

18th International Conference on Structural Mechanics in Reactor Technology 2005 (SMiRT 18)

Beijing, China
7-12 August 2005

Volume 1 of 6

ISBN: 978-1-5108-1701-2

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2005) by International Association for Structural Mechanics in Reactor Technology (IASMiRT)
All rights reserved.

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact International Association for Structural Mechanics in Reactor Technology (IASMiRT)
at the address below.

International Association for Structural Mechanics in Reactor Technology (IASMiRT)
c/o Dr. Vernon Matzen
North Carolina State University
Campus Box 7908
Raleigh, NC 27695-7908

Phone: (919) 515-5277
Fax: (919) 515-5301

IASMiRTinfo@gmail.com

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

DIVISION A: PLENARY LECTURES

A01-1 Intensifying Nuclear Safety Regulation, Promoting Nuclear Power Development	N/A
<i>Ganjie Li</i>	
Advanced Technologies for Future Generation CANDU® Reactors	N/A
<i>David F. Torgerson</i>	
Application and Limitation of Magnetic Bearings on Large Turbo Machines	N/A
<i>Luc Baudelocque</i>	
Development and Application of Probabilistic Safety Assessment PSA in Daya Bay Nuclear Power Station	1
<i>Weigang Huang, Jiefei Chen, Jianbing Guo, Wei Zhen</i>	
Structural Mechanics Research and Development for Main Components of Chinese 300 MWe PWR NPPs: from Design to Life Management.....	N/A
<i>Weida Yao, Yikang Dou, Yongcheng Xie, Yinbiao He, Ming Zhang, Xingyun Liang</i>	
Ultimate Strength of RC Shear Walls under Multi-Axes Seismic Loads	14
<i>Yoshio Kitada</i>	
An Advanced Seismic Analysis of NPP Powerful Turbogenerator on Isolation Pedestal.....	21
<i>Victor V. Kostarev, Andrei V. Petrenko, Peter S. Vasilyev</i>	
Corrosion Initiation and Service Life of Concrete Structures	32
<i>Byung Hwan Oh, Bong Seok Jang</i>	
Irradiation Behaviour and Structural Analysis of HTR/VHTR Graphite Core Components	38
<i>Barry J. Marsden, Siu-Lun Fok, Haiyan Li</i>	
Modeling Materials	N/A
<i>Joseph Zarka</i>	
EPR Deployment Shifting into High Gear	48
<i>Bernard Estève</i>	

DIVISION B: COMPUTATIONAL MECHANICS

B01: NEW METHODS IN COMPUTATIONAL MECHANICS

Peridynamic Modeling of Plain and Reinforced Concrete Structures	54
<i>Walter Gerstle, Nicolas Sau, Stewart Silling</i>	
Development of a Particle Method for Elastic and Creep Deformation	69
<i>Yoshitaka Chikazawa</i>	
A Simple Boundary Element Formulation for Shape Optimization of 2D Continuous Structures	79
<i>Luciano Mendes Bezerra, J. De Carvalho Santos, Arlindo Pires Lopes, Andre Luiz A. C. Souza</i>	
Surface Wave Velocity Tracking by Bisection Method.....	91
<i>Toshiro Maeda</i>	
p-Version Direct Time Integration Method and Adaptive Procedure for Structure Dynamic Analysis	106
<i>Xiaoping Zheng, Guowen Tan, Zhenhan Yao</i>	
Applications of Boundary Node Method to Simulation of Piezoelectric Composites	112
<i>Guowen Tan, Song Cen, Hongtao Wang, Zhenhan Yao</i>	

B02: STRUCTURAL ANALYSIS

Hydraulic Behaviour of a Representative Structural Volume for Confinement Buildings	125
<i>Ludovic Jason, Shahrokh Ghavamian, Gilles Pijaudier-Cabot, Antonio Huerta</i>	
Assessment of the Detailed Linear-Elastic Stress Calculation of 90°-Bends Based on the Elastic-Plastic Method.....	137
<i>Wieland Holzer, Christian Huettner</i>	
Numerical Calculation and Analysis of Single-Curvature Polyhedron Hydro-Bulging Process for Manufacturing Spherical Vessels.....	145
<i>Jianling Dong, Fengke Zhang, Dejian Yin</i>	
Structural Analysis of RRRP Reflector Vessel.....	156
<i>Jorge E. Magoia, Alberto D. Abbate</i>	
Structural Analysis of the Reactor Pool for the RRRP	171
<i>Jose G. Alberro, Alberto D. Abbate</i>	

B03: MATERIAL BEHAVIOR

Phase Field Simulation of Hydrogen Diffusion and Hydride Formation Pattern in Zirconium	186
<i>S. Q. Shi, X. Q. Ma, X. N. Jing, X. H. Guo, L. Q. Chen</i>	

Change-Scale Modelling of the Thermomechanical Behaviour of Particle-Based Nuclear Fuel Assemblies	198
<i>Serge Pascal</i>	
A Plastic Damage Model with Stress Triaxiality-Dependent Hardening	210
<i>Xinpu Shen, Guoxiao Shen, Lin Zhou</i>	
Finite Element Implementation of Advanced Constitutive Model Emphasizing on Ratcheting	224
<i>Guozheng Kang</i>	
Assessments of Unified Theories in Simulating Creep-Ratchetting Behavior of Viscous Materials	234
<i>Mohammad Abdel-Karim</i>	
Stress Assessment Based on Ovality and Thickness Asymmetry for an Internally Pressurized Pipe Elbow at High Temperature	245
<i>Hong Xu, Li Duan, Naqiang Zhang, Guoyue Liu</i>	
Single-nary Philosophy for Non-Linear Study of Mechanics of Materials	252
<i>Chi Tran</i>	

B04: IMPACT AND DYNAMIC ANALYSIS

Engineering Method Design Ductile Structure under Impact Load	267
<i>Yimin Zhu</i>	
Computational Non-Smooth Fracture Dynamics in Nonlinear and Heterogeneous Materials. Application to Fracture of Hydrided Zircaloy	274
<i>Frédéric Perales, Yann Monerie, Frédéric Dubois, Laurent Stainier</i>	
Modeling of a Cracked Beam Section under Bending	281
<i>Christophe Vare, Stéphane Andrieux</i>	
Detail Vibration Analysis of Magnetic Bearing Helium Fan in High Temperature Reactor	291
<i>Yang Xu, Guojun Yang, Lei Zhao</i>	
High Order Finite Elements in Free Vibrations of Thick Plates	297
<i>S. F. Silva, L. J. Pedroso</i>	
The Tank's Dynamic Response under Nuclear Explosion Blast Wave	N/A
<i>Mei Xu, Liangzhou Wang, Xiaotian Li, Suyuan Yu, Zhengming Zhang, Li Wan</i>	

B05: FLUID-STRUCTURAL INTERACTION

Sloshing Effects of ADS-DF Lead-Bismuth Primary Coolant Caused by the Reference Earthquake	315
<i>Donato Aquaro, Giuseppe Forassassi</i>	
Development of a 3D Code for the Analysis of Fluid-Structure Interaction in the Liquid Storage Tank	327
<i>Daogang Lu, Xiao'an Gao, Lin Luan, Yugiao Zhu, Degui Jin</i>	
Flow Induced Vibration Analysis of the Thermowell in Reactor Coolant Pipe	N/A
<i>Fenggang Zang, Wenjin Liu</i>	
Pressure Waves Induced by Transients in a Pipe Flowing Fluid	338
<i>A. N. Barbosa, L. J. Pedroso</i>	

DIVISION C: FUEL AND CORE STRUCTURES

C01: FUEL ROD VIBRATION AND FRETTING

New Knowledge and Experiences of Flow Induced Fretting in PWR Fuel Assemblies	345
<i>Juergen Stabel, Mingmin Ren, Bruno Ladouceur</i>	
Vibration Control of Nuclear Reactor Core	355
<i>Ruojing Zhang</i>	
Experimental Study of Flow Induced Vibration of the Planar Fuel Assembly	367
<i>Jinhua Wang, Hanliang Bo, Shengyao Jiang, Haijun Jia, Wenxiang Zheng, Gang Min, Xinxing Qu</i>	
Fuel Rod to Support Contact Optimization for the 16x16 Next Generation Fuel	376
<i>Leo Alves Carrilho</i>	

C02: FUEL ASSEMBLY MODELING

The PROMETRA Program: A Reliable Material Database for Highly Irradiated Zircaloy-4, ZIRLOTM and M5TM Fuel Claddings	383
<i>Bernard Cazalis, Jean Desquines, Christian Bernaudat, Pascal Yvon, Christophe Poussard, Xavier Avery</i>	
Thermomechanical Behavior of Mexican Fabricated Fuel	394
<i>Héctor Hernández López, Carlos A. Nocetti</i>	
Modeling Contacts among Multiple CANDU Fuel Elements in a Bundle	401
<i>Shouze Xu, Shudong Yu, Mukesh Tayal, Zhen Xu</i>	
Improved Fuel Assembly Dynamic Model	413
<i>Sudhir J. Shah, Ben Brenneman, John H. Strumpell, Gary T. Williams</i>	
Three-Dimensional Modeling of CANDU Nuclear Fuel Elements in Bowing Analysis	422
<i>Shudong Yu</i>	

Analytical-and-Experimental Simulation of WWER-1000 Fuel Rod Behaviour under Initial Stage of LB LOCA at the Test Bench "Parameter"	434
<i>V. P. Semishkin, V. I. Nalivayev, V. S. Konstantinov, N. Ya. Parshin</i>	

C03: CLAD INTEGRITY

The Fracture and Spallation of Zirconia Layers in High Burnup PWR Fuel Claddings Submitted to RIA Transients.....	444
<i>Jean Desquines, V. Georgenthum, F. Lemoine, B. Cazalis</i>	
Development of Welded Joints for Steel and Zirconium Tubes at Nuclear Power Plants.....	454
<i>Alexander Semenov, Vladimir Aden, Evgeny Rivkin, German Shevelyov, Vasiliy Tyurin</i>	
Analysis of Pellet-Clad Interaction of LWR Fuel Rods during Power Ramps.....	461
<i>Ali R. Massih, Lars O. Jernkvist, Jan-Erik Lindbäck, Gang Zhou</i>	
Pellet Cladding Mechanical Interaction Assessment Using 3D Modelling	475
<i>B. Michel, D. Plangcq, C. Struzik, Ph. Garcia, S. Lansiart</i>	
Influence of Azimuth and Radial Neutron and Thermal Sources Anisotropy on Contact Problem Simulation in Real Fuel Pellet-Cladding Configuration Using FEM.....	488
<i>Josef Beldc, Mojmír Valach, Jiří Zymák</i>	

C04: FUEL ASSEMBLY DYNAMICS

Fracture Toughness of Irradiated Zr-2.5Nb CANDU Pressure Tube Using Load Ratio Method	501
<i>Seung-Jin Oh, In-Sup Kim, Young-Suk Kim, Sang-Bok Ahn</i>	
Applying the TRANSURANUS Code to VVER Fuel Under Accident Conditions	512
<i>Csaba Gyori, Zoltán Hózér, Erzsébet Perez-Feró, Paul Van Uffelen, Arndt Schubert, Jacques Van De Laar</i>	
Experimental Investigation of Strain, Damage and Failure of Hydrided Zircaloy-4 with Various Hydride Orientations.....	524
<i>Aude Racine, Michel Bornert, Daniel Caldemaison, Claude Sainte Catherine, Chantal Cappelaeire</i>	
The Stress Analysis and Stress Evaluates of y-Spectrometer-Probe Station.....	N/A
<i>Hailong Li</i>	

C05: DESIGN OF ADVANCED REACTOR FUEL

Identification of the Key Parameters Defining the Life of Graphite Core Components.....	544
<i>Mark N. Mitchell</i>	
Theoretical and Experimental Modeling of the Multiple Pressure Tube Rupture for RBMK Reactor. Part II.....	558
<i>Natalya Y. Medvedeva, Andrey V. Andreev, Sergey V. Timkin, Igor A. Peshkov, Vladislav N. Zhilko, Dimitri Ye. Martsiniouk, Olga A. Poshtovaya</i>	
Experimental Study of New Generation WWER-1000 Fuel Assemblies at JSC NCCP.....	570
<i>Anatoly A. Enin, Vladimir V. Rozhkov, Mstislav A. Shustov, Alexander P. Ustimenko</i>	
Characterization of Coated Nuclear Fuels by Nano-Indentation	580
<i>Yong Choi, Bong-Goo Kim, Y. W. Lee, J. K. Lee</i>	
MP98, An Innovative Reactivity Control System for LWR and VHTR, Tests Results on Prototypes.....	583
<i>Michel Emin, Jean Francois Gagne</i>	

