

# **International Topical Meeting on Probabilistic Safety Assessment and Analysis 2013**

**(PSA 2013)**

**Columbia, South Carolina, USA  
22-27 September 2013**

**Volume 1 of 3**

**ISBN: 978-1-62993-817-2**

**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© (2013) by the American Nuclear Society  
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact the American Nuclear Society  
at the address below.

American Nuclear Society  
555 North Kensington Avenue  
LaGrange Park, Illinois 60526

Phone: (800) 323-3044  
(708) 352-6611  
Fax: (708) 352-0499

[www.ans.org](http://www.ans.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## VOLUME 1

<b>STATISTICAL EXAMINATION OF VERTICAL FIRE SPREAD THROUGH A CABLE TRAY STACK</b> .....	1
<i>Raymond Gallucci</i>	
<b>SEISMIC PRA: STREAMLINING HAZARD FREQUENCY CURVE REPRESENTATION VIA DISTRIBUTIONAL FITTING</b> .....	7
<i>Raymond Gallucci</i>	
<b>PRELIMINARY RELIABILITY ANALYSIS OF A SPECIAL PASSIVE SYSTEM DEVOTED TO DECAY HEAT REMOVAL OF A GAS-COOLED FAST REACTOR DEMONSTRATOR</b> .....	16
<i>Luciano Burgazzi</i>	
<b>STUDY OF CONTAINMENT RADIATION LEVEL USED FOR CORE DAMAGE ASSESSMENT DURING SEVERE ACCIDENT</b> .....	28
<i>Zhao Yunfei, Zhang Liguo, Tong Jiejuan</i>	
<b>TIER 1 NUCLEAR SAFETY PERFORMANCE INDICATOR AT STP: RISK INDEX</b> .....	39
<i>Fatma Yilmaz, Ernie Kee</i>	
<b>RETURN-TO-SERVICE PRIORITY DETERMINATION IN RASCAL</b> .....	49
<i>Fatma Yilmaz, Ernie Kee</i>	
<b>HIGH WIND PRA MODEL DEVELOPMENT AND LESSONS LEARNED</b> .....	58
<i>Theodore Kulczycky, Yan Gao</i>	
<b>IMPLICATIONS OF PARAMETER CHANGES FOR FDS MODELING OF A TYPICAL NUCLEAR POWER PLANT ELECTRICAL SWITCHGEAR ROOM</b> .....	68
<i>Jeffrey Miller</i>	
<b>DEVELOPMENT AND V&amp;V BENCHMARKING OF A HIGH PERFORMANCE DESKTOP COMPUTER FOR FDS SIMULATIONS</b> .....	88
<i>Jeffrey Miller, David Icove</i>	
<b>AN EVENT CLASSIFICATION SCHEMA FOR EVALUATING SITE RISK IN A MULTI-UNIT NUCLEAR POWER PLANT PROBABILISTIC RISK ASSESSMENT</b> .....	106
<i>Suzanne Schroer, Mohammad Modarres</i>	
<b>LESSONS LEARNED FROM THE SEISMIC PRA PEER REVIEW AT PALO VERDE USING THE ASME/ANS PRA STANDARD (2009)</b> .....	114
<i>Steven Eide, Lawrence Lee, Richard Lee, Jonathan Lucero, Mary Presley, Nishikant Vaidya</i>	
<b>FIRE PRA ADVANCEMENTS IN ESTIMATING THE LIKELIHOOD OF FIRE-INDUCED SPURIOUS OPERATIONS</b> .....	127
<i>Gabriel Taylor, Raymond Gallucci, G. Martinez-Guridi, Manomohan Subudhi</i>	
<b>MODELING U.S. EMERGENCY RESPONSE</b> .....	141
<i>R. Sullivan</i>	
<b>NATIONAL AND INTERNATIONAL ACTIVITIES TO DEVELOP RISK-INFORMED PERFORMANCE-BASED SAFETY STANDARDS FOR SODIUM-COOLED FAST REACTORS</b> .....	150
<i>George Flanagan</i>	
<b>IDENTIFYING AND RESOLVING CIRCULAR LOGIC IN FAULT TREES</b> .....	161
<i>Joshua Beckton, Stephen Reed</i>	
<b>A MORE RISKINFORMED FRAMEWORK FOR SEISMIC DESIGN AND REGULATION OF NUCLEAR POWER PLANTS</b> .....	171
<i>Robert Budnitz, Michael Mieler</i>	
<b>RISK INFORMED SAFETY MARGINS CHARACTERIZATION VIA FAILURE DOMAIN QUANTIFICATION. LOSS OF MAIN FEED WATER EXAMPLE</b> .....	182
<i>V. Rychkov</i>	
<b>STRESS-RESISTANCE APPROACH TO COMMON CAUSE FAILURES. ESTIMATION OF MODEL PARAMETERS, OPTIMIZATION AND MACHINE LEARNING</b> .....	191
<i>Pierre-Jean Pouit, V. Rychkov, Roland Donat</i>	
<b>LOSS OF OFFSITE POWER FREQUENCY CALCULATION</b> .....	198
<i>Zhiping Li</i>	
<b>COPING WITH AN EXTENDED SBO – AN EVALUATION OF STRATEGIES</b> .....	209
<i>Gary Hayner, Joseph Hanley</i>	
<b>PSA INTEGRAL IMPORTANCE MEASURES</b> .....	218
<i>Andrija Volkanovski</i>	
<b>ALWR PRA STANDARD DEVELOPMENT</b> .....	231
<i>James Chapman</i>	

