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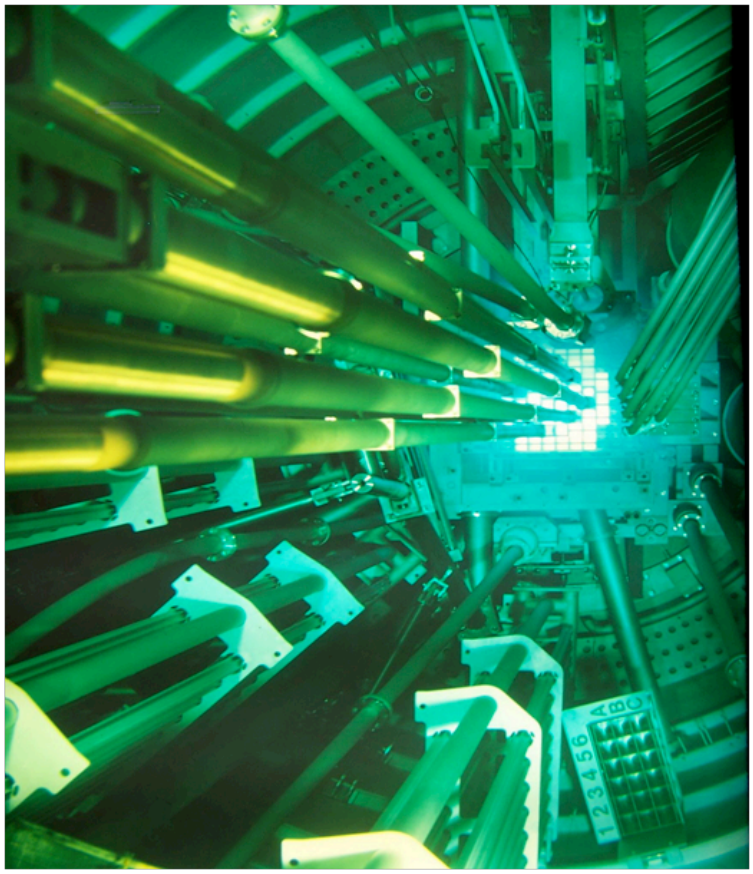

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PREFACE

Dear readers, with great pleasure we provide you with the second issue of Jurnal Teknologi Reaktor Nuklir (Journal of Nuclear Reactor Technology) Tri Dasa Mega in 2019. Tri Dasa Mega Vol. 21 No. 2 (June 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.

"Development of Experimental Power Reactor (EPR) Model for Safety Analysis Using RELAP5" was written by A.S. Ekariansyah, M. Subekti, S. Widodo, H. Tjahjono, and Susyadi from the Center for Nuclear Reactor Technology and Safety, National Nuclear Energy Agency of Indonesia in collaboration with P.I. Wahyono from the Center for Science and Accelerator Technology, National Nuclear Energy Agency of Indonesia and with A. Budianto from Polytechnic Institute of Nuclear Technology, National Nuclear Energy Agency of Indonesia. In this study, the design of BATAN's experimental power rector was evaluated as part of detail design document to be submitted to the Indonesian Nuclear Regulatory Body. RELAP5/SCDAP/Mod.3.4 is used for thermal-hydraulic analysis. It was found that the peak pebble temperature is calculated to be 1,375 ^{0}C, which is still below the pebble temperature limit.

"A Preliminary Assessment of the Effects of Drought on Water Sustainability Indocators for Nuclear Power Generation in Mongolia" was investigated by Ichinkhorloo Davaadorj from the Ulaanbaatar, Mongolia collaborating with Eric Yee from the KEPCO International Nuclear Graduate School, Republic of Korea and Restu Maerani from the National Nuclear Energy Agency of Indonesia (BATAN). This study collects data and conducts analyses to estimate sustainability indicators for a nuclear power plant life cycle and extends these analyses to understand how an event such as a drought would affect such indicators. The study focused on the APR-1400 nuclear power plant. By accounting drought frequency in Mongolia, the life cycle water withdrawal is estimated to be approximately 7,611 L/MWh for the nuclear power plant.

"Reactor Operational Experience Review and Analysis Based on Un-intended Reactor Trip Data" was studied by Sigit Santoso, Roziq Himawan, Johnny Situmorang and Tulis Jojok Suryono from the Center for Nuclear Reactor Technology and Safety, National Nuclear Energy Agency of Indonesia, in collaboration with Edison from the Center for Multipurpose Reactor, National Nuclear Energy Agency. To enhance the safety and reliability of a new reactor, human factors should be integrated into its design process. This paper reviews and analyses the operational experience data of RSG-GAS reactor. Analysis on the cooling system based on HFACS showed that the challenges to the human factors are related to unsafe acts, preconditions of unsafe acts, and unsafe supervision.

"Development of Mobile Device for Gamma Radiation Measurement Utilizing LORA as The Communication Means" was written by I Putu Susila, Istofa, Sukandar, and Budi Santoso from the Center for Nuclear Facility Engineering, National Nuclear Energy Agency of Indonesia collaborating with Agung Alfiansyah from Prasetya Mulya University, Indonesia and with Suratman from the Center for Informatics and Nuclear Strategic Zone Utilization, National Nuclear Energy Agency of Indonesia. In case of accident occurs, the facility owner and related organizations shall make decision whether to evacuate people or not, based on the level of the accident and radiation dose rate released to the environment. In this study, as part of the decision support system for nuclear emergency response, a prototype of mobile radiation measurement system has been developed.

“Reactor Cavity Cooling System with Passive Safety Features on RDE: Thermal Analysis During Accident” was investigated by Kusumastuti, et.al. from the Center for Nuclear Reactor Technology and Safety, National Nuclear Energy Agency of Indonesia. The reactor cavity cooling system (RCCS) is designed to remove the heat from the reactor vessel to the containment structure. The performance and reliability of the RCCS, therefore, are considered as critical factors in determining maximum design power level related to heat removal. This paper discusses the calculation of RCCS thermal analysis during accident. The accident is assumed that there is no electricity from diesel generator supplied to the blower.

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