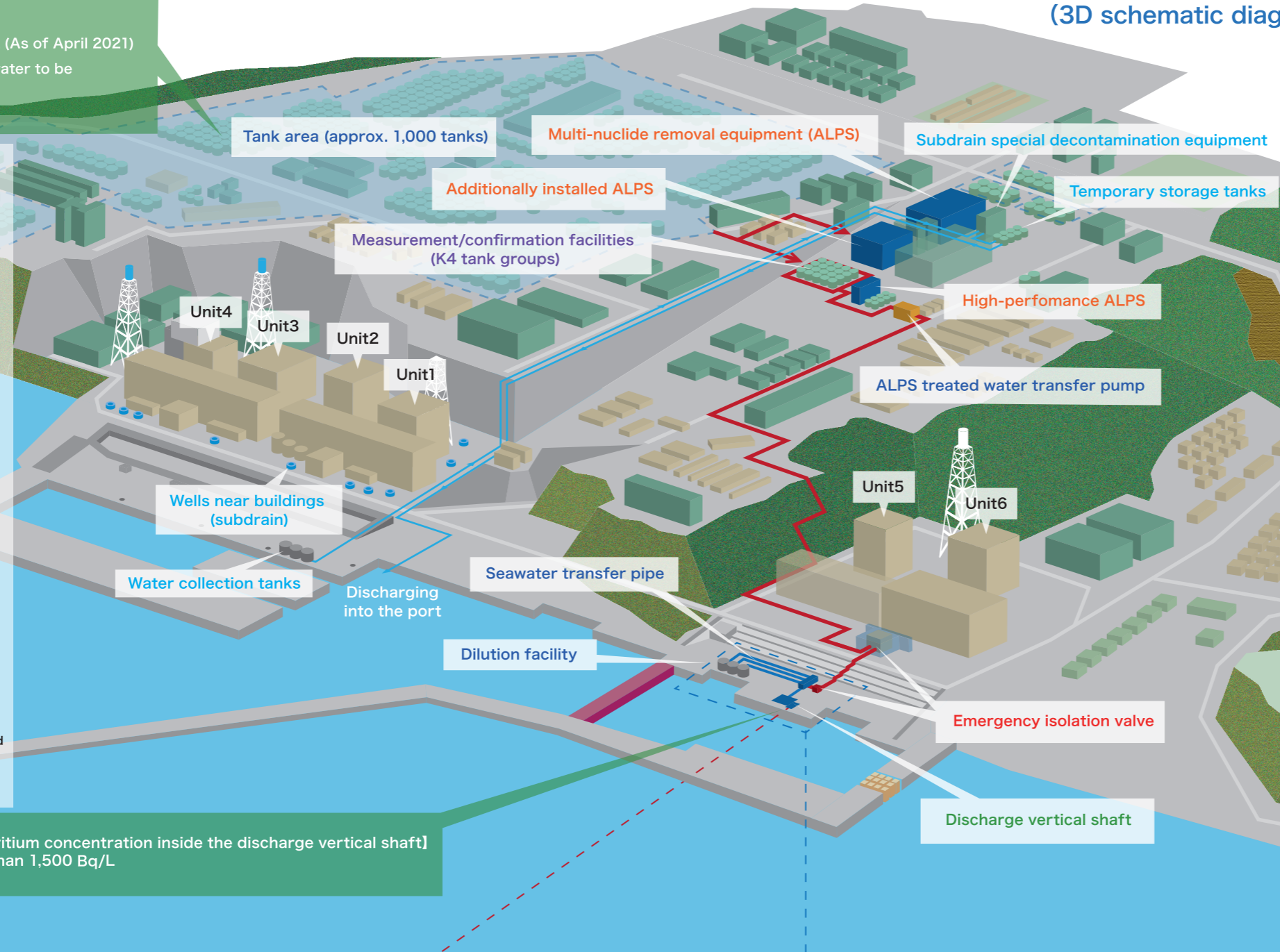
[Treated water to be re-purified]  
Water that has been purified with multi-nuclide removal equipment (ALPS), but for which the concentrations of radioactive materials do not meet the regulatory standard value for safety (sum of the ratios to regulatory concentration limits excluding tritium, is 1 or higher)  
Before discharging into the sea, it will be re-purified to remove radioactive materials other than tritium until satisfying the regulatory standards

[The tritium concentration inside the discharge vertical shaft]  
Less than 1,500 Bq/L

Discharge tunnel  
(undersea, length: approx. 1km, interior diameter approx. 2.6m)

Discharge outlet (water depth approx. 12m)

[The tritium concentration near the discharge outlet]  
Tritium will disperse swiftly as it flows away from the discharge outlet, and after 2-3 kilometers the tritium concentration will be indistinguishable from the concentration of the surrounding sea.



