Passive safety systems have been widely applied to advanced water-cooled reactors (WCRs), to enhance the safety of nuclear power plants. For the near term and medium term, the Chinese government decided for advanced pressurized water reactors with an extensive usage of passive safety systems. The International Workshop on Passive Safety Systems of Advanced PWR (IPASS’08) was held in Shanghai on April 28–30, 2008, coorganized by the Shanghai Jiao Tong University and the Pisa University. The main purposes of the Workshop IPASS’08 are (a) to provide a platform to the international nuclear community for exchanging research results and design experience on passive safety systems applied to advanced WCR and (b) to enhance the contact and collaboration between the Chinese research institutions and international partners.

More than 100 scientists and nuclear engineers from eight countries, that is, Canada, China, France, Germany, Italy, Korea, Pakistan, and USA, were participating in this workshop. More than 60 technical papers were presented covering the following topics:

(a) safety injection and decay heat removal systems,
(b) passive containment cooling systems and hydrogen safety research,
(c) passive systems for severe accident mitigation,
(d) assessment and application of numerical tools,
(e) single effect and integral verification experiments,

Eight papers were selected for this special issue. The first paper of Cheng et al. [1] gives a summary about the Chinese research activities on passive safety systems of advanced PWR. Experimental studies and validation of numerical codes are presented in the following two papers [2, 3]. The paper of Gou et al. [4] deals with numerical analysis of the performance of passive safety systems; whereas the methodology for the reliability assessment of passive safety systems is investigated in the paper of Pierro et al. [5]. The last three papers are devoted to hydrogen safety issue, which is a main topic of the workshop [6–8].

The editors of this special issue express thanks to all authors for their contribution.

References


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