Extending the economic lifetime of ageing plants by systematic engineering

Results in Brief

Competitiveness for elapsing plants

Plant performance, aside from the safety and environmental issues, needs to be periodically evaluated for cost effectiveness in relation to overall machine performance, maintenance, replacement of parts and other economic factors. A methodology designed to support decision making with respect to these issues has been developed that provides not only an assessment of any changes made, but an overview of overall plant performance in relation to the optimal plant functionality.

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Keeping aging plant production at optimal levels is often a careful balancing act between operating constant maintenance shifts, replacing faulty or broken parts, meeting with ever increasing health, environmental and safety legislation and keeping the plant economically competitive.

In order to achieve optimum performance levels, the ELAPSE methodology for analysing plant performance in terms of its economic prosperity and survival was developed. Extending the Economic Life of Aging Plants by Systematic Engineering (ELAPSE) methodology provides facilities to monitor, assess and ascertain the best procedural pathways a plant should initiate in order to maintain its longevity and competitiveness.

Based on data taken from overall industry standard for similar plants, the methodology is able to assess amendments, maintenance and the replacement of parts on a comparative level, thereby giving management a clear idea of which tasks are best suited to optimise performance standards before initiating expensive procedures.

The methodology is user-friendly, having both the capacity for input from plant specialists as well as the means to analyse plant performance on an historical basis. Using the software allows for a selection-testing environment that may provide insight into a variety of changes that advances data on the best improvement strategies, simulates the effects of changes made and compares results to a reference model, thus curtailing the expensive process of costly overhauls, improvements or renovations that might not prove optimal.

The methodology is suitable for nuclear fission plants, but can be adapted to a variety of industrial plant types and the developers are available for consultancy.

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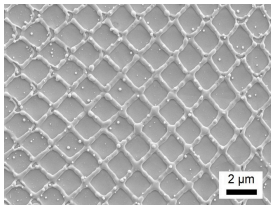

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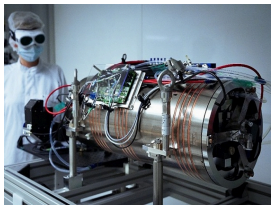

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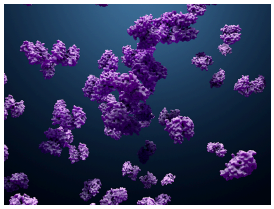

Novel method finds helpful enzymes easier

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ELAPSE

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