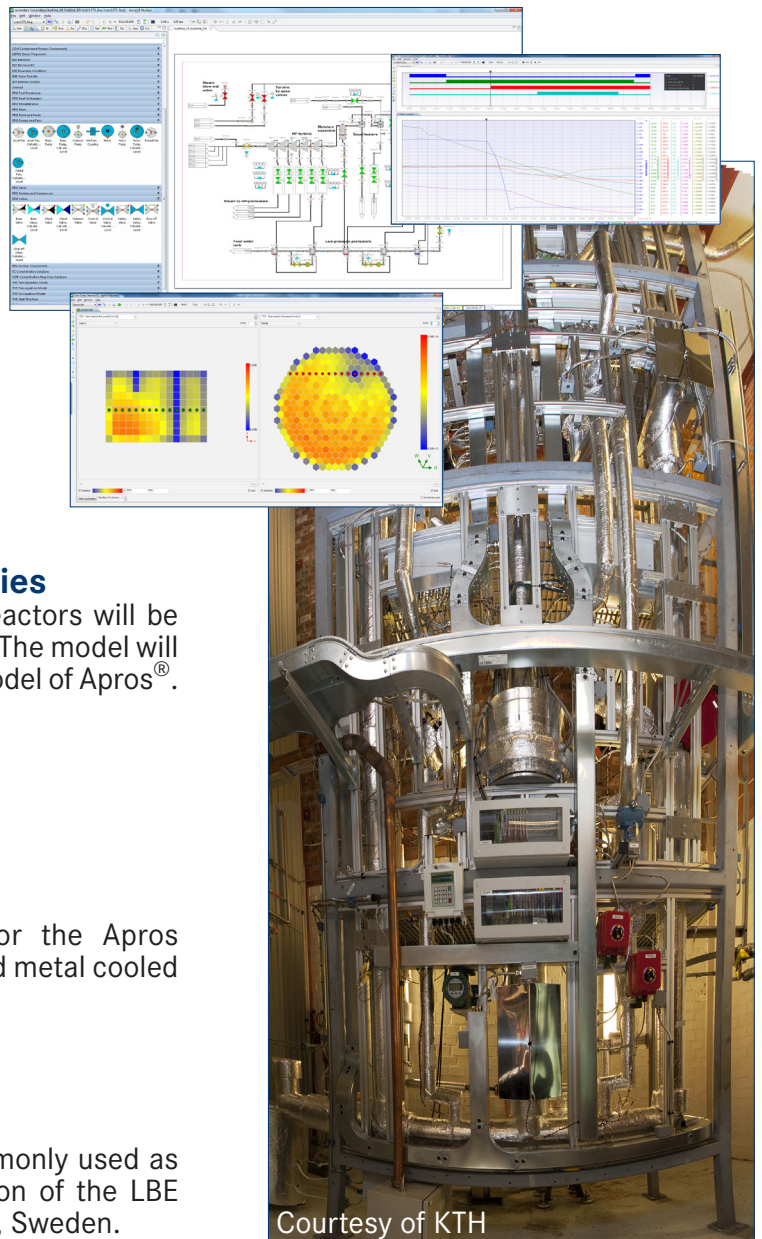


# Apros<sup>®</sup> Nuclear Products

## Generation IV Features

### Ensuring safety and operational performance in Generation IV nuclear power plants

Development and demonstration of the Generation IV reactor concepts require engineering, feasibility and engineering & safety analyses, and training. Apros<sup>®</sup> Nuclear is a well-established, reactor-vendor independent software product for the integrated dynamic analysis and simulation of nuclear power plants including Generation IV concepts.



#### Neutronics for new reactor technologies

The neutronics solution of the new types of reactors will be based on a novel multi-group neutronics model. The model will be tightly integrated to the thermal hydraulics model of Apros<sup>®</sup>.

#### Gas coolants

Apros has full capabilities to accurately simulate flow circuits with gases e.g. helium, nitrogen and argon.

#### Liquid metal coolants

New fluid systems have been developed for the Apros homogeneous flow model according to the liquid metal cooled fast reactor concepts:

- Sodium + Argon
- LBE (Lead-Bismuth Eutectic) + Argon

Both fluid models include argon, which is commonly used as gaseous atmosphere in the concepts. Validation of the LBE calculation is ongoing in co-operation with KTH, Sweden.

Courtesy of KTH

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