

# Contents

## “Human Factors in Nuclear Engineering”

Advanced MMIS Toward Substantial Reduction in Human Errors in NPPs <i>Poong Hyun Seong, Hyun Gook Kang, Man Gyun Na, Jong Hyun Kim, Gyunyoung Heo, and Yoensub Jung</i> .....	125
A Qualitative Method to Estimate HSI Display Complexity <i>Jacques Hugo and David Gertman</i> .....	141
Measuring the Influence of Task Complexity on Human Error Probability: An Empirical Evaluation <i>Luca Podofillini, Jinkyun Park, and Vinh N. Dang</i> .....	151
A Review on Developing Industrial Standards to Introduce Digital Computer Application for Nuclear I&C and HMIT in Japan <i>Hidekazu Yoshikawa</i> .....	165

## Papers

### Thermal Hydraulics

Analysis of a Station Blackout Scenario with an Atlas Test <i>Yeon-Sik Kim, Xin-Guo Yu, Kyoung-Ho Kang, Hyun-Sik Park, Seok Cho, and Ki-Yong Choi</i> .....	179
Numerical Analysis of Thermal Stratification in the Upper Plenum of the MONJU Fast Reactor <i>Seok-Ki Choi, Tae-Ho Lee, Yeong-Il Kim, and Dohee Hahn</i> .....	191

### Nuclear Safety

Iodine Removal Efficiency in Non-Submerged and Submerged Self-Priming Venturi Scrubber <i>Majid Ali, Yan Changqi, Sun Zhongning, Gu Haifeng, Wang Junlong, and Khurram Mehboob</i> .....	203
---	-----

### Nuclear Fuel Cycle and Radioactive Waste Management

Limited Oxidation of Irradiated Graphite Waste to Remove Surface Carbon-14 <i>Tara E. Smith, Shilo McCrory, and Mary Lou Dunzik-Gougar</i> .....	211
---	-----

### Nuclear Fuel and Reactor Materials

Effects of Irradiation on Thermal Conductivity of Alloy 690 at Low Neutron Fluence <i>Woo Seog Ryu, Dae Gyu Park, Ung Sup Song, Jin Seok Park, and Sang Bok Ahn</i> .....	219
--	-----

### Nuclear Structural Analysis and Plant Management & Maintenance

Structural Test and Analysis of RC Slab after Fire Loading <i>Chul-Hun Chung, Cho Rong Im, and Jaegyun Park</i> .....	223
A Coupled CFD-FEM Analysis on the Safety Injection Piping Subjected to Thermal Stratification <i>Sun-Hye Kim, Jae-Boong Choi, Jung-Soon Park, Young-Hwan Choi, and Jin-Ho Lee</i> .....	237

# Contents

---

## **Nuclear Structural Analysis and Plant Management & Maintenance**

Design of a Vibration and Stress Measurement System for an Advanced Power Reactor 1400 Reactor Vessel

Internals Comprehensive Vibration Assessment Program

*Do-Young Ko and Kyu-Hyung Kim* ..... 249

Development of an Improved FARE Tool with Application to Wolsong Nuclear Power Plant

*Sun Ki Lee and Sung Yull Hong* ..... 257

## **Technical Note**

### **Nuclear Structural Analysis and Plant Management & Maintenance**

Deterministic Evaluation of Delayed Hydride Cracking Behaviors in PHWR Pressure Tubes

*Young-Jin Oh and Yoon-Suk Chang* ..... 265