| | 08:30 – 15:30 OPENING DAY AWARDS, KEYNOTE, PANEL DISCUSSION Congress Hall Details please find on page 28 – 31 | | | | | |
|---------------|---|--|---|---|--|--|
| | | Congress Hall | Room 214 | Room 219 | Room 221 | Room 223 |
| > | 16:00 | Mo.1.A | Mo.1.B | Mo.1.C | Mo.1.D | Mo.1.E |
| 11 Jul 11 , . | | D05 - Response of Structures, Systems and Components I | D05 - Impact Testing and Modelling I | D05 - Base Isolation | D09 - Nuclear Waste Management and Disposal | D07 - Applications of Bayesian Methods |
| Mor | 18:00 | EXHIBITOR AND POSTER | EVENING Kongresshote | l Potsdam | | |
| | 08:30 | Tu.1.A | Tu.1.B | Tu.1.C | Tu.1.D | Tu.1.E |
| day, 12 July | | D05 - Response of Structures, Systems and Components II | D05 - Impact Testing and Modelling II | SPECIAL SESSION: History and State of the Art for Impact Analysis I | D07 - Risk Informed Decision Making | D07 - Cliff Edge and Resilience Assessment |
| es | 10:45 | Tu.2.A | Tu.2.B | Tu.2.C | Tu.2.D | Tu.2.E |
| P | | D05 - Response of Structures, Systems and Components III | D05 - Impact Testing and Modelling III | SPECIAL SESSION: History and State of the Art for Impact Analysis II | D07 - Risk Informed Seismic Design | D07 - Beyond-Design and Cliff-Edge Evaluation |
| | 13:30 | Tu.3.A | Tu.3.B | Tu.3.C | Tu.3.D | Tu.3.E |
| | | D05 - Response of Structures, Systems and Components IV | D03 - Impact I | SPECIAL SESSION: History and State of the Art for Impact Analysis III | WORKSHOP: Nebojsa Orbovic me- morial and JASMiRT Joint WS for SMiRT26"Toward higher performance of nuclear components considering Beyond Design Basis Events" I | D07 - Tsunami risk assessment |
| | 15:40 | Tu.4.A | Tu.4.B | Tu.4.C | Tu.4.D | Tu.4.E |
| | | D05 - Response of Structures, Systems and Components V | D03 - Impact II | SPECIAL SESSION: History and State of the Art for Impact Analysis III | WORKSHOP: Part II Title see Tu.3.D | D07 - Seismic PRA/ PSA and Fragility Assessment, Method Comparisons |
| | 18:30 | ISC DINNER (BOAT TRIP) | Meeting point: Landing | Stage at the Kongresshote | l (for invited guests only) | |
| | | | | | | |
| nly l | 08:30 | We.1.A | | | | |
| 3 JI | | Plenary Session I | | | | |
| ۲, 1 | 10:30 | We.2.A | We.2.B | We.2.C | We.2.D | We.2.E |
| Wednesda | | D05 - Seismic Response of Structure I | D03 - Impact III | SPECIAL SESSION: 2019-11-11 Le Teil Earthquake: A special earthquake occurred close to a special NPP II | SPECIAL SESSION: Fukushima Accident – 10 years later – where we are now? I | D07 - Correlation of Fragilities |
| | 13:30 | We.3.A | We.3.B | We.3.C | We.3.D | We.3.E |
| | | D05 - Seismic Response of | D04 - Impact I | SPECIAL SESSION: | SPECIAL SESSION: | D05 - Seismic Fragility |

| | | | close to a special NPP II | | |
|-------|---|-----------------|---------------------------|---|--|
| 15:40 | We.4.A | We.4.B | | We.4.D | We.4.E |
| | D05 - Testing & Modelling of Concrete Structure II | D04 - Impact II | | SPECIAL SESSION: Fukushima Accident – 10 years later – where we are now? III | D07 - Seismic Fragility Assessment - Method Developments |

2019-11-11 Le Teil

Earthquake: A special earthquake occurred

Fukushima Accident –

10 years later – where

we are now? II

Analysis

Structure II

10 -15 July | OVERVIEW

| Room 225 | Room 227 | Room 229 | Room 231 | Room 226 | Room 241 |
|---|--|--|--|---|---|
| | | | | | |
| Mo.1.F | Mo.1.G | Mo.1.H | Mo.1.I | Mo.1.J | Mo.1.K |
| D10 - Deeply Embedded SMRs | D03 - Computer Aided Engineering and Software Development + Verification, Validation, Simulation | D11 - Digital Innovations | D02 - Fracture Testing | D05 - Soil-Structure Interaction I | D01 - Concrete Degradation |
| | | | | | |
| Tu.1.F | Tu.1.G | Tu.1.H | Tu.1.I | Tu.1.J | Tu.1.K |
| D10 - Innovative Structures or Reactors, Design of Safety Systems, Structures and Components (SSC), | D03 - Fluid-Structure Interaction I | D06 - Fatigue and Thermal Design I | D02 - Generic Fracture Issues I | D05 - Soil-Structure Interaction II | D01 - Properties and Modelling of Nuclear Concrete I |
| Tu.2.F | Tu.2.G | Tu.2.H | Tu.2.I | Tu.2.J | Ти.2.К |
| D09 - Spent Fuel Storage and Transportation I | D03 - Fluid-Structure Interaction II | D06 - Fatigue and Thermal Design II | D02 - Generic Fracture Issues II | D05 - Soil-Structure Interaction III | D01 - Properties and Modelling of Nuclear Concrete II |
| Tu.3.F | Tu.3.G | Tu.3.H | Tu.3.I | Tu.3.J | Ти.3.К |
| SPECIAL SESSION: MECOS iniitative on Seismic design of piping systems - Towards im- proved design criteria I | D03 - Nonlinear Simulations | D06 - SSC Design I | D02 - Generic Issues of Structure Integrity I | D05 - Soil-Structure Interaction IV | SPECIAL SESSION: Seismic performance evaluation of NPP structures and equip- ment against high- frequency ground motion I |
| Tu.4.F | Tu.4.G | Tu.4.H | Tu.4.I | Tu.4.J | Tu.4.K |
| SPECIAL SESSION: MECOS iniitative on Seismic design of piping systems - Towards im- proved design criteria II | D06 - Application of Finite Element Methods in Design | D06 - SSC Design II | D01 - Steel and Alloys | D03 - Soil-Structure Interaction | SPECIAL SESSION: Part II Title see Tu.3.K |

| We.2.F | We.2.G | We.2.H | We.2.I | We.2.J | We.2.K |
|--|---|--|--|--|--|
| D11 - Construction planning and technologies | D04 - Ground Motion Characterisation I | D08 - Effects of operations and service conditions on performance of structures, systems and components | D02 - Fatigue Evaluation | SPECIAL SESSION: Nonlinear Seismic SSI Analysis Based on Best Engineering Practices in US and Japan I | D01 - Effect of Elevated Temperature on Concrete |
| We.3.F | We.3.G | We.3.H | We.3.I | We.3.J | We.3.K |
| D05 - Piping System | D04 - Ground Motion Characterisation II | WORKSHOP: Lessons Learned from Preparation of Nuclear Power Plants for Safe Long Term Operation I | SPECIAL SESSION: Steam generator tube integrity I | SPECIAL SESSION: Nonlinear Seismic SSI Analysis Based on Best Engineering Practices in US and Japan II | D03 - Structural Responce and FRS |
| We.4.F | We.4.G | | We.4.I | | We.4.K |
| D08 - Inspection and monitoring methods | D04 - External Hazards and Designing for Extreme Hazards and Accidents | | SPECIAL SESSION: Steam generator tube integrity II | | D05 - Dynamic Response of Reactor Building |

| | | Congress Hall | Room 214 | Room 219 | Room 221 | Room 223 |
|-----------|-------|---|--|--|---|--|
| , 14 July | 08:30 | Th.1.A Plenary Session II | | | | |
| day | 10:35 | Th.2.A | Th.2.B | Th.2.C | Th.2.D | Th.2.E |
| Thurs | | D05 - Seismic Response of Equipment I | D08 - Non-Destructive Evaluation I | SPECIAL SESSION: Impact tests and numerical analyses I | SPECIAL SESSION: Shibata Memorial- Achievement of Prof. Shibata in nuclear seismic engineering and challenges for the coming 50 years in nuclear technology against external hazards I | D07 - Seismic Fragility Assessment based on experience and/or testing |
| | 13:15 | Th.3.A | Th.3.B | Th.3.C | Th.3.D | Th.3.E |
| | | D05 - Seismic Response of Equipment II | D08 - Non-Destructive Evaluation II | SPECIAL SESSION: Impact tests and numerical analyses II | SPECIAL SESSION: Shibata Memorial- Achievement of Prof. Shibata in nuclear seismic engineering and challenges for the coming 50 years in nuclear technology against external hazards II | D04 - PSHA Applications |
| | 15:15 | Th.4.A | Th.4.B | Th.4.C | Th.4.D | Th.4.E |
| | | D09 - Decommissioning | D08 - Ageing Management | SPECIAL SESSION: Impact tests and numerical analyses III | D05 - VeRCoRs Experience – Predicting Containment Ageing, from the Mockup to the Digital Twin | D07 - Fault Displacement PRA |

17:00 - 24:00 CONFERENCE DINNER AT TIPI IN BERLIN | 17:00 Bus shuttle from Kongresshotel

Friday, 15 July

 09:00
 Fr.1.A
 Fr.1.B
 Fr.1.C

 SPECIAL SESSION:
 SPECIAL SESSION:
 D05 - Seismic Isolation

 Performance assessment
 Capturing Data and
 Assessing Results of

 In-Service Inspections of
 Nuclear Structures

11:00 Closing – Congress Hall

10 -15 July | OVERVIEW

| Room 225 | Room 227 | Room 229 | Room 231 | Room 226 | Room 241 |
|---|---|--|--|-------------------------------------|---|
| | | | | | |
| Th.2.F | Th.2.G | Th.2.H | Th.2.I | Th.2.J | Th.2.K |
| D01 - Material Properties, Modelling and Simulation I | SPECIAL SESSION: Challenges and recent advances from European Research Projects I | D02 - Fracture Mechanics Assessment Methods and Probabilistic Fracture Assessment | SPECIAL SESSION: Concepts and methods for cooling tower blasting I | TUTORIAL: Nonlinear analysis I | D05 - Seismic Response Evaluation |
| Th.3.F | Th.3.G | Th.3.H | Th.3.I | Th.3.J | Th.3.K |
| D01 - Material Properties, Modelling and Simulation III | SPECIAL SESSION: Challenges and recent advances from European Research Projects II | D06 - Advancing Standards for Analysis and Design | SPECIAL SESSION: Concepts and methods for cooling tower blasting II | TUTORIAL: Nonlinear analysis II | SPECIAL SESSION: Overview of the work done in the OECD SOCRAT benchmark dedicated to the beyond design seismic behavior assessment of crane bridges I |
| | Th.4.G | Th.4.H | Th.4.I | Th.4.J | Th.4.K |
| | D05 - Steel – Plate Composite Construction: Past, Present and Future Opportunities /Shear Walls | D06 - Codes and Licensing Issues I | D02 - Leak Before Break I | WORKSHOP: Nonlinear SSI Analysis | SPECIAL SESSION: Overview of the work done in the OECD SOCRAT benchmark dedicated to the beyond design seismic behavior assessment of crane bridges II |

