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P3.213 Design of the Main Building and Plant Systems of the IFMIF-DONES facility

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In the framework of the EU fusion roadmap implementing activities, an accelerator-based Li(d,n) neutron source called DONES (Demo-Oriented early NEutron Source) is being designed within the EUROfusion workpackage WPENS as an essential irradiation facility for testing candidate materials for DEMO reactor and future fusion power plants. The objective of this workpackage is to be ready for IFMIF-DONES construction as soon as 2020.

Recently a joint Spain-Croatia proposal to host DONES in Europe (Granada, Spain) has been made. The facility configuration is based on a number of systems grouped by areas with common technologies (the Accelerator Systems, Tests Systems and Lithium Systems). Besides them, the Site, Buildings & Plant Systems need to be designed in order to provide the necessary services. Also, the Main and the Auxiliary Buildings to host all the DONES Structure, Systems and components are to be designed.

In this paper, the engineering works done for the Site, Buildings & Plant Systems as well as the Main Building design activities will be presented. Within these engineering and design works the adaptation from a generic to the Granada specific site will be included, as well as the consolidation of the engineering input data that will allow a detailed engineering and the production of the technical specifications to be issued to the subcontractors. Also, the design criteria as well as the design basis for the facility Structures, Systems and components is included.

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