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Practical Implementation within the Electron Cyclotron Upper Launcher of the French INB Order of 2012

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The ITER project is being undertaken at Cadarache, France, to construct and operate an experimental nuclear fusion facility. The aim of this paper is the description of the implementation of the French Order of February 7, 2012, concerning Basic Nuclear Installation (also called "INB") within the European Union Domestic Agency (EU-DA), specifically on the Electron Cyclotron Upper Launcher (EC UL).

The EC UL will be used for the control and heating of the ITER plasma. The launcher includes in-vessel items (nuclear shielding, blanket module, port plug structure and optics) and ex-vessel first confinement items (diamond window, isolation valve, waveguides, miterbends, tapers and port plug back end).

According to the general rules of the French order, ITER Organization (IO), being the nuclear operator, has to monitor all activities related to the Design, Construction, Operation, Maintenance, Final shutdown and Dismantling of Nuclear facilities during their full life cycle at ITER. The EU-DA, as a tier 1 supplier of IO, applies a Requirements Management and Verification (RMV) process in order to track, control and verify all technical requirements applicable to EC UL components. EU-DA has duties regarding the compliance with the requirements propagated in his full supply chain performing Protection Important Activities (PIA). The methodology of this process will be illustrated for different EC UL Protection Important Components (PIC). The paper will go in more detail on the Nuclear Pressurized Equipment classification (ESPN) of the EC UL and its cooling circuits. The nuclear safety demonstration, traceability, validation of methods, qualifications, prototype tests, calculations and modelling, will be described with specific examples of EC UL.

ITER Disclaimer: The views and opinions expressed herein do not necessarily reflect those of the ITER Organisation.

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