<b>FUKUSHIMA INSIGHTS – ROLE OF PRA</b> .....	244
<i>James Chapman</i>	
<b>ROLE OF FIRE PRA IN ASSESSING DEFENSE IN DEPTH AND SAFETY MARGIN</b> .....	257
<i>James Chapman</i>	
<b>SEEKING REALISM IN FIRE PRA</b> .....	267
<i>James Chapman</i>	
<b>USING FIRE PRA INSIGHTS TO IDENTIFY SMART VERSUS COMPLIANT MODIFICATIONS</b> .....	276
<i>James Chapman</i>	
<b>PACE: A GEOGRAPHIC INFORMATION SYSTEM BASED LEVEL 3 PROBABILISTIC ACCIDENT CONSEQUENCE EVALUATION PROGRAM</b> .....	287
<i>Thomas William Charnock, Antony Paul Bexon, Jonathan Sherwood, Neil A Higgins, Simon John Field</i>	
<b>IRSN AGEING PSA PILOT STUDY DEVELOPMENT</b> .....	296
<i>Gabriel Georgescu, J.-M. Lanore, Francois Corenwinder</i>	
<b>USING OF THE 1300 MWE IRSN PSA IN THE FRAME OF THIRD DECENNIAL VISIT OF THE 1300 MWE FRENCH PLANTS</b> .....	306
<i>Audrey Roisin, Patricia Dupuy, Gabriel Georgescu, Francois Corenwinder</i>	
<b>SIMULATOR PLATFORM FOR MULTI-UNIT SEVERE ACCIDENT SIMULATION AND RISK-INFORMED REGULATION</b> .....	313
<i>H. Luo, Duncan Burgess, Z. Wang, D. Luxat, T. Elicson, J. Gabor</i>	
<b>EVALUATION OF STAGGERED INTEGRATED ESF/LOOP TESTING AT THE VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2</b> .....	327
<i>G. Andre, J. Andrachek, K. Honath, J. Kitzmiller, A. Maioli</i>	
<b>ESTIMATION OF RISK BENEFIT FROM FLEX EQUIPMENT IN LEVEL 1 PRA</b> .....	343
<i>Aram Hakobyan, Allen Moldenhauer, John Spaargaren</i>	
<b>EDF LESSONS LEARNED FROM THE DEVELOPMENT AND USES OF PSA FOR NEW REACTORS</b> .....	354
<i>Vincent Sorel, Sebastien Vermuse, Stephane Benzoni</i>	
<b>FULL-SCOPE PSA LEVEL 3 OF NPP GOSGEN – METHODS AND RESULTS</b> .....	366
<i>J.-U. Klugel, P. Steiner, B. Askari</i>	
<b>USE OF THE MULTIPLIER METHOD FOR SUPPORT SYSTEM INITIATING EVENT (SSIE) FAULT TREES</b> .....	378
<i>Michael Lloyd, Eric Jorgenson, Habib Shtaih</i>	
<b>SECURITY RISK MANAGEMENT OF SMALL MODULAR REACTORS</b> .....	404
<i>Benjamin Cipiti, Gregory Wyss, Felicia Duran, Tom Lewis</i>	
<b>CONVERSION OF RISK MODEL FROM RISKSPECTRUM TO CAFTA</b> .....	414
<i>Chris Rochon, Carroll Trull, Donald Remlinger, N. Reed Labarge</i>	
<b>INCORPORATION OF NFPA-805 INTERNAL FIRE SCENARIOS INTO SPAR ALL HAZARD MODELS</b> .....	423
<i>S. Sancaktar, F. Ferrante, N. Melly</i>	
<b>WEB-BASED FAULT TREE COLLABORATIVE MODELING IN RISKA</b> .....	432
<i>Jiawen Xu, Jin Wang, Shanqi Chen, Liqin Hu, Fang Wang, Wei Jia</i>	
<b>ASSESSING HUMAN FAILURES EVENTS FOR EX-CONTROL ROOM ACTIONS</b> .....	439
<i>A. Zoulis, Y. Chang</i>	
<b>LESSONS LEARNED FROM THE DIGITAL I&amp;C SYSTEM MODELING OF THE AP1000® PLANT PRA</b> .....	451
<i>Stacy Davis, Heather Detar, Yves Masset</i>	
<b>RISK INFORMED OPTIMIZATION OF NUCLEAR REGULATION</b> .....	460
<i>Alexander Knoll</i>	
<b>REVIEW OF PASSIVE SYSTEM RELIABILITY MODELING APPROACHES FOR ADVANCED SMALL MODULAR REACTORS</b> .....	471
<i>David Grabaskas, Tanju Sofu</i>	
<b>LOCA FREQUENCIES FOR GSI-191 APPLICATIONS</b> .....	484
<i>Karl Fleming, Bengt Lydell</i>	
<b>MOTIVATIONS AND CHALLENGES FOR MULTI-UNIT PRAS</b> .....	496
<i>Karl Fleming</i>	
<b>HAZARD ANALYSIS EXTENSIONS TO ADDRESS FUKUSHIMA INSIGHTS: AN APPROACH TO ADDRESSING NTF RECOMMENDATION 1</b> .....	507
<i>Paul Amico, Richard Anoba, Bijan Najafi</i>	
<b>DYNAMIC UNCERTAINTY QUANTIFICATION IN FIRE PROGRESSION ANALYSIS</b> .....	520
<i>Matthew Bucknor, Richard Denning, T. Aldemir</i>	
<b>DYNAMIC ASSESSMENT OF LOW PROBABILITY CONTAINMENT FAILURE MODES</b> .....	536
<i>Acacia Brunett, Richard Denning, T. Aldemir</i>	

