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P4.029 Enhanced operation of the EU EC Test Facility

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A Test Facility (TF) has been designed and installed at SPC to allow for the commissioning of the EU gyrotrons developed in view of their integration to the ITER EC system. The first phase of operation of this TF was dedicated to the development of the EU 2MW coaxial cavity gyrotron [1,2]. The EU gyrotron development for ITER has been reoriented since then and is presently advancing a 170GHz/1MW/CW gyrotron based on a technical design similar to the 140GHz/0.9MW/CW operated at W7X.
This paper will describe first the technical modifications brought to the existing TF to comply with the requirements of the new EU 1MW gyrotron designed within the EGYC consortium and manufactured by THALES. Not only mechanical adaptations of the support tower have been implemented, but also a complete review of the cooling system and of the auxiliaries (SCM PS, filament PS etc.) has been implemented.
In parallel, this TF has been updated to include a second tower to host a 170GHz/1MW/CW gyrotron from GYCOM. This facility, named FALCON, is used to perform testing of the main RF components part of the EC transmission line and Upper Launcher system installed on ITER. Care has been taken to permit switching of the auxiliaries from one tower to the other within a short time (<1 week) while maintaining operator safety and equipment protection. A detailed description of the additional implementation will be presented, focusing on the strategy followed to share the main auxiliaries (like the HVPS, the cooling system, the control, etc.) in order to ensure a safe and optimized operation.
Moreover, most of the new equipment, such as the control hardware, has been designed to fulfil the ITER site applicable standard. Finally, the preliminary operation results with this reconfigured TF will be described.

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