GRAPE

Graphical RELAP5-based Analysis Platform for **Education** & Engineering

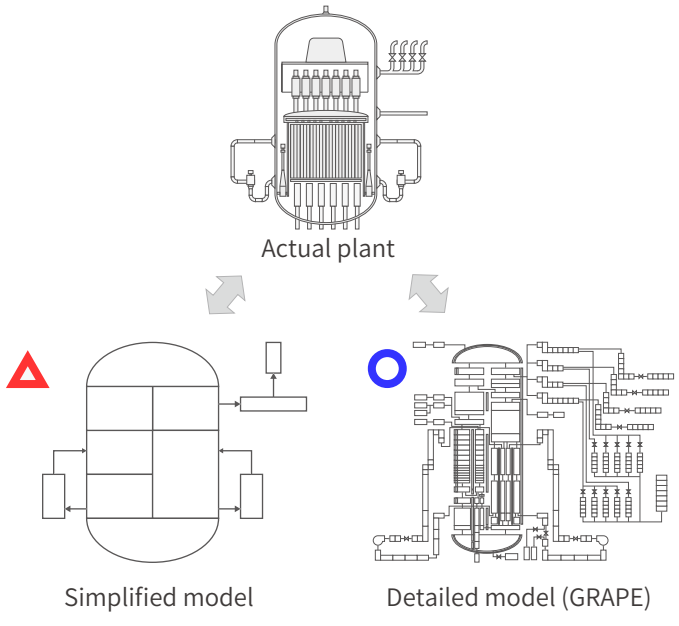
Innovative Educational Plant Simulator with Usability and Reliability

GRAPE is a platform for an educational simulator which can provide simple and easy operation experiences where reliable plant models can be treated with RELAP/SCDAPSIM that has been used for licensing applications. With easy-to-understand interactive operations for specifying analysis conditions and rich visualization capabilities, it can be easily used for students to start learning of basic principles on nuclear power plant behaviors without deep knowledges on a calculation code itself. It can cover a wide range of educational needs with a nature of flexibility and extensibility. GRAPE can help any educational professionals make their educational courses more meaningful and attractive.

Features and Benefits

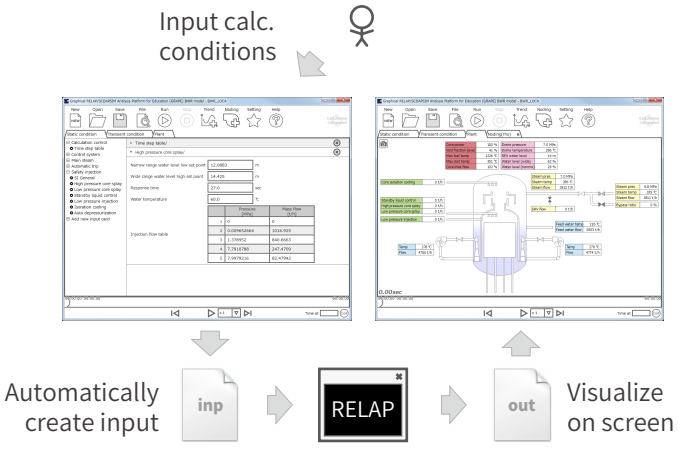
Understanding of Realistic Plant Behavior

Simple computational models are easy to understand and used in nuclear education programs. It is effective, but it might lead to misunderstanding because of too much simplification with models in which treatment of physical phenomena might be no longer valid. RELAP/SCDAPSIM used in GRAPE as a calculation kernel is recognized as one of the best-estimate code that is widely used for research and engineering applications all over the world. Students are going to understand physical phenomena which can be precisely simulated in nuclear plant models implemented in GRAPE.



Intuitive and Easy-to-Understand GUI

Simulations using a full-stack analysis code are effective and reasonable to understand plant behaviors. However, it will require a lot of efforts to master the code itself which may be a big burden for novice users. GRAPE provides simple and easy user experiences with an intuitive GUI so that novice users can easily start their analysis. Visualization of calculation results can be started just after initiation of a computation. GRAPE can effectively help students focus on their learning and understanding on behavior of nuclear power plants without difficulties on calculation codes.



Reliable Technology for Tomorrow's Energy

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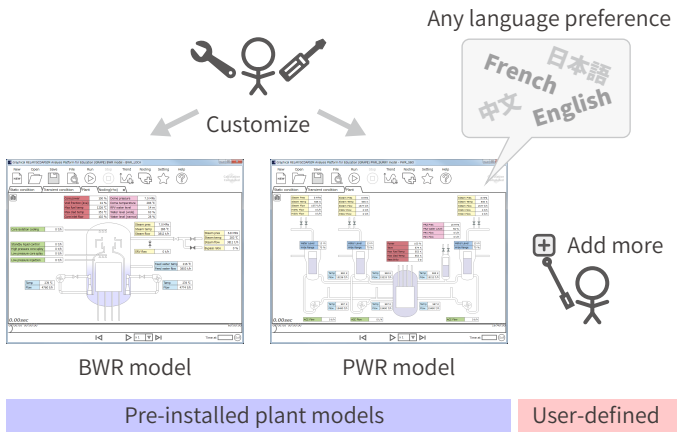
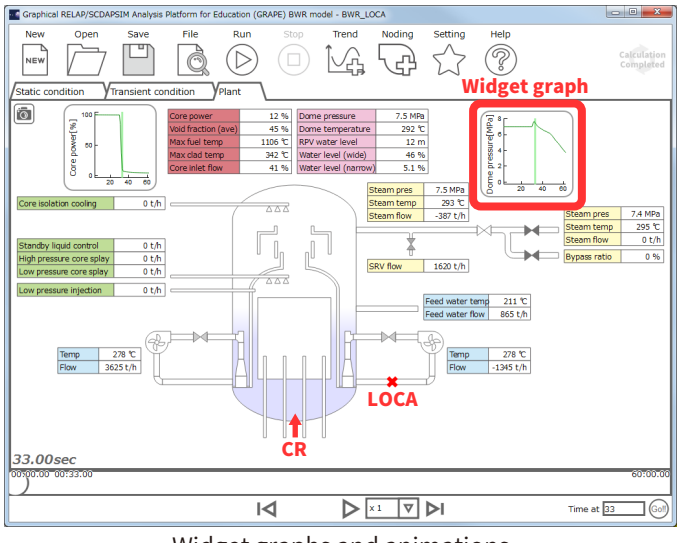
Flexibility and Extensibility