<b>SDP EVALUATION FOR CATAWBA UNIT 1 DESIGN CONTROL PERFORMANCE DEFICIENCY</b> .....	548
<i>Robert Boyer</i>	
<b>USE OF OECD DATA PROJECT PRODUCTS IN PROBABILISTIC SAFETY ASSESSMENT</b> .....	558
<i>K. Coyne, Margaret Tobin, N. Siu, M. Roewekamp</i>	
<b>ROBUSTNESS OF DECISION INSIGHTS UNDER ALTERNATIVE ALEATORY/EPISTEMIC UNCERTAINTY CLASSIFICATIONS</b> .....	569
<i>Stephen Unwin, Paul Eslinger, Kenneth Johnson</i>	
<b>EVALUATION OF FIRE SCENARIO FREQUENCY PARAMETER UNCERTAINTY</b> .....	581
<i>Pierre Macheret</i>	
<b>USE OF FIRE PRA INFORMATION FOR THE EVALUATION OF DEFENSE-IN-DEPTH</b> .....	590
<i>Pierre Macheret</i>	
<b>SEAMLESS LEVEL 2/LEVEL 3 DYNAMIC PROBABILISTIC RISK ASSESSMENT CLUSTERING</b> .....	597
<i>Douglas Osborn, T. Aldemir, Richard Denning</i>	
<b>MINIMAL CUT SETS IDENTIFICATION BY HIERARCHICAL DIFFERENTIAL EVOLUTION</b> .....	614
<i>Francesco Di Maio, Samuele Baronchelli, Enrico Zio</i>	
<b>PROBABILISTIC SAFETY ASSESSMENT OF NEWLY ADDED MOBILE DIESEL GENERATOR FOR STATION BLACKOUT SCENARIO AT QINSHAN CANDU NPP</b> .....	626
<i>Zhang Gangping, Qiu Yongping</i>	
<b>SUPPORT SYSTEM INITIATING EVENT DEVELOPMENT - ELIMINATION OF DUPLICATE CONTRIBUTORS</b> .....	631
<i>Richard Derrett-Smith</i>	
<b>USING GRAPHICAL LOGIC ANALYSIS SOFTWARE TO VISUALIZE COMPLEX LOGIC RELATIONSHIPS</b> .....	640
<i>Keith Began</i>	
<b>A NEW SURROGATE RISK METRIC - RISK TO THE MAXIMALLY EXPOSED OFFSITE INDIVIDUAL</b> .....	650
<i>Kamiar Jamali</i>	
<b>OECD-NEA CODAP EVENT DATA PROJECT ON PASSIVE COMPONENT DEGRADATION &amp; FAILURES IN COMMERCIAL NUCLEAR POWER PLANTS</b> .....	663
<i>Bengt Lydell, Alejandro Huerta, Karen Gott, Jovica Riznic</i>	
<b>PIPING RELIABILITY ANALYSIS GUIDELINES FOR PSA PRACTITIONERS</b> .....	673
<i>Bengt Lydell, Danielle Chrun</i>	
<b>PRA ASPECTS OF VOGTLE LICENSE AMENDMENT REQUEST TO IMPLEMENT NEI 06-09 FOR RITS INITIATIVE 4B</b> .....	685
<i>Anees Farruk, Diane Jones</i>	
<b>DEVELOPMENT OF SEISMIC EQUIPMENT LISTS FOR FERMI 2</b> .....	699
<i>Aaron Young, Steven Eide</i>	
<b>THE INTEGRATED RISK OF MULTI-REACTOR NUCLEAR POWER PLANT</b> .....	711
<i>Tao Liu, Jie He, Jiejuan Tong</i>	
<b>SEPARATE AND INTEGRAL EFFECT TESTS FOR VALIDATION OF COOLING AND OPERATIONAL PERFORMANCE OF THE APR+ PASSIVE AUXILIARY FEEDWATER SYSTEM</b> .....	721
<i>Kyoung-Ho Kang, Seok Kim, Byoung-Uhn Bae, Yun-Je Cho, Yu-Sun Park</i>	
<b>NORDIC EXPERIENCE AND EXPERIMENTS OF MODELLING DIGITAL I&amp;C SYSTEMS IN PSA</b> .....	731
<i>Stefan Authen, Jan-Erik Holmberg</i>	
<b>PRA RESEARCH PROGRAM OF OLKILUOTO IN THE LIGHT OF THE FUKUSHIMA ACCIDENT</b> .....	740
<i>Jari Pesonen, Risto Himanen, Pekka Viitanen, Antti Tarkiainen, Lasse Tunturivuori, Maria Palomaki</i>	
<b>DEVELOPMENT OF THE IMPLEMENTATION STANDARD FOR INTERNAL FIRE PROBABILISTIC RISK ASSESSMENT OF NUCLEAR POWER PLANTS</b> .....	754
<i>Toshiyuki Takagi, Katsunori Ogura, Naoyuki Murata</i>	
<b>OBSERVATIONS AND DISCUSSION FROM THE TAXONOMIES OF DIGITAL SYSTEM FAILURE MODES PROVIDED BY THE DIGREL TASK GROUP1</b> .....	769
<i>Wietske Postma, Tsong-Lun Chu, Meng Yue</i>	
<b>MODELING DIGITAL I&amp;C IN PRA: CONSIDERING CONTEXT AND DEFENSIVE MEASURES</b> .....	780
<i>David Blanchard, Thuy Nguyen, Ray Torok</i>	
<b>RE-EVALUATION OF RISK FROM EXTERNAL EVENTS FOR THE VVER-440 TYPE REACTORS</b> .....	793
<i>Zoltan Kovacs, Robert Spenlinger</i>	

<b>FIRE IGNITION FREQUENCY ESTIMATION USING RECENT FIRE EVENTS DATA</b> .....	803
<i>Patrick Baranowsky</i>	
<b>POTENTIAL REGULATORY USE OF RISK LIMIT CURVES</b> .....	815
<i>Richard Denning, Ji Hyun Lee, David Grabaskas, T. Aldemir</i>	
<b>QUANTIFIED DYNAMIC EVENT TREES VS PSA – A COMPARISON FOR MLOCA RISK</b> .....	827
<i>Durga Rao Karanki, Vinh Dang</i>	
<b>THE UPDATED FIRE EVENTS DATABASE: DESCRIPTION OF CONTENT AND DATA CHARACTERIZATION</b> .....	841
<i>Patrick Baranowsky, Jonathen Facemire</i>	

