

Automation Platform for Engineering Simulation and Analysis

Software Solutions for Engineering Analysis

AREVA, the world's leading nuclear supplier, has developed a premier Automation Platform for Engineering Simulation and Analysis (APESA) to reduce cost and improve quality. AREVA wants to support the goals of Delivering the Nuclear Promise® initiative and provide the expertise powering this innovative platform to utilities who self-perform engineering analyses on a cycle-to-cycle basis.

Involved and Engaged

AREVA has actively supported the nuclear industry by developing a suite of automation products to perform complex engineering analysis for many of AREVA's evaluation methodologies. As part of the Delivering the Nuclear Promise® initiative, AREVA is developing automation products to help our customers reach and exceed their performance goals.

Automation Platform for Engineering Simulation and Analysis

The APESA platform has been developed by AREVA to automate the execution of engineering analyses that support:

- Large Break LOCA (statistical and Appendix K)
- Reactor vessel fluence
- Chapter 15 non-LOCA events
- Thermal-hydraulic (T-H) system code validation and verification
- Fuel cycle neutronics reload automation
- Fuel cycle T-H reload automation
- Coupling of T-H system code to BOP performance code



Process

Creating a custom automation solution which leverages APESA expertise requires customer interface to explain:

- Goals — establish cost reduction and quality improvement targets
- Design — define engineering analysis workflow process based on customer inputs
- Develop — create a solution development plan comprised of software requirements, implementation, testing and deployment integral to the proposal agreed upon by the customer
- Maintain — establish a maintenance program to support customer evolving need

AREVA's Work Scope

- Design, develop and deploy automation solution (typically with Python)
- Create document templates in LaTeX (produces PDF) that match customer's corporate templates
- QA verify & certify the software to NQA-1 requirements
- Present a beta copy to the customer
- Involve the customer as co-creator during the solution development and deliver final product components
 - Solution code
 - Programmer's manual
 - User's manual
 - LaTeX calculation template in customer's format
 - Support for automation solution integration with analysis processes and deployment on customer computing resources
 - Training documentation and services

Final Product

A NQA-1 certified software solution that interfaces with customer's analysis code suite to produce calculations that only require the analyst's input on the results to be added.

Experience You Can Count On

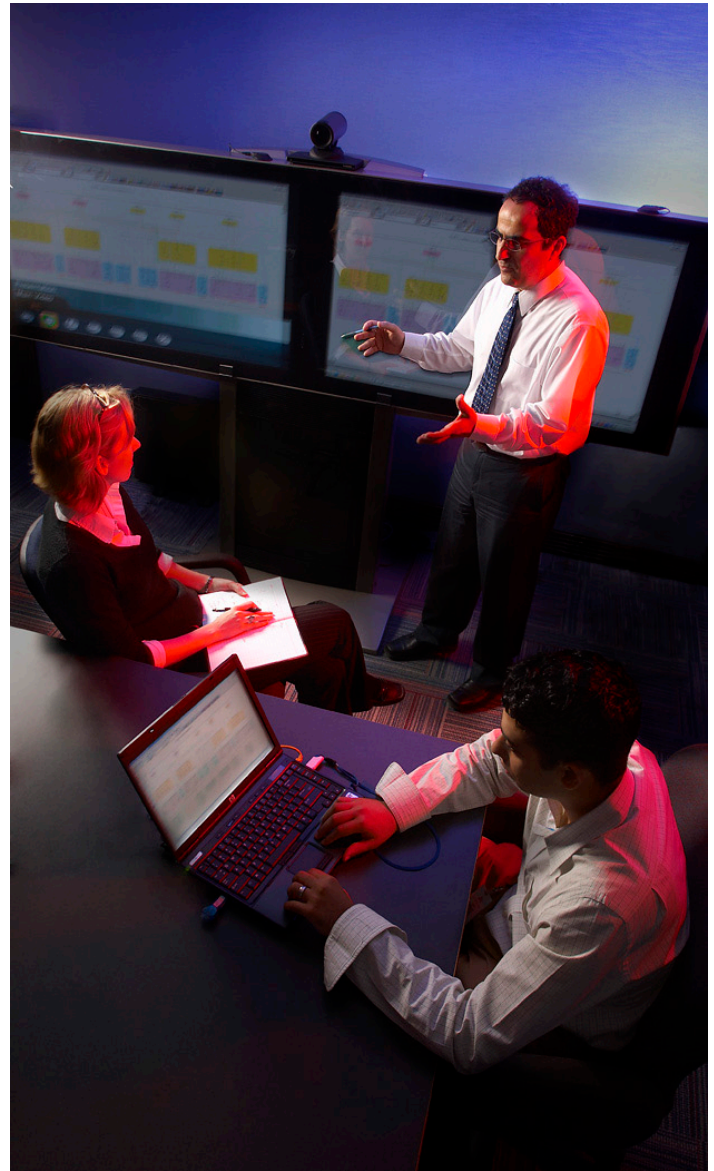
AREVA offers a complete range of services for development of custom automation solutions to help implement cost reductions and quality improvements to your engineering analysis process. Working in concert with your neutronics, fuels T-H, plant T-H, and safety analysis personnel, we will map the transition process and develop the cost-benefit analyses needed to support key decisions and create the solution that will exceed your expectations.

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