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Original

A study for Storage, Treatment and Separation from Cesium of Treated Water Containing Tritium by using Super Absorbent Polymer

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● **Summary** ● After the Fukushima Daiichi nuclear disaster, treated water containing tritium has been stored in storage tanks for a long time, and in the near future, the storage space will be full. In this respect, using a super absorbent polymer to store treated water might enable storage in solid form, which is safer than storage in liquid form and exhibits less risk of leakage. This technique can also release treated water into the atmosphere during natural evaporation without needing additional energy while controlling the tritiated water concentration. In addition, the presence of radiocesium in the treated water is one of the causes for concern when it is time to release it into the ocean. This study investigates the possibility of using a super absorbent polymer to evaporate tritium in water vapor form via natural drying with a controlled evaporation rate. Consequently, the release rate of tritiated water could be increased by adding glucose. Cesium is selectively retained in the super absorbent polymer at a relatively high amount and stability, even when new water is added after drying.

Key Words: tritium, cesium, treated water, super absorbent polymer

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