Fr.1.H D06 - Codes and Licensing Issues II Fr.1.I D02 - Leak Before Break II SMiRT 26

OPENING DAY | AWARDS, KEYNOTE, PANEL DISCUSSION | 08:30 – 15:30 h, Congress Hall | Details please find on page 28 – 31 |

| | Hour | Congress Hall | Room 214 | Room 219 | Room 221 | Room 223 |
|-----------------|-------|---|--|---|--|--|
| Monday, 11 July | | Mo.1.A D05 - RESPONSE OF STRUCTURES, SYSTEMS AND COMPONENTS I S. Nakamura, K. Goldschmidt | Mo.1.B D05 - IMPACT TESTING AND MODELLING I A. Fila | Mo.1.C D05 - BASE ISOLATION O. Furuya | Mo.1.D D09 - NUCLEAR WASTE MANAGEMENT AND DISPOSAL S. McDuffie, P. Ford | Mo.1.E D07 - APPLICATIONS OF BAYESIAN METHODS T. Riekert, R. Cappa |
| | 16:00 | Mo.1.A.1 | Mo.1.B.1 | Mo.1.C.1 | Mo.1.D.1 | Mo.1.E.1 |
| | | Overview of the research activities in earthquake engineering and seismic risk assessment within the joint framework CEA-EDF-FRAMATOME- IRSN B. Richard, IRSN, Paris, France | Full-Scale Drop Testing within the Safety Evaluation of a Package for Radioactive Waste T. Quercetti, Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, Germany | Dynamic Characteristics Tests of Full-Scale Lead Rubber Bearing (LRB) K. Mori, Mitsubishi Heavy Industries, LTD., Hyogo, Japan | Transuranic Waste Disposal in the United States of America S. McDuffie, U.S. Department of Energy, Richland, Washington, USA | Probabilistic Modeling of Condensate Storage Tank under Sequence of Main and Aftershocks Using Bayesian Network C. Mun, Seoul National University, Seoul, South Korea |
| | 16:20 | Mo.1.A.2 | Mo.1.B.2 | Mo.1.C.2 | Mo.1.D.2 | Mo.1.E.2 |
| | | Hydrogen Detonation in a Vapor Suppression Tank of the Nuclear Fusion Reactor ITER: determination of pressure impulses and vessel stress and strain state A. Pesetti, University of Pisa, Italy | Discussion on data evaluation of tomographic and numerical results F. Hille, Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, Germany | 3D Seismic Isolation Systems for the Nuclear Industry Layout, Design & Qualification P. Nawrotzki, GERB Schwingungsisolierungen GmbH & Co. KG, Berlin, Germany | Innovative technique for improving the compatibility of radioactive waste with the blocking matrix P. Chantereau, NUVIA PROTECTION, Morestel, France | Application of The Bayesian Updating Method for Assessment of Unknown Nominal Wall Thickness of Pipe Joints M. Moghtaderi-Zadeh, Pacific Gas and Electric, Walnut Creek, USA |
| | 16:40 | Mo.1.A.3 | Mo.1.B.3 | Mo.1.C.3 | Mo.1.D.3 | Mo.1.E.3 |
| | | Vapor Suppression Tank of ITER Nuclear Fusion Reactor: Stress and Strain State of the Steel Anchors Imbedded in the Concrete Foundation due to a Hydrogen Detonation A. Pesetti, University of Pisa, Pisa, Italy | Reinforced Concrete Floor Slabs under Drop- Weight Impact Loads T. Szczesiak, Swiss Federal Nuclear Safety Inspectorate ENSI, Brugg, Switzerland | Numerical simulation of non-linear effects in seismic isolation systems P. Vasilyev, CKTI- Vibroseism, StPeterburg, Russia | Investigation of the radiological impact of a forklift truck fire on radioactive waste stored in 20' containers J. Struve, TÜV NORD EnSys GmbH & Co. KG, Hamburg, Germany | Application of The Confidence Interval Method for Assessment of Unknown Nominal Wall Thickness of Pipe Joints M. Moghtaderi-Zadeh, Pacific Gas and Electric, Walnut Creek, USA |
| | 17:00 | Mo.1.A.4 | Mo.1.B.4 | Mo.1.C.4 | | |
| | | Comparison of the In-Structure Response Spectra Based on Numerical Models and Recorded Data with Empirical Methods A. Bassam, Simpson Gumpertz and Heger, Atlanta, USA | Geometric influences on the behavior of beams under impact loading L. Leicht, TU Dresden, Dresden, Germany | Seismic Isolation of an Emergency Diesel Generator System for Nuclear Power Plants G. Mosqueda, UC San Diego, Gilman Dr, La Jolla, CA, USA | | |
| | 17:20 | Mo.1.A.5 | Mo.1.B.5 | | | |
| | | Development of Simplified and High Fidelity FE Model of Single Door Electrical Cabinet H. Son, Kyung Hee University, Yongin, South Korea | Interaction of Bending and Punching in Rein- forced Concrete Slabs Subjected to Impacts of Deformable Projectiles in IMPACT III Project Tests M. Borgerhoff, Stangenberg & Partners Consulting Engineers, Bochum, Germany | | | |

| 15:30 Break

| Room 225 | Room 227 | Room 229 | Room 231 | Room 226 | Room 241 |
|--|--|---|--|--|---|
| Mo.1.F D10 - DEEPLY EMBEDDED SMRS C. Bläsius, S. Samaddar | Mo.1.G D03 - COMPUTER AIDED ENGINEERING AND SOFTWARE DEVELOPMENT + VERIFICATION, VALIDATION, SIMULATION P. Rangelow, T. Szczesiak | Mo.1.H D11 - DIGITAL INNOVATIONS G. Hervé-Secourgeon, K. Han | Mo.1.I D02 - FRACTURE TESTING U. Mayer, C. Gourdin | Mo.1.J D05 - SOIL- STRUCTURE INTERACTION I B. Jeremic | Mo.1.K D01 - CONCRETE DEGRADATION D.K. Panesar, M. Koschemann |
| Mo.1.F.1 | Mo.1.G.1 | Mo.1.H.1 | Mo.1.I.1 | Mo.1.J.1 | Mo.1.K.1 |
| Geotechnical Parameters for Design of Deeply Embedded Small Modular Reactors L. Todorovski, GE Hitachi, Wilmington, NC, USA | Deterministic and/ or Probabilistic, Time Domain, Nonlinear, Inelastic Earthquake Soil Structure Interaction (ESSI) Modeling and Simulation B. Jeremic, University of California, Davis, California, USA | Digital Twins Applications for Advanced Reactors H. Charkas, Electric Power Research Institute, Charlotte, North Carolina, USA | Insights on how to use the Master Curve Method at Elevated Loading Rates U. Mayer, MPA University of Stuttgart, Germany | Analytical study on building / ground nonlinear behaviors during earthquakes by Domain Reduction Method H. Matsushita , Obayashi Corporation, Tokyo, Japan | Bond behavior and crack propagation of reinforced concrete under long-term loading M. Koschemann, Institute of Concrete Structures TU Dresden, Dresden, Germany |
| Mo.1.F.2 | Mo.1.G.2 | Mo.1.H.2 | Mo.1.I.2 | Mo.1.J.2 | Mo.1.K.2 |
| Generic Design Analyses of Deeply Embedded Small Modular Reactors L. Todorovski, GE Hitachi, Wilmington, NC, USA | Dynamic Simulation of Nuclear Power Plants Subjected to Secondary Fault Displacement by Dynamic Rupture Simulation and Domain Reduction Method Y. Mitsuhashi, KOZO KEIKAKU ENGINEERING Inc., Tokyo, Japan | Impact of a hybrid modelling for wall/ wall and wall/slab connections on the constructability of reinforced concrete nuclear building N. Massé, EDF-DIPNN- EDVANCE, Malakoff, France | Development of Structural Integrity testing facilities C. Gourdin, CEA, Gif-sur- Yvette, France | Application of the Domain Reduction Method in Seismic Analyses of Nuclear Power Plants R. Borsutzky, HOCHTIEF Engineering GmbH Consult IKS, Frankfurt am Main, Germany | Semi-empirical model to predict the swelling due to the development of Delayed Ettringite Formation G. Nahas, IRSN, Fontenay- aux-Roses, France |
| | Mo.1.G.3 | Mo.1.H.3 | Mo.1.I.3 | Mo.1.J.3 | Mo.1.K.3 |
| | Critical Slip Surface Search in Seismic Stability Assessment of Slope/Foundation K. Haba, Taisei Corporation, Tokyo, Japan | Automated Quality Assessment of Modular Components for Construc- tion of Nuclear Energy Facilities Using 3D As-built Models and BIM K. Han, North Carolina State University, Raleigh, USA | FE modelling of SPT specimens of irradiated OFE copper to evaluate fracture toughness using experimental data B. Dutta, Homi Bhabha National Institute, Mumbai, India | Iterative Static Soil Structure Interaction Analysis for UK HPR1000 M. Tan, Mott MacDonald Ltd, Manchester, United Kingdom | Stochastic modelling of cracks spacing in RC structures in the presence of size effects D. Bouhjiti, EGIS, Montreuil, France |
| | Mo.1.G.4 | Mo.1.H.4 | | Mo.1.J.4 | Mo.1.K.4 |
| | Life is a Spring Mass (LIASM) M. Cepkauskas, CEP Engineerig, Phoenix, USA | Computer Vision-based Robotic Welding for Construction of Nuclear Power Plants K. Han, North Carolina State University, Raleigh, USA | | SEISMIC SSI ANALYSIS OF A REACTOR BUILDING COUPLED MODEL AND SEISMIC EVALUATION OF SELECTED STRUCTURES, SYSTEMS AND COMPONENTS (SSCs) Y. Isbiliroglu, Rizzo International, Pittsburgh, | Modeling Concrete Expansion due to Alkali-Silica Reaction G.G. Aliyeva, North Carolina State University, Raleigh, USA |
| | | Mo.1.H.5 | | USA Moli I E | Mo 1 K F |
| | | Geometric and Structural Data Extraction Algorithms to Support BIM Interoperability Between Architectural And Structural Analysis Models N. Crowder, North Carolina State University, Raleigh, USA | | A Study on Seismic SSI Analysis of RB Complex on Piles Including Effects of Motion Incoherency and Nonlinear Soil Behavior in Vicinity of Piles D.M. Ghiocel, Ghiocel Predictive Technologies, Rochester, New York, USA | Calibration of tensorial damage concrete material model with cyclic compression tests and ultrasound measurements K. Calonius, VTT Technical Research Centre of Finland Ltd., Espoo, Finland |