## VOLUME 2

<b>QUANTITATIVE ASSESSMENT OF HUMAN-INDUCED LOSS OF OFFSITE POWER (HILOOP) EVENT FREQUENCIES AT U.S. COMMERCIAL NUCLEAR POWER PLANTS (NPPS)</b> .....	852
<i>Yehia Khalil, Michael Lloyd, Gary Smith, Frank Rahn, Mary Presley</i>	
<b>A COMPARISON OF SOCIETAL RISKS</b> .....	871
<i>Sean McGhee, Richard Denning</i>	
<b>THE RISKMAN® RISKMONITOR AND ITS APPLICATION AT NPP GOESGEN-DAENIKEN</b> .....	884
<i>Thomas Kozlik</i>	
<b>INSIGHTS FROM DEVELOPMENT OF THE COMBINED PWR SAMG</b> .....	896
<i>N. Reed LaBarge, Robert Lutz, K. Honath, J. Brad Chamberlain, Ted Book, Steven Pierson</i>	
<b>ACCIDENT RESPONSE AND TIMELINE FOR A FUKUSHIMA LIKE ACCIDENT AT A CE, B&amp;W AND WESTINGHOUSE PLANT</b> .....	906
<i>N. Reed LaBarge, Robert Lutz, Roy Linthicum</i>	
<b>THE SACADA DATABASE FOR HUMAN RELIABILITY AND HUMAN PERFORMANCE</b> .....	918
<i>Y. Chang, A. Zoulis</i>	
<b>RISK-INFORMED DECISION-MAKING: ADDRESSING VERY LARGE PRA UNCERTAINTIES</b> .....	925
<i>G. Parry, D. Vanover, D. True, S. Lewis, M. Presley</i>	
<b>METHODS AND TREATMENTS FOR INTERNAL FLOOD PROBABILISTIC RISK ASSESSMENTS</b> .....	935
<i>Robert J. Wolfgang</i>	
<b>OVERCOMING THE CHALLENGES ASSOCIATED WITH BUILDING AN OPERATIONAL PRA FOR AN ADVANCED PRE-OPERATIONAL PLANT</b> .....	951
<i>Stacy Davis, Heather Detar, David Teolis, Camille Zozula</i>	
<b>DEVELOPMENT OF THE ANS/ASME 58.25 LEVEL 3 PRA STANDARD</b> .....	963
<i>Keith Woodard, Grant Teagarden, Stanley H. Levinson</i>	
<b>CASE STUDY FOR DEVELOPMENT OF A SEISMIC PRA USING FRANX</b> .....	970
<i>Thomas Asmus, Scott Beck, Paul Knoespel</i>	
<b>METHODOLOGY FOR ESTABLISHING SUCCESS CRITERIA BASES FOR PASSIVE SAFETY SYSTEMS</b> .....	981
<i>Davide Mercurio, Patrick Baranowsky</i>	
<b>PRA DATABASES AND THEIR REALIZED/POTENTIAL BENEFITS</b> .....	994
<i>Stephen Reed</i>	
<b>LOW POWER SHUTDOWN LEVEL 2 PROBABILISTIC RISK ASSESSMENT METHODOLOGY FOR BOILING WATER REACTORS</b> .....	1008
<i>Davide Mercurio, Kenneth Wagner, Mark Leonard, Yahya Bayraktarli</i>	
<b>ONLINE LABELING OF DYNAMIC EVENT TREE SCENARIOS USING OBSERVABLE OPERATOR MODELS</b> .....	1020
<i>Daniya Zamalieva, A. Yilmaz, T. Aldemir, Richard Denning</i>	
<b>A FRAMEWORK FOR USE OF RISK METRICS AND CRITERIA IN MAKING DECISIONS</b> .....	1031
<i>Dennis Damon</i>	
<b>LEVERAGING EXISTING TOOLS FOR SIMULATING OPERATOR PERFORMANCE IN DISCRETE DYNAMIC EVENT TREES</b> .....	1037
<i>Huafei Liao, Jeffrey Cardoni, Timothy Wheeler, Matthew Denman</i>	
<b>RISK EVALUATION OF ERRATIC STANDPIPE LEVEL INDICATIONS IN TRANSITIONING TO MID-LOOP OPERATION</b> .....	1048
<i>Allen Moldenhauer</i>	
<b>EXPERIMENTAL SHIELDING EVALUATION OF THE RADIATION PROTECTION PROVIDED BY RESIDENTIAL STRUCTURES</b> .....	1058
<i>Elijah Dickson, David Hamby</i>	

<b>PRELIMINARY DEVELOPMENT OF A SEISMIC PRA MODEL USING FRANX/CAFTA/ACUBE/UNCERT</b> .....	1074
<i>William McNeely, Steven Eide</i>	
<b>UNCERTAINTY TREATMENT IN THE QUANTIFICATION OF A SEISMIC PSA</b> .....	1086
<i>Martin McCann Jr., A. Maioli, Nataliya Povroznyk, Erica Carson, Jonathan Lucero</i>	
<b>WHEN MODEL MEETS REALITY – A REVIEW OF SPAR LEVEL 2 MODEL AGAINST FUKUSHIMA ACCIDENT</b> .....	1105
<i>Zhegang Ma</i>	
<b>MSPI: AN EXACT NUMBER</b> .....	1115
<i>Heather Addis</i>	
<b>NUCLEAR POWER PLANT RISK-INFORMED SURVEILLANCE FREQUENCY CONTROL PROGRAM IMPLEMENTATION – LESSONS LEARNED</b> .....	1126
<i>James Liming, C. Grantom</i>	
<b>NUCLEAR POWER PLANT CONFIGURATION RISK MANAGEMENT: EPRI CRMF RESEARCH – 2011 THROUGH 2013</b> .....	1142
<i>Thomas Morgan, Diane Jones, Doug Hance</i>	
<b>OVERVIEW OF COMMON PRA MODELING APPROACHES FOR EXTERNAL EVENTS</b> .....	1152
<i>Richard Anoba, Paul Amico, Bijan Najafi</i>	
<b>CLASSIFICATION METHOD OF EXTERNAL HAZARDS BASED ON RISK SIGNIFICANCE FOR NUCLEAR POWER PLANTS</b> .....	1169
<i>Satoshi Shinzaki, Takahiro Kuramoto, Kagetomo Miyahara, Yutaka Mamizuka, Yoshiyuki Narumiya, Takayuki Ota</i>	
<b>ANALYZING OPERATOR BEHAVIORS FOLLOWING STEPS OF PROCEDURES</b> .....	1181
<i>Y. Kim, J. Park, W. Jung</i>	
<b>LOVIISA NPP PRESSURIZED THERMAL SHOCK (PTS) THERMAL HYDRAULIC ANALYSES USING APROS SIMULATION CODE</b> .....	1191
<i>Pasi Junninen, Harri Kontio</i>	
<b>REFLECTIONS ON LIMITATIONS OF CURRENT PSA – METHODOLOGY</b> .....	1204
<i>Wolfgang Kroger, Didier Sornette</i>	
<b>DEVELOPING PRA COMPUTER CODE REQUIREMENTS BASED ON PROBABILISTIC RISK ANALYSIS PRACTICES</b> .....	1215
<i>Kim Bjorkman, Tero Tyrvaïnen, Ilkka Niemela, Teemu Matasniemi</i>	
<b>REVIEW PROCESSES AND ITS EFFECT ON LIVING PSA – BENCHMARKING AND INCREASED EFFICIENCY OF REVIEW PROCESSES</b> .....	1227
<i>Anders Karlsson, Johan Gustafsson, Goran Hultqvist</i>	
<b>ENSURING EFFECTIVENESS OF PRA CONFIGURATION CONTROL PROGRAMS</b> .....	1233
<i>Joseph Lavelline, Michael Lake</i>	
<b>BWR-CLUB PSA BENCHMARKING – BOTTOM LOCA DURING OUTAGE, REACTOR LEVEL MEASUREMENT AND DOMINATING INITIATING EVENTS</b> .....	1245
<i>Anders Karlsson, Goran Hultqvist, Maria Frisk</i>	
<b>SHUTDOWN PRA SOURCES OF UNCERTAINTY</b> .....	1254
<i>R. Anderson, R. Dremel, H. Lim, J. Kim</i>	
<b>RECOMMENDATIONS AND STANDARDS FOR ESTABLISHMENT OF EMERGENCY PLANNING ZONES FOR NUCLEAR REACTORS</b> .....	1262
<i>Claudia Decco, Lizandra Fonseca</i>	
<b>SHUTDOWN INITIATING EVENTS FOR PRESSURIZED WATER REACTORS</b> .....	1274
<i>R. Anderson, R. Dremel, H. Lim, J. Kim</i>	
<b>PROCESSING DATA FOR THE INTERNAL FIRE PSA</b> .....	1283
<i>Peter Simurka, Jan Prochaska, Karol Balog</i>	
<b>SOARCA PEACH BOTTOM ATOMIC POWER STATION LONG-TERM STATION BLACKOUT UNCERTAINTY ANALYSIS: PROBABILISTIC METHODOLOGY AND REGRESSION TECHNIQUE</b> .....	1294
<i>Cedric Sallaberry, Patrick Mattie, Donald Kalinich, Douglas Osborn, S. Tina Ghosh</i>	
<b>SOARCA PEACH BOTTOM ATOMIC POWER STATION LONG-TERM STATION BLACKOUT UNCERTAINTY ANALYSIS: MELCOR PARAMETERS AND PROBABILISTIC RESULTS</b> .....	1310
<i>Randall Gauntt, Kyle Ross, Douglas Osborn, Cedric Sallaberry, Andrew Goldmann, Jeffrey Cardoni, Patrick Mattie, S. Tina Ghosh, Edward Fuller</i>	
<b>IDHEAS – A NEW APPROACH FOR HUMAN RELIABILITY ANALYSIS</b> .....	1327
<i>G. Parry, J. Forester, V. Dang, S. Hendrickson, M. Presley, E. Lois, J. Xing</i>	
<b>RESEARCH STATUS OF DIGITAL INSTRUMENTATION AND CONTROL PRA AT NRC</b> .....	1339
<i>Ming Li, Alan Kuritzky, K. Coyne, Tsong-Lun Chu</i>	
<b>IDENTIFICATION OF SEISMIC-FIRE AND SEISMIC-FLOOD INTERACTION EVENTS</b> .....	1353
<i>Steven Eide, Aaron Young</i>	

