



3DEXPERIENCE

ENERGY, PROCESS & UTILITIES **DECOMMISSIONING EXCELLENCE**

Ensure safety and preserve the environment



EFFICIENT AND SAFE NUCLEAR PLANT DECOMMISSIONING

Nuclear plant decommissioning faces increased public and regulatory scrutiny as many reactors, built decades ago, reach their end of life. Owner/Operators decommissioning their facilities are under pressure to anticipate personnel radiation exposure, even though design and operation data can be incomplete and inaccurate. At the same time, they must warrant first-time-right deconstruction plans and execution, while ensuring radioactive material inventory accuracy for disposal optimization and to protect the environment.

Based on the **3DEXPERIENCE**® platform, Decommissioning Excellence provides Owner/Operators with an integrated environment in which all assets and waste inventories can be recorded and managed. Visualizing and simulating decommissioning operations in a virtual environment promotes greater field worker safety, while reducing costs and environmental impact.

LIFECYCLE STAGES



INTRODUCING DECOMMISSIONING EXCELLENCE

Decommissioning Excellence combined with Capital Facilities Information Excellence provides one source of information for the safe and cost-effective decommissioning of nuclear plants. Together they propose an entire waste inventory program from identification through to waste clearance. More efficient work schedules deliver safer and more cost-effective deconstruction programs while reducing environmental impact.

Digital mockup of radioactive waste inventory leads to more reliable disposal & storage decision-making

Decommissioning Excellence provides a comprehensive radioactive waste inventory in the context of the 3D virtual plant, with accurate bills of materials associated with the evidence of radioactive waste distribution.

By integrating the 3D model with engineering and radiation data and documents, knowledge is aggregated and hazardous materials are fully classified and traced throughout the decommissioning process. Moreover, stakeholders can reuse existing knowledge and schedule safe and efficient waste plans with confidence.

Simulate radiation dosimetry in multidimensional planning helps ensure workers' health and safety

A model-based approach to decommissioning planning provides a clear visual of radiation distribution. By integrating partial drawings and designs, stakeholders have a complete picture of the plant. Simulations predict further radiation risks, improving knowledge of the site and contributing to risk management plans.

Detailed work packages are created and linked to individual workers to assess dosimetry and plan equipment inventories. 3D instructions are turned into animated step-by-step sequences and digital simulations so that workers can improve

their understanding of disassembly operations in a risk-free virtual environment. Remote handling options are explored and compared against worker plans to provide the safest and most cost-effective actionable tasks. **One company reported saving up to 2,000 hours of training per month thanks to digital simulations.**

Manage the waste production lifecycle, from plan to disposal, to improve traceability and accountability

With Decommissioning Excellence, companies create a comprehensive waste clearance program enabling traceability across the radioactive waste cycle. Radioactive waste is identified, measured and classified to develop a full and accurate inventory, providing project teams with more control. Day-to-day waste handling constraints are scheduled and radioactive waste handling statuses can be reported in real time.

Hazardous material clearance is planned mitigating unscheduled or last-minute work at the site, which helps keep schedules on track. Hazardous material volumes are anticipated and work packages are integrated, enabling teams to more efficiently manage their time throughout the project.

KEY BENEFITS

- Improve field worker safety through digital simulation, optimization and training of the decommissioning process
- Reduce environmental impact by decreasing radioactive waste and the risk of exposure
- Acquire public acceptance thanks to digital visualization of the decommissioning plan
- Reduce decommissioning costs by comparing decommissioning options and through better project monitoring
- Enhance knowledge reuse by capitalizing past project experiences

Our 3DEXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 210,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.

