Safety and waste management studies as design feedback for a fusion DEMO reactor in Japan

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**Highlight**

All radwaste originating from in-vessel components of DEMO in every periodic replacement is classified as LLW (Low Level Waste) and can be disposed of in shallow land burial.

**Approach and result**

- Activation and transport via likely pathways in the biosphere were analyzed for detrimental radioactive nuclides of in-vessel components.

- Radiation exposure by the nuclides is as low as 2.64 μSv/y at most when the waste (used in-vessel components) is disposed of in a concrete pit near the land surface after 10-year cooldown, being well below the shallow land burial condition in Japan (<10 mSv/y)