<b>DEVELOPMENT OF A METHOD FOR THE SCREENING OF NATURAL HAZARDS AT EDF</b> .....	1365
<i>M. Gallois, C. Luzoir, A. Dufloy, D. Vasseur</i>	
<b>AN APPROACH TO DEVELOPMENT OF COMMON CAUSE FAILURES OF ELECTRICAL BUSES</b> .....	1375
<i>Bert Commandeur, Richard Derrett-Smith</i>	
<b>WHAT IF WE REVISIT EVALUATION OF PSA MODELS WITH NETWORK ALGORITHMS?</b> .....	1387
<i>Mohamed Hibti</i>	
<b>SOARCA PEACH BOTTOM ATOMIC POWER STATION LONG-TERM STATION BLACKOUT UNCERTAINTY ANALYSIS: MACCS2 PARAMETERS AND PROBABILISTIC RESULTS</b> .....	1399
<i>Nathan Bixler, Douglas Osborn, Joseph Jones, Cedric Sallaberry, Patrick Mattie, S. Tina Ghosh</i>	
<b>INTERNAL FLOODING SCENARIO DEVELOPMENT USING TOOL FOR INTERNAL FLOODING ANALYSIS (TIFA)</b> .....	1419
<i>Cassandra Ruch</i>	
<b>SOARCA PEACH BOTTOM ATOMIC POWER STATION LONG-TERM STATION BLACKOUT UNCERTAINTY ANALYSIS: MACCS2 DOSE-TRUNCATION SENSITIVITY</b> .....	1427
<i>Nathan Bixler, Douglas Osborn, Joseph Jones, Cedric Sallaberry, Patrick Mattie, S. Tina Ghosh</i>	
<b>SOARCA PEACH BOTTOM ATOMIC POWER STATION LONG-TERM STATION BLACKOUT UNCERTAINTY ANALYSIS: MACCS2 ALEATORY WEATHER EFFECTS</b> .....	1443
<i>Nathan Bixler, Douglas Osborn, Patrick Mattie, S. Tina Ghosh</i>	
<b>MAAP5 ENHANCEMENTS FOR FUKUSHIMA DAIICHI ACCIDENT SIMULATION</b> .....	1463
<i>Wisou Luangdilok, Masato Yamada, Christopher Henry, Sung Jin Lee, Chan Paik, Martin Plys, Robert Henry</i>	
<b>AUXILIARY BUILDING HYDROGEN BEHAVIOR DURING A SEVERE ACCIDENT</b> .....	1482
<i>Sung Jin Lee, James Burelbach, Robert Apthorpe, Arthur Stefanczyk, Martin Plys</i>	
<b>THE USE OF QUALITATIVE INSIGHTS TO OFFSET UNCERTAINTIES ASSOCIATED WITH IMMATURE FIRE PRA MODELS</b> .....	1494
<i>D. Vanover, Gregory Zucal</i>	
<b>ANALYSIS OF A BWR MARK I REACTOR BUILDING RESPONSE TO VARIOUS POSTULATED SPENT FUEL POOL ACCIDENT SCENARIOS</b> .....	1505
<i>Andrew Dercher, D. Luxat, J. Gabor</i>	
<b>A PRELIMINARY APPROACH TO HUMAN RELIABILITY ANALYSIS FOR EXTERNAL EVENTS WITH A FOCUS ON SEISMIC HRA</b> .....	1518
<i>Mary Presley, J. Julius, J. Grobbelaar, K. Kohlhepp</i>	
<b>PRA SOCIALIZATION IN THE NUCLEAR POWER PLANT ENVIRONMENT - USING RISK APPLICATIONS AS EDUCATIONAL TOOLS</b> .....	1531
<i>Christopher Pupek</i>	
<b>ANALYSIS OF THE BEAVER VALLEY POWER STATION UNIT 1 SPENT FUEL POOL WITH THE MAAP5 SEVERE ACCIDENT ANALYSIS CODE</b> .....	1541
<i>Andrew Dercher, T. Elicson, Bill Schlichting, Jason Hall, Tong Guo</i>	
<b>INTEGRATION OF A FIRE INITIATING EVENT DECISION TREE INTO A FIRE PRA</b> .....	1552
<i>Brian Albinson, Gregory Zucal, D. Vanover</i>	
<b>SAFETY RELIEF VALVE CYCLIC FAILURE ANALYSIS FOR USE IN DISCRETE DYNAMIC EVENT TREES</b> .....	1564
<i>Matthew Denman</i>	
<b>AN INNOVATIVE TECHNIQUE FOR THE INTEGRATION OF INITIATING EVENT AND MITIGATION FAULT TREE LOGIC</b> .....	1576
<i>Eric Thornsbury, Mark Wishart</i>	
<b>VALIDATING A CYBER SECURITY RISK-INFORMED DECISION MODEL: WISHES AND REALITY</b> .....	1585
<i>Danielle Chrun, Michel Cukier, A. Mosleh, Gerry Sneeringer</i>	
<b>A REVIEW OF SEISMIC OPERATING EXPERIENCE WITH IMPLICATIONS FOR HUMAN RELIABILITY</b> .....	1597
<i>Mary Presley, J. Julius, J. Grobbelaar, K. Kohlhepp</i>	
<b>THE INFLUENCE OF SPATIAL GEOMETRY ON TRANSIENT FIRE LIKELIHOOD</b> .....	1609
<i>Gregory Zucal, Robert White</i>	
<b>A SIMULATION APPROACH TO INVESTIGATE THE IMPACT OF TEAM CHARACTERISTICS ON OPERATING CREW PERFORMANCE</b> .....	1621
<i>M. Azarkhil, A. Mosleh</i>	
<b>DISCRETE DYNAMIC EVENT TREE ANALYSIS OF SMALL MODULAR REACTOR SEVERE ACCIDENT MANAGEMENT</b> .....	1636
<i>Matthew Denman, Jeffrey Cardoni, Huafei Liao, Timothy Wheeler, Katrina Groth</i>	



