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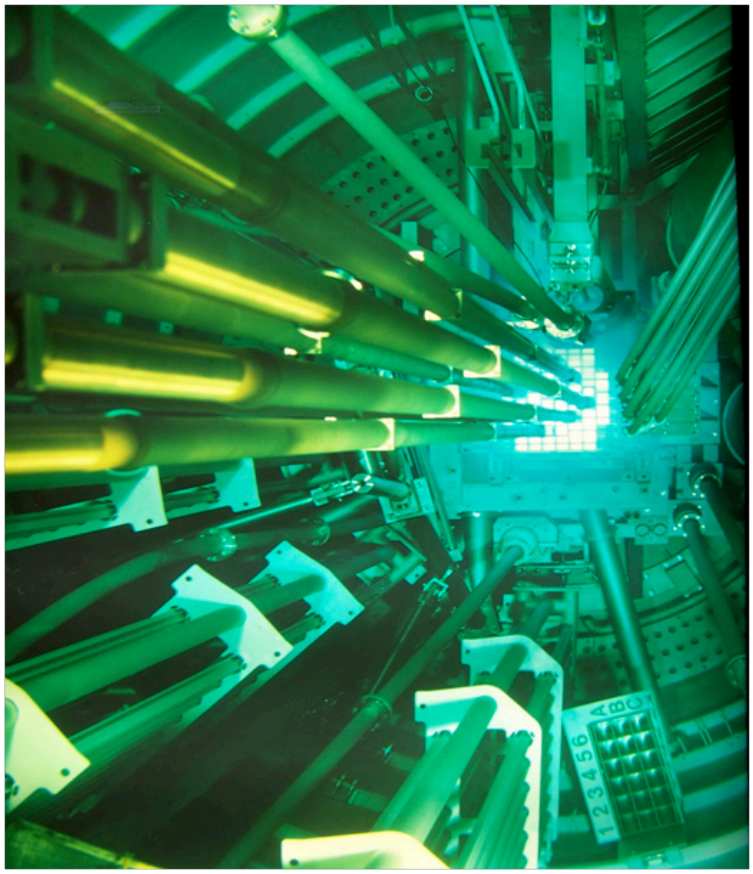

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# PREFACE

Dear readers, with great pleasure we provide you with the third issue of Jurnal Teknologi Reaktor Nuklir (Journal of Nuclear Reactor Technology) Tri Dasa Mega in 2019. Tri Dasa Mega Vol. 21 No. 3 (October 2019) contains five articles discussing various applications of nuclear reactor technology. Articles were written by authors and co-authors from various universities and institutions in Indonesia as well as in overseas.

"Performance Analysis of RDE Energy Conversion System in Various Reactor Power Condition" was written by Ignatius Djoko Irianto, Sukmanto Dibyo, Sriyono Sriyono, Djati H. Salimy, and Rahayu Kusumastuti from the Center for Nuclear Reactor Technology and Safety, National Nuclear Energy Agency of Indonesia in collaboration with Marliyadi Pancoko from the Center for Nuclear Facilities Engineering, National Nuclear Energy Agency of Indonesia. In this study, the performance characteristics of RDE energy conversion system was evaluated under various reactor power conditions using ChemCad program package. It was found that the optimal turbine power is obtained after the reactor thermal power reached 7.5 MW.

"Routing Design on The Primary Cooling Piping System in Plate-Type Converted TRIGA 2000 Reactor Bandung" was investigated by V. Indriati Sri Wardhani and Rasito Tursinah from the Center for Science and Applied Nuclear Technology, National Nuclear Energy Agency of Indonesia collaborating with Henky Poedjo Rahardjo from the Sekolah Tinggi Teknologi Mandala, Bandung. This study discussed the design of suitable piping routing based on pipe stress and N-16 radioactivity of TRIGA 2000 Reactor Bandung using CAESAR II software. Four routings were designed and analyzed to minimize the amount of N-16 radioactivity on the surface of the reactor tank, prolonging the cooling fluid travel time to reach at least five times of N-16 half-life. It was found that all pipeline routes designed and selected for the primary cooling system met the safety standards.

"Estimation of The Radioactive Source Term from RDE Accident Postulation" was studied by Pande Made Udiyani, Ihda Husnayani, M. Budi Setiawan, Sri Kuntjoro, Hery Adrial, and Amir Hamzah from the Center for Nuclear Reactor Technology and Safety, National Nuclear Energy Agency of Indonesia. In this study, the mechanistic source term approach was used. The approach models radioactive material released from the fuel element to the cooling system, from the cooling system to the reactor building, and from the reactor building to the environment. The study found that the RDE source term is greater than the reference HTR-10 source term.

"Need of a Next Generation Severe Accident Code" was written by Alexandre Ezzidi Nakata and Masanori Naitoh from the Institute of Applied Energy, Tokyo, Japan collaborating with Chris Allison from the Innovative System Software, Idaho, USA. In this article, a best etimate new generation severe accident code is proposed for several reasons. The proposed code is a reliable new generation mechanistic severe accident code which can simulate severe accident scenarios from an initiating event till containment failure with better accuracy not only for existing light water reactors but also for new generation IV reactor types.

"The Effect of Beach Environment and Sea Water on Nickel Corrosion Rate as a Collimator Material for the Application of Boron Neutron Capture Theraphy" was investigated by Hardi Hidayat and Budi Setyahandana from the Department of Mechanical Engineering, Faculty of Science and Technology, Sanata Dharma University, Yogyakarta, Indonesia collaborating with Yohannes Sardjono from the Center

for Accelerator Science and Technology, National Nuclear Energy Agency of Indonesia and Yulwido Adi from the Department of Nuclear Engineering and Engineering Physics, Universitas Gadjah Mada, Yogyakarta, Indonesia. The purpose of this study is to determine the value of the corrosion rate that is influenced by the coastal environment and sea water to nickel as a collimator base material for the application of boron neutron capture therapy. The results showed that corrosion resistance was relatively the same for all nickel exposed to corrosion in the coastal environment because it could be categorized well. Therefore, in regards to corrosion resistance, using nickel as a collimator base material for BNCT applications is safe.

On behalf of Editor in Chief of Tri Dasa Mega, I would like to thanks to all Editors, Reviewers, Managements, Authors, and Readers for your endless supports.

Editor in Chief