C06: LIFE ASSESSMENT OF CORE STRUCTURE I

Stress Analysis of Two-Dimensional C/C Composite Components for HTGR'S Core Restraint Mechanism	600
<i>Satoshi Hanawa, Junya Sumita, Taiju Shibata, Masahiro Ishihara, Tatsuo Iyoku, Kazuhiro Sawa</i>	
Towards a Better Understanding of the Role of Stress in Restructuring of Radiation Damage	606
<i>Jérôme Jonnet, Paul Van Uffelen, Dragos Staicu, Thierery Wiss, Claudio Ronchi</i>	
Mechanics and Material Researches on Component Design Improvements for 300MWe NPPs.....	619
<i>Yongcheng Xie, Ming Zhang, Weida Yao, Yinziao He, Xingyun Liang, Guolin Shi, Dong Ning, Shaowuan Lin, Yi Jing, Ren'an Yang</i>	
Hydroelasticity and Deformations of Spacers for Fuel Elements as Structural Anisotropic Domes Composed of Cylindrical Shells	N/A
<i>Vaclav Kuzelka</i>	
Bending Load Analysis for the Simulator of Fuel Assembly	627
<i>Jing Wen, Daogang Lu, Hailong Li, Huajin Yu, Feng Sheng, Jiayi Liu</i>	

C07: LIFE ASSESSMENT OF CORE STRUCTURE II

A Model for Delayed Hydride Cracking of Zirconium Alloys	633
<i>Young-Suk Kim, Sang-Bok Ahn, Kang S. Kim</i>	
How the RRR Neutronic Characteristics Impact on the Mechanical Design.....	642
<i>Eduardo Villarino, Kurt Coquibus</i>	

DIVISION D: AGING, LIFE EXTENSION, AND LICENSE RENEWAL

D01: INTERNATIONAL EXPERIENCES RELATED TO LIFETIME EXTENSION I

Methodology on Ageing Management Review for Main Components of a PWR NPP	648
<i>Yikang Dou, Yinbiao He, Xuelian Xu, Ming Zhang, Xingyun Liang</i>	
Using Lessons Learned to Improve the NPP License Renewal Process	659
<i>Jerry Dozier, Amy Hull, Steven West, Pao Tsin Kuo</i>	
Proof of Integrity and Ageing Management of Mechanical Components in Nuclear Power Plants.....	666
<i>Eberhard Roos, Karl-Heinz Herter, Hans Kockelmann, Xaver Schuler</i>	
Integrity Assessment Technology for the Aging Management.....	678
<i>Tae-Eun Jin</i>	
French Nuclear Plant Life Management Strategy Application on Reactor Pressure Vessels and Steam Generators	
Life Management.....	688
<i>Georges Bezdikian</i>	

D02: INTERNATIONAL EXPERIENCES RELATED TO LIFETIME EXTENSION II

Key Elements of the Ageing Management of the WWER-440/213 Type Nuclear Power Plants.....	701
<i>Tamás János Katona, Ágnes Jánosné Bíró, Sándor Rátkai, Zoltán Ferenczi</i>	
Control of Selected VVER Components Life Time SKODA JS a.s. Experience.....	714
<i>Jan Zdebor, Eugen Pribulla</i>	
Sampling of Reactor Pressure Vessel Inner Cladding for Retrospective Dosimetry Analysis	725
<i>Miloslav Ruchár, Josef Hógl</i>	
Application of Dialife for Residual Life Time Assessment on Nuclear Power Plants.....	733
<i>Dusan Vincour, Ladislav Jurasek</i>	

D03: INTERNATIONAL EXPERIENCES RELATED TO LIFETIME EXTENSION III

Integrated Plant Life Management (PLIM) - The IAEA Contribution.....	747
<i>Ki-Sig Kang, Claude Russell Clark, Akira Omoto</i>	
Ageing Management of Nuclear Components: A Safety and Economical Issue	762
<i>Claude Faidy</i>	
Ageing Management Database Development for PWR NPP Steam Generator.....	771
<i>Hongyun Liu, Liangjun Xu, Changhuai Xiong, Xianyuan Wang</i>	
Piping Vibration Stress Measurement and Life Assessment	777
<i>Nianwen Lu, Xiaolong Wang, Xiaozhen Wu</i>	

D04: FATIGUE ISSUES

High Cycle Thermal Crazing: A Phenomena Related to the Structure	781
<i>Said Taheri, Erwan Galenne</i>	
Evaluation of Environmental Fatigue Lifetime for Nuclear Welded Structure Based on Structural Stress and Fracture Mechanics Approach	N/A
<i>Jong-Sung Kim, Tae-Eun Jin</i>	
Comparison between S-N-P Curves Obtained from Constant Stress and Step-Stress Fatigue Tests.....	801
<i>João Mário Andrade Pinto, Tanius Rodrigues Mansur, Miguel Mattar Neto, Enrico Antonio Colosimo</i>	
Thermal Fatigue of Reactor Components in OECD-NEA Member Countries: a Three Fold Program to Enhance Cooperation	812
<i>Claude Faidy, Stéphane Chapuliot, E. Mathet</i>	

VOLUME 2

An Approach for Low Cycle Fatigue Life Prediction of Various Metallic Materials Subjected to Non-Proportional Multiaxial Loading	824
<i>Haisheng Yu, S. N. Shukayev</i>	

D05: SCC AND WATER CHEMISTRY ISSUES

The Inhibition Mechanism and Applicability of Inhibitors for the ODSCC of Alloy 600 Tubing in PWRs	829
<i>Joung Soo Kim, Hong Pyo Kim, Yongsun Yi</i>	
Corrosion Monitoring Programmes for Life Time Extension of NPP Components.....	837
<i>Martin Brezina, Ludovit Kupca, Peter Beno</i>	

Development of the Normative Documentation for Control Exploitation Pipe Lines of Second Side NPP with VVER	845
<i>V. I. Baranenko, S. G. Oleynik, O. A. Belyakov, R. S. Istomin, A. V. Kumov</i>	

D06: COMPONENT INTEGRITY - PTS

Aging Management of PWR Internals Components	854
<i>H. T. Tang, Jeff D. Gilreath</i>	
Proactive Materials Degradation Assessment (PMDA)	863
<i>Joseph Muscara, Niles C. Chokshi, Michael A. Switz</i>	
Probabilistic Structural Integrity of Reactor Vessel under Pressurized Thermal Shock	870
<i>Myung Jo Jhung, Young Hwan Choi, Hho Jung Kim, Changheui Jang</i>	
Technical Basis for Revision of the Pressurized Thermal Shock (PTS) Screening Limit in the PTS Rule (10CFR50.61)	881
<i>Mark T Ericksonkirk, Niles C. Chokshi, Roy Woods, Mike Junge, Shah Malik, Dave Bessette</i>	

D07: MATERIAL PROPERTIES RELATED TO AGING

Life-Time Prediction of Austenitic Stainless Steel by Applying Magnetic NDT-Methods.....	898
<i>Markus Niffenegger, Hans J. Leber, Dietmar Kalkhof</i>	
Have Any Material Tests Been Forgotten?	914
<i>Josef Jansky</i>	

D08: VVER LIFETIME MANAGEMENT

Results from Irradiation Embrittlement Monitoring Programmes of RPV's Operated in the Slovak Republic NPP's	924
<i>Peter Beno, L'Udovít Kupca, Martin Brezina</i>	
Radiation Embrittlement of VVER-1000 RPV Steels	935
<i>Yury A. Nikolaev</i>	
Integrated Surveillance Specimen Program for WWER-1000/V-320 Reactor Pressure Vessels	944
<i>Milan Brumovsky, Miloš Kytká, Petr Novosad, Jiri Zlárek</i>	
Flux Effect on Radiation Embrittlement of VVER-440 Reactor Pressure Vessel Materials	950
<i>Alexandr Kryukov, Anna Chernobaeva, Amir Amaev, Dmitry Erak, Pavel Platonov, Yaroslav Shtrombakh</i>	
Experience of Operating the Automatic System of Residual Service Life Monitoring for WWER-1000	963
<i>A. V. Bogachev, B. N. Dranchenko, V. P. Semishkin, M. B. Bakirov</i>	

DIVISION F: DESIGN METHODS AND RULES FOR COMPONENTS

F01: CONSTITUTIVE MODELING AND RATCHETING OF MATERIALS I

Identification of Constitutive Laws by Inverse Method Based on EBSD, Microextensometry and Finite Elements Simulations. Application to Zirconium Grade 702	971
<i>Marie Dexet, Jérôme Crepin, Lionel Gelebart, André Zaoui</i>	
Experiment Research on Ratcheting of Pressurized Pipe Subjected Reversed Bending	981
<i>Bingjian Gao, Xu Chen, Gang Chen</i>	
Multiaxial Ratcheting of 1Cr18Ni9Ti Stainless Steel	988
<i>Xu Chen, Xin Li, Rong Jiao</i>	
A Unified Time Dependent Model for Low Cycle Fatigue and Ratcheting Failure Based on Microcrack Growth	995
<i>Xianjie Yang</i>	
Uniaxial Ratcheting of SS316L Stainless Steel at High Temperature: Experiments and Simulations	1006
<i>Guozheng Kang, Qing Gao</i>	
Neutron Irradiation Embrittlement Modeling in RPV Steels - An Overview	1015
<i>M. F. Hashmi, S. J. Wu, H. X. Li</i>	
Application of a Unified Fatigue Modelling to Some Thermomechanical Fatigue Problems	1026
<i>K. Dang Van, H. Maitournam, Z. Moumni</i>	

F02: CONSTITUTIVE MODELING AND RATCHETING OF MATERIALS II

Elastic Core Concept in Shakedown Analysis	N/A
<i>Janek Porowski, Tom O'Donnell</i>	
Application of Nano-Indentation Technique to Evaluate Mechanical Properties of Irradiated Materials	1033
<i>Y. S. Choo, Kee Nam Choo, D. S. Kim, B. G. Kim, Y. Choi</i>	
Statutes of the Study on the Irradiated Materials by a Special Capsule in HANARO	1037
<i>Young-Hwan Kang, Bong-Goo Kim, Man-Soon Cho, Yong Choi</i>	

Design Criteria for Ratcheting Fatigue of 316FR Steel under Fast Reactor Conditions	1041
<i>Nobuhiro Isobe, Masayuki Sukekawa, Yasunari Nakayama, Tomomi Ohtani, Shingo Date, Yukio Takahashi, Naoto Kasahara, Kyotada Nakamura, Hiroshi Shibamoto, Hideaki Nagashima, Kazuhiko Inoue</i>	
Comparisons of Ratchetting Analysis Methods Using RCC-M, RCC-MR and ASME Codes	1052
<i>Yu Yang, M. T. Cabrillat</i>	
Microstructure Development and Corrosion Behavior of Copper-Silver Nano-Filamentary Composites	1060
<i>Yong Choi, M. Y. Choi, J. H. Song, S. H. Shin</i>	

F03: FATIGUE AND CREEP INTERACTION OF MATERIALS

Experimental Verification of Different Parameters Influencing the Fatigue S/N-Curve.....	1064
<i>Eberhard Roos, Karl Maile, Karl-Heinz Herter, Xaver Schuler</i>	
A Probabilistic Assessment on the Random S-N Relations and the ASME Design S-N Curves of 0Cr18Ni10Ti Piping Steel	1074
<i>Yongxiang Zhao, Bing Yang</i>	
The Entire Mean Stress Relaxation of 0Cr18Ni10Ti Piping Steel	1084
<i>Bing Yang, Yongxiang Zhao</i>	
On the Creep Crack Growth Behaviour of Inconel 718.....	1093
<i>Antonietta Lo Conte</i>	
Mechanical Aspects Concerning Thermal Fatigue Initiation in the Mixing Zones of Piping.....	1105
<i>J. M. Stephan, F. Curtit</i>	

F04: INTERNATIONAL CODES AND STANDARDS I

Design Principles and Overall Aspects to Proof the Integrity of Pressurized Components.....	1118
<i>Eberhard Roos, Karl-Heinz Herter, Xaver Schuler</i>	
Recent Developments for Fast Reactor Structural Design Standard (FDS)	1131
<i>Naoto Kasahara, Kyotada Nakamura, Masaki Morishita, Hiroshi Shibamoto, Hideaki Nagashima, Kazuhiko Inoue</i>	
EPR Codes and Standards for Pressure Equipments	1141
<i>Claude Faidy</i>	
Advances in the R5 and R6 Defect Assessment Procedures	1150
<i>Robert Anthony Ainsworth</i>	
J Simplified Assessment for Cracked Pipes and Elbows in the RSE-M Code.....	1159
<i>Patrick Le Delliou, Jean-Philippe Sermage, Philippe Gilles, Stéphane Marie, Yann Kayser, Bruno Barthelet</i>	
Formation of Stress/Strain Cycles for Analytical Assessment of Fatigue Crack Initiation and Growth.....	1172
<i>Alexander V. Tashkinov</i>	

F05: INTERNATIONAL CODES AND STANDARDS II

Comparison of "VERLIFE" and Russian Methodologies for Reactor Pressure Vessel Integrity Assessment	1187
<i>Vladislav Pistora, Ales Kacor</i>	
Proper Understanding of Relevant Articles in RCC-M and Panel G-7-002	1200
<i>Zaozhan Sun</i>	
A View on the Ways Design of Reliability Criteria in Structural Mechanics.....	1205
<i>Miroslav Kopecky</i>	
Review of Stress Analysis Results According to Decoupling Criteria Change and Suggestion of Alternative Solution.....	1212
<i>Joong-Kyo Shin, Kyoung-Mo Yang</i>	