**Secondary treatment facility**  
Radioactive materials other than tritium in the water stored in the tanks will be purified as many times as necessary until they are certainly below the regulatory standard value for safety at the pre-discharge stage.  
Treated water that exceeds the regulatory standard value will not be discharged without treatment.

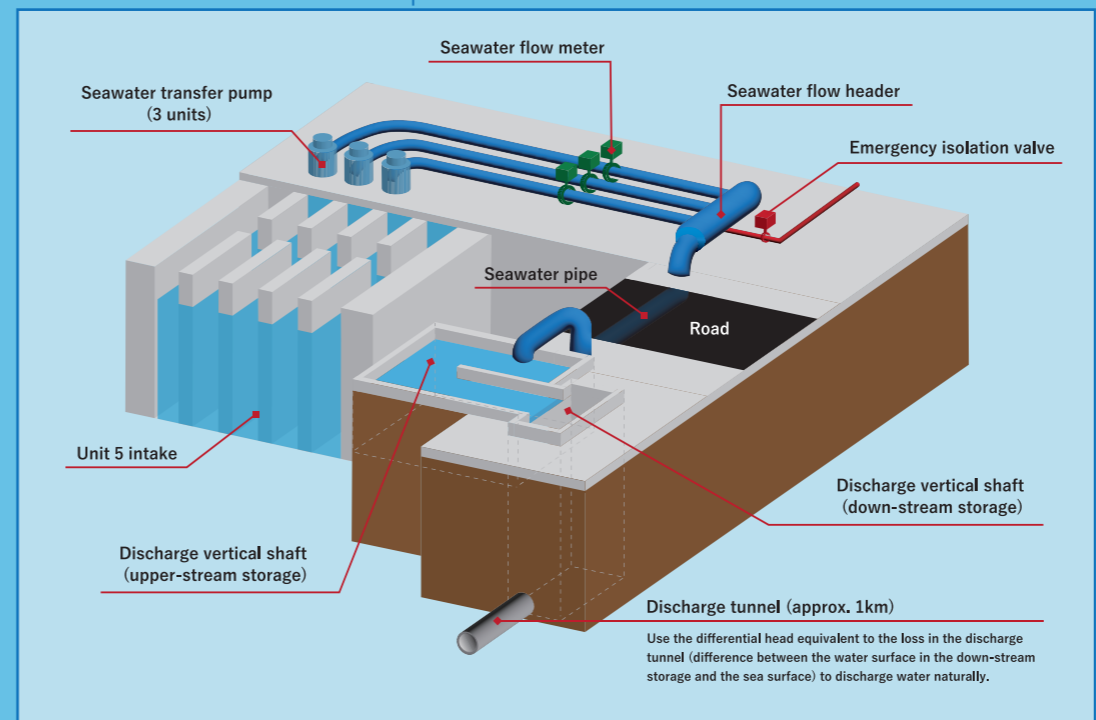
**Measurement/confirmation facility**  
Comprised of three sets of tank groups (one group : approx. 10,000m<sup>3</sup>) each with the role of receiving, measurement/confirmation, and discharge.  
In measuring/confirmation process, after homogenizing ALPS treated water in the tanks by circulating and agitating, we will discharge only the water which be below the regulatory standard value for safety confirmed through the measurement and assessment by not only TEPCO but also the external agencies.

**Dilution facility**  
Three pumps with a capacity of approx. 170,000 m<sup>3</sup>/day each will be prepared so that the tritium concentration after dilution with seawater will be even greater below 1,500 Bq per liter.

**Emergency isolation valve**  
In the event of an abnormal dilution of ALPS treated water, emergency isolation valve will be closed automatically.

**Amount of ALPS treated water to be discharged**  
We will discharge ALPS treated water while ensuring that the tritium concentration will be less than 1,500 Bq/L and the total amount of tritium to be discharged for a year will be less than 22 trillion Bq, which is same as the target discharge management value before the accident. It will be as small as possible to the extent that it does not interfere with decommissioning.

**Radiological impact assessment on public and environment**  
Tritium will disperse swiftly as it flows away from the discharge outlet, and after 2-3 kilometers the tritium concentration will be indistinguishable from the concentration of the surrounding sea.  
For the assessment conducted in accordance with internationally recognized methods, results of the assessment on the public found that the exposure dose was approx. 1/30,000 to approx. 1/500,000 of upper limit of annual radiation dose for the general public not engaged in work at nuclear facilities, etc.※ (1 mSv/year) and approx. 1/70,000 to approx. 1/1,000,000 of natural radiation exposure (average in Japan : 2.1 mSv/year)  
※Dose limit for the general public



**<Reference> Wells near buildings (subdrain)**  
Groundwater flowing from the mountain side of the site is pumped up from wells near the reactor buildings, etc. The pumped-up groundwater is purified and discharged into the sea after being confirmed by TEPCO and third parties to meet the effluent standard (tritium concentration: 1,500 Bq/L), thereby reducing the amount of groundwater approaching the reactor buildings, etc.