GRAPE is designed and implemented to provide high flexibility and extensibility to accommodate various needs for novice educations, i.e., major configurations of GRAPE can be easily costomized and improved by users. For example, the following customizations are supported:

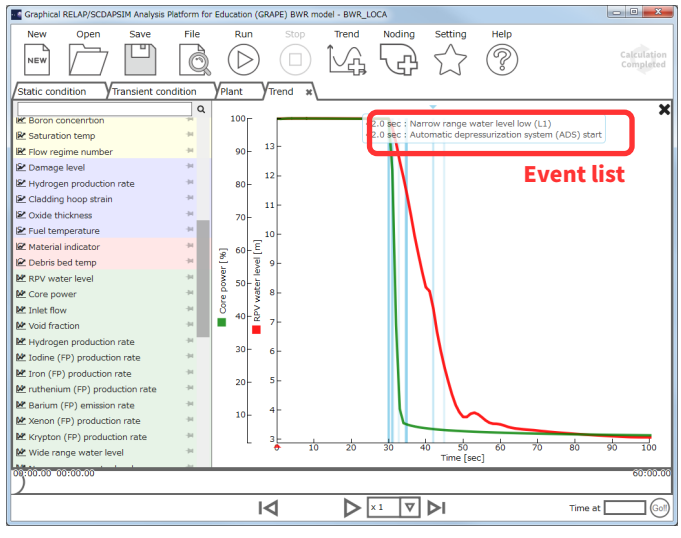
- Modifications on existing plant models (PWR/BWR)
- Addition of user-defined plant models
- Adoption of severe accident models
- Support for multilingual display



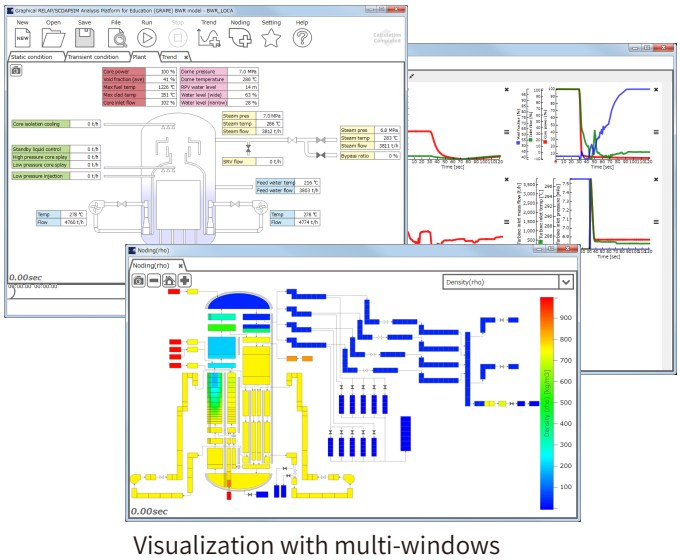
Gallary



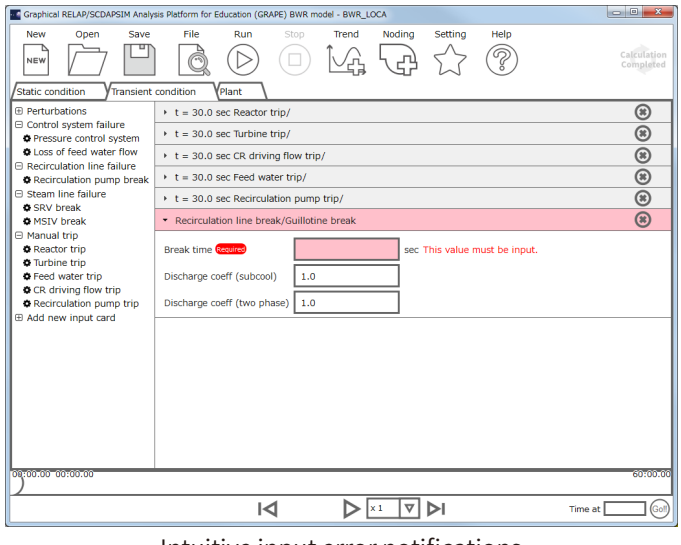
Widget graphs and animations



Event list with trend graphs



Visualization with multi-windows



Intuitive input error notifications

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