F06: DESIGN OF PIPING, VESSELS, AND COMPONENTS I

Equivalent Properties for Perforated Plates - An Analytical Approach.....	1225
<i>M. M. Cepkauskas, Jianfeng Yang</i>	
Design of the Filter Pressure Vessel of HTR-10 Safety Valve Testing Loop	1236
<i>Jianling Dong, Junjie Liu, Shuyan He, Suyuan Yu</i>	
Strength Compliance of Pipe Fittings with Large Ovality.....	N/A
<i>Gabor Kovacs, Zoltan Zsidi, Zoltan Vigh, Eleonora Pek</i>	
Interactive Thresholding in the Topology Optimization Process.....	1242
<i>Ryszard Kutyłowski</i>	
Computer Simulation of Drop Test on Lead Shielded Shipping Cask and its Validation	1254
<i>U. P. Singh, S. M. Ingole, A. G. Chhatre, S. Vedamoorthy, R. S. Mahajan, S. Raju</i>	
Numerical Simulation of Residual Stress in Piping Components at FRAMATOME-ANP	1268
<i>Philippe Gilles, Christian Franco, Marie-France Cipière, Pascal Ould</i>	
Design and Suspension Experiments of the Full-Size Active Magnetic Bearing Test Rig for the HTR-10GT	1282
<i>Qiyue Lu, Lei Shi, Lei Zhao, Suyuan Yu</i>	
Application of DSP in Active Magnetic Bearing (AMB-F) Control for the HTR-10GT	1289
<i>Huan Yu, Lei Shi, Suyuan Yu</i>	

F07: DESIGN OF PIPING, VESSELS, AND COMPONENTS II

Thermo-Mechanical Design of a Photoneutron Source for Time-of-Flight Experiments	1295
<i>Eberhard Altstadt, Carsten Beckert, Vladimir Galindo, Baerbel Naumann, Frank-Peter Weiss</i>	
Development of Computational Methods of Design by Analysis for Pressure Vessel Components	1306
<i>Shiyi Bao, Yu Zhou, Shuyan He, Honglin Wu</i>	
A Simplified Technique for Shakedown Load Determination	1315
<i>Hany F. Abdalla, Maher Y. A. Younan, Mohammed M. Megahed</i>	
Application of FEM Analysis Methods to a Cylinder-Cylinder Intersection Structure	1329
<i>Liping Xue, G. E. O. Widera, Zhifui Sang</i>	

F08: DESIGN OF PIPING, VESSELS, AND COMPONENTS III

Design Rules for the O Ring Seal in Nuclear Reactors	1341
<i>Xuanyu Sheng, Suyuan Yu, Dan Zhou, Honglin Wu</i>	
Limit Load Analysis of Bolted Flange Connections	1346
<i>Jürgen Deininger, Robert Kauer</i>	
Design on the Recuperator Used in Power Conversion Unit with the Direct Helium-Turbine Cycle of HTR-10	1357
<i>Xinxin Wu, Qingliao Yin, Jisheng Wang</i>	
High-Temperature Strength and Inelastic Behavior of Plate-Fin Structure for HTGR	1367
<i>Fumiko Kawashima, Toshihide Igari, Yasuyuki Miyoshi, Masanori Tanihira</i>	
A Discussion of Application Possibility of LBB Methodology for PWR High Energy Piping Lines other than Main Coolant Pipe inside Containment	1378
<i>Bingbing Liang, Wenda Gao</i>	
Design Verification for Reactor Head Replacement	1383
<i>Keshab K. Dwivedy, Melvin S. Whitt, Robert Lee</i>	

DIVISION G: FRACTURE MECHANICS

G01: GENERAL INTEGRITY ISSUES

The NRC Perspective on Flaw Evaluations for Various Nuclear Components	1393
<i>Simon C. F. Sheng, John Honcharik, Matthew A. Mitchell, Terence L. Chan</i>	
Classification of the Mastercurve Concept within the Framework of Safety Assessments Based on Mechanics of Materials	1406
<i>Eberhard Roos, Xaver Schuler, Horst Silcher, Hans-Peter Seebich, Ulrich Eisele</i>	
Use of the Master Curve Methodology for Real Three Dimensional Cracks	1423
<i>Kim Wallin, Rauno Rintamäa</i>	

G02: THERMAL AND DYNAMIC LOADING

Stress Intensity Factors Evaluation Due to Thermal Stresses Using Photoelasticity	N/A
<i>Marco Antônio Dutra Quinan, Miguel Mattar Neto</i>	
3-D Thermal Weight Function Method and Multiple Virtual Crack Extension Technique for Thermal Shock Problems	1443
<i>Yanlin Lu, Xiao Zhou, Jiadi Qu, Yikang Dou, Yinbiao He</i>	
Dynamic Crack Growth and Arrest Analysis Using Cohesive Zones	1457
<i>Gilles Debruyne, Miguel Charlotte</i>	
Double Cracking in Brittle Cylindrical Specimens Subjected to Quenching	1466
<i>Weijing He, Haiyan Li, Siu-Lun Fok, J. Derek Jackson, Jan R. Wright</i>	
Statistical Analysis of Creep Crack Growth Data in Type 316LN Stainless Steel	1477
<i>Woo-Seog Ryu, Woo-Gon Kim, Song-Nam Yoon</i>	

G03: FUNDAMENTAL RESEARCH I

EComparison of Stress Intensity Factor Solutions for Cylinders with Axial and Circumferential Cracks	1484
<i>Naoki Miura, Yukio Takahashi, Hiroshi Shibamoto, Kazuhiko Inoue</i>	
A Generic Validation Methodology and its Application to a Set of Multi-Axial Creep Damage Constitutive Equations	1496
<i>Qiang Xu</i>	
Simulating Hydride Embrittlement on Cold-Worked Stress-Relieved Zircaloy-4 with Gurson-Tvergaard-Needleman Damage Model	1508
<i>Jean Desquines, Vincent Busser, Frédéric Perales</i>	
Applicability of Computational Cell Model Technique for Nonlinear Fracture Mechanics	1516
<i>Weilin Zang, Pål Efsing</i>	

G04: FUNDAMENTAL RESEARCH II

On the Constraint-Based Failure Assessment of Thick-Walled Cylinders with Internal Axial Cracks	1531
<i>Xin Wang, Wolf Reinhardt</i>	
The Leak-Before-Break (LBB) Safety Analysis Research	1538
<i>Haihua Wu, Quan Duan</i>	
Stress Distribution in a Cubic Solid Containing a Penny-Shaped Crack	1545
<i>Marc Dahan</i>	
Comparative Studies on Constitutive Models for Cohesive Interface Cracks of Quasi-Brittle Materials	1551
<i>Xinpu Shen, Guoxiao Shen, Lin Zhou</i>	

G05: FUNDAMENTAL RESEARCH III

Comparing FEM, BEM and Analytical Formulations in the Evaluation of the Stress Intensity Factor in LEFM	1566
<i>Ricardo Fiúza Lima, Sandro Petry Laureano Leme, Luciano Mendes Bezerra, Paul William Partridge</i>	
New Stress Intensity Factor Solutions for an Elliptical Crack in a Plate	1580
<i>Patrick Le Delliou, Bruno Barthelet</i>	
Application of Three Dimensional Crack Analysis Using Finite Element Alternating Method	1594
<i>Tae Soon Kim, Sang Yun Park, Jai Hak Park, Chi Yong Park, Tae Eun Jin</i>	
Finite Element Simulation of Crack Growth in Blanking Process Using Floating Collapsed Elements	1601
<i>Farid R. Biglari, Mehrdad Ghatrenabi, Mohamad R. Razfar, Kamran M. Nikbin</i>	
Stacking Sequence Optimization of Laminated Panels for Maximum Strength Using Genetic Algorithm	1611
<i>Mahmood Shakeri, Akbar Alibeiglou, Abedin Morowat</i>	

VOLUME 3

Elastic-Plastic Behaviour of a Nuclear Pipe Elbow with Axial Through Wall Crack at Crown under In-Plane Bending	1619
<i>K. M. Prabhakaran, V. Venkat Raj</i>	

G06: ANALYSIS OF WELDED STRUCTURES

Structural Integrity of Dissimilar Welds BIMET-DIMEW Project Results	1628
<i>Claude Faïdy, G. Martin</i>	
Fad-Based Defect Assessment Method for Welded Structures at High Temperature	1634
<i>Fuzhen Xuan, Shantung Tu, Zhengdong Wang</i>	
Fatigue Crack Propagation Properties on Corrosion Resistant Welded Joints	1643
<i>Geraldo De Paula Martins, Carlos Alberto Cimini Jr., Leonardo Barbosa Godefroid, Emerson Giovane Rabello</i>	

G07: REACTOR PRESSURE VESSEL INTEGRITY

SMILE: A European R&D Program for the Inclusion of Warm Pre-Stress in RPV Assessment	1653
<i>Dominique Moinereau, Georges Bezdikian</i>	
SMILE: Interpretation of WP4 PTS Transient Type Experiment Performed on a Cracked Cylinder Involving Warm Pre-Stress	1668
<i>Dominique Moinereau, Anna Dahl, Yves Wadier</i>	
SMILE: Experimental Results of the WP4 PTS Large Scale Test Performed on a Component in Terms of Cracked Cylinder Involving Warm Pre-Stress	1680
<i>Klaus Kerkhof, Georges Bezdikian, Dominique Moinereau, Anna Dahl, Yves Wadier, Philippe Gilles, Elisabeth Keim, Stéphane Chaputit, Nigel Taylor, David Lidbury, John Sharples, Peter Budden, Dieter Siegelse, Gerhard Nagel, Richard Bass, David Emond</i>	
Constraint-Based Fracture Assessment of Embedded-Flaw Beams in the NESC-IV Tests	1695
<i>Iradj Sattari-Far</i>	

G08: PIPE AND TUBE INTEGRITY I

Evaluation of Full Scale Pipe Tests Based on a Probabilistic Procedure	1706
<i>Eberhard Roos, Karl-Heinz Herter, Michael Ringel</i>	
Load Bearing Capacity of Degraded Nuclear Piping	1716
<i>Eberhard Roos, Karl-Heinz Herter, Xaver Schuler, J. Chattopadhyay, B. K. Dutta, H. S. Kushwaha</i>	
Coalescence Model of Two Collinear Cracks Existing in Steam Generator Tubes	1728
<i>Seong In Moon, Yoon Suk Chang, Young Jin Kim, Youn Won Park, Myung Ho Song, Young Hwan Choi, Jin Ho Lee</i>	
Influence of a Welded Pipe Whip Restraint on the Critical Crack Size in a 90° Bend	1743
<i>Igor Varfolomeyev, Wieland Holzer, Dieter Beukelmann, Wolfgang Mayinger</i>	

G09: PIPE AND TUBE INTEGRITY II

Fatigue Crack Growth Properties of Typical Pressure Vessel Steels at High Temperature	1754
<i>Zengliang Gao, Weiming Sun, Ying Wang, Fang Zhang</i>	
Three Dimensional Fatigue Propagation Modelling of a Nozzle Corner Crack	1762
<i>Philippe Gilles, Johan Leseux, Moïse Pignol</i>	
Corrosion-Fatigue Crack Growth Behavior of Piping and Reactor Pressure Vessel Steels	1778
<i>Evgeniy A. Grin, Alexander V. Zelenskiy</i>	
The Analysis of the Dissimilar Metal Weld Joint for Fracture Mechanics Evaluations	1788
<i>June-Soo Park, Ha-Cheol Song, Ki-Seok Yoon, Taek-Sang Choi</i>	

G10: PIPE AND TUBE INTEGRITY III

Estimation Schemes to Evaluate Elastic-Plastic J and COD for Throughwall Circumferentially Cracked Elbow under Closing Moment	1796
<i>J. Chattopadhyay, A. K. S. Tomar, B. K. Dutta, H. S. Kushwaha</i>	
DHC Behaviour of Irradiated Zr-2.5Nb Pressure Tubes Up to 365°C	1811
<i>M. Resta Levi, M. P. Puls</i>	
Prediction of Failure due to Crack Coalescence in Steam Generator Tubes.....	1824
<i>Abdalla Elbella, Jeries Abou Hanna, Suman Kumar Renukunta</i>	
Limit Load Analysis for Local Wall-Thinning Steam Generator Tubes	1831
<i>Hu Hui, Peining Li, Yi Tang, Yong Nie</i>	