<b>PROBABILISTIC MODEL DEVELOPMENT FOR FATIGUE CRACK DETECTION USING ACOUSTIC EMISSION TECHNOLOGY</b> .....	1647
<i>Azadeh Keshtgar, Mohammad Modarres</i>	
<b>A CLUSTERING ANALYSIS OF PROBABILISTIC PROLIFERATION RESISTANCE MEASURES IN AN EXAMPLE NUCLEAR FUEL SYSTEM</b> .....	1658
<i>Zachary Jankovsky, Daniya Zamalieva, A. Yilmaz, Richard Denning, T. Aldemir</i>	
<b>DETERMINING SUCCESS CRITERIA FOR A SPENT FUEL POOL PRA</b> .....	1672
<i>Alexander Duvall</i>	
<b>WHAT HRA NEEDS TO SUPPORT SITE-WIDE, MULTI-HAZARD LEVEL 2 PRA</b> .....	1686
<i>Susan Cooper, J. Xing, Y. Chang</i>	

### VOLUME 3

<b>DYNAMIC EVENT TREE ANALYSIS THROUGH RAVEN</b> .....	1697
<i>A. Alfonsi, C. Rabiti, D. Mandelli, J. Cogliati, R. Kinoshita, A. Naviglio</i>	
<b>MULTI-STATE PHYSICS BASED AGING ASSESSMENT OF PASSIVE COMPONENTS</b> .....	1710
<i>Askin Guler, T. Aldemir, Richard Denning</i>	
<b>GAP ANALYSIS INSIGHTS BETWEEN EXTERNAL EVENTS HRA REQUIREMENTS AND CURRENT HRA METHODS</b> .....	1719
<i>Mary Presley, J. Julius, J. Grobbelaar, K. Kohlhepp</i>	
<b>EVALUATION OF THE PARAMETERS OF THE VVER440/V213 CONTAINMENT SAFETY SYSTEMS</b> .....	1730
<i>Jan Kubacka, Milan Cvan</i>	
<b>SIMULATING NUCLEAR POWER PLANT OPERATORS' USE OF KNOWLEDGE IN SITUATION AWARENESS</b> .....	1747
<i>Yuandan Li, A. Mosleh</i>	
<b>MINING NUCLEAR TRANSIENT DATA THROUGH SYMBOLIC CONVERSION</b> .....	1759
<i>D. Mandelli, C. Smith, A. Yilmaz, T. Aldemir</i>	
<b>FIRE CONFIGURATION RISK MANAGEMENT: IMPLEMENTATION PROCESS AND LESSONS LEARNED</b> .....	1772
<i>Daniel Mearhoff</i>	
<b>MODEL-BASED HRA METHODOLOGY: PROCEDURES FOR QUALITATIVE ANALYSIS</b> .....	1779
<i>Nsimah Ekanem, A. Mosleh, Song-Hua Shen, Johanna Oxstrand</i>	
<b>INCORPORATING OPERATOR ACTION ISOLATION PROBABILITIES INTO FRANX, AND COMBINING GENERATED CCDP CUTSET FILES TO PERFORM DEPENDENCY ANALYSIS</b> .....	1791
<i>Michael Shehane</i>	
<b>PROBABILISTIC RISK ASSESSMENT OF SPENT FUEL POOL FIRE</b> .....	1799
<i>James Lin</i>	
<b>ADDRESSING PROBABILISTIC NATURE OF OPERATOR ACTION FEASIBILITY THROUGH PRA FAULT TREE LOGIC – A CONCEPTUAL APPROACH</b> .....	1811
<i>Young Jo</i>	
<b>ADAPTIVE SAMPLING ALGORITHMS FOR PROBABILISTIC RISK ASSESSMENT OF NUCLEAR SIMULATIONS</b> .....	1821
<i>Dan Maljovec, Bei Wang, Valerio Pascucci, Peer-Timo Bremer, D. Mandelli</i>	
<b>ANALYZING DYNAMIC PROBABILISTIC RISK ASSESSMENT DATA THROUGH TOPOLOGY-BASED CLUSTERING</b> .....	1839
<i>Dan Maljovec, Bei Wang, Valerio Pascucci, Peer-Timo Bremer, D. Mandelli</i>	
<b>MODELING MAIN CONTROL ROOM FIRES</b> .....	1855
<i>Francisco Joglar, Guy Ragan</i>	
<b>SPECIFICATION OF THE ENVIRONMENT LOADING PARAMETERS DURING THE SEVERE ACCIDENT DEDICATED TO QUALIFICATION OF SEVERE ACCIDENT MITIGATION SYSTEMS</b> .....	1866
<i>Jozef Balaz, Jan Fiedler</i>	
<b>CONSEQUENCE ANALYSIS PERSPECTIVES ON SEVERE ACCIDENT MITIGATION ALTERNATIVES (SAMA) ANALYSES</b> .....	1877
<i>Kevin O'Kula, Martin O'Neill</i>	
<b>CURRENT ACTIVITIES TO ENHANCE PSA AND UPDATE THE CORRESPONDING NUCLEAR REGULATORY FRAMEWORK IN GERMANY</b> .....	1900
<i>Heinz-Peter Berg, Marina Rowekamp</i>	

