

# Safety Assessment for the Temporary Storage Sites

Potential radiation exposure was evaluated for the Temporary Storage Sites (TSS) with contaminated soil and waste, removed as a result of decontamination. It was performed under normal and accident condition. Under normal condition, additional external exposure to nearby residents was evaluated. Under accident condition, exposure scenarios in case of fire, which is assumed to have the greatest impact, were evaluated.

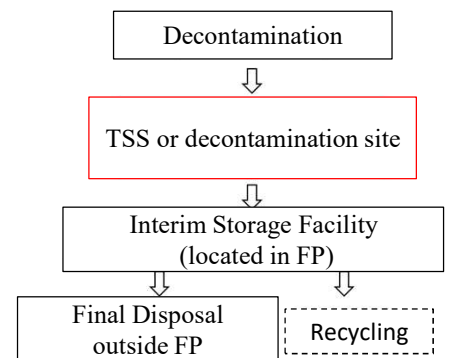
The results confirmed that if the removed soil and waste are stored according to the guidelines, the exposure dose will be low under normal condition. In addition, accident scenarios with high potential impact were identified and the ways to reduce exposure dose were indicated under accident conditions.

## Background

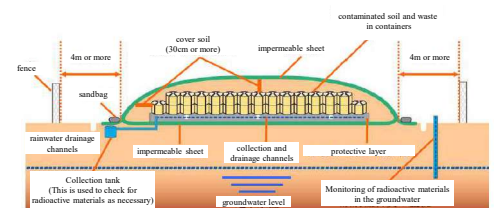
- TSS for soil and waste removed as a result of decontamination has safety measures in place to keep public exposure doses low.
- Even with safety measures in place, some accidents could occur.
- In preparation for accidents, it is important to assess the impact of an accident in advance.
- Therefore, we evaluated the radiation exposure that could occur in the TSS management process under normal and accident conditions.

## Method

- A conceptual TSS model was set up, and possible scenarios were developed for normal and accident conditions.
- A well-established exposure dose assessment model was used to evaluate each scenario.



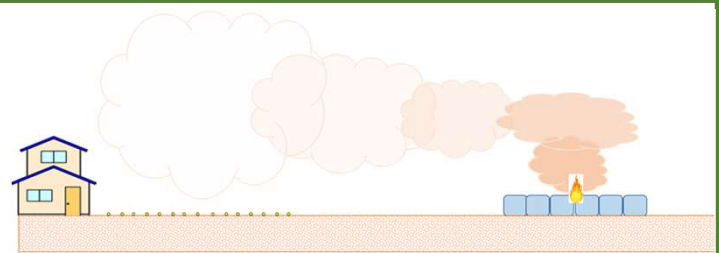
Life cycle of the contaminated soil and waste



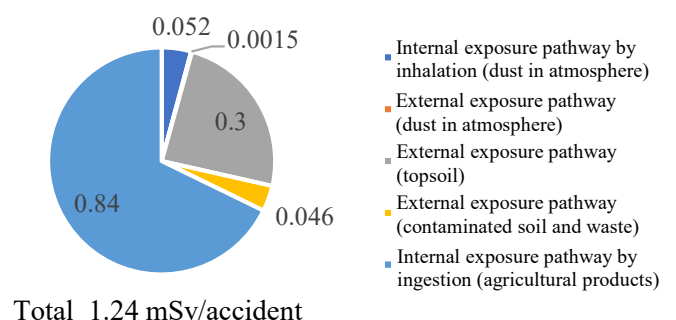
Structure of TSS

## Result

- The exposure dose at TSS under normal condition was evaluated to be 0.06 mSv/y by designing the TSS according to the guidelines, which is below the long-term safety goal; 1 mSv/y.
- As a result of a conservative evaluation of exposure doses under various accident scenarios, the highest exposure dose was estimated for the fire scenario.
- For fire scenario, which is largest among the scenarios, significant reduction of exposure dose can be reached by limiting the intake of agricultural products. In this case, the exposure dose is 0.4 mSv/accident.



Example of a possible situation of fire



Additional exposure dose assumed in the fire scenario

**We will study the restoration of TSS in the future**