G11: MATERIAL PROPERTIES

Master Curve Analysis of a German RPV Steel Considering Local Constraint	1839
<i>Dieter Siegele, Jörg Hohe, Valerie Friedmann</i>	
Strain-Induced Damage to Passive Films on Austenitic Stainless Steels.....	1852
<i>Paul Chard-Tuckey, Ken Trethewey, Mark Wenman, Sean Jarman</i>	
The Influence of Combined Warm Prestress on Brittle Fracture Material of the Pressure Vessel of VVER-Type	N/A
<i>Petro Yasniy, Volodymyr Hutsaylyuk, Petro Pschonjak, Igor Okipny</i>	
Effect of In-Plane Constraint and Type of Loading on Fracture Toughness of RPV Steels.....	1872
<i>Dana Lauerova, Milan Brumovský</i>	
Fracture Toughness of Ferritic Steel - Underwater Wet Welded	1882
<i>Roberto F. Di Lorenzo, Wellington Antonio Soares, Alexandre Q. Bracarense</i>	
Fatigue Initiation of Crack under Mode III and Mixed Mode I + III Loads in a 9Cr Steel	1896
<i>Ph. Matheron, Stéphane Chaputot</i>	
High-Temperature Crack Growth Behavior of High-Chromium Steels	1904
<i>Yukio Takahashi, Toshihide Igari, Fumiko Kawashima, Shingo Date, Norihiro Isobe, Takuya Itoh, Yasutaka Noguchi, Kenichi Kobayashi, Masaaki Tabuchi</i>	
Test of Fatigue Behavior and Verification of S-N Curve for 321 Austenitic Stainless Steel	1916
<i>Weiming Sun, Xing Ren, Weiya Jin, Kangda Zhang, Zhanggen Bao, Weida Yao</i>	
Hydride Crack Formation in Zr-Nb Alloy under Constant and Cyclic Loading	N/A
<i>Albertas Grybenas, Vidas Makarevicius</i>	
Effects of Loading Factors on Environmental Fatigue Behavior of Low-Alloy Pressure Vessel Steel in Simulated BWR Water.....	N/A
<i>X. Q. Wu, E. H. Han, W. Ke, Y. Katada</i>	
Test of Fatigue Behavior and Verification of S-N Curve for SA372-J70 Steel.....	1941
<i>Weiming Sun, Xing Ren, Kangda Zhang</i>	

DIVISION H: CONCRETE MATERIAL, CONTAINMENT AND OTHER STRUCTURES

H01: PRE-STRESS CONCRETE CONTAINMENT I

Axisymmetric Modeling of Prestressing Tendons in Nuclear Containment Building Dome.....	1946
<i>Se-Jin Jeon, Chul-Hun Chung, Young Jin Kim, Yun-Seok Lee, Yun-Suk Chung</i>	
Numerical Model for the Analysis of Unbonded Prestressed Structures Using the Hybrid Type Finite Element Method	1958
<i>Ranier Adonis Barbieri, Francisco P. S. L. Gastal, Américo Campos Filho</i>	
Structure Simulation of Pre-Stressed Concrete Containment Structures	1970
<i>Hans Grebner, Jürgen Sievers</i>	
Large Scale Model Experimental Analysis of Concrete Containment of Nuclear Power Plant Strengthened with Externally Wrapped Carbon Fiber Sheets	N/A
<i>Tao Yang, Xiaobing Chen, Qingrui Yue</i>	

H02: PRE-STRESS CONCRETE CONTAINMENT II

Concrete Material, Containment and Other Structure - Provision of Large Openings in Dome Structure of Prestressed Concrete Double Containments for Indian PHWR Stations	1995
<i>S. G. Joglekar, U. K. Rajeshirke, U. S. P. Verma</i>	
Structural Integrity Test of Prestressed Concrete Containment Vessel	2000
<i>Ii-Hwan Moon, Sung-Hoon Kang, Yong Lak Paek</i>	
Determination of Limiting Amount of Absent Tendons in Prestressed Nuclear Power Plant Containment.....	2007
<i>Victor N. Medvedev, Alexandre S. Kiselev, Alexey S. Kiselev, Valery F. Strizhov, Alexey A. Lopanchuk, Sergey S. Nefedov</i>	
Prediction of Transfer Length in Pretensioned Prestressed Concrete Structures	2018
<i>Byung Hwan Oh, Young Cheol Choi, Eui Sung Kim</i>	

H03: ALKALI-SILICA REACTION STUDY

Vibration Measurement and Simulation Analysis on a Reinforced Concrete Structure with Alkali-Silica Reaction.....	2026
<i>Masaharu Takakura, Takashi Hosokawa, Katsuki Takiguchi, Yuichi Watanabe, Takakazu Ishi, Yoshihiro Masuda</i>	
Study on the Influence of Alkali-Silica Reaction on Structural Behavior of Reinforced Concrete Members	2036
<i>Yasuyuki Murazumi, Naoki Matsumoto, Katsuki Takiguchi, Yuichi Watanabe, Shiro Mitsugi, Yoshihiro Masuda</i>	
Study on the Influence of Alkali-Silica Reaction on Mechanical Properties of Reinforced Concrete Members.....	2043
<i>Yasuyuki Murazumi, Naoki Matsumoto, Katsuki Takiguchi, Takashi Hosokawa, Shiro Mitsugi, Yoshihiro Masuda</i>	
Investigation of Safety Margin for Turbine Generator Foundation Affected by Alkali-Silica Reaction Based on Non-Linear Structural Analysis.....	2049
<i>Hiroshi Shimizu, Takashi Hosokawa, Kunihiko Sato, Katsuki Takiguchi, Isoharu Nishiguchi, Yoshihisa Asai, Hisashi Sekimoto, Yuichi Oshima, Yoshihiro Masuda</i>	
Study on Material Properties in Order to Apply for Structural Analysis of Turbine Generator Foundation Affected by Alkali-Silica Reaction	2055
<i>Hiroshi Shimizu, Tatsuya Ishikawa, Yoshihiro Masuda, Yuichi Watanabe, Hisashi Sekimoto, Katsuki Takiguchi, Isoharu Nishiguchi, Yuichi Oshima</i>	
Investigation on the Expansion Value of Turbine Generator Foundation affected by Alkali-Silica Reaction	2061
<i>Takeo Takakura, Shirou Mitsuji, Katsuki Takiguchi, Isoharu Nishiguchi, Tatsuya Ishikawa, Naoki Matsumoto, Yoshihiro Masuda</i>	

H04: SIMULATION OF TEST RESULTS

Results of the CAMUS-I Test Simulation by the Japanese Team.....	2069
<i>Yoshio Kitada, K. Takashima, S. Kawahara, K. Maekawa</i>	
Mechanical Simulations of SANDIA II Tests OECD ISP 48 Benchmark.....	2081
<i>Shahrokh Ghavamian, Alexis Courtois, Jean-Luc Valfort</i>	
Posttest Analysis of the NUPEC/NRC 1:4 Scale Prestressed Concrete Containment Vessel Model Using a Three-Dimensional Model with Unbonded Tendons	2093
<i>Ola Jovall</i>	
Analysis of a 1:4-Scale Prestressed Concrete Containment Vessel Model for Severe Accident Thermal and Pressure Loading	2108
<i>Robert A. Dameron, Brian E. Hansen, Michael F. Hessheimer</i>	
An International Standard Problem: Analysis of 1:4-Scale Prestressed Concrete Containment Vessel Model under Severe Accident Conditions.....	2123
<i>E. Mathet, Michael F. Hessheimer</i>	
Prediction of a Containment Vessel Mock-Up Cracking During Over Design Pressure Test	2138
<i>Sandrine Kevorkian, Grégoire Heinfling, Alexis Courtois</i>	
Parameter Identification of a Stress Triaxiality-Dependent Plastic Damage Model for Concrete	2151
<i>Xinpu Shen, Guoxiao Shen, Lin Zhou</i>	
Numerical Simulation of the NPP's Steel-Concrete Structures Diagnostic by the Impact-Echo Method	2158
<i>Ladislav Pecinka, Stefan Moravka, Josef Voldrich</i>	
Introducing Infrared Thermography in Dynamic Testing on Reinforced Concrete Structures.....	2166
<i>Minh-Phong Luong, Dang-Van Ky</i>	

H05: MATERIAL CONCRETE CONTAINMENT LEAKAGE – FAILURE BEHAVIOR

Damaged Concrete Wall and Leak Rate under Simulated Conditions	2173
<i>Abdeslam Laghcha, Gérard Debicki, Benoît Masson</i>	
Numerical Investigation of the Leakage Behaviour of Reinforced Concrete Walls	2188
<i>Christoph Niklasch, Laurent Coudert, Grégoire Heinfling, Chantal Hervouet, Benoit Masson, Nico Herrmann, Lothar Stempniewski</i>	
Experimental Investigation of the Leakage Behaviour of Reinforced Concrete Walls	2202
<i>Michael Stegemann, Nico Herrmann, Lothar Stempniewski, Benoit Masson, Laurent Coudert, Jean-Pierre Touret</i>	
Experimental Investigation on Air Leakage Characteristics of Containments	2215
<i>Hyungtae Kim, Namso Cho, Youngsun Choun, Namsik Kim</i>	

H06: CONCRETE CONTAINMENT FAILURE BEHAVIOR

Investigations on the Tensile Strength of High Performance Concrete Incorporating Silica Fume.....	2222
<i>Santanu Bhanja, Bratish Sengupta</i>	
Deteriorating Fracture Property and Wave Velocity of Concrete Used in Nuclear Power Plant in Marine Environment.....	2227
<i>Yu-Cheng Kan, Kuang-Chih Pei, Chia-Chi Cheng</i>	
On the Fracture Analysis of Concrete Structures Taking Into Consideration Size Effects.....	2236
<i>Jorge Daniel Riera, Ignacio Iturrioz</i>	
A New Model for Anisotropic Damage in Concrete and its Application to the Prediction of Failure of Some Containment Vessel.....	2248
<i>Pierre-Bernard Badel, Vincent Godard, Jean-Baptiste Leblond</i>	
Reliability Based Approach for the Ageing Management of Prestressed Concrete Containment Vessel	2263
<i>Grégory Heinfling, Alexis Courtois, Emmanuel Viallet</i>	

H07: CONTAINMENT BEHAVIOR

Tensile Behavior of Containment Wall Considering Liner Plate	2274
<i>Namso Cho, Namsik Kim, Young-Sun Choun</i>	
Instability of Reinforced Concrete Containment Under Internal Pressure.....	2282
<i>Sergey S. Nefedov</i>	
A Study on the Adhesion Characteristics of the Protective Coatings by Immersion for Nuclear Power Plants	2287
<i>Sang-Kook Lee, Dong-Hoon Oh, Jae-Rock Lee</i>	
Influence of the Mix Parameters and Microstructure on the Behaviour of Concrete at High Temperature	2297
<i>M. Kanema, A. Noumowe, J.-L. Gallias, R. Cabrillac</i>	

H08: CONCRETE FOUNDATION AND FASTENING SYSTEM

An Evaluation of ACI 349 Code for Design of the Fastening System at Nuclear Power Plant	2306
<i>Jung-Bum Jang, Yong-Pyo Suh, Jong-Rim Lee</i>	
Behavior of Large Anchor Loaded in Tension in Unreinforced/Reinforced Concrete	2313
<i>Nam Ho Lee, Yong-Pyo Suh, Sang Gu Lee</i>	

H09: DESIGN STANDARD AND CONSTRUCTION

Structure Analysis and Design of PCCV for New Generation NPP	2323
<i>Mingdan Wang, Xiaowen Wang, Xiaolin Huang, Zufeng Xia</i>	
Evaluation of Containment Prestressing for Cernavoda NPP Unit 2: Considering the Actual Construction Sequence	2328
<i>Ovidiu Coman, Arshad Khan, Simon Chen, Nicolas Issid, Nicolae Viorelmil Marculescu</i>	
Construction Aspects of Containment Structures of a Typical large Atomic Power Project	2340
<i>Narasimhan Raghavan, P. Niranjana</i>	

H10: CONCRETE STRUCTURES I

Ultimate Pressure Capacity of ACR™ Containment Structure	2352
<i>A. M. Saoudy, A. Awad, M. M. Elgohary</i>	
Qinshan Phase 3 CANDU 6 Reactor Buildings Proof Pressure Test and Leak Rate Test	2362
<i>K. Petrunik, Simon Pang, R. Cullen, A. F. Khan, S. Chen, Guibao Zhang, Jiangming Pan, Jinwei Zhu</i>	
Effect of Elevated Temperatures on Heavy Concrete Structural Strength in Qinshan Phase 3 CANDU 6 Reactor Buildings	2373
<i>S. Alikhan, A. F. Khan, Simon Chen</i>	
Feasibility Study of Enhancing Earthquake Resistance of the Nuclear Power Plant Dukovany Structures	2383
<i>Viktor Kanicky, Jiri Novotny, Petr Hradil, Vlastimil Salajka, Petr Stepanek, Zdenek Plocck</i>	

H11

Experimental Investigation on the Threshold Chloride Concentration for Corrosion Initiation in Reinforced Concrete Structures.....	2389
<i>Byung Hwan Oh, Seung Yup Jang</i>	
Energy Dissipated within a Reinforced Concrete Structural System and its Correlation to Inelastic Responses During Intense Seismic Action	2397
<i>Tetsuo Kubo</i>	
Pushover Analysis of Concrete Shear Walls: Benchmarking of CAMUS Experiment	N/A
<i>Prabir C. Basu, A. D. Roshan</i>	