| | Hour | Congress Hall | Room 214 | Room 219 | Room 221 | Room 223 | | |
|------------------|-------|---|---|--|---|---|--|---|
| Tuesday, 11 July | | Tu.1.A D05 - RESPONSE OF STRUCTURES, SYSTEMS AND COMPONENTS II D. Bouhjiti, K. Goldschmidt | Tu.1.B D05 - IMPACT TESTING AND MODELLING II A. Fila, M. Roosefid | Tu.1.C SPECIAL SESSION: HISTORY AND STATE OF THE ART FOR IMPACT ANALYSIS I A. Siefert | Tu.1.D D07 - RISK INFORMED DECISION MAKING M. Nakajima, T. Riekert | Tu.1.E D07 - CLIFF EDGE AND RESILIENCE ASSESSMENT R. Srinivasan, O. Furuya | | |
| | 08:30 | Tu.1.A.1 | Tu.1.B.1 | | Tu.1.D.1 | Tu.1.E.1 | | |
| | | Application of Analysis for Assembly of Integrated Components to Steel Member Connections for Seismic Safety Assessment of Plant Structures Part 2: Plastic Analysis K. Matsukawa, Chiyoda Corporation, Yokohama, Japan | Reinforcement bar and reinforcement bar splicing systems under impact loading Experimental tests and test specification M. Thiele, Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, Germany | Sessions, Tutorials and Workshops from page 15 | Sessions, Tutorials and Workshops from page 15 | Computationally efficient algorithms for risk informed decision making in nuclear PRA A. Gupta, North Carolina State University, Raleigh, NC, USA | Estimation of Seismic Hazard severity corresponding to the Cliff Edge Effect in the safety assessment of nuclear installations O. Coman, International Atomic Energy Agency, Vienna, Austria | |
| | 08:50 | Tu.1.A.2 | Tu.1.B.2 | | Tu.1.D.2 | Tu.1.E.2 | | |
| | | Loading Tests and Seismic Analysis for Shear Wall Composed of Ultra-High-Performance- Concrete M. Yukawa Obayashi Corporation, Tokyo, Japan | Numerical Simulation of Experiments on Impact Induced Vibrations Comparison of IRIS Phase 3 and IMPACT V3 Mock-Ups with Respect to Boundary Conditions C. Heckötter, Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH, Cologne, Germany | | | | The Application of Risk Informed Design and Risk Informed Regulation to the External Hazards Design of Nuclear Facilities P. Ford, Ford Nuclear Services Ltd, Broughton in Furness, United Kingdom | Three-dimensional structural analysis for enhancing resilience of next-generation nuclear structures under extremely high temperature conditions S. Futagami, Japan Atomic Energy Agency, Oarai, Japan |
| | 09:10 | Tu.1.A.3 | Tu.1.B.3 | | Tu.1.D.3 | Tu.1.E.3 | | |
| | | Non-linear modeling of PWR fuel assembly dynamic behavior in earthquake and LOCA J. Pacull, Framatome Fuel division, Lyon, France | Bending Damage of Reinforced Concrete Slabs Subjected to Soft Missile Impact: Numerical Simulations of Inclined Impacts S. Ghadimi Khasraghy, Basler Hofmann AG, Zurich, Switzerland | | Recent Efforts to Risk- Inform the Operating Reactor Program at the U.S. Nuclear Regulatory Commission S. Samaddar, U.S. Nuclear Regulatory Commission, Rockville, MD, USA | Development Plan of failure mitigation technologies for improving resilience of nuclear structures N. Kasahara, The University of Tokyo, Japan | | |
| | 09:30 | Tu.1.A.4 | Tu.1.B.4 | | | Tu.1.E.4 | | |
| | | Match of Predicted and Real Long-time Deformation of PCCV J. Stepan, UJV Rez div. Energoprojekt Praha, Prague, Czech Republic | Effect of Projectile Material on Local Damages of Reinforced Concrete Panels Subjected to Impact Loading J. Ye, Seoul National University, Seoul, South | | | Seismic evaluation of cliff edge effects for the ICC function at Ringhals NPP J. Lundwall, Ringhals AB, Varberg, Sweden | | |
| | 09:50 | Tu.1.A.5 | Korea | | | | | |
| | | Water Hammer Induced by the Vapor Condensation during a postulated LOCA in the Pressure Suppres- sion System of ITER Nuclear Fusion Reactor D. Aquaro, University of Pisa, Italy | | | | | | |

| Room 225 | Room 227 | Room 229 | Room 231 | Room 226 | Room 241 |
|---|--|--|--|---|--|
| Tu.1.F D10 - INNOVATIVE STRUCTURES OR REACTORS, DESIGN OF SAFETY SYSTEMS STRUCTURES AND COMPONENTS (SSC), SEISMIC DESIGN AND ANALYSES C. Bläsius, S. Samaddar | Tu.1.G D03 - FLUID- STRUCTURE INTERACTION I B.S. Ju, A. Mutz | Tu.1.H D06 - FATIGUE AND THERMAL DESIGN I R. Gersinska, T. Schopf | Tu.1.I D02 - GENERIC FRACTURE ISSUES I S. Chapuliot, V. Pištora | Tu.1.J D05 - SOIL- STRUCTURE INTERACTION II B. Jeremic, T. Szczesiak | Tu.1.K D01 - PROPERTIES AND MODELLING OF NUCLEAR CONCRETE I M. Galan |
| Tu.1.F.1 | Tu.1.G.1 | Tu.1.H.1 | Tu.1.I.1 | Tu.1.J.1 | Tu.1.K.1 |
| Challenges Implementing Detailing Requirements of AISC/ N690 Code for Openings in Steel-Composite (SC) Walls for Nuclear Power Plants R. Nayal, Nuscale Power, Corvallis, OR, USA | Simulation Strategy of the recuperator KKG considering fatigue based on realistic approach A. Mutz, Kernkraftwerk Gösgen-Däniken, Däniken, Switzerland | Fatigue Assessment of Grooves for Gaskets in Reactor Main Flange P. Gál, ÚJV Řež, a. s., Husinec, Czech Republic | Analysis of Pressurized Thermal Shocks for ECCS Nozzle of VVER Reactor Pressure Vessel V. Pištora, ÚJV Řež, a. s., Husinec - Řež, Czech Republic | A Computationally Efficient Soil Parameter Randomization Scheme for Nonlinear Soil- Structure Interaction Analysis A. Bassam, Simpson Gumpertz and Heger, Atlanta, USA | Concrete distributed strain measurements feedback on civil structures based on VeRCoRs Mockup potential application for new NPPs M. Galan, EDF DTG, Lyon, France |
| Tu.1.F.2 | Tu.1.G.2 | Tu.1.H.2 | Tu.1.I.2 | Tu.1.J.2 | Tu.1.K.2 |
| Performance prediction of compact autocatalytic recombiners in hydrogen risk control P. Chantereau, NUVIA PROTECTION, Morestel, France | Best-estimate water hammer simulations to avoid the calculation of unrealistically high loads or unphysical pressure and force peaks T. Neuhaus, TÜV NORD EnSys GmbH & Co. KG, Hamburg, Germany | Consideration of important Effects in Environmentally Assisted Fatigue (EAF) of Austenitic and Ferritic Steel Components including Welds and development of a practical Fatigue Assessment Concept J. Rudolph, Framatome, Erlangen, Germany | Consideration of Welding Residual Stresses within the Fracture Mechanics Assessment of nuclear components Part 1: Bibliography analysis S. Chapuliot, EDF/R&D, Moret Sur Loing, France | Soil-structure- interaction sensitivity to earthquake level. Case of a deeply embedded nuclear building in soft soil PM. Alliard, TRACTEBEL ENGIE, Lyon, France | Large-scale Cast-in-place Practice of Special Concrete for Nuclear Reactor Buildings - Ultra-high-performance Concrete with a Specified Compressive Strength of 150 MPa Y. Nishioka, Takenaka Corporation, Inzai, Japan |
| Tu.1.F.3 | Tu.1.G.3 | Tu.1.H.3 | Tu.1.I.3 | Tu.1.J.3 | Tu.1.K.3 |
| Feasibility Assessment of a site in Patagonia - Argentina A. Godoy, Antonio Ramon Godoy, Castelar-Buenos Aires, Argentina | Spectral Extrapolation of Frequency-Dependent Fluidelastic Coupling Coefficients from Causality Enforcing P. Piteau, Des-Service d'Études Mécaniques et Thermiques (SEMT), CEA, Université Paris-Saclay, | Fatigue crack observation under biaxial mechanical loading G. Perez, CEA, Gif-sur- Yvette, France | Consideration of Welding Residual Stresses within the Fracture Mechanics Assessment of nuclear components Part 2: Finite Element Modelling S. Chapuliot, EDF/R&D, Moret Sur Loing, France | Large Scale Soil- Structure-Interaction Testing of Partially Buried Structures K. Sener, Auburn University, Auburn, USA | Creep Effects in Prestressed Concrete Containment Vessels D. Parker, Structural Integrity Associates, Inc., San Diego, CA, USA |
| | Gif-sur-Yvette, France | | | Tu.1.J.4 | Tu.1.K.4 |
| | | | | Development of the Coupled Soil-Structure Interaction (SSI) Analysis Model of a Reactor Building using Domain Reduction Method (DRM) Y. Isbiliroglu, Rizzo International, Pittsburgh, USA | Delayed strains of containment buildings in operational and accidental conditions: progress research in ACES project JL. Adia, EDF, Moret-Sur- Loing, France |
| | | | | Tu.1.J.5 | Tu.1.K.5 |
| | | | | Soil-Structure Interaction Analysis of LILW Silo YS. Jang, KONES Corp., Seoul, South Korea | Pumping Performance of Ultra-high-performance Concrete with a Specified Compressive Strength of 150 MPa Y. Nishioka, Takenaka |