<b>FIRE PRA METHODOLOGY TO SELECT PINCH POINTS FOR TRANSIENT FIRE SCENARIO SELECTION</b> .....	1909
<i>Eric Jorgenson, Dennis Henneke, Jonathan Li</i>	
<b>A RE-LOOK AT THE US NRC SAFETY GOALS</b> .....	1918
<i>V. Mubayi</i>	
<b>APPROACHES FOR ADDRESSING RISKS IN REPROCESSING FACILITIES: AN ASSESSMENT</b> .....	1928
<i>G. Martinez-Guridi, V. Mubayi, R. Bari</i>	
<b>PROCESS FOR IDENTIFYING AND ADDRESSING POTENTIAL SEISMICALLY-INDUCED INTERNAL FIRES AND INTERNAL FLOODS IN A COMMERCIAL NPP SEISMIC PRA OR PRA- BASED SMA</b> .....	1942
<i>Barry Sloane, D. True, Vince Andersen, Grant Teagarden, Paul Lawrence, Alexander Trifanov</i>	
<b>IAEA GUIDELINES FOR PSA QUALITY FOR EXTERNAL &amp; INTERNAL HAZARDS AND LOW POWER SHUTDOWN</b> .....	1965
<i>Artur Lubarskiy, I. Kuzmina, P. Hughes, Paul Amico</i>	
<b>IMPROVEMENT OF EXTERNAL EVENT ( TSUNAMI SEISMIC) PSA APPROACH FOR SEVERE ACCIDENTS OF NUCLEAR POWER PLANTS</b> .....	1976
<i>Tadakuni Hakata</i>	
<b>HRA PRE-INITIATOR ANALYSIS GONE STATISTIC</b> .....	1988
<i>Pamela Nelson, Teresa Ruiz-Sanchez, Cecilia Martin del Campo, C. Grantom</i>	
<b>SOFTWARE RELIABILITY ESTIMATION BASED ON BAYESIAN INFERENCE</b> .....	2001
<i>Gee-Yong Park</i>	
<b>EVALUATING COMPONENT FAILURE PROBABILITY AS A FUNCTION OF DEMAND INTERVAL USING EPIX/RADS</b> .....	2012
<i>Steven Eide</i>	
<b>A TAXONOMY FOR THE FMEA OF DIGITAL I&amp;C PROTECTION SYSTEMS</b> .....	2022
<i>Gilles Deleuze, Thuy Nguyen, Herve Bruneliere, Carol Smidts</i>	
<b>DARLINGTON NUCLEAR GENERATING STATION (DNGS) HABITABILITY STUDY WITH MAAP-CANDU 4.0.7C AND MAAP5</b> .....	2036
<i>T. Elicson, Andrew Dercher, Heather Lucek, Ghulam Khawaja, Sergio Petrella</i>	
<b>RISK INFORMING EMERGENCY PREPAREDNESS OVERSIGHT: EVALUATION OF EMERGENCY ACTION LEVELS — A PILOT STUDY OF PEACH BOTTOM, SURRY AND SEQUOYAH</b> .....	2050
<i>M. Azarm, Sandra Herrick, R. Sullivan, Gary DeMoss, Terry Gitnick, Clifford Marks</i>	
<b>SIMPLIFIED METHOD FOR ASSESSING THE RISK ASSOCIATED WITH CONSEQUENTIAL STEAM GENERATOR TUBE RUPTURE EVENTS</b> .....	2061
<i>M. Azarm, S. Sancaktar, Terry Gitnick, R. Beaton</i>	
<b>FEASIBILITY STUDY OF RISK INFORMING EMERGENCY ACTION LEVELS OF FISSION PRODUCT BARRIERS USING LEVEL 2 PRA</b> .....	2073
<i>M. Azarm, R. Sullivan, Sandra Herrick, Terry Gitnick</i>	
<b>FUKUSHIMA DAI-ICHI: WGRISK PRE- AND POST-EVENT ACTIVITIES</b> .....	2083
<i>N. Siu, K. Coyne, J.-M. Lanore, M. Roewekamp, A. Amri</i>	
<b>KNOWLEDGE ENGINEERING TOOLS – AN OPPORTUNITY FOR RISK-INFORMED DECISION MAKING?</b> .....	2100
<i>N. Siu, P. Appignani, K. Coyne</i>	
<b>IMPACTS ON RISK INFORMED SAFETY MARGINS OF POWER UPRATES FOR PWR LOSS OF MAIN FEEDWATER EVENTS</b> .....	2113
<i>Richard Sherry, Donald Dube, J. Gabor, Stephen Hess</i>	
<b>IMPACT OF BWR EXTENDED POWER UPRATE ON SAFETY MARGIN DURING STATION BLACKOUT</b> .....	2126
<i>Donald Dube, Richard Sherry, J. Gabor, Stephen Hess</i>	
<b>SHUTDOWN PROBABILISTIC SAFETY ASSESSMENT UPDATE FOR BORSSELE NUCLEAR POWER STATION</b> .....	2138
<i>J. Grobbelaar, M. Hirt, J. Julius, K. Kohlhepp, M. Quilici, J. Krijger, E. Roose, H. Schoonakker, J. Brinkman</i>	
<b>ARPS: AN AUTOMATED RELIABILITY PREDICTION SYSTEM TOOL FOR SAFETY CRITICAL SOFTWARE</b> .....	2155
<i>Xiang Li, Jatin Gupta, Chetan Mutha, Carol Smidts</i>	
<b>REQUIREMENTS AND CRITERIA FOR PROBABILISTIC SAFETY ASSESSMENT AND ITS APPLICATIONS DEVELOPMENT AT COFRENTES NPP</b> .....	2168
<i>Ainhua Palma, Miguel Angel del Barrio, Miguel Angel Moreno, Marta Benito</i>	

