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INTRODUCTION

Journal of Energy special issue: Papers from 9th International Conference of the Croatian Nuclear Society “Nuclear Option in Countries with Small and Medium Electricity Grids”

Welcome to this special issue, which is based on selected papers presented at the 9th International Conference of the Croatian Nuclear Society “Nuclear Option in Countries with Small and Medium Electricity Grids”, held in Zadar, Croatia, on June 3rd–6th, 2012.

The International Conference was organized by the Croatian Nuclear Society in cooperation with International Atomic Energy Agency (IAEA), Croatian State Office for Nuclear Safety and University of Zagreb, Faculty of Electrical Engineering and Computing. The goal of the Conference was to address the various aspects of the implementation of nuclear energy in the countries with small and medium electricity grids and in power system in general. The conference also focuses on the exchange of experience and co-operation in the fields of the plant operation, nuclear fuel cycle, nuclear safety, radioactive waste management, regulatory practice, liability, and insurance for nuclear damage and environment protection.

The conference was organized in ten oral sessions and one poster session. In three Conference days authors presented 42 papers orally and 11 papers in poster session. 110 participants came from 11 countries representing equipment manufacturers and utilities, universities and research centres, and international and government institutions. Seven invited lectures were held and 53 papers were accepted by international programme committee.

The Conference topics reflect some current emphasis, such as country energy needs, new reactor technologies (especially small reactors), operation and safety of the current nuclear power plants, move of the focus in nuclear safety toward severe accidents and accident management strategies, improvement in nuclear safety, reactor physics and radiation shielding calculation tools and ever increasing requirements for minimization of environmental impact. Impact of Fukushima accident on future of nuclear power and lessons learned from the accident are explicitly covered.

From 53 papers presented at the Conference, 18 papers were accepted for publication in this number of Journal of Energy after having undergone the additional peer-review process. We would like to thank the authors for their contributions and the reviewers who dedicated their valuable time in selecting and reviewing these papers, both during the Conference and during the preparation of this special issue of Journal of Energy. As usual, it was very challenging to collect a balanced overview of the entire Conference. We believe that the papers which were selected for this issue represent some of the best research related to nuclear plant operation, energy planning, development of new reactors and technologies, reactor physics, and radiation shielding. We hope this special issue will provide a valuable insight into different aspects of nuclear and electrical engineering, reactor physics, and nuclear power plants operation, as well as a pleasant and inspiring reading.

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