Corporation, Chiba, Japan

Tuesday, 12 July

| Hour | Congress Hall | Room 214 | Room 219 | Room 221 | Room 223 |
|-------|---|--|---|--|---|
| 10:45 | Tu.2.A D05 - RESPONSE OF STRUCTURES, SYSTEMS AND COMPONENTS III G.T. Proestos, D. Bouhjiti Tu.2.A.1 | Tu.2.B D05 - IMPACT TESTING AND MODELLING III A. Fila, M. Roosefid Tu.2.B.1 | Tu.2.C SPECIAL SESSION: HISTORY AND STATE OF THE ART FOR IMPACT ANALYSIS II A. Siefert | Tu.2.D D07 - RISK INFORMED SEISMIC DESIGN M. Talaat, R. Cappa Tu.2.D.1 | Tu.2.E D07 - BEYOND-DESIGN AND CLIFF-EDGE EVALUATION Y.Y. Bayraktarli, R. Srinivasan Tu.2.E.1 |
| | Planning for Seismic Shake Table Test of a Full-Scale Dry Storage of Spent Nuclear Fuel E. Kalinina, Sandia National Laboratories, Livermore, USA | Punching Failure of Reinforced Concrete Slabs Subjected to Hard Missile Impact: Simulations of Influence of Slab Thickness & Shear Reinforcement in LS-DYNA S. Ghadimi Khasraghy, Basler Hofmann AG, Zürich, Switzerland | Details on Special Sessions, Tutorials and Workshops from page 15 | A Framework of RI-PB Seismic Design/Part 1: Main Characteristics of the Proposed RI-PB Design and Considerations on Balanced Risk Profile T. Sakai, Central Research Institute of Electric Power Industry, Abiko, Japan | State-of-art Review of Beyond Design Basis Evaluation of a Generic Nuclear Power Plant in the UK M. Tan, Mott MacDonald Ltd, Manchester, United Kingdom |
| 11:05 | Tu.2.A.2 | Tu.2.B.2 | | Tu.2.D.2 | Tu.2.E.2 |
| | Simulation of Soil Structure Interaction Supporting Seismic Shake Table Test of a Full-Scale Dry Storage of Spent Nuclear Fuel J. Garcia, SC Solutions, Marietta, USA | Study on influence evaluation of internal equipment installed in structure subjected to projectile impact Y. Okuda, Japan Atomic Energy Agency, Ibaraki, Japan | | A Framework of RI-PB Seismic Design / Part 3: Methodology for Accident Sequence Analysis for Seismic Risk Considering Seismic Diversity H. Muta, Tokyo City University, TOkyo, Japan | Determination of Clearance to the Stop based on Performance Criteria of a Seismically Isolated Nuclear Power Plant M. Kim, Korea Atomic Energy Research Institute, Daejeon, South Korea |
| 11:25 | Tu.2.A.3 | Tu.2.B.3 | | Tu.2.D.3 | Tu.2.E.3 |
| | Pretest Predictions of Spent Nuclear Fuel in a Seismic Shake Test D. Ammerman, Sandia National Laboratories, Albuquerque, NM, USA | Loading tests of the embedded anchorage using ultra-high- performance-concrete M. Shimono, Mitsubishi Heavy Industries, Ltd., Hyogo, Japan | | Risk-Informed Performance-Based Seismic Design Approach for Advanced Reactors N. Chokshi, Consultant to SwRI, Silver Spring, MD, USA | Out-Of-Plane Shear Capacity of Reinforced Concrete Walls for Use in Fragility and Margin Calculation S. Dorvash, Simpson Gumpertz and Heger, Newport Beach, USA |
| 11:45 | Tu.2.A.4 | Tu.2.B.4 | | Tu.2.D.4 | Tu.2.E.4 |
| | Reconciliation of Dynamic Characteristics of Electrical Double Door Cabinet based on Experimental and Numerical Analysis H. Son, Sandia Kyung Hee University, Yongin, South Korea | Synthesis of the VTT IMPACT tests, project phases II and III mechanical resistance of reinforced concrete slabs under impact with various damage mechanisms M. Galan, EDF DTG, Lyon, France | | Application Example to Demonstrate RIPB Seismic Design Concepts for Advanced Nuclear Power Reactors N. Chokshi, Consultant to SwRI, Silver Spring, MD, USA | Evaluation of seismic capacity of nuclear installation equipment based on seismic experience data A. Altinyollar, International Atomic Energy Agency, Vienna, Austria |
| 12:05 | Lunch | | | | |

| Room 225 | Room 227 | Room 229 | Room 231 | Room 226 | Room 241 |
|--|--|---|---|--|---|
| Tu.2.F D09 - SPENT FUEL STORAGE AND TRANSPORTATION I S. McDuffie, P. Ford | Tu.2.G D03 - FLUID- STRUCTURE INTERACTION II B.S. Ju, S. Riedelmeier | Tu.2.H D06 - FATIGUE AND THERMAL DESIGN II R. Gersinska, Y. Mihara | Tu.2.I D02 - GENERIC FRACTURE ISSUES II S. Chapuliot, V. Pištora | Tu.2.J D05 - SOIL- STRUCTURE INTERACTION III B. Jeremic, P. Rangelow | Tu.2.K D01 - PROPERTIES AND MODELLING OF NUCLEAR CONCRETE II D.K. Panesar, J. Draup |
| Tu.2.F.1 | Tu.2.G.1 | Tu.2.H.1 | Tu.2.I.1 | Tu.2.J.1 | Tu.2.K.1 |
| Multi-sensor conception for safe sealing structures in underground repositories F. Baensch, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany | Numerical simulation of seismic response of spent fuel pool considering structure- fluidstructure interaction T. Genov, Mott MacDonald, Sofia, Bulgaria | Practical Application of Reinforced Concrete Design Methods for Thermal Loads in Nuclear Structures J. Phillips, Mott MacDonald Ltd, Manchester, United Kingdom | Pipe Elbow Structural Integrity Assessment Method for R6 Y. Lei, EDF Energy Nuclear Generation Ltd., Gloucester, United Kingdom | Seismic Energy Flow and Balance in Earthquake Soil Structure Interaction (ESSI) Systems B. Jeremic, University of California, Davis, USA | Design of ultra-high performance fiber reinforced concrete waste container: thermal stress analysis T. Sabrah, Kinectrics, Toronto, Canada |
| Tu.2.F.2 | Tu.2.G.2 | Tu.2.H.2 | Tu.2.I.2 | Tu.2.J.2 | Tu.2.K.2 |
| Assessment of spent nuclear fuel during dry storage in casks with fuel rod performance codes - TÜV NORD EnSys approach for fuel rod performance calculation for an extended dry storage period G. Spykman, TÜV NORD EnSys GmbH & Co.KG, Hannover, Germany | Seismic Reevaluation of a Fuel Storage Rack considering FSI and Friction Effects S. Riedelmeier, KAE GmbH, Hausen, Germany | Investigations on the fatigue behavior of a full-scale pipe component with dissimilar weld under thermos-mechanical loading T. Schopf, MPA University of Stuttgart, Germany | Closed form formulae for two interacting parallel through-wall cracks embedded in an infinite elastic medium under normal tension P. Gilles, GEP-INT, Paris, France | Efficient Linear and Nonlinear Seismic SSI Analysis of Deeply Embedded Structures Using Flexible Volume Reduced-Order Modeling (FVROM) D.M. Ghiocel, Ghiocel Predictive Technologies, New York, USA | Graphene-Cement Composites: The next generation of construction materials? D. Panesar, University of Toronto, Canada |
| Tu.2.F.3 | Tu.2.G.3 | Tu.2.H.3 | Tu.2.I.3 | Tu.2.J.3 | Tu.2.K.3 |
| Structural Qualification of Nuclear Plant Facilities and Equipment to Higher Capacity Dry Storage Systems K. Nizamiev, Jensen Hughes, Independence, USA | Seismic Evaluation of Water Storage Tanks Considering Soil-Structure-Fluid Interaction Effects P. Tehrani, SC Solutions, Sunnyvale, USA | On the Comparison of Design Standards for Creep-Fatigue Damage Limits in High Temperature Reactor Components R. Christensen, TerraPower, LLC., Bellevue, USA | Verification of the Master Curve Concept (ASTM E1921) for the Weld of a German RPV Steel at Various Loading Rates J. Tlatlik, Fraunhofer- Institute for Mechanics of Materials IWM, Freiburg, Germany | Introduction of impact assessment technology and evaluation examples for fault displacement of critical civil engineering structures K. Yamaguchi, Central Research Institute of Electric Power Industry, Abiko-shi, Chiba, Japan | Effects of High-Quality Recycled Aggregate on the Properties of Concrete for Nuclear Power Plants. H. Tateyashiki, Diareform Corporation, Tokyo, Japan |
| Tu.2.F.4 | | | | Tu.2.J.4 | |
| Experimental and numerical investigation of prestressed bolt connections under lateral displacements | | | | Simplified Approach to Establish the Dynamic Impedance of Deeply Embedded Small Modular Reactors | |

