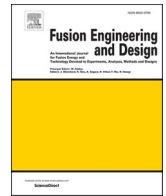


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Plant design and integration issues

Certain design, physics or technology choices are so integral to the plant architecture, that they have significant implications on a large number of systems that must be integrated into the plant. If such choices are made in isolation, they could have adverse effects on the design of the plant as a whole, adding risks and complexity to the design and increasing the difficulties for the integration of one or more systems and ultimately costs. Therefore, a thorough examination of system integration aspects is essential to ensure that the integrated view of the plant is maintained from the very beginning and all factors affected by the numerous design choices to be made are identified, evaluated, and properly weighted. Implementation of this approach provides an opportunity for overall design convergence, reduction of integration risk and minimization of life-cycle costs at an early stage of the design. The risk of postponing integration, assuming that it restricts innovation and

inhibits an attractive DEMO plant, is that designers remain oblivious to integration issues and develop design solutions that cannot be integrated in practice.

Eight Key Design Integration Issues (KDIIs) which have a strong impact on tokamak and plant design architecture, safety, maintainability and licensing were selected for study during the Pre-Concept Design Phase.

G. Federici^{a,b}

^a *EUROfusion Consortium, Programme Management Unit Garching 85748, Germany*

^b *Fusion for Energy, Boltzmannstr.2, Garching 85748, Germany*
E-mail address: Gianfranco.federici@euro-fusion.org.

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