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INTRODUCTION

Journal of Energy special issue: Papers from 11th 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 11th International Conference of the Croatian Nuclear Society “Nuclear Option in Countries with Small and Medium Electricity Grids”, held in Zadar, Croatia, on June 5th–8th, 2016.

This 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 for electricity production 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 and environment protection.

The conference was organized in eight main topics covered in ten oral sessions and one poster session. In three Conference days authors presented 49 papers orally and 23 papers in poster session. 102 participants came from 16 countries representing equipment manufacturers and utilities, universities and research centres, and international and government institutions. Eight invited lectures were held and 72 papers were accepted by international programme committee.

The importance of international cooperation for the assessment of the nuclear option has been recognized by everybody planning to introduce nuclear power plant to the grid. That is even more important for small and medium countries having limited resources and specific requirements due to limited grid size. 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.

From 72 papers presented at the Conference, 16 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. It was very challenging to collect a balanced overview of the entire Conference. We decided to select 16 papers for this issue and additional 14 for the next one. We believe that the papers which were selected for this number 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 and reactor physics, as well as a pleasant and inspiring reading.

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