DIVISION J: ANALYSIS AND DESIGN FOR DYNAMIC AND EXTREME LOADS

J01: PIPING ANALYSIS AND DESIGN I

Considering Dynamic Friction and Proper Structural Response in Hydraulic Load Cases for Realistic Piping Design..... <i>Tilman Diesselhorst, Peter Diatschuk, Werner Schnellhammer</i>	2419
Engineering Approach for Medium Modeling in Piping Dynamic Analysis	2430
<i>Peter S. Vasilyev</i>	
On the Optimization of Support Positioning and Stiffness for Piping Systems in Power Plants	2445
<i>Andrea Collina, Piero Zanaboni, Marco Belloli</i>	

VOLUME 4

Analytical Investigation of Pipe Whip Restraints against Postulated High Energy Pipe Ruptures..... <i>Krasimir T. Karparov, Marin Jordanov, Todor D. Karamanski</i>	2453
--	------

J02: PIPING ANALYSIS AND DESIGN II

Experimental Study of Orifice-Induced Pressure Fluctuation and Pipe Vibration..... <i>Qing Mao, Jinghui Zhang, Yushan Luo, Haijun Wang, Quan Duan</i>	2463
A Fatigue Assessment of Pressurized Piping Elbows with Local Thinned Areas	2470
<i>Cornel Balan, Bo Xu, D. Redekop</i>	
Collapse Loads for Cracked Piping Elbows under Internal Pressure and In-Plane Moment	2482
<i>Chen Wang, Fuzhen Xuan, Peining Li</i>	

J03: PLANT SAFETY AND STANDARD

Large Fire Scenarios in Relation to Sabotage of Nuclear Installations	2497
<i>Paolo Contri, Aybars Gürpinar, Ulrich Schneider</i>	
On the Dimensioning of Steel Construction Considering Revision of German Standards	2509
<i>Lutz Lindhorst, Lukas Schaudinn, Jens Milleder</i>	

J04: AIRCRAFT AND MISSILE IMPACT I

Consequences of the Large Commercial Aircraft Crash into the Interim Spent Fuel Storage Facility	2522
<i>Jan Stepan, Jan Maly, Ivan Holub</i>	
Airplane Crash Modelling: Assessment of the Riera Model.....	2531
<i>Jean-Mathieu Rambach, François Tarallo, Sylvain Lavarenne</i>	
Applications of a Coupled Multi-Solver Approach in Evaluating Damage of Reinforced Concrete Walls from Shock and Impact	2539
<i>Xiangyang Quan, Masaharu Itoh, Malcolm Cowler, Masahide Katayama, Naury Birnbaum, Bence Gerber, Greg Fairlie</i>	
Structural Integrity Analysis of an INPP Building Under External Loading	2548
<i>Gintautas Dundulis, Renatas Karalevicius, Eugenijus Uspuras, Ronald F. Kulak, Algirdas Marchertas</i>	
Non-Linear Impact Analysis of a Concrete Building	2557
<i>Danièle Chauvel, Jean-Pierre Touret, Friedhelm Stangenberg, Michael Borgerhoff, Rainer Zinn</i>	

J05: AIRCRAFT AND MISSILE IMPACT II

Investigation on Impact Resistance of Steel Plate Reinforced Concrete Barriers against Aircraft Impact Part 1: Test Program and Results	2566
<i>Jun Mizuno, Norihide Koshika, Yoshikazu Sawamoto, Nobuyuki Niwa, Atsushi Suzuki, Toshio Yamashita</i>	
Investigation on Impact Resistance of Steel Plate Reinforced Concrete Barriers against Aircraft Impact Part 2: Simulation Analyses of Scale Model Impact Tests.....	2580
<i>Jun Mizuno, Norihide Koshika, Hiroshi Morikawa, Ryusuke Fukuda, Kentaro Wakimoto, Kazuyoshi Kobayashi</i>	
Investigation on Impact Resistance of Steel Plate Reinforced Concrete Barriers against Aircraft Impact Part 3: Analyses of Full-Scale Aircraft Impact	2591
<i>Jun Mizuno, Norihide Koshika, Eiichi Tanaka, Atsushi Suzuki, Yoshinori Mihara, Isao Nishimura</i>	
Experimental Study on Behavior of RC Panels Covered with Steel Plates Subjected to Missile Impact	2604
<i>Jun Hashimoto, Katsuki Takiguchi, Koshiro Nishimura, Kazuyuki Matsuzawa, Mayuko Tsutsui, Yasuhiro Ohashi, Isao Kojima, Haruhiko Torita</i>	
Behavior of RC Panels Retrofitted with Aramid Fiber Sheets to Missile Impact.....	2616
<i>Jun Hashimoto, Katsuki Takiguchi, Koshiro Nishimura, Mayuko Tsutsui</i>	
Identification of Potential for Explosions in Nuclear Power Plant	2624
<i>Saeed Ahmad, Hamid Mehmood, Javed Iqbal Siddiqui, Shoaib Raza</i>	

J06: STRUCTURAL CAPACITY ANALYSIS

Development of a Dry Storage Cask for PWR Spent Fuel	2631
<i>Heung-Young Lee, Sung-Hwan Chung, Byung-Il Choi, Ke-Hyung Yang, Ki-Seog Seo</i>	
IHI-STORM Dry Storage Cask Tip-Over Event Structural Response.....	2637
<i>Mahendra Jivanlal Shah</i>	
Safety Analysis and Assessment of Container for Radioactive Material Transportation.....	2649
<i>Jing Xu, Lei Sun, Xihua Li</i>	
Analysis of Reactor Body for Dropping of Fuel Flask.....	2655
<i>József Györgyi, Zoltan Zsidi, Tamás Eőttelevénnyi</i>	

J07: MATERIAL FLOW INDUCED VIBRATION AND FLUID-STRUCTURE INTERACTIONS

Fluid-Elastic Instability of Tube Bundles in Two-Phase Cross-Flow	2670
<i>In-Cheol Chu, Heung June Chung</i>	
Wavelet Time-Frequency Localization of Bi-Stable Flows in Tube Banks.....	2680
<i>Cláudio R. Olinto, Maria Luiza S. Indrusiak, Luiz Augusto M. Endres, Sergio V. Möller</i>	
Evaluation of Fretting Wear Data with the Aid of Mechanism-Maps	2690
<i>Jakob Knudsen, Ali R. Massih</i>	
Modal Characteristics of the FIV Test Loop	2704
<i>Kang Hee Lee, Heung Seok Kang, Kyung Ho Yoon, Kee Nam Song, Yeun Ho Jung</i>	
Bifurcation of Cubic Nonlinear Parallel Plate-Type Structure in Axial Flow.....	2714
<i>Li Lu, Yiren Yang</i>	

J08: DESIGN AND ANALYSIS METHODOLOGY

Evaluation Method of the Large Thermal Strain Produced in Steel Structures - Application of a Theory of Ductility Exhaustion to Evaluate the Thermal Strain Produced in the Floor Liner of FBR MONJU	2721
<i>Naoto Misawa, Makinori Ikeda, Kazumichi Imou</i>	
Run-Up Heights of 1983 Central East Sea Tsunami Along the Korean Peninsula	2733
<i>Keum-Seok Kang, So-Beom Jin, Yong-Sik Cho, Chong-Hak Kim</i>	
Analysis of the Computational Methods on the Equipment Shock Response Based on ANSYS Environments	2739
<i>Yu Wang, Zhaojun Li</i>	

J09: COMPONENT DESIGN I

Structural Response of DN15-Tubes under Radiolysis Gas Detonation Loads for BWR Safety Applications	2740
<i>Michael Kuznetsov, Wolfgang Breitung, Joachim Grine, R. K. Sing</i>	
Design and Structure Analysis for the Center Post of Low Aspect Ratio Tokamak Reactor.....	2750
<i>Yuntao Song, Liman Bao, Damiao Yao, Satoshi Nishio</i>	
Safety and Protection Aspects of a Cold Neutron Source	2765
<i>Néstor Masriera, Osvaldo Lovotti</i>	
A Novel Bandage Ring for High Speed Generator	2776
<i>Zhuo Sun, Guojun Yang, Shixin Zhou</i>	

J10: COMPONENT DESIGN II

Studies to Demonstrate the Adequacy of Testing Results of the Qualification Tests for the Actuator of Main Steam Safety Relief Valves (MSSRV) in an Advanced Boiling Water Reactor (ABWR)	2783
<i>Pengfei Gou, Ram Patel, Gordon Curran, Don Henrie, Enrique Solorzano</i>	
Strain Measurement on a Compact Nuclear Reactor Pressurizer.....	2799
<i>Denis Henrique Bianchi Scaldaferrri, Renato Del Pozzo, Jairo Mola, Paulo De Tarso Vida Gomes, Tanius Rodrigues Mansur</i>	
Temperature Evaluation of an Instrumented Capsule after Irradiation Tests in HANARO.....	2812
<i>Myoung Hwan Choi, Kee Nam Choo, Young-Hwan Kang, Man Soon Cho, Young Jin Kim, Bong Goo Kim</i>	
Characteristic Analysis of Rotor Dynamics and Experiments of Active Magnetic Bearing for HTR-10GT	2818
<i>Guojun Yang, Yang Xu, Zhengang Shi, Huidong Gu</i>	

J11: DYNAMIC RESPONSE EVALUATION I

Dynamic Behavior of Upper Hydraulic Drive Control Rod	2832
<i>Xiaotian Li, Zhongjie Zhang, Shuyan He</i>	
Frequency Response Analysis of NPP Containment with WWER-1000 Type Reactor	2839
<i>Dmitriy Zoubkov, Alexander Isaikin, Georgiy Shablinksy</i>	
Three-Dimensional Dynamic Solution of Laminated Shell Panel with Piezoelectric Sensor Layer Based on the Theory of Elasticity	2844
<i>Ali Reza Daneshmehr, Mahmood Shakeri</i>	

J12: DYNAMIC RESPONSE EVALUATION II

Finite Element Modeling of the AP1000 Nuclear Island for Seismic Analyses at Generic Soil and Rock Sites	2856
<i>S. Orr Richard, Tunon-Sanjur Leonardo, Tinic Sener</i>	
Natural Vibration Experimental Analysis of Novovoronezhskaya NPP Main Building.....	2868
<i>Dmitriy Zoubkov, Alexander Isaikin, Georgiy Shablinksy, Anton Lopanchuk, Sergey Nefedov</i>	
Review Experience on Overturning Prevention of NPP Buildings in Switzerland	2875
<i>Yves E. Mondet, Peter F. Zwicky</i>	
Dynamic Behavior and Functional Reliability of WWER 1000 Turbine Foundation.....	2892
<i>Tsena Bozhanova Todorova, Marin Kostov Kostov, Velina A. Todorova</i>	
Dynamic Coupled Piezothermoelasticity of Pyroelectric Composite Plate.....	2907
<i>Fariborz Heidary, M. Reza Eslami</i>	

DIVISION K: SEISMIC ANALYSIS, DESIGN AND QUALIFICATION

K01: CURRENT & FUTURE SEISMIC DESIGN ISSUES

The Activities of the OECD/NEA in the Field of Earthquake Engineering.....	2919
<i>P. Sollogoub, Yoshio Kitada, E. Mathet</i>	
Australian RRRP Seismic Design and Qualification	2927
<i>Alberto D. Abbate, Pablo M. Abbate</i>	
Implications from Past Seismic Safety Assessments on Development of a Risk-Based Seismic Design Philosophy	2944
<i>Sanjeev R. Malushte, Robert P. Kennedy</i>	
A Research Program on Thinned Wall Piping Systems under Seismic Events.....	N/A
<i>Izumi Nakamura, Heki Shibata, Nobuyuki Ogawa, Akihito Otani, Masaki Shiratori</i>	
Site-Specific Issues related to Structural/Seismic Design of an Underground Independent Spent Fuel Storage Installation (ISFSI).....	2964
<i>Bhasker P. Tripathi</i>	
Earthquake Prediction by KIANA Method.....	2971
<i>Hasan Kianoosh, Hafez Keypour, Ahmad Naderzadeh, Hasan F. Motlag</i>	

K02: GROUND MOTION CHARACTERIZATION

Attenuation Relations of Strong Motion in Japan Using Site Classification Based on Predominant Period.....	2978
<i>Toshimasa Takahashi, Akihiro Asano, Kojiro Irikura, John X. Zhao, Jian Zhang, Hong K. Thio, Paul G. Somerville, Yasuhiro Fukushima, Yoshimitsu Fukushima, Yuki Ono, Hiroshi Ogawa</i>	
On the Constitutive Criteria for the Fault: Influence of Size and Tensile Cracks Generation During Rupture	2990
<i>Jorge Daniel Riera, Letícia Fleck Fadel Miguel, Luis Angel Dalguer Gudiel</i>	
Characterization of Design Ground Motion for the Central and Eastern United States: Licensing Implications	3004
<i>Joe Litehiser, Peter Carrato</i>	