<b>HUMAN RELIABILITY DEPENDENCY ANALYSIS USING EPRI HRA CALCULATOR FOR OCONEE NUCLEAR STATION</b> .....	2172
<i>Jeremy Allen</i>	
<b>LEVEL-1 PSA STUDIES FOR THE ASTRID REACTOR</b> .....	2178
<i>P. Gauthier, F. Curnier, F. Bertrand, H. Gentner, A. Charrier, M. Balmain, V. Rychkov, Y. Banchieri</i>	
<b>ANALYSES OF INSPECTION REPORTS AT FUEL CYCLE FACILITIES TO DERIVE INSIGHTS FOR A SIGNIFICANCE DETERMINATION PROCESS</b> .....	2191
<i>Pranab Samanta, V. Mubayi, R. Bari</i>	
<b>DEVELOPMENT OF WEB-BASED ENVIRONMENT FOR ATMOSPHERIC DISPERSION MODELING</b> .....	2204
<i>R. Hofman, P. Pecha</i>	
<b>INTEGRATION OF PRA INSIGHTS INTO THE DESIGN OF THE B&amp;W MPOWER™ SMALL MODULAR REACTOR</b> .....	2215
<i>Kerri Madden, Thomas Morgan</i>	
<b>A PILOT EXPERIMENT FOR SCIENCE-BASED HUMAN RELIABILITY ANALYSIS VALIDATION</b> .....	2225
<i>Rachel Benish, Carol Smidts, Alex Aurand, Atul Gupta, Jinguo Gao, Ronald Boring</i>	
<b>ANALYSIS OF BEYOND DESIGN BASIS EVENTS AT U.S. DEPARTMENT OF ENERGY NUCLEAR FACILITIES</b> .....	2238
<i>James O'Brien, Michael Hillman, David Freshwater, Jeffrey Woody</i>	
<b>TECHNICAL STANDARD FOR CONTROL OF PROBABILISTIC RISK ASSESSMENTS AT DEPARTMENT OF ENERGY NUCLEAR FACILITIES</b> .....	2248
<i>James O'Brien, Garrett Smith, Rama Sastry, Steven Krahn</i>	
<b>EVALUATION OF TECHNICAL BASIS FOR DEPARTMENT OF ENERGY PUBLIC DOSE EVALUATION GUIDELINE</b> .....	2256
<i>James O'Brien, Chris Chaves, Lanny Smith</i>	
<b>AN APPLICATION OF QUANTITATIVE DECISION ANALYSIS TO OPERATIONAL DECISION-MAKING</b> .....	2265
<i>Randall Best, Mark Smutny, David Malek</i>	
<b>DEVELOPMENT OF GENERAL CRITERIA FOR SCREENING LOSS OF ROOM COOLING IN PRA MODELING</b> .....	2280
<i>Young Jo, Taeyong Sung</i>	
<b>EXELON'S APPROACH TO NRC'S NEAR TERM TASK FORCE RECOMMENDATION 2.1 – SEISMIC HAZARDS</b> .....	2295
<i>Philip Tarpinian, Barry Sloane</i>	
<b>RELIABILITY MONITORING USING LOG-GAUSSIAN PROCESS REGRESSION</b> .....	2308
<i>Martin Wayne, Mohammad Modarres</i>	
<b>FUTURE DIRECTION FOR SEISMIC AND TSUNAMI SAFETY - LESSONS LEARNED FROM FUKUSHIMA DISASTER</b> .....	2316
<i>Genn Saji</i>	
<b>PRACTICAL LESSONS LEARNED AND CHALLENGES IN CONTEMPORARY PRA DEVELOPMENT AND APPLICATIONS</b> .....	2338
<i>Ching Guey</i>	
<b>TSUNAMI PROBABILISTIC RISK ASSESSMENT (PRA) FOR KASHIWAZAKI-KARIWA NUCLEAR POWER STATION</b> .....	2352
<i>Masanori Takeuchi, Yasunori Yamanaka, Shinichi Sugimoto</i>	
<b>IMPLEMENTATION GUIDELINES FOR SEISMIC PSA</b> .....	2362
<i>Ovidiu Coman, Sujit Samaddar</i>	
<b>SOME USEFUL ENHANCEMENTS FOR SEISMIC PRA</b> .....	2369
<i>Ovidiu Coman</i>	
<b>OVERVIEW OF IAEA'S PROJECTS ON SAFETY GOALS AND INTEGRATED RISK INFORMED DECISION MAKING</b> .....	2376
<i>I. Kuzmina, A. Lyubarskiy, P. Hughes</i>	
<b>RISK-INFORMED FIRE HAZARDS ANALYSIS FOR ANGRA-1 NUCLEAR POWER PLANT</b> .....	2388
<i>Jose Felipe Brabo Pastana, Cesar Augusto Cavalcanti, Robert Kassawara, Bijan Najafi, Paul Amico</i>	
<b>INVESTIGATION OF STRATEGIES FOR MITIGATING RADIOLOGICAL RELEASES IN SEVERE ACCIDENTS</b> .....	2398
<i>Rick Wachowiak, J. Gabor, D. True</i>	
<b>DEVELOPING A GLOSSARY OF RISK-RELATED TERMS TO SUPPORT RISK-INFORMED DECISIONMAKING</b> .....	2422
<i>John Lehner, W. Trevor Pratt, Mary Drouin, Michelle Gonzalez, Sandra Herrick, Matthew Dennis, Jeffrey LaChance, Timothy Wheeler, Zoran Musicki, Willard Thomas</i>	

<b>L2 PSA DEVELOPMENT AND REVIEW ACTIVITIES OF IRSN IN THE FRAMEWORK OF THE 3RD PSR OF THE FRENCH 1300 MWE PWR SERIES.....</b>	2434
<i>T. Durin, N. Rahni, Y. Guigueno, E. Raimond</i>	
<b>UPDATES AND CURRENT APPLICATION OF THE MCDET SIMULATION TOOL FOR DYNAMIC PSA .....</b>	2446
<i>Martina Kloos, Juergen Hartung, Joerg Peschke, Josef Scheuer</i>	
<b>RISK-INFORMED RESOLUTION OF GENERIC SAFETY ISSUE 191.....</b>	2458
<i>Zahra Mohaghegh, Ernie Kee, Seyed Reihani, Reza Kazemi, David Johnson, Rick Grantom, Karl Fleming, Tim Sande, Bruce Letellier, Gilbert Zigler, David Morton, Jeremy Tejada, Kerry Howe, Janet Leavitt, Yassin Hassan, Rodolfo Vaghetto, Saya Lee, Steve Blossom</i>	
<b>MANAGEMENT OF BEYOND DESIGN BASIS EVENTS RISK – ROLE OF PROBABILISTIC AND DETERMINISTIC ASSESSMENTS.....</b>	2472
<i>Akira Yamaguchi</i>	
<b>A METHODOLOGY FOR THE CONSTRUCTION OF A RISK-INFORMED ANALYSIS .....</b>	2484
<i>Brittany Guyer, Michael Golay</i>	
<b>METHOD TO EVALUATE FAILURE OF MAIN STEAM ISOLATION VALVES IN SUPPORT OF SIGNIFICANCE DETERMINATION PROCESS.....</b>	2495
<i>Mahmoud Heiba</i>	
<b>APPLICATIONS OF PSA IN HUMAN FACTOR ENGINEERING DESIGN AND DESIGN RELIABILITY ASSURANCE PROGRAM FOR CAP1000 .....</b>	2502
<i>Qiu Yongping, He Jiandong, Zhuo Yucheng</i>	
<b>AUTHOR INDEX</b>	