K. Linnemann, Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, Germany

SMiRT 26 | Berlin/Potsdam | Germany 41

A. Fernandez, FZA, LLC,

Pittsburgh, USA

Tuesday, 12 July

| Hour | Congress Hall | Room 214 | Room 219 | Room 221 | Room 223 |
|-------|--|---|--|--|--|
| | Tu.3.A D05 - RESPONSE OF STRUCTURES SYSTEMS AND COMPONENTS IV B. Richard, G.T. Proestos | Tu.3.B D03 - IMPACT I T. Szczesiak, S. Ghadimi Khasraghy | Tu.3.C SPECIAL SESSION: HISTORY AND STATE OF THE ART FOR IMPACT ANALYSIS III A. Siefert | Tu.3.D WORKSHOP: NEBOJSA ORBOVIC MEMORIAL AND JASMIRT JOINT WS FOR SMIRT26 "TOWARD HIGHER PERFORMANCE OF NUCLEAR COMPONENTS | Tu.3.E D07 - TSUNAMI RISK ASSESSMENT T. Riekert, M. Pellisetti |
| 13:30 | Tu.3.A.1 | Tu.3.B.1 | | COMPONENTS | Tu.3.E.1 |
| | Behavior of pre-cast anchors in reinforced concrete under dynamic loadings L. Veilleux, CEA, Bruyères- le-Châtel, France | Impact Experiments on Differently Reinforced Concrete Plates F. Bracklow, Technische Universität Dresden, Institue of Concrete Structures, Dresden, Germany | Sessions, Tutorials and Workshops from page 15 | BEYOND DESIGN BASIS EVENTS" I T. Nitheanandan Details on Special Sessions, Tutorials and Workshops from page 15 | Fragility evaluation method for tsunami- borne debris impact by simulation-based approach for group-spec ific tsunami scenario H. Kaida, Central Research Institute of Electric Power Industry, Chiba, Japan |
| 13:50 | Tu.3.A.2 | Tu.3.B.2 | | | Tu.3.E.2 |
| | Time multi-scale co-simulation method applied to simplified reactor block under sismic event Y. Le Nôtre, LaMCoS - Framatome, Paris, France | Assessment of Reactor Coolant Pipe Whip on Reactor Containment Wall K. Chaudhry, Next Structural Integrity Inc, Burlington, Ontario, Canada | | | A framework for tsunami fragility assessment using response factor Y. Takahashi, Kajima Corporation, Tokyo, Japan |
| 14:10 | Tu.3.A.3 | Tu.3.B.3 | | | Tu.3.E.3 |
| | Effects of Near-Fault Ground Motions on Nuclear Power Plant Containment Structures K. Soyluk, Gazi University, Faculty of Engineering, Department of Civil Engineering, Ankara, Turkei | Aircraft Impact: Critical Aspects of Coupled Dynamic Simulations P. Wörndle, HOCHTIEF Engineering GmbH Consult IKS, Frankfurt am Main, Germany | | | Application of Zero- Modified Probability Distribution to Tsunami Fragility Assessment T. Kondo, Kajima Corporation, Tokyo, Japan |
| 14:30 | Tu.3.A.4 | Tu.3.B.4 | | | |
| | Casks (Stacks) under Earthquake Loads N. Wieczorek, TÜV NORD EnSys GmbH & Co. KG, Berlin, Germany | Multi-Layer Wall System for Protection Against Close-In Explosions V. Vlaski, Max Aicher Engineering, Freilassing, Germany | | | |
| 14:50 | Tu.3.A.5 | Tu.3.B.5 | | | |
| 15:10 | Development and Implementation of a Qualification Methodology for I&C Components to Airplane Crash Induced Vibrations N. Moussallam, Framatome, Lyon, France Break | Discussion of Numerical Simulation Methods for Impact Analyses of Reinforced Concrete Structures S. Ghadimi Khasraghy, Basler & Hofmann AG, Consulting Engineers, Zürich, Switzerland | | | |
| | | | | | |

| Room 225 | Room 227 | Room 229 | Room 231 | Room 226 | Room 241 |
|---|--|---|---|---|--|
| Tu.3.F SPECIAL SESSION: MECOS INIITATIVE ON SEISMIC DESIGN OF PIPING SYSTEMS - TOWARDS IMPROVED DESIGN CRITERIA I P. Sollogoub | Tu.3.G D03 - NONLINEAR SIMULATIONS I J. Rodriguez, S. Ghadimi Khasraghy, | Tu.3.H D06 - SSC DESIGN I J. Xu, Y. Mihara | Tu.3.I D02 - GENERIC ISSUES OF STRUCTURE INTEGRITY I J. Sievers, A. Mutz | Tu.3.J D05 - SOIL- STRUCTURE INTERACTION IV B. Jeremic. B. Rangelow | Tu.3.K SPECIAL SESSION: SEISMIC PERFOR- MANCE EVALUATION OF NPP STRUCTURES AND EQUIPMENT AGAINST HIGH-FREQUENCY GROUND MOTION I M.K. Kim |
| | Tu.3.G.1 | Tu.3.H.1 | Tu.3.I.1 | Tu.3.J.1 | |
| Details on Special Sessions, Tutorials and Workshops from page 15 | Applicability of Discrete- Like Crack Model to Box Culvert K. Mizukoshi, Obayashi Corp., Tokyo, Japan | An Efficient Review Guideline for Anchor Design J. Attinger, Basler & Hofmann, Zurich, Switzerland | Influence of PWR fuel assembly bow on RCCA drop J. Arndt, Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH, Cologne, Germany | Probabilistic SSSI Analysis of Reactor and Auxiliary Building without and with Incoherency Effects H. Senechal, KAE GmbH, Hausen, Germany | Details on Special Sessions, Tutorials and Workshops from page 15 |
| | Tu.3.G.2 | Tu.3.H.2 | Tu.3.I.2 | Tu.3.J.2 | |
| | Identification of the reactor building damage mode for seismic fragility assessment using a three-dimensional finite element model B. Choi, Japan Atomic Energy Agency, Tokai- mura, Naka-gun, Ibaraki Pref., Japan | Study on Feasibility of a Large Size Steel Containment Vessel Structure to Avoid Post- Weld Heat Treament N. Hou, INET of Tsinghua University, Beijing, China | New approach to irradiation swelling and creep assessment of VVER-1000 core shroud M. Listík, ÚJV Řež a.s., Husinec - Řež, Czech Republic | Evaluation of ISFSI Pad for Soil Consolidation T. AL-Shawaf, Orano Federal Services, Charlotte, NC, USA | |
| | Tu.3.G.3 | Tu.3.H.3 | Tu.3.I.3 | Tu.3.J.3 | |
| | Modeling the thermomechanical behaviour of reinforced concrete structures exposed to natural fire M. Roosefid, IRNS, Fonte- nay-aux-Roses, France | Design of Anchor Plates according to EN 1992-1-4:2019: A Practice Oriented View M. Imbach, HOCHTIEF IKS Schweiz, Glattbrugg, Switzerland | Modelling of thermal loads of the surge line of a PWR M. Hannink, NRG, Petten, Netherlands | Seismic Response of ISFSI Site with Thick Soft Soil Layer below the Water Table T. AL-Shawaf, Orano, Charlotte, USA | |
| | Tu.3.G.4 | Tu.3.H.4 | Tu.3.I.4 | Tu.3.J.4 | |
| | Software Commercial Grade Dedication Guidance for Nonlinear Seismic Analysis N. Doulgerakis, SC Solu- tions, Inc., Atlanta, USA | Conceptual Design of the ITER Hot Cell Complex: Structural Analysis J.I. Ezeberry Parrotta, IDOM, Madrid, Spain | Assessment of Piping Integrity with Post-installed Anchor Fastenings during Seismic Loading K. Kerkhof, Materials Testing Institute University of Stuttgart, Stuttgart, Germany | Time Domain, Intrusive Probabilistic Seismic Risk Analysis of Nonlinear Earthquake Soil Structure Interaction Systems B. Jeremic, University of California, Davis, USA | |
| | Tu.3.G.5 | Tu.3.H.5 | Tu.3.I.5 | | |
| | Proposal of Validation Procedure of Non-Linear Seismic Response Analysis Method S. Nakamura, Nihon University, Koriyama, Japan | Design Requirements for Steel-Composite Wall Rib and Stiffener Connections L. Cleveland, Sargent & Lundy, Chicago, USA | Structural Integrity of Small Diameter Piping during Seismic Loading A. Mutz, Kernkraftwerk Goesgen-Daeniken AG, Goesgen, Switzerland | | |

| Hour | Congress Hall | Room 214 | Room 219 | Room 221 | Room 223 |
|-------|--|--|---|--|---|
| | Tu.4.A D05 - RESPONSE OF STRUCTURES SYSTEMS AND COMPONENTS V G.T. Proestos, B. Richard | Tu.4.B D03 - IMPACT II K. Calonius, R. Borsutzky | Tu.4.C SPECIAL SESSION: HISTORY AND STATE OF THE ART FOR IMPACT ANALYSIS IV A. Siefert | Tu.4.D WORKSHOP: NEBOJSA ORBOVIC MEMORIAL AND JASMIRT JOINT WS FOR SMIRT26 "TOWARD HIGHER PERFORMANCE OF NUCLEAR COMPONENTS | Tu.4.E D07 - SEISMIC PRA/ PSA AND FRAGILITY ASSESSMENT, METHOD COMPARISONS O. Furuya, M. Pellissetti |
| 15:40 | Tu.4.A.1 Multi-mode factor for motor-driven pump units: compared pseudo-static and dynamic (response spectrum and time history) determination of seismic loads at anchorage points S. Audebert, EDF R&D, Palaiseau, France | Tu.4.B.1 Fundamental study on high speed impact analysis A. Takahashi, Obayashi Corporation, Tokyo, Japan | Details on Special Sessions, Tutorials and Workshops from page 15 | CONSIDERING BEYOND DESIGN BASIS EVENTS" I T. Nitheanandan Details on Special Sessions, Tutorials and Workshops from page 15 | Tu.4.E.1 OBSERVATIONS FROM RECENT SEISMIC PRAS IN USA R. Srinivasan, Independent Consultant, San Jose, USA |
| 16:00 | Tu.4.A.2 Overview of Nuclear SSCs Seismic Fragility Test 1 H. Abe, JASMiRT, Minato-ku, Tokyo, Japan | Tu.4.B.2 Study of Local Turbine Missile Impacts on a Concrete Target D. Parker, Structural Integrity Associates, Inc., San Diego, CA, USA | | | Tu.4.E.2 Creep Rupture Analysis of the RCS Pressure Boundary for a PWR SBO Accident KI. Ahn, Korea Atomic Energy Research Institute, Daejeon, South Korea |
| 16:20 | Tu.4.A.3 | Tu.4.B.3 | | | Tu.4.E.3 |
| | Overview of Nuclear SCCs Seismic Fragility test 2 : control rod insertion device H. Abe, JASMiRT, Minato-ku, Tokyo, Japan | Multilayer Wall System for Protection of Nuclear Facilities Against Airplane Crash V. Vlaski, Max Aicher Engineering, Freilassing, Germany | | | Two-step Probabilistic Ground Deformation Hazard Analysis for Seismic Risk Assessment of Plant Facilities A. Satoda, Chiyoda Corporation, Kanagawa, Japan |
| 16:40 | Tu.4.A.4 | | | | Tu.4.E.4 |
| | Modelling of the Load- Displacement Behavior of Undercut Anchors and Comparison with Large-Scale Tests F. Dwenger, TÜV Süd Energietechnik GmbH, Filderstadt, Germany | | | | Insights Gained from Reviews of Seismic Probabilistic Risk Assessments for Operating Nuclear Power Plant Sites S. Samaddar, United States Nuclear Regulatory |
| 17:00 | Tu.4.A.5 | | | | Commission, Rockville, |
| | Seismic Resistance Evaluation of Reinforced Concrete Structures with Complex Planar Shapes T. Tojo, Takenaka Corporation, Inzai-shi, Chiba, Japan | | | | USA |
| 18:30 | ISC Dinner Boat trip (invite | ed guests only) | | | |