K03: GROUND MOTION & SITTING

Response Spectra by Blind Faults for Design Purpose of Stiff Structures on Rock Site	3016
<i>Hiroyuki Mizutani, Kenichi Kato, Masayuki Takemura, Kazuhiko Yashiro, Kazuo Dan</i>	
Distribution of Base Rock Depth Estimated from Rayleigh Wave Measurement by Forced Vibration Tests	3020
<i>Hiroshi Hibino, Toshiro Maeda, Chiaki Yoshimura, Yasuo Uchiyama</i>	
Determination of the Peak Ground Acceleration for Operating Basis Earthquake and its Influence in Design of Structures	3029
<i>A. K. Ghosh, H. S. Kushwaha</i>	
Site Specific Estimation of Cumulative Absolute Velocity.....	3041
<i>Marin Kostov Kostov</i>	
Evaluation of Strong Ground Motion Considering the Active Fault System near the Nuclear Power Plant in Korea.....	3051
<i>Yoshiaki Shiba, In-Kil Choi, Young-Sun Choun</i>	

K04: SOIL-STRUCTURE INTERACTION I

Simulation Analyses of Vibration Tests on Pile-Group Effects Using Blast-Induced Ground Motions.....	3061
<i>Takayuki Hashimoto, Kazushige Fujiwara, Katsuichirou Hijikata, Hideo Tanaka, Kohji Koyamada, Atsushi Suzuki, Osamu Kontani</i>	
Large Scale Vibration Tests on Pile-Group Effects Using Blast-Induced Ground Motion	3075
<i>Katsuichirou Hijikata, Hideo Tanaka, Takayuki Hashimoto, Kazushige Fujiwara, Yuji Miyamoto, Osamu Kontani</i>	
A Test to Evaluate Non-Linear Soil Structure Interaction.....	3088
<i>Tetsuya Hagiwara, Yoshio Kitada</i>	
Soil-Structure Interaction Analysis Including Ground Motion Incoherency Effects	3096
<i>Farhang Ostadan, Nan Deng, Robert P. Kennedy</i>	

An Estimation Method for Basemat Uplift Behavior of NPP Buildings	3105
<i>Naohiro Nakamura, Susumu Ino, Osamu Kurimoto, Masayuki Miake</i>	

K05: SOIL-STRUCTURE INTERACTION II

Reanalysis and Evaluation of Seismic Response of Reactor Building	3116
<i>Zhongcheng Li, Zhongxian Li</i>	
Soil Structure Interaction Model and Variability of Parameters in Seismic Analysis of Nuclear Island Connected Building.....	3121
<i>K. V. Subramanian, S. M. Palekar, M. S. Bavare, H. A. Mapari, S. C. Patel, C. S. Pillai</i>	
Analytical Study on System Identification of Fixed-Base Transfer Functions for an Embedded Reactor Building	3133
<i>Yukio Naito, Ali Niousha</i>	
Assessment of Seismic Analysis Methodologies for Deeply Embedded NPP Structures.....	3147
<i>Jim Xu, Charles Miller, Carl Costantino, Charles Hofmayer, Herman Graves</i>	

K06: SOIL-STRUCTURE INTERACTION III

Influence of Different Boundary Conditions on Analysis of SSI.....	3157
<i>Jiachun Wang</i>	
Analysis of Raft Foundations for Spent Fuel Pool in Nuclear Facilities	3165
<i>K. V. Subramanian, A. V. Kashikar, Cleona Nath, C. C. Shintre</i>	
System Identification of a Nuclear Reactor Building under Fixed-Base Condition Using Measured Data.....	3179
<i>Ali Niousha, Yukio Naito, Masao Kan, Atsushi Onouchi, Atsushi Tachibana</i>	
Frequency-Dependent Springs in the Seismic Analysis of Structures.....	3194
<i>Alexander G. Tyapin</i>	
Evaluation of Seismic Induced Wall Pressures for Deeply Embedded NPP Structures	3206
<i>Jim Xu, Charles Miller, Carl Costantino, Charles Hofmayer, Herman Graves</i>	

K07: SEISMIC RESPONSE OF STRUCTURES

Effect of Supporting Structure Stiffness on the Drive Train Assembly of an Induced Draft Cooling Tower under Seismic Effects.....	3218
<i>Narasimhan Raghavan, S. Ramasubramanian, Khasim Khan</i>	
Upgrading the Seismic Performance of the Interior Water Pipe Supporting System of a Cooling Tower.....	3226
<i>George C. Manos, V. J. Soulis</i>	
The Seismic Response and Floor Spectra of OL3 NPP Buildings in Finland.....	3240
<i>Pentti Varpasuo</i>	

VOLUME 5

Seismic Safety of Building Structures of NPP Kozloduy III.....	3252
<i>Georgi Ivanov Varbanov, Marin Kostov Kostov, Dimitar Dechkov Stefanov, Antoaneta Dineva Kaneva</i>	
Seismic Resistant Analysis of Coupled Model of Reactor Coolant System and Reactor Building.....	3264
<i>Xiaowen Wang, Zufeng Xia</i>	
Simulation Analysis of Earthquake Response of Nuclear Power Plant to the 2003 Miyagi-Oki Earthquake	3270
<i>Yoshihiro Ogata, Kiyoshi Hirotani, Masayuki Higuchi, Shingo Nakayama</i>	
Story Damage Index of Seismically-Excited Buildings Based on Modal Parameters.....	3278
<i>Jer-Fu Wang, Chi-Chang Lin, Shih-Min Yen</i>	

K08: SEISMIC RESPONSE OF STRUCTURES AND COMPONENTS

Seismic Strengthening of Overhead Roads between Reactor Buildings of WWER-1000MW Type NPP	3290
<i>George Stoyanov, Marin Jordanov</i>	
Seismic Response of the ACRTM Reactor Building	3300
<i>A. M. Saudy, A. Awad, A. Paskalov, M. Elgohary</i>	
Nonlinear Seismic Analysis of CANDU Containment Structure Subjected to Scenario Earthquakes.....	3308
<i>In-Kil Choi, Young-Sun Choun, Jeong-Moon Seo, Seong-Moon Ahn</i>	
Seismic Response Analysis of a Freestanding Model of Spent Fuel Storage Cask.....	3317
<i>Jae-Han Lee, Ki-Seog Seo, Chun-Hyung Cho</i>	

K09: METHODS FOR SEISMIC ANALYSIS

Combination of Modal Responses: A New Closed-Form Formulation for Rigid Response Coefficient	3324
<i>Rakesh Saigal, Abhinav Gupta</i>	

How Many Accelerograms to Use and How to Deal with Scattering for Transient Non-Linear Seismic Computations?	3333
<i>Emmanuel Viallet, Grégoire Heinfling</i>	
The Development of CRFD Program for Control Rod Assembly Drop Time Analysis	3344
<i>Lei Sun, Yongtao Wei, Jianhua Yu, Fangyu Gu</i>	
Evaluation of Impact of Replacement Steam Generator Load Path on Existing Plant Spectra	3352
<i>Sohrab Esfandiari, Robert P. Kennedy</i>	
Non-Linear Lift-Off and Sliding Analysis of Parts of the CMS-Detector for the Load Case Earthquake	3358
<i>Fritz-Otto Henkel, Roland Reuchlein, Hubert Gerwig</i>	
Several Problems of Cumulative Effective Mass Fraction in Antiseismic Analysis	3364
<i>Wei Wang, Feng Sheng, Hailong Li, Jing Wen, Lin Luan</i>	

K10: SEISMIC BASE ISOLATION

A Development of Three-Dimensional Seismic Isolation for Advanced Reactor Systems in Japan - Part 2	3371
<i>Kenji Takahashi, Kazuhiko Inoue, Asao Kato, Masaki Morishita, Takafumi Fujita</i>	
Research on 3-D Base Isolation System Applied to New Power Reactor 3-D Seismic Isolation Device with Rolling Seal Type Air Spring: Part 2	3381
<i>Junji Suhara, Ryoichiro Matsumoto, Shinsuke Oguri, Yasuo Okada, Kazuhiko Inoue, Kenji Takahashi</i>	
Study on 3-Dimensional Base-Isolation System applying to New Type Power Plant Reactor: Part 2 (Hydraulic 3-Dimensional Base-Isolation System)	3392
<i>Takahiro Shimada, Junji Suhara, Kenji Takahashi</i>	
Survey of Past Base Isolation Applications in Nuclear Power Plants and Challenges to Industry/Regulatory Acceptance	3404
<i>Sanjeev R. Malushte, Andrew S. Whittaker</i>	

K11: SEISMIC ISOLATION & CONTROL

Experimental Study on Vertical Component Isolation System	3411
<i>Shigeki Okamura, Seiji Kitamura, Kenji Takahashi, Takahiro Somaki</i>	
Adaptation of High Viscous Dampers (HVD) for Essential Decreasing of In-Structure Floor Response Spectra	3423
<i>Victor V. Kostarev, Andrei V. Petrenko, Peter S. Vasilyev, Karl-Heinz Reinsch</i>	
Seismic Protection of Secondary Systems in Nuclear Power Plant Facilities	3435
<i>Yin-Nan Huang, Andrew S. Whittaker, Michael C. Constantinou, Sanj Malushte</i>	

K12: EXPERIMENTAL STUDIES & TESTING

Two Important Safety-Related Verification Tests in the Design of Qinshan NPP 600MWe Reactor	3450
<i>Pengzhou Li, Tianyong Li, Danping Yu, Lei Sun</i>	
Tests with the Same Non-Linear Specimen to Evaluate the Performance of the European Shaking Tables	3457
<i>J. C. Queval, R. Bairrao, T. Payen</i>	
Seismic Qualification for Water Chillers of Nuclear Power Plant	N/A
<i>Chunming Wang</i>	
Research and Development of Three Dimensional Measurement Technique for Shake Table Test Using Image Processing	3473
<i>Satoshi Fujita, Osamu Furuya, Yasushi Niitsu, Tadashi Mikoshiba</i>	

K13: EXPERIMENTAL EVALUATION OF SEISMIC RESPONSE

An Experimental Study on Advancement of Damping Performance of Foundations in Soft Ground Part 1 Forced Vibration Tests of a Foundation Block Constructed on Improved Soil Medium	3484
<i>Shinji Ishimaru, Yukio Shimomura, Masashi Kawamura, Yoshio Ikeda, Ippei Hata, Hidenori Ishigaki</i>	
An Experimental Study on Advancement of Damping Performance of Foundations in Soft Ground Part 2 Experiment Focusing on Damping and Antivibration Performance of Side Surface of Foundation Blocks	3496
<i>Shinji Ishimaru, Yukio Shimomura, Masashi Kawamura, Yoshio Ikeda, Ippei Hata, Shinya Miwa</i>	
Forced Vibration Test of an ABWR Nuclear Reactor Building - Data Analysis and System Identification	3507
<i>Atsushi Onouchi, Atsushi Tachibana, Ali Niousha, Yukio Naito, Masao Kan, Yoshinori Mihara</i>	
Study on the Seismic Responses of an Experimental LMFBR Including Fluid-Structure Interaction	3519
<i>Liang Lu, Xilin Lu, Jiang Qian, Zhiyuan Weng</i>	
Forced Vibration Test of an ABWR Nuclear Reactor Building - Simulation Analysis by MDOF Parallel Model	3526
<i>Atsushi Onouchi, Atsushi Tachibana</i>	
Seismic Fragility Capacity of Equipment - Horizontal Shaft Pump Test	3541
<i>Toru Iijima, Hiroshi Abe, Kenichi Suzuki</i>	

K14: ANALYSIS, DESIGN & QUALIFICATION OF EQUIPMENT I

Methods of Qualifying Electrical Cabinets for the Load Case Earthquake	3547
<i>Fritz-Otto Henkel, Helmut Kennerknecht, Thomas Haefeli, Finn Jorgensen</i>	
Seismic Qualification of Distribution Board for Kozloduy NPP, Units 5&6, by Analytical Method and by Analogy	3554
<i>Stanislav Georgiev, Marin Jordanov, Ognyan Ganchev</i>	
A Bend Thickness Sensitivity Study of CANDU Feeder Piping	3569
<i>Ming Li, Manohar Lal Aggarwal, Andy Meysner, Cosimina Micelotta</i>	

K15: ANALYSIS, DESIGN & QUALIFICATION OF EQUIPMENT II

Seismic Re-Evaluation of the TARAPUR Atomic Power Plants 1 & 2	3584
<i>Amit Pore, Santosh Kumar, Sushil Gupta, U. P. Singh, K. Giridhar, S. D. Bhawsar, A. Samota, S. M. Ingole, A. G. Chhatre, K. B. Dixit</i>	
Seismic Qualification of Fluid Operated Valves at WWER-1000MW Type NPP	3592
<i>Maria Nikolova, Ivan Geshanov, Marin Jordanov</i>	
Australian RRRP First Shutdown System Seismic Qualification	3598
<i>Pablo A. Ramirez, Alberto D. Abbate, Jose G. Alberro, Jorge E. Magoia</i>	
K15-6	N/A
<i>Ming Li, Manohar Lal Aggarwal, Andy Meysner</i>	

