④ Management of contaminated water inside the buildings

【Current situation】

Discharge of contaminated water from the buildings is blocked by controlling the water level of contaminated water inside the buildings lower than the groundwater level. Although management of the water level in the building is thought to continue to be effective, sealing measures will be important to mitigate risk upon removal of contaminated water such as by drying up the whole of the buildings.

As measures to block groundwater from flowing into the buildings, installation of an impervious wall on the land side, etc., are planned. However, in case these measures do not prove to be effective, measures such as blocking water by filling water stops from inside the buildings and implementing soil improvement by putting water glass, silica gel, etc., in gaps between neighboring buildings are expected. (See Figure ④-1.)

However, due to high radioactivity at the reactor buildings and part of the area near the turbine buildings, it is a difficult environment for working in for long hours.

In order to block water from inside the buildings, water stops such as concrete could be filled from above ground. However, water stops may prove to be ineffective since groundwater is flowing, and there may be difficulty in filling water stops from above the ground without any gap since the underground structure below the buildings is complicated.

Moreover, standard implementation of soil improvement prove difficult since there exist many obstacles underground.

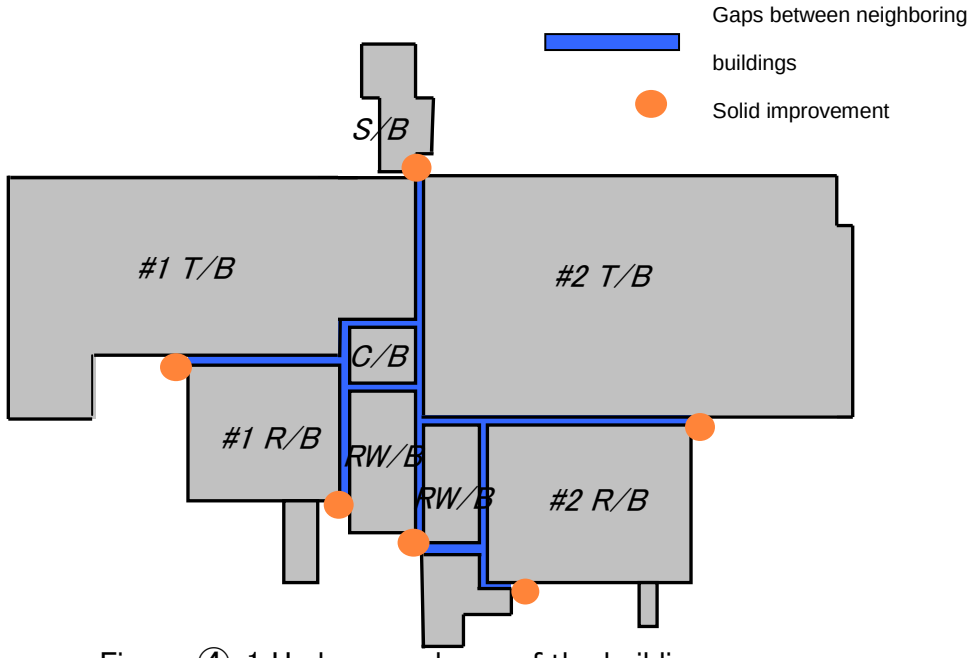

Figure ④-1 Underground map of the buildings

Figure ④-2 Situation close to the buildings

【Technologies needed】

(1) Technologies to block water inside the buildings

- Water stops that can solidify to block underground water continuously flowing into the buildings.
- Methods and materials that can work from above the ground and can fill water stops without gaps even if the structure under the buildings is complicated with the space divided by many rooms. (e.g. materials that will not disintegrate in water, with high fluidity, with sustainability in solid form, with a specific gravity heavier than water, which are suitable for mass installation)

(2) Technologies for soil improvement

- Technologies for soil improvement that can be implemented by remote control so as to make the work possible even in a high radiation environment near the buildings so that soil improvement near the buildings can stop underground water from flowing into the buildings.
- Technologies which are implementable even with a limited space or which can put chemicals into the ground near the buildings by boring far from the buildings. (There exist many obstacles near the buildings above the ground and it is difficult to spare sufficient space for implementation).
- Technologies for soil improvement that allow blocking water even inside the underground obstacles since there exist many underground obstacles that can disturb implementation of soil improvement, such as underground trenches.