| Room 225 | Room 227 | Room 229 | Room 231 | Room 226 | Room 241 |
|--|---|---|--|---|---|
| Tu.4.F SPECIAL SESSION: SPECIAL SESSION: MECOS INIITATIVE ON SEISMIC DESIGN OF PIPING SYSTEMS - TOWARDS IMPROVED DESIGN CRITERIA II P. Sollogoub | Tu.4.G D06 - APPLICATION OF FINITE ELEMENT METHODS IN DESIGN Y. Mihara, J. Rudolph | Tu.4.H D06 - SSC DESIGN II J. Xu, J. Rudolph | Tu.4.1 D01 - STEEL AND ALLOYS S. Weihe, C. Boller | Tu.4.J D03 - SOIL- STRUCTURE INTERACTION D. Kurmann, T. Szczesiak | Tu.4.K SPECIAL SESSION: SEISMIC PERFOR- MANCE EVALUATION OF NPP STRUCTURES AND EQUIPMENT AGAINST HIGH- FREQUENCY GROUND MOTION II M.K. Kim |
| | Tu.4.G.1 | Tu.4.H.1 | Tu.4.I.1 | Tu.4.J.1 | |
| Details on Special Sessions, Tutorials and Workshops from page 15 | FEM and stress categories groups in the Czech standard NTD ASI Section III S. Vejvoda, personier, Rebesovice, Rajhrad, Czech Republic | Comparison of Plastic Instability Analysis and Results of a Vessel Burst Test W. Reinhardt, Candu Energy / SNC Lavalin, Mississauga, Canada | Brittle Failure Analysis of High-Burnup PWR Fuel Cladding Alloys K. Simbruner, Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, Germany | Full Seismic Wave Inversion in 3D for Earthquake Soil Structure Interaction (ESSI) Modeling and Simulation B. Jeremic, University of California, Davis, USA | Details on Special Sessions, Tutorials and Workshops from page 15 |
| | Tu.4.G.2 | Tu.4.H.2 | Tu.4.I.2 | Tu.4.J.2 | |
| | A Novel UHPC Based Containment Design Methodology S.H. Lee, Seoul National University, Seoul, South Korea | Qualification and design of anchor channels in Nuclear Power Plants S. Hempel, LEVIAT Halfen, Langenfeld, Germany | Vibration crack corrosion – a phenomenon that could promote the occurrence of increased oxide layer thicknesses in the upper region of fuel rods made of M5 cladding tubes B. Gerold, TÜV SÜD Energietechnik GmbH, Mannheim, Germany | Quasi One-Step Soil Structure Interaction Seismic Analysis for UK HPR1000 M. Tan, Mott MacDonald Ltd, Manchester, United Kingdom | |
| | Tu.4.G.3 | Tu.4.H.3 | Tu.4.I.3 | Tu.4.J.3 | |
| | Computational determination of stress concentration factors for spherical and cylindrical shells with nozzles F.E. Silber, Materials testing Institute (MPA) University of Stuttgart, Germany | Optimized Design of Metallic Containment Isolation Hatches in CANDU NPPs T. Sabrah, Kinectrics, Toronto, Canada | Annealing-temperature Evaluation of Type 316 Stainless Steel Based on Material Tensile Test N. Yanagida, Hitachi, Ltd., Hitachi, Ibaraki, Japan | SSI-Analysis of Nuclear Structures in the Time- Domain using Real-ESSI P. Rangelow, Basler & Hofmann, Zurich, Switzerland | |
| | Tu.4.G.4 | Tu.4.H.4 | Tu.4.I.4 | Tu.4.J.4 | |
| | CORDEL MCSTF: Harmonization of non-linear analysis design rules within international codes and standards R. Tanguy, World Nuclear Association, London, | Embedment Design in Safety-Related Concrete Z. Shang, SHANG Research Group LLC., SC, USA | Evaluation of the Fatigue Life of AISI 347 Specimens with Small Notches Based on Local Strain Considerations C. Boller, Saarland University, Saarbrücken, Germany | Experience in calculating the soil-structure interaction dynamic effects using LS-DYNA A. Kultsep, CKTI- Vibroseism Ltd, St Petersburg, Russia | |
| | United Kingdom | Tu.4.H.5 | Tu.4.1.5 | Tu.4.J.5 | |
| | | Protecting Nuclear Infrastructures from Earthquakes through Vibrating Barriers A. Ayoub, City, University of London, United Kingdom | Study of VVER-440 reactor pressure vessel weld metal after 45 years of operation K. Medvedev, NRC Kurchatov Institute, Moscow, Russia | Studies on Seismic Wave Traveling Effects on SMR Responses for Nonuni- fform Soils With Abrupt Variations of Layer Stiffness with Depth D.M. Ghiocel, Ghiocel Predictive Technologies. Inc., Rochester, New York, | |

USA

| | _ | Hour | Congress Hall | Room 214 | Room 219 | Room 221 | Room 223 |
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| ay, 13 Ju | | 08:30 10:00 | We.1.A PLENARY SESSION I – H Break | . Sadegh-Azar (Details P. 4) | | | |
| Wednes | | | We.2.A D05 - SEISMIC RESPONSE OF STRUCTURE I S. Nakamura, T. Heitz | We.2.B D03 - IMPACT III A. Fäcke, A. Siefert | We.2.C SPECIAL SESSION: 2019-11-11 LE TEIL EARTHQUAKE: A SPECIAL EARTHQUAKE OCCURRED CLOSE TO A SPECIAL NPP I E. Viallet | We.2.D SPECIAL SESSION: FUKUSHIMA ACCIDENT 10 YEARS LATER WHERE WE ARE NOW? I A. Godoy | We.2.E D07 - CORRELATION OF FRAGILITIES M. Kim, K. Goldschmidt |
| | | 10:30 | We.2.A.1 | We.2.B.1 | | | We.2.E.1 |
| | | IU:30 N Si R La El S. of C | Nonlinear Analysis on Seismic Behavior of Reinforced Concrete Members using Laminated Shell Elements S. Nagata, Central Institute of Electric Power Industry, Chiba-ken, Japan | Analytical Study on Behavior of RC Panels Covered with Steel Plate Subject to Missile Impact T. Tsukada, Shimizu Corporation, Tokyo, Japan | Details on Special Sessions, Tutorials and Workshops from page 15 | Details on Special Sessions, Tutorials and Workshops from page 15 | Quantifying Partial Fragility Correlations in Seismic Probabilistic Risk Assessments A. Anup, Simpson Gumpertz & Heger, Inc., Newport Beach, USA |
| | | 10:50 | We.2.A.2 | We.2.B.2 | | | We.2.E.2 |
| | | | Analytical and numerical investigation of ring spring dampers in seismic design L. Helm, Institute of Structural Analysis and Dynamics, University of Kaiserslautern, Germany | Investigating the shear performance of SC walls under impact loads D. Watkins, SC Solutions, Sacramento, CA, USA | | | Evaluation of Correlation Coefficient for Seismic Fragility Response Vari- ables to Estimate Multi- ple Failure Probability S.Y. Kim, Department of Civil Engineering, Pusan National University, Pusan, South Korea |
| | | 11:10 | We.2.A.3 | We.2.B.3 | | | We.2.E.3 |
| | | | A Simplified Added Mass Modeling and Seismic Responses of Submerged Reactor Assembly of Ki-Jang Research Reactor B. Yoo, KAERI, Daejeon, South Korea | Characteristics of an ultra-high-performance- concrete (UHPC) against impact loading Part 1: Basic characteristics test and evaluation of bearing force of UHPCs K. Kodera, Taisei Corporation, Tokyo, Japan | | | A Tail-oriented Multi-normal Model for Partially Correlated Seismic-Induced Failure Probabilities M. Talaat, Simpson Gumpertz & Heger Inc., Oakland, USA |
| | | 11:30 | We.2.A.4 | We.2.B.4 | | | |
| | | | Non-linear Seismic Capacity Evaluation of a Reactor Building B. Radmanovic, Framatome GmbH, Karlstein, Germany | Characteristics of an ultra-high-strength- concrete against impact loading Part 3: Preliminary analyses for a nuclear power plant building against impact | | | |
| | | 11:50 | | loading K. Mori, Mitsubishi Heavy Industries, LTD., Hyogo, Japan | | | |

Room 227

Room 229

Room 231

Room 226

Room 241

We.2.F D11 - CONSTRUCTION PLANNING AND TECHNOLOGIES Z. Shang, K. Han

2. Shang, N. Ha

We.2.F.1

Construction planning for the renewal of the manipulator crane track in the MAW scrapping facility of Kerntechnische Entsorgung Karlsruhe GmbH

C. Nobbe, Energy, Industrial, Special Structures, Frankfurt a.M., Germany

We.2.F.2

Surveys of development needs for licensing model of nuclear installtions in Finland – Main findings and recommendations R. Rintamaa, Clenercon Oy, Espoo, Finland

We.2.F.3

The Combination of Modular and Composite Construction Technology in Generation III NPP Design-Build Z. Shang, SNERDI, Shanghai, China

We.2.F.4

An innovative nonintrusive fastener to streamline Nuclear Power Plant construction H. Abbad el andaloussi, Cold pad, Paris, France