K16: FLUID-STRUCTURE INTERACTION

The Research of Seismic Response Analysis of CARR Reactor Complex	3628
<i>Ming Zhang, Weida Yao, Xuejun Luo</i>	
Mass-Spring Model Used to Simulate the Sloshing of Fluid in the Container under the Earthquake	3636
<i>Jing Wen, Daogang Lu, Lin Luan, Xiaoan Gao, Wei Wang, Shuangwang Zhang</i>	
Modal Analysis of a Nuclear Reactor with Fluid Structure Interaction: Added Mass and Added Stiffness Effects	3645
<i>Jean-François Sigrist, Daniel Broc, Christian Laine</i>	
Seismic Analysis of Liquid Storage Container in Nuclear Reactors	3657
<i>Zhengming Zhang, Ming Xu, Shuyan He</i>	
Mitigation of Elephant-Foot Bulge Formation in Seismically-Excited Steel Storage Tanks	3664
<i>Medhat A. Haroun</i>	

K17: MONITORING OF SEISMIC MOTION

Experience with Seismic Instrumentation and Real Earthquake Data at Nuclear Power Plant Beznau in Switzerland	3676
<i>Suresh Sahgal, Sener Tinic</i>	
Development of a Seismic Evaluation System (SES) for HANARO	3689
<i>Jeong-Soo Ryu, Doo-Byung Yoon, Jong-Sup Wu, Cheol Park</i>	
New System of Seismic Protection of NPP SSZ-1M Type	3697
<i>F. Arakelyan, H. Hakobyan</i>	
Cyclic and Dynamic Response of a Bridge Pier Model Located at the VOLVI European Test Site in Greece	N/A
<i>George C. Manos, V. Kourtidis, V. J. Soulis</i>	

KM01: GROUND MOTION AND PROBABILISTIC HAZARD EVALUATION I

The Seismic Site Hazard Assessment for OL3 NPP in Finland	3716
<i>Pentti Varpasuo</i>	
Probabilistic Evaluation of Near-Field Ground Motions due to Buried-Rupture Earthquakes Caused by Undefined Faults	3728
<i>Shohei Motohashi, Katsumi Ebisawa, Masaharu Sakagami, Kazuo Dan, Yasuhiro Ohtsuka, Takao Kagawa</i>	

KM02: GROUND MOTION AND PROBABILISTIC HAZARD EVALUATION II

Probabilistic Scenario Earthquakes for Korean Site Based on Seismic Hazard Analysis	3743
<i>Masato Nakajima, In-Kil Choi, Yasuki Ohtori, Young-Sun Choun</i>	
On the Use of Probabilistic Seismic Hazard Analysis as an Input for Seismic PSA	3755
<i>Jens-Uwe Klügel</i>	
A Study on Epistemic Uncertainty in Probabilistic Seismic Hazard Curves for ITER Rokkasho Site	N/A
<i>Sei'Ichiro Fukushima, Mitsugu Mashimo, Takayuki Hayashi, Eisuke Tada</i>	

DIVISION M: STRUCTURAL RELIABILITY AND PROBABILISTIC SAFETY ASSESSMENT (PSA)

M01: SEISMIC PROBABILISTIC SAFETY ASSESSMENT (PSA)

Seismic Safety Design and Risk Assessment	3782
<i>Takaaki Konno</i>	
Effect of the Seismic Capacity of Equipment on the Core Damage Frequency in Nuclear Power Plants	3797
<i>Young-Sun Choun, In-Kil Choi</i>	
Strategy for Seismic Upgrading of Chemical Plant Taking Productivity as Criterion of Judgment	3806
<i>Masami Oshima, Takashi Kase, Harumi Yashiro, Sei Ichiro Fukushima</i>	

M02: RELIABILITY ANALYSIS OF STRUCTURES AND COMPONENTS I

PROSIR Round Robin: Probabilistic Structural Integrity of a PWR Reactor Pressure Vessel	3814
<i>Claude Faidy, Eric Mathet</i>	
Probabilistic Analysis of Failure of the Steam Distribution Device	3824
<i>Gintautas Dundulis, Robertas Alzbutas, Sigitas Rimkevicius, Ronald F. Kulak</i>	
Markovian and Semi-Markov Models for Availability Evaluation of NPP Subsystems and Equipment	3833
<i>Adrian Vulpe, Alexandru Carausu</i>	
Reliability Analysis Techniques Based on the FTA for Reactor-Regenerator System	3843
<i>Guangxi Cheng, Yaoheng Zhang</i>	
Statistical Estimation of Crack Growth Behaviors in Steam Generator Tubes Using Monte Carlo Method	3855
<i>Jae Bong Lee, Jai Hak Park, Sung Ho Lee, Hong-Deok Kim, Han-Sub Chung</i>	
A Probabilistic Assessment Procedure for Evaluating and Comparing Various NDT Methods	3867
<i>Robert Kauer, Wenfeng Guo, Markus Schäll</i>	

M03: RELIABILITY ANALYSIS OF STRUCTURES AND COMPONENTS II

Safety Management in NPPs Using Evolutionary Algorithm	3879
<i>Alok Mishra, Anand Patwardhan, Ashok Chauhan, A. K. Verma</i>	
Use of Bayesian Operations for Diagnosing Accidents	N/A
<i>Kyung Min Kang, Moosung Jae, Kune Y. Suh</i>	
LOCA Frequency Evaluation Using Expert Elicitation	3894
<i>Robert Lee Tregoning, Lee Richard Abramson, Paul Michael Scott, Nilesh Chokshi</i>	
Fuzzy Logic Methods for Seismic Damage Assessment and Control	3907
<i>Alexandru Carausu, Adrian Vulpe</i>	

M04: RELIABILITY ANALYSIS OF STRUCTURES AND COMPONENTS III

Probabilistic Framework for the Assessment of Structures Submitted to Thermal Fatigue	3917
<i>Bruno Sudret</i>	
Methodological Issues in the Overall RPV Failure Probability Assessment	3927
<i>E. Ardillon, S. Turato, E. Meister</i>	
Account for Fire Induced Loss of Room Cooling	3937
<i>Wei He, James Lin</i>	
The Analysis of a Steam Generator PGV-1000 Failure Possibility due to Destruction of Studs of a Collector Cover	3944
<i>Alexander S. Kiselev, Alexey S. Kiselev, Oleg D. Loskutov, Alexander A. Tutnov</i>	
Estimation Method for First Excursion Probability of Secondary System with Impact and Friction Using Maximum Response	3958
<i>Shigeru Aoki</i>	
Assessing of Flame Spread on NPP Cables	3972
<i>Olavi Keski-Rahkonen, Johan Mangs</i>	
Advanced Probabilistic Simulation of NPP Fires	3984
<i>Simo Hostikka, Olavi Keski-Rahkonen</i>	

DIVISION O: OPERATION, INSPECTION, AND MAINTENANCE

O01: OPERATION, INSPECTION AND MAINTENANCE I

The Applications of Risk-Informed In-Service-Inspection	3997
<i>Kuen Ting, Tzu-Hsiang Ko, Yuan-Chih Li, Wen-Fang Wu, Yuan-Lung Lu, Fwu-Tian Chien</i>	
Applications of Digital Correlation Method to Structure Inspection	4005
<i>Guanchang Jin, Junda Chen, Libo Meng</i>	
Insights from the Analyses of Risk-Informed Extension of Diesel Generator Allowed Outage Time	4012
<i>James Lin, Wei He</i>	
Implementation of Inspection Qualification within Lithuania	4021
<i>Aleksandr Alejev, Robin Shipp</i>	

Maintenance Risk Management in Dayabay Nuclear Power Plant	4026
<i>Xuhong He, Jiejuan Tong</i>	
The Development On-Line Monitoring System of Active Magnetic Bearings for HTR-10GT	4032
<i>Zhengang Shi, Lei Shi, Meisheng Zha, Suyuan Yu</i>	
HTR-10GT AMBs Displacement Sensor Design	4042
<i>Zhengang Shi, Meisheng Zha, Lei Zhao, Zhuo Sun</i>	
Risk-Informed Categorization of the SSCs in NPPs	4048
<i>Jun Zhao, Jiejuan Tong, Xuhong He</i>	

O02: OPERATION, INSPECTION AND MAINTENANCE II

Review of Nuclear Power Reactor Coolant System Leakage Events and Leak Detection Requirements	4053
<i>Nilesh C. Chokshi, M. Srinivasan, D. S. Kupperman, P. Krishnaswamy</i>	
Remote Measurement of Dimensions for Reactor Structures in HANARO	4066
<i>Yeong-Garp Cho, Jung-Hee Lee, Jeong-Soo Ryu, Jong-Sup Wu, Yun-Hang Chou</i>	
The Current Status of Performance Demonstration in Taiwan	4071
<i>Hung-Fa Shyu, W. J. Shong</i>	
Design Strategies of Alarm System for SMART	4076
<i>Gwi-Sook Jang, Sang-Moon Suh, Heui-Youn Park</i>	
System Validation of Computerized Procedure System Based on Multi-Level Flow Modeling	4085
<i>Wei Qin, Liangju Zhang</i>	

VOLUME 6

O03: OPERATION, INSPECTION AND MAINTENANCE III

KNFC Fuel Service Technology Development	4093
<i>Jin-Young Park, Yong-Bock Kwon, Jae-Soon Choi, Jong-Youl Park, Joong Cheol Shin</i>	
Improving the Cooling Conditions of the Irradiation Grid of a 22MW Multipurpose Research Reactor	4102
<i>Daniel Amaya, Rubén Mazzi, Carlos Brendstrup</i>	
High Speed Rotational Experiments of AMB-P Setup	4113
<i>Huidong Gu, Lei Zhao, Hongbin Zhao</i>	
Development of On-Line Monitoring system for Flow Accelerated Corrosion	4121
<i>Na Young Lee, Seung Gi Lee, Il Soon Hwang, Jung Taek Kim, Vincent K. Luk</i>	

O04: STEAM GENERATOR AND PIPING

A Prediction Method of Wear Volume Considering Effects of the Clearance between Tube and Support in Steam Generator	4132
<i>Chi-Yong Park, Yong-Sun Lee, Tae-Ryong Kim</i>	
Ligament Rupture and Burst Pressure of Mechanical Defects of Steam Generator Tubings	4141
<i>Seong Sik Hwang, Man Kyo Jung, Hong Pyo Kim, Joung Soo Kim</i>	
A New Technique for Intergranular Crack Formation on Alloy 600 Steam Generator Tubing	4146
<i>Tae Hyun Lee, Young Jin Oh, Il Soon Hwang, Han Sub Chung, Jang Yul Park</i>	
A Challenging Task: Cleaning and Repairing at Nuclear Power Plant ATUCHA I (CAN-I) the Primary's Moderators Cooling Circuits Heat Exchangers	4158
<i>Daniel Amaya, A. Alaniz, R. Bernasconi</i>	
The Problem of Maintenance of Strength, Lifetime and Safety of the Structural Components Operational NPP from Items of a System Approach	4169
<i>A. F. German</i>	
Progress in the Reliable Inspection of Cast Stainless Steel Reactor Piping Components	4178
<i>S. R. Doctor, M. T. Anderson, A. A. Diaz, S. E. Cumbledge</i>	
The TVO Piping and Component Analysis and Monitoring System (PAMS)	4190
<i>Paul Smeeches</i>	
Integrated Evaluation of Maintenance Optimization for Pipes in Nuclear Power Plants Based on Probabilistic Fracture Mechanics	4206
<i>Mitsuyuki Sagisaka, Yoshihiro Isobe, Takeshi Suyama, Shinobu Yoshimura</i>	

O05: NON-DESTRUCTIVE EVALUATION (NDE) MEASUREMENT TECHNIQUES

NDE Studies on CRDMs Removed from Service	4217
<i>S. R. Doctor, S. E. Cumbledge, G. J. Schuster, R. L. Hockey, J. Abrefah</i>	
Assessing Primary Water Stress Corrosion Crack Morphology and Nondestructive Evaluation Reliability	4230
<i>S. R. Doctor, G. J. Schuster, M. T. Anderson</i>	
The Application of NDE in Construction Examination and Operation Maintenance Examination of Steel Mill	4240
<i>Pikuan Chen</i>	

DIVISION P: SEVERE ACCIDENT MANAGEMENT AND STRUCTURAL EVALUATION

P01: MODELING AND ANALYSIS

Simplified Model of PWR Vessel Tearing under Severe Accident Conditions. Application to LHF Tests and Reactor Situations	4244
<i>Thomas Laporte, Philippe Mongabure</i>	
Evaluation of Ultimate Load Bearing Capacity of the Primary Containment of a Typical First Generation 220MWe Indian PHWRs	4259
<i>Ashutosh K. Singh, Indrajit Ray, Raghupati Roy, R. P. Garg, U. S. P. Verma</i>	
Nozzle Failure Mechanism of a Water Reactor Pressure Vessel under Severe Accident Conditions.....	4269
<i>Young Jin Oh, Tae Hyun Lee, Il Soon Hwang</i>	
Development of Simplified 1D and 2D Models for Studying a PWR Lower Head Failure under Severe Accident Conditions.....	4282
<i>V. Koundy, J. Dupas, H. Bonneville, I. Cormeau</i>	
EURATOM Research Supporting Reactor Safety	4298
<i>Michel Hugon, Georges Van Goethem, Panagiotis Manolatos, Sylvie Casalta</i>	
Parametric Thermal-Hydraulic Studies of HTGR Reactor Vessel System - Consequences on the Structure Lifetime	4311
<i>Shengqiang Li</i>	
Concept of Development of Accident Management Procedures and Guidelines for Tianwan NPP	N/A
<i>K. Kosourov, B. Korolev, A. Suslov</i>	
Main Features of the Core Melt Stabilization System of the European Pressurized Water Reactor (EPR)	4336
<i>Dietmar Bittermann, Manfred Fischer, Markus Nie</i>	

