# **Nuclear Technology**

VOLUME 204 · NUMBER 2 · NOVEMBER 2018

#### Contents

#### **CRITICAL REVIEW**

119 Empirical Formulas for the Design of Reinforced Concrete Nuclear Power Plants to Resist the Effects of Wind-Borne Missile Impact: A Critical Review

\*\*Brian Terranova, Andrew Whittaker, Len Schwer\*\*

#### **TECHNICAL PAPERS**

131 The Key Attributes, Functional Requirements, and Design Features of Resilient Nuclear Power Plants (rNPPs)

Sherrell R. Greene

- **147** Examining Fuel-Cycle Scenarios with the Safeguards Analysis Toolbox *Nicolas Shugart, Jeffrey King, Jake Jacobson*
- 162 Improvement of One-Dimensional Two-Fluid Momentum Conservation Equations for Vertically Stratified Flow

Jaeseok Heo, Kyung Doo Kim, Byoung Jae Kim

172 Evolution of Aerosols Coupled to Environments: Verification of Direct Simulation Monte Carlo (DSMC)

Isaac Saldivar, Sudarshan K. Loyalka

184 Diffusion in a Variable Aperture Slot: Impact on Radionuclide Release from a Repository for Spent Fuel

Helen Winberg-Wang

195 The Effect of Intrinsic Radiation from a  $3 \times 3$ -in. LaBr $_3$ (Ce) Scintillation Detector on In Situ Artificial Radiation Measurements

Li Sangang, Cheng Yi, Wang Lei, Yang Li, Liu Huan, Liao Jiawei, Zeng Liyang, Luo Yong, Wang Xiaoyu, Pei Qiuyan, Wang Jie

203 Criticality Properties and Control Rod Worth of the Critical Experiment Device for MSR Research

Yafen Liu, Rui Yan, Yang Zou, Xuzhong Kang, Ruimin Ji, Bo Zhou, Shihe Yu

213 Thermal Conductivity Estimation of Compacted Bentonite Buffer Materials for a High-Level Radioactive Waste Repository

Seok Yoon, Min-Jun Kim, Seung-Rae Lee, Geon-Young Kim



## **Contents** continued

VOLUME 204 · NUMBER 2 · NOVEMBER 2018

### **TECHNICAL NOTES**

**227** Modeling and Simulation for Coolant Activity and Dose Rate Estimation in a Pool-Type Nuclear Research Reactor

Vijay K. Veluri, Samiran Sengupta, Shaji Mammen, Sujay Bhattacharya

**238** Analysis and Simulation of a Gripper for Fuel Handling on China Lead-Based Research Reactor

Meihua Zeng, Yong Song, Yunqing Bai, Minghuang Wang, Meisheng He, Jie Yu