We.2.G D04 - GROUND MOTION CHARACTERISATION I A. Altinyollar,

S. Fukushima

We.2.G.1

Validation with Empirical Data P. Renault, swissnuclear,

Olten, Switzerland

We.2.G.2

We.2.G.3

Energy-Balanced

Ground Motions

Intensity of Earthquake

Y. Liu, Candu Energy Inc.,

A Member of SNC Lavalin,

Empirical Assessment of

Kinematic Soil-Structure

Instrumented Structures

R. Motamed, University of

Nevada Reno, Reno, USA

Interaction Effects for

Vertical Motions in

Kashiwazaki-Kariwa

Mississauga, Canada

Hard Rock Site Response

We.3.H

WORKSHOP: LESSONS LEARNED FROM PRE-PARATION OF NUCLE-AR POWER PLANTS FOR SAFE LONG TERM OPERATION R. Krivanek

Details on Special Sessions, Tutorials and Workshops from page 15

We.2.I D02 - FATIGUE EVALUATION

J. Rudolph, T. Schopf

We.2.I.1

Very High Cycle Fatigue (VHCF) behavior of austenitc stainless steels and their welds for reactor internals at ambient and operating relevant temperature M. Smaga, WKK, Kaiserslautern, Germany

We.2.I.2

RCC-MRx and R5 Creep-Fatigue Initiation Predictions Applied to the EVASION Tests P. James, Jacobs, Warrington, United Kingdom

We.2.I.3

Current State of knowledge and determination of realistic ke factors for the simplified elastic - plastic fatigue analysis S. Fricke, TUEV NORD EnSys GmbH & Co. KG, Hannover, Germany

We.2.I.4

XFEM Analysis of Nonuniform Fatigue Crack Growth Crossing Interface in Cladded Plate M. Nagai, Central Research Institute of Electric Power Industry, Yokosuka-shi, Japan

We.2.I.5

Automated Fatigue Crack Growth tool developed on the basis of ASME Code Case N-809 for the application on real time plant data measured using FAMOSi V. Suryaprakash, Framatome GmbH, Erlangen, GER

We.2.J

SPECIAL SESSION: NONLINEAR SEISMIC SSI ANALYSIS BASED ON BEST RNGINEERING PRACTICES IN US AND JAPAN I D.M. Ghiocel

Details on Special Sessions, Tutorials and Workshops from page 15

We.2.K

D01 - EFFECT OF ELEVATED TEMPERATURE ON CONCRETE tbd

We.2.K.1

Development of a novel damage model for concrete accounting for creep, high temperature, and constraint effects J. Draup, EDF Energy R&D

UK Centre, Manchester, United Kingdom

We.2.K.2

Influence of High Tempe- rature Heating on the Fracture Properties of Concrete Mixed withDifferent Coarse Aggregate K. Matsuzawa, Building Research Institute, Tsukuba, Japan

We.2.K.3

Effects having to the materials and mix concrete when the petrographic and chemical characteristics of the concrete changes in sustained elevated temperatures H. Nishi, FLOWRIC Co., Ltd., 33-1, Kaname, Tsukuba, Ibaraki, Japan

We.2.K.4

Influence of Recycled Aggregate on the Properties of Concrete Exposed to Sustained Elevated Temperatures up to 175°C

K. Matsuzawa, Building Research Institute, Tsukuba, Japan

We.2.G.4

Modeling of Vertical Component Ground Motion for Soil-Structure-Interaction Analyses N. Abrahamson, SC Solutions, Inc., Sunnyvale, USA

| | | Hour | Congress Hall | Room 214 | Room 219 | Room 221 | Room 223 |
|----|--------------------|-------|---|---|---|---|--|
| | Wednesday, 13 July | | We.3.A D05 - SEISMIC RESPONSE OF STRUCTURE II B. Richard, I. Nakamura | We.3.B D04 - IMPACT I R. Borsutzky, A. Altinyollar | We.3.C SPECIAL SESSION: 2019-11-11 LE TEIL EARTHQUAKE: A SPECIAL EARTHQUAKE OCCURRED CLOSE TO A SPECIAL NPP II E. Viallet | We.3.D SPECIAL SESSION: FUKUSHIMA ACCIDENT 10 YEARS LATER WHERE WE ARE NOW? II A. Godoy | We.3.E D05 - SEISMIC FRAGILITY ANALYSIS I. Zentner, O. Furuya |
| | | 13:30 | We.3.A.1 | We.3.B.1 | | | We.3.E.1 |
| | | | Effect of uncertainties in nonlinear model parameters and damping model for nonlinear time history analysis of concrete shear wall structures subjected to high-intensity earthquakes S. Lee, North Carolina | Methods for Simulation of Hard Projectile Impact on Reinforced Concrete Structures L. Heibges, TU Kaiserslautern, Germany | Details on Special Sessions, Tutorials and Workshops from page 15 | Details on Special Sessions, Tutorials and Workshops from page 15 | Bayesian meta-model (MOCABA) of fuel assembly spacer grid deformations for use in seismic fragility analysis M. Pellissetti, Framatome GmbH, Erlangen, Germany |
| | | | State University, Rateign, | We.3.B.2 | | | We.3.E.2 |
| | | 13:50 | We.3.A.2 Investigation on Effects of Fluid and Cyclic Plasticity on Seismic Analysis Results for Reactor Assembly JS. Kim, Sejong University, Seoul, South Korea | Turbine missile impact assessment of safety related nuclear structures M. Tan, Mott MacDonald Ltd, Manchester, United Kingdom | | | Fragility analysis of NSSS M. Pellissetti, Framatome GmbH, Erlangen, Germany |
| | | 14.10 | Wo 2 A 2 | We 2 P 2 | | | We 2 E 2 |
| | | 14.10 | Seismic Analysis of Nuclear Power Plant Structures under Beyond-design Basis Earthquake Excitation I. Moon, KEPCO E&C Company, Gimcheon- si, Gyeongsangbuk-do, South Korea | Applicability of Sub- modelling Technique for Dynamic Analysis of Concrete Structures with Attached Equipment Under Missile Impact G. Sagals, Canadian Nuclear Safety Commission, Ottawa, Canada | | | Seismic Fragility Assessments of APR-1400 Containment Building Using Bayesian Inference Framework M.S. Azad, Department of Civil and Environmental Engineering, Konkuk University, Seoul, South Korea |
| | | 14:30 | We.3.A.4 | We.3.B.4 | | | |
| | | | Large-Scale Shear Critical Reinforced Concrete Deep Beam Experiments Monitored with Full Field of View Digital Image Correlation Equipment D. Palipana, North Carolina State University, Raleigh, USA | Experimental study on local damage to reinforced concrete panels subjected to oblique impact by projectiles Analysis of experimental results Y. Okuda, Japan Atomic Energy Agency, Shirakata 2-4, Tokai-mura, Naka-gun Ibaraki, Japan | | | |
| | | 14:50 | We.3.A.5 | wana-guii, ibarani, Japali | | | |
| | | | Floor response spectra variance of detailed model of auxiliary building Y. Lee, Seoul National University, Seoul, South Korea | | | | |
| 48 | | 15:10 | Break | | | | |

| Room 225 | Room 227 | Room 229 | Room 231 | Room 226 | Room 241 |
|--|---|--|---|--|---|
| | | | | | |
| We.3.F D05 - PIPING SYSTEM I. Nakamura, C. Chatzigogos | We.3.G D04 - GROUND MOTION CHARACTERISATION II S. Fukushima | We.3.H WORKSHOP: LESSONS LEARNED FROM PREPARATION OF NUCLEAR POWER PLANTS FOR SAFE LONG TERM OPERATION R. Krivanek | We.3.I SPECIAL SESSION: STEAM GENERATOR TUBE INTEGRITY I J. Sievers | We.3.J SPECIAL SESSION: NONLINEAR SEISMIC SSI ANALYSIS BASED ON BEST ENGINEERING PRACTICES IN US AND JAPAN II D.M. Ghiocel | We.3.K D03 - STRUCTURAL RESPONCE AND FRS A. Andonov, M. Ries |
| We.3.F.1 | We.3.G.1 | | | | We.3.K.1 |
| Advanced stress analyses in thick tube plates F. Billon, ONET TECHNOLOGIES, Marseille, France | Effective Kappa Values for Nonlinear Site Effects - A Case Study F. Beltran, Belgar Engineering Consultants, Villalba (Madrid), Spain | Details on Special Sessions, Tutorials and Workshops from page 15 | Details on Special Sessions, Tutorials and Workshops from page 15 | Details on Special Sessions, Tutorials and Workshops from page 15 | A Method for Scaling In-Structure Response Spectra A. Asfura, APA Consulting, Potomac, USA |
| We.3.F.2 | We.3.G.2 | | | | We.3.K.2 |
| Numerical Examination on Seismic Response Behavior of a Piping System considering Plastic Deformation of Supports I. Nakamura, National Research Institute for Earth Science and Disaster Resilience, Ibaraki, Japan | Simulation of Surface Fault Displacement Using Multiscale Finite Element Method M. Sawada, Central Research Institute of Electric Power Industry, Abiko, Japan | | | | A comparative study on direct spectra-to- spectra methods for floor response spectra generation J.R. Munigety, Assystem Engineering and Operation Services, Paris, France |
| We.3.F.3 | We.3.G.3 | | | | We.3.K.3 |
| A simple engineering method for simulating flow induced vibration in piping P. Vasilyev, CKTI- Vibroseism, Saint- Petersburg, Russia | Development of Fault Displacement PRA T. Sakai, Central Research Institute of Electric Power Industry, Abiko, Japan | | | | Calculation of acceleration response spectra: Investigation of different models regarding economy and applicability J.S. Bochert, Technische Hochschule, Ingolstadt, Germany |
| We.3.F.4 | We.3.G.4 | | | | We.3.K.4 |
| A framework for characterizing cyclic behavior of piping T joint connections having different boundary conditions A. Gupta, North Carolina State University, Raleigh, USA | On the Generation of Synthetic and Selection of Natural Time Histories for Engineering Practice I. Zentner, Electricite de France, Palaiseau, France | | | | Assessment and use of Probabilistic Floor Response Spectra for Seismic Evaluation of Systems and Components in Nuclear Power Plants Y. Isbiliroglu, Rizzo International, Pittsburgh, USA |