P02: SEVERE ACCIDENT MANAGEMENT AND STRUCTURAL EVALUATION

Modification of Steam Generator System to Prevent Overheating Tube Rapture Accidents at MONJU	4345
<i>Makoto Matsuura, Makinori Ikeda</i>	
The Feasibility Study of An In-Vessel Retention Strategy during Severe Accidents for a 700 MWe PHWR	4355
<i>Soo Yong Park, Y. H Jin, See Darl Kim, Y. M. Song</i>	
Radiative Heat Exchange Model for Late Phase of Severe Accident at VVER-Type Reactor	4359
<i>Arcadii E. Kiselev, Gennadii V. Kobelev, Valerii F. Strizhov, Alexander D. Vasiliev</i>	
The Effect of Ballooning Model in ISAAC	4374
<i>See Darl Kim, Dong Ha Kim, Soo Yong Park</i>	
Multi-Dimensional Simulation of Hydrogen Mixing and Transport in the Containment Using CFD Codes.....	4381
<i>Jianjun Xiao, Zhiwei Zhou, Xingqing Jing</i>	

DIVISION S: ADVANCED REACTORS AND GENERATION IV REACTORS

S01: GENERAL CONCEPTION I

Small Size Modular Fast Reactors in Large Scale Nuclear Power	4395
<i>A. V. Zrodnikov, G. I. Toshinsky, O. G. Komlev, U. G. Dragunov, V. S. Stepanov, N. N. Klimov, I. I. Kopytov, V. N. Krushelnitsky</i>	
CAREM: An Innovative-Integrated PWR	4407
<i>Rubén Mazzi</i>	
CAREM Project Development Activities.....	4416
<i>Rubén Mazzi, Carlos Brendstrup</i>	
Integrated Design Approach of the Pebble Bed Modular Using Models	4428
<i>Pieter J Venter</i>	

S02: GENERAL CONCEPTION II

Study on Layout and Construction Concept of DMS(Modular Simplified Medium Small Reactor).....	4443
<i>Shizuka Hirako, Takahiko Hida, Yuusuke Shimizu, Shigeru Yokouchi, Yoshinori Iimura, Yuuji Yasuda, Kumiaki Moriya</i>	
PBMR Reactor Design and Development	4452
<i>Pieter J Venter, Mark N. Mitchell, Fred Fortier</i>	
Advanced CANDU Reactor, Evolution and Innovation.....	4467
<i>Frank Nuzzo, Helmut Keil, Basma Shalaby, Simon Pang, Stephn Yu, Jerry Hopwood</i>	
Status of the ETDR Preconceptual Design Studies.....	4476
<i>F. Morin, J. C. Garnier, J. Y. Malo, Y. Lejeail</i>	
Technical and Economical Conditions of Nuclear Energy Usage Continuation in Lithuania.....	4490
<i>Jonas Gylys, Valentinas Klevas, Stanislovas Ziedelis</i>	

S03: PLANT SAFETY ASSESSMENT

Structural Integrity Assessments of Helium Components in the Primary Cooling System during the Safety Demonstration Test Using the HTTR	4499
<i>Nariaki Sakaba, Yukio Tachibana, Shigeaki Nakagawa, Shimpei Hamamoto</i>	
Safety Evaluation on the Depressurization Accident in the Gas Turbine High Temperature Reactor (GTHTR300)	4512
<i>Shoji Katanishi, Kazuhiko Kunitomi</i>	
Numerical Study on the Heat Transfer Phenomena in Water Pool Type Reactor Cavity Cooling System of Very High Temperature Gas-Cooled Reactor	4522
<i>Dong Un Seo, Moon Oh Kim, Hyoung Kyu Cho, Tae Wan Kim, Goon Cherl Park</i>	
Dynamics of MSR	4532
<i>Jiri Krepel, Ulrich Grundmann, Ulrich Rohde, Frank-Peter Weiss</i>	

S04: ENGINEERING, DESIGN AND APPLICATION I

Product Life-Cycle Management of the HELIOS by SIVR.....	N/A
<i>Seung Ho Jeong, Seung Hee Chang, Na Young Lee, Hyong Won Lee</i>	
The Application of Similarity Criteria on Helium Compressor on Power Conversion System of HTGR-GT	4548
<i>Mingchen Sun, Xiaoyong Yang, Jinling Li, Jie Wang</i>	
Auxiliary Bearing Design and Rotor Dynamics Analysis of Blower Fan for HTR-10.....	4556
<i>Mingshan Gao, Guojun Yang, Yang Xu, Lei Zhao, Suyuan Yu</i>	
Experimental Test on the Coil's Temperature Running of Electromagnetic Movable Coil Control Rod Drive Mechanism	4561
<i>Changlong Sun, Hanliang Bo, Shengyao Jiang, Cang Ma, Hongchao Zhang, Jinhua Wang, Benke Qin, Li Ca</i>	
Turbo-Machine Deployment of HTR-10GT	4569
<i>Shutang Zhu, Jie Wang, Zhengming Zhang, Suyuan Yu</i>	

S05: ENGINEERING, DESIGN

The Primary Circuit of the Dragon High Temperature Reactor Experiment	4580
<i>Rainer Simon</i>	
Passive Cooling of the PBMR Spent and Used Fuel Tanks	4588
<i>Wim F. Fuls</i>	
Energy Analysis of HTGR-GT	4598
<i>Jianhua Cao, Jie Wang, Xiaoyong Yang, Suyuan Yu</i>	

S06: FUEL AND MATERIAL ISSUES I

Operation of CANDU Power Reactor in Thorium Self-Sufficient Fuel Cycle	4606
<i>Boris Bergelson, Alexander Gerasimov, Georgy Tikhomirov, Jinhong Li</i>	
Improvement of Inelastic Constitutive Model for Austenitic Stainless Steel for Design Use.....	4612
<i>Yukio Takahashi, Naoto Kasahara, Hiroshi Shibamoto, Kazuhiko Inoue</i>	
Candidate Materials for Advanced HTGRs	4623
<i>Lineo Makhele-Lekala, Philip Ennis, Florian Schubert</i>	
Experiment and Analysis on the Creep-Fatigue Damage of a 316SS Nonlinear Structure in Liquid Metal Reactor Subjected to a Cyclic Loading with 1HR Hold Time.....	4638
<i>J. B. Kim, H. Y. Lee, C. G. Park, J. H. Lee</i>	

S07: FUEL AND MATERIAL ISSUES II

Investigations of Radiation Resistance of Structural Materials for Heavy-Water Reactors	4647
<i>B. V. Sharov, G. V. Kiselev</i>	
Technical Aspects of Plutonium Disposition in Current Community (Russian Experience).....	4653
<i>G. V. Kiselev</i>	
A Study on the Effect of Thermal Capacity to Reactor Control	4662
<i>Soonja Song, Wonseok Park</i>	
Assessment of the Loads on a Solid Centre Reflector of a Pebble Bed Reactor Using DEM Techniques	4667
<i>Mark N. Mitchell, Alexander G. Polson</i>	

DIVISION W: WORKSHOPS

W01: DECOMMISSIONING OF NUCLEAR FACILITIES AND WASTE MANAGEMENT

Finnish Concept for Spent Nuclear Fuel Disposal	4682
<i>Heikki Raiko, Tiina Jalonen, Tapani Kukkola, Jukka-Pekka Salo</i>	

Shaft Shock Absorber for a Spent Fuel Canister.....	4697
<i>Tapani Kukkola</i>	
Collection and Characterization of Emissions from Metal Cutting in CAORSO Nuclear Power Plant	
Decommissioning	4712
<i>Franco Giuseppe Cesari, Luigi Andrea Terzi, Angelo Giostri, Cristina Bernini, Enzo Siritò, Massimo Siritò</i>	
Considerations on Risk Analysis for Nuclear Spent Fuel Storage Facility of Cernavoda NPP.....	4723
<i>Veronica Andrei, Sorin Ghita, Florin Glodeanu</i>	

W02: WASTE MANAGEMENT

Technology of Reprocessing High-Level Wastes by Method of Self-Propagating High-Temperature Synthesis (SPHTS) into Mineral-Like Materials	4731
<i>O. A. Yarmolenko, A. A. Romenkov, N. A. Sudareva, Ye. V. Sukhovsky, O. K. Karlina, G. A. Pavlova, A. Yu. Yurchenko</i>	
Decay Heat Power and Radiotoxicity of Spent Uranium, Plutonium and Thorium Fuel at Long-Term Storage	4745
<i>Alexander Gerasimov, Boris Bergelson, Tamara Zaritskaya, Gennady Kiselev, Alexander Volovik, Georgy Tikhomirov</i>	
Application of Power Reactors for Transmutation of Actinides.....	4752
<i>Boris Bergelson, Alexander Gerasimov, Georgy Tikhomirov</i>	
Full System Decontamination with the HP/CORD(R) UV for Decommissioning at German PWR Stade	4758
<i>Ch. Stiepani, H.-O. Bertholdt</i>	

W101: STRUCTURAL INTEGRITY AND LIFE TIME PREDICTION FOR GRAPHITE CORE COMPONENTS

Strain Measurements During Pressurized Thermal Shock Experiment.....	4767
<i>Paulo De Tarso Vida Gomes, Julio Ricardo Barreto Cruz, Tanius Rodrigues Mansur, Denis Henrique Bianchi Scaldaferrari, Miguel Mattar Neto</i>	
Proposal of a Methodology for Computing Damages from Flexo-Rotative Fatigue Considering the Theory of the Acting Average Stresses	4775
<i>Tanius Rodrigues Mansur, Alvaro Alvarenga Junior, João Mário Andrade Pinto, Wellington Antonio Soares, Ernani Sales Palma</i>	
Calculation of Thermal Stresses in Graphite Fuel Blocks	4786
<i>Y. Lejeail, M. T. Cabrillat</i>	
High-Cycle Metal Fatigue under Multiaxial Loading Damage Accumulation Models Applied to an Industrial Structure.....	4801
<i>Jean Angles, Said Taheri, Thomas Papaconstantinou</i>	
Finite Element Analysis of Deformation and Restoration for Cylindrical Beam Structure	4814
<i>Myung Hwan Boo, Chi-Yong Park, Jin Won Kim</i>	
Temperature Evaluation of Core Components of the HTGR at Depressurization Accident Considering Annealing Recovery on Thermal Conductivity of Graphite	4822
<i>Junya Sumita, Taiju Shibata, Shigeaki Nakagawa, Satoshi Hanawa, Tatsuo Iyoku, Masahiro Ishihara</i>	
Stress Analysis on Multiple Opening Extruded Outlets of Headers.....	4829
<i>Weiya Jin, Zengliang Gao, Weiming Sun, Kangda Zhang</i>	
The Relationship between Stresses and Dimensional Changes in Nuclear Graphite Moderator Bricks under Irradiation	4835
<i>Haiyan Li, Barry J. Marsden, Siu-Lun Fok</i>	
Deterministic and Probabilistic Analysis of Fuel Channel - Graphite Gas-Gap Closure in Ignalina NNP Reactor.....	4844
<i>Juozas Augustis, Gintautas Dundulis, Bary J. Marsden, Jurgita Simaitite</i>	
Irradiation Stress Analysis of Graphite Bricks in HTR-10 - A Finite Element with Hybrid Model	4852
<i>Zhensheng Zhang, Libin Sun</i>	

W301: CHINESE NUCLEAR POWER

Low-Medium Level Radioactive Solid Waste Cask Drop Analysis and Test	4861
<i>Chunning Wang</i>	
A Design of Compact and Enhanced Heat Exchanger Used in Integrated Nuclear Reactor	4865
<i>Minghui Chen, Rizhu Li, Benyuan Li</i>	
Development and Application of the Computer Code CAPS (Computer Aided Piping-Analysis System).....	4872
<i>Shubin Liu, Shangwang Zhang, Yuanzhu Wang, Zhenbang Gong, Shihua Liu</i>	
Research on Process Management of Nuclear Power Technology Innovation.....	4876
<i>Hua Yang, Yu Zhou</i>	
Nuclear Component Design Ontology Building Based on ASME Codes	4880
<i>Shiyi Bao, Yu Zhou, Shuyan He</i>	
Challenges and Opportunities for the Development of World Nuclear Power	4888
<i>Yinjuan Lu, Zhen Fu, Yu Yang</i>	
Study on Concept of Web-Based Reactor Piping Design Data Platform	4893
<i>Yu Wang, Yu Zhou, Jianling Dong, Yang Meng</i>	
Author Index	