# Overall View of ALPS Treated Water Dilution/Discharge Facility (Plan schematic diagram)

## Radiological impact assessment on public and environment

Tritium will disperse swiftly as it flows away from the discharge outlet, and after 2-3 kilometers the tritium concentration will be indistinguishable from the concentration of the surrounding sea.

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※Dose limit for the general public

## Amount of ALPS treated water to be discharged

We will discharge ALPS treated water while ensuring that the tritium concentration will be less than 1,500 Bq/L and the total amount of tritium to be discharged for a year will be less than 22 trillion Bq, which is same as the target discharge management value before the accident. It will be as small as possible to the extent that it does not interfere with decommissioning.

## Emergency isolation valve

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## Measurement/confirmation facility

Comprised of three sets of tank groups (one group : approx. 10,000m<sup>3</sup>) each with the role of receiving, measurement/confirmation, and discharge.

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## Secondary treatment facility

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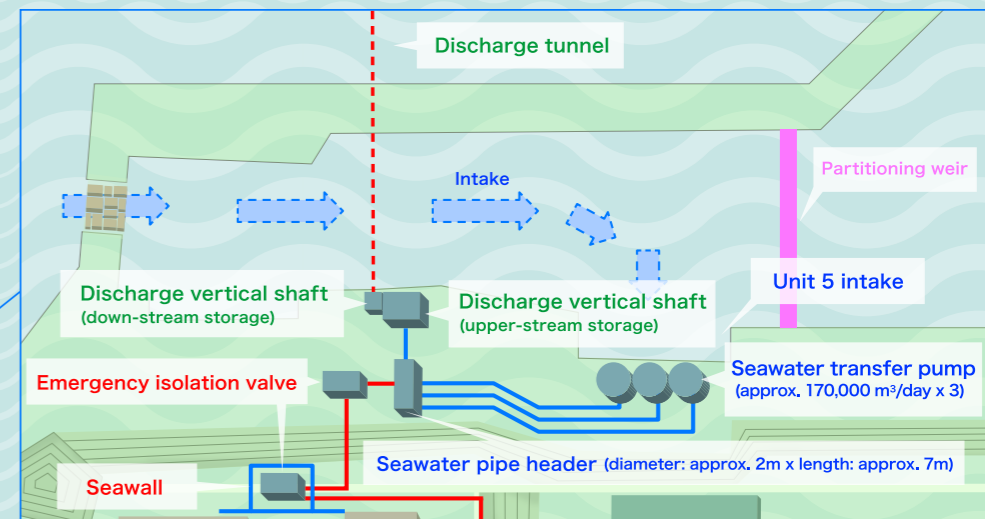
Treated water that exceeds the regulatory standard value will not be discharged without treatment.

[The tritium concentration near the discharge outlet]  
Tritium will disperse swiftly as it flows away from the discharge outlet, and after 2-3 kilometers the tritium concentration will be indistinguishable from the concentration of the surrounding sea.

Discharge outlet (water depth approx. 12m)

Discharge tunnel (undersea, length: approx. 1km, interior diameter approx. 2.6m)

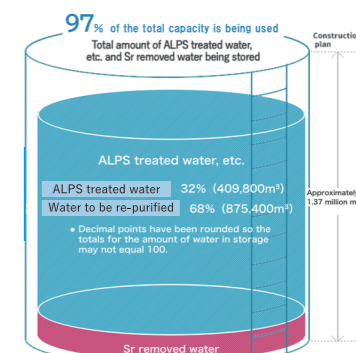
[The tritium concentration inside the discharge vertical shaft]  
Less than 1,500 Bq/L



## Dilution facility

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Approx. 1,330,000m<sup>3</sup> (as of May, 2023)



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Less than approx. 150,000 ~ 2,160,000 Bq/L (As of April 2021)

The tritium concentration of ALPS treated water to be discharged into the sea is set to a maximum of 1 million Bq/L.

Discharge vertical shaft

Dilution facility

Emergency isolation valve

ALPS treated water transfer pump

Measurement/confirmation facilities (K4 tank groups)

Unit 1 Unit 2 Unit 3 Unit 4 Unit 5 Unit 6

Seawater transfer pipe

High-performance ALPS

Additionally installed ALPS

Multi-nuclide removal equipment (ALPS)

Tank area (approx. 1,000 tanks)

