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P4.230 JET work effort data collection for ITER operational radiation exposure optimization.

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The occupational radiation exposure (ORE) assessment is one of the key aspects of the licensing process for International Tokamak Experimental Reactor (ITER) currently under construction in Cadarache (France). As this machine is the first of its kind, the maintenance activities for the replacement and repair of components are foreseen to be frequent and complex. In this context the remote handling (RH) equipment will play the main role in reducing the radiation exposure to operators to the high radiation field inside the tokamak building. However, hands-on maintenance will be unavoidable, at least to prepare the areas in which the RH activity is planned to be used.

The first step to building an ORE assessment is to identify the work effort (WE), the time necessary to perform a task multiplied by the number of workers engaged in the task under the predicted conditions.

WE data was collected during the Joint European Torus (JET) maintenance shutdowns over the last 3 years under the framework of the Eurofusion WPJET3 program in order to build a validated WE data base (WE-DB) essential for the ITER ORE analyses. The first versions of the WE-DB dated back to the ORE studies for ITER-FEAT (ITER-Fusion Energy Advanced Tokamak), but at that time they included data based on engineering judgement that needed to be confirmed and validated from the WE data gathered in the fieldwork.

The methodology of the WE collection will be described together with the parameters for updating of the WE-DB based on the monitored activities at JET. In addition, a comparison with the WE data used in the previous ITER ORE assessments will allow optimization of the WE for the tasks traced but will also allow the application of the ALARA process by means of a fast and simple tool.

Presenter: MACHETA, Peter (Health Physics Group Assurance Division. United Kingdom Atomic Energy Authority (UKAEA) Culham Centre for Fusion Energy)

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