NURETH-17

Call for Papers

NURETH-17 BEPU-WORKSHOP EMBEDDED
Xi'an – September 3, 2017
Workshop Organizer: F. D'Auria and Milorad Dusic

The Best Estimate Plus Uncertainty (BEPU) approach is the final outcome of research and development in nuclear system thermal-hydraulics; this is also the tip of the iceberg of competence in nuclear thermal-hydraulics or a cross-way into the thermal-hydraulics universe

BEPU shall also be seen as an industrial product ready for applications in nuclear technology.

The BEPU aims at making feasible the application of nuclear thermal-hydraulics to the licensing and the safety evaluation processes of Nuclear Power Plants (NPP). The features of BEPU are such to make attractive the application to address any design and operational issue in NPP technology.

The triggering idea for BEPU came from the adoption of Best Estimate (BE) system thermal-hydraulics (SYS TH) codes for accident analysis in NPP technology. Historically, the virtual roadmap pursued within the technological community to arrive at BEPU can be summarized as follows:

a) availability of SYS TH codes involving unavoidable approximations in the related development like volume and time averaging and modeling of flow regimes and turbulence;
b) identification of needs for validation and performing validation activities;
c) detection of inevitable errors in calculation results;
d) development of uncertainty methods to characterize the errors in calculation results;
e) association of BE codes applications and uncertainty evaluations, that means BEPU.

The application and the future development of BEPU imply interaction between deterministic and probabilistic analyses also recognized as Deterministic Safety Assessment (DSA) and Probabilistic Safety Assessment (PSA).

The workshop aims at: 1) discussing the bases for BEPU, 2) expanding the use of BEPU to any analytical activity part of the Final Safety Analysis Report (FSAR) and 3) fostering the application of BEPU. Papers are envisaged in the following areas (not an exhaustive list):
*Verification and Validation for numerical codes and procedures for their application;
*Scaling;
*Uncertainty;
*Coupling among numerical codes;
*Application to NPP safety demonstration, Accident Analysis;
*Pioneering Application to NPP safety demonstration, any section of FSAR

Abstract due : Dec. 31, 2016
Final paper due (intention to attend the Workshop): April 30, 2017.

American Nuclear Society