

CONTENTS / OCTOBER 2014—VOL. 188, NO. 1

TECHNICAL PAPERS

FISSION REACTORS

- 1** Evaluation of Effective Prompt Neutron Lifetime for Pressurized Water Reactors / *Heba K. Louis*
- 8** Feasibility Study of a Soluble Boron-Free Small Modular Integral Pressurized Water Reactor / *Justin Mart, Andrew Klein, Alexey Soldatov*
- 20** A DFM/Fuzzy/ATHEANA Human Failure Analysis of a Digital Control System for a Pressurizer / *J. M. O. Pinto, P. F. Frutuoso E Melo, P. L. C. Saldanha*
- 34** Moderator Displacers for Reducing Coolant Void Reactivity in CANDU Reactors: A Scoping Study / *Robert Farkas, Eleodor Nichita*
- 45** Modeling and Analysis of a Heat Transport Transient Test Facility for Space Nuclear Systems / *Adam R. Wheeler, Andrew C. Klein*

REACTOR SAFETY

- 63** Combining Insights from Probabilistic and Deterministic Safety Analyses in Option 4 from the IAEA Specific Safety Guide SSG-2 / *Milorad Dusic, Mark Dutton, Horst Glaeser, Joachim Herb, Javier Hortal, Rafael Mendizábal, Fernando Pelayo*

THERMAL HYDRAULICS

- 78** A Three-Dimensional Computational Analysis of One-Way Fluid-Structure Coupling in Main Steam Isolation Valve / *Li Wu, Jian Xiao, Hong Chen, Jia Li, Songzhi Jiang, Tongmin Wang*

REPROCESSING

- 83** Measurement of Molten Chloride Salt Flow and Demonstration of Simulated Fission Product Removal Using a Zeolite Column Apparatus for Spent Salt Treatment in Pyroprocessing / *Koichi Uozumi, Takatoshi Hijikata, Takeshi Tsukada, Tadafumi Koyama, Takayuki Terai, Akihiro Suzuki*

RADIATION MEASUREMENTS AND GENERAL INSTRUMENTATION

- 97** Simulations for Developing a Flag-Based Active Neutron Interrogation Method for Explosives Detection in Sea-Land Cargo Containers / *Adrienne L. Lehnert, Kimberlee J. Kearfott*