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The European Spallation Source –ESS: Mechanical engineering and structural health monitoring.

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European Spallation Source (ESS) is a multi-disciplinary research facility currently being commissioned with major upcoming milestones for starting up operations. The mission of ESS is to operate the world's most powerful accelerator-based neutron source to enable scientific breakthroughs in the areas of materials, energy, health and the environment. ESS is a multi-disciplinary research facility currently under commissioning. Neutrons are obtained through the process of spallation by delivering 2 GeV protons to the solid tungsten target. The Mechanical Engineering, Technology & Analysis (META) group develops and performs mechanical engineering on facility level as well as performs the consolidated machine design under the ESS Plant Layout. ESS pursues stringent goals for machine availability and reliability with the META group implementing Structural Health Monitoring (SHM) techniques and Non-Destructive Testing (NDT) focusing on ultrasound, optical and modal, to validate machines' behavior, monitoring the aging effects and achieve steady state operations.

Footnotes

Funding Agency

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