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P2.232 Testing of some potential techniques for the DEMO radioactive waste management

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Selection of technologies that are considered for detritiation and recycling of DEMO waste materials has been made. To study treatment of waste technological process at DEMO facility where it has to be accounted groups of specific materials as composites, metals, oxides and others. From them the DEMO facility will be constructed and which are considered for further modification of this unit. Nevertheless, the new design changes of DEMO had significant impact on waste and recycling. For example, there would be very different requirements for the different breeding blanket options.

Test information was submitted about the potential MSO and IMCC devices for the part of DEMO plant the Waste Management. The Molten Salt Oxidation (MSO) and the Induction Melting in Cold Crucible (IMCC) facilities has to be flexible for specifying kinds and quantities. The IMCC technology was tested for suitable materials that require temperatures up to 1000°C above melting point for the desired changes. The MSO technology can apply to different characteristic materials, typically from a liquid or suspension to small solids. For both technologies, groups of characteristic materials were selected, some of the representatives were tested and evaluated from the safety and environmental point of view as well.

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