| | Hour | Congress Hall | Room 214 | Room 219 | Room 221 | Room 223 |
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| Wednesday, 13 July | | We.4.A D05 - TESTING & MODELLING OF CONCRETE STRUCTURE II G.T. Proestos | We.4.B D04 - IMPACT II S. Fukushima, R. Borsutzky, | | We.4.D SPECIAL SESSION: FUKUSHIMA ACCIDENT 10 YEARS LATER WHERE WE ARE NOW? III A. Godoy | We.4.E D07 - SEISMIC FRAGILITY ASSESSMENT - METHOD DEVELOPMENTS M. Pellissetti, M. Nakajima |
| _ | 15:40 | We.4.A.1 | We.4.B.1 | | | We.4.E.1 |
| | | Verification of punching damage of Reinforced Concrete slabs under soft impact with RCC-CW punching resistance A. Darraba, EDF DT, Lyon, France | Performance-based design for airplane crash shields of nuclear buildings. Part 1: Deterministic approach by engineering charts PM. Alliard, TRACTEBEL ENGIE, Lyon, France | | Details on Special Sessions, Tutorials and Workshops from page 15 | Relevant intensity measures for seismic damage prediction with artificial neural networks K. Goldschmidt, Technische Universität Kaiserslautern, Germany |
| | 16:00 | We.4.A.2 | We.4.B.2 | | | We.4.E.2 |
| | | A Study on Deferent Design Options for Aircraft Impact Resistant RC Walls A. Andonov, Mott MacDonalds, Sofia, Bulgaria | Performance-based design for airplane crash shields of nuclear buildings. Part 2: Probabilistic fragility assessment PM. Alliard, TRACTEBEL ENGIE, Lyon, France | | | A COMPUTATIONAL APPROACH TO STREAMLINE DETERMINISTIC SAFETY ANALYSIS AND FRAGILITY ANALYSIS OF STRUCTURES, SYSTEMS AND COMPONENTS (SSCs) FOR A NUCLER POWER PLANT (NPP) S.C.R. Korlapati, Rizzo International, Pittsburgh, USA |
| | 16:20 | We.4.A.3 | We.4.B.3 | | | We.4.E.3 |
| 1 | | Vertical Load Capacity and Collapse Behavior of Reinforced Concrete Members with Shear Failure Y. Miyagawa, Central Research Institute of Electric Power Industry, Abiko-shi, Japan | Methods for Simulation of Hard Projectile Impact on multiple RC Structures I. Münch, University of Kaiserslautern, Germany | | | Improved Fragility Update Methods to Address New Seismic Hazard Estimates G. Hardy, Simpson Gumpertz & Heger, Newport Beach, USA |
| | 16:40 | We.4.A.4 | | | | We.4.E.4 |
| | | Ductility coefficient assessment for RC walls and slabs submitted to experimental tests M. Huguet, EGIS, Montreuil, France | | | | A Modified Hybrid Method for Developing Seismic Fragilities A. Anup, Simpson Gumpertz & Heger, Inc., Newport Beach, USA |
| | 17:00 | We.4.A.5 | | | | We.4.E.5 |
| | | Study on application of non-linear analysis to out-of-plane stress of foundation slab using solid model S. Ishikawa, Chubu Electric Power Co.,Inc., Nagoya, Japan | | | | Development and Application of Earthquake-type Dependent Fragility Curves S. Fukushima, RKK Consulting Co., Ltd., Tokyo, Japan |

| Room 225 | Room 227 | Room 229 | Room 231 | Room 226 | Room 241 |
|--|---|----------|--|----------|---|
| We.4.F D08 - INSPECTION AND MONITORING METHODS R. Krivanek, C. Heil | We.4.G D04 - EXTERNAL HAZARDS AND DESIGNING FOR EXTREME HAZARDS AND ACCIDENTS A. Altinyollar | | We.4.I SPECIAL SESSION: STEAM GENERATOR TUBE INTEGRITY II J. Sievers | | We.4.K D05 - DYNAMIC RESPONSE OF REACTOR BUILDING N. Moussallam, I. Nakamura |
| We.4.F.1 | We.4.G.1 | | | | We.4.K.1 |
| Condition monitoring system for cyclically loaded components using electromagnetic acoustic transducers - EMUS-4-STRESS M. Weikert-Müller, Fraunhofer IZFP, Saarbrücken, Germany | Feasibility Assessment of Ultra-High-Performance- Concrete Application to NPPs G. Nagashima, Mitsubishi Heavy Industries, Ltd., Kobe, Japan | | Details on Special Sessions, Tutorials and Workshops from page 15 | | Concrete Containment Structure Shell Strip Experiments and Single Element Modelling of Shell Elements Subjected Shear G. Proestos, North Carolina State University, Raleigh, USA |
| We.4.F.2 | We.4.G.2 | | | | We.4.K.2 |
| Development of technologies for monitoring the operating condition of guidance devices of internal parts of VVER 440 reactor pressure vessels J. Brom, Research Centre Rez, Husinec-Rez, Czech Republic | Validation of Earthquake-Induced Rock Collapse Analysis by Simplified DEM Model for Traveling Distance Evaluation and Sedimentation State Evaluation H. Nakase, Tokyo Electric Power Services co.ltd., Tokyo, Japan | | | | Increasing the level of resistance to seismicity and extreme climatic influences Nuclear Power Plant Dukovany, Czech Republic M. Gabriel, UJV Rez, div. Energoprojekt Praha, Prague, Czech Republic |
| We.4.F.3 | We.4.G.3 | | | | |
| Condition Monitoring of Nuclear Equipment- Piping using Deep Learning H.K. Sandhu, North Carolina State University, Raleigh, USA | Hazard and structural response consistent SSI assessment P. Renault, swissnuclear, Olten, Switzerland | | | | |
| | We.4.G.4 | | | | |
| | Proposal of Coastel Levee for NPSs as Stable and No-collaps Design Against Unexpected Maximum Sizes of Tsunami D. Kaneko, Remote Sensing Environmental Monitor, Inc., Yokohama, Japan | | | | |
| | We.4.G.5 | | | | |
| | Methodology on Progressive Climate Change-related Hazard Evaluation of Tsunamis in the Sea of Japan C. Yavuz, Dumlupinar | | | | |

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| 2 | 08.20 | | | | | |
| ay, 14 Ju | 10:00 | PLENARY SESSION II – Break | H. Sadegh-Azar (Details P. 4) | | | |
| Thursda | | Th.2.A D05 - SEISMIC RESPONSE OF EQUIPMENT I T. Nitheanandan, D. Combescure | Th.2.B D08 - NON- DESTRUCTIVE EVALUATION I J. Tcherner | Th.2.C SPECIAL SESSION: IMPACT TESTS AND NUMERICAL ANALYSES I J. Sievers | Th.2.D SPECIAL SESSION: SHIBATA MEMORIAL- ACHIEVEMENT OF PROF. SHIBATA IN NUCLEAR SEISMIC ENGINEERING AND CHALLENGES FOR THE COMING 50 | Th.2.E D07 - SEISMIC FRAGILITY ASSESSMENT BASED ON EXPERIENCE AND/ OR TESTING M. Kim |
| | 10:35 | Th.2.A.1 | Th.2.B.1 | | TECHNOLOGY AGAINST | Th.2.E.1 |
| | | Design of masonry walls for the out-of- plane behavior under earthquake load L. Helm, Institute of Structural Analysis and Dynamics, University of Kaiserslautern, Germany | Non-Destructive Examination of Steam Generator Tubes near the Top of Tube Sheet Area A. Erhard, Erhard NDE Consulting, Berlin, Germany | Details on Special Sessions, Tutorials and Workshops from page 15 | EXTERNAL HAZARDS I I. Nakamura Details on Special Sessions, Tutorials and Workshops from page 15 | The Anchorage, Alaska M7.1 Earthquake of November 30, 2018: Findings from a Post- Earthquake Investigation on Selected Power and Industrial Facilities R. Cappa, SG & Heger, Inc., Newport Beach, USA |
| | 10:55 | Th.2.A.2 | Th.2.B.2 | | | Th.2.E.2 |
| | | Generating motion for seismic qualification of components on semi-rigid supports. Application to the ITER Leak Detection System D. Combescure, Fusion for Energy (F4E), Barcelona, Spain | Magnetic methods for evaluation of bcc and bct iron fractions below 0.1% in austenite: surface mapping and full volume evaluation V. Lyamkin, Saarland University, LZfPQ, Saarbrücken, Germany | | | Pilot Study Incorporating Shake Table Tests and Earthquake Experience Data to Develop Equipment Capacities for Use in Fragility Calculations R. Cappa, Simpson Gumpertz & Heger, Inc., Newport Beach, USA |
| | 11:15 | Th.2.A.3 | Th.2.B.3 | | | Th.2.E.3 |
| | | Fundamental study on post-buckling behavior of reactor vessels under excessive seismic load S. Hasegawa, The University of Tokyo, Japan | Microstructure-based Lifetime Assessment of Austenitic Steel AISI 347 Exposed to Corrosion and Fatigue R. Acosta, LZfPQ, Saarland University, Saarbrücken, Germany | | | Summary of EPRI 3002015993: Loss of Offsite Power Seismic Fragility Guidance R. Cappa, Simpson Gumpertz & Heger, Inc., Newport Beach, USA |
| | 11:35 | Th.2.A.4 | Th.2.B.4 | | | Th.2.E.4 |
| | | Coupled Nonlinear Analysis for Evaluation of Seismic Demands on Electrical Equipment subjected to HighFreq- uency Ground Motions S. Singh, Jaypee Univer- sity of Information Tech- nology, Waknaghat, India | Reliability Considerations for Ultrasonic Testing at Crack Fields in Large Forgings A. Juengert, Materials Testing Institute (MPA) University of Stuttgart, Germany | | | Vibration Test and Fatigue Test for Failure Probability Evaluation Method with Integrated Energy T. Kinoshita, Toyama Prefectural University, Toyama, Japan |
| | 11:55 | Th.2.A.5 | Th.2.B.5 | | | Th.2.E.5 |
| | | On the applicability of new seismic criteria for nuclear piping A. Berkovsky, CKTI- Vibroseism, Saint Petersburg, Russia | Artificial Intelligence for quality control in manufacturing applied to materials defects detection in the ITER Vacuum Vessel welding operations M. Ortiz de Zúñiga López- Chicheri, UNED, Barcelona, ES | | | A Comparative Study of Methodologies for Seismic Performance Evaluation with Nonlinear Facility Response M. Talaat, SG and Heger Inc., Oakland, USA |

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Room 227

Room 229

Room 231

Room 226

Th.2.F **D01 - MATERIAL** PROPERTIES MODELLING AND SIMULATION I S. Weihe

Th.2.F.1

Concrete Drying Shrinkage Simulations in ABAQUS C. Jones, Kansas State University, Manhattan, KS. USA

Th.2.F.2

The potential for use of mini CT specimens in obtaining the fracture toughness characteristics of 15Kh2NMFA steel A Bandura NRC Kurchatov Institute", Moscow, Russia

Th.2.F.3

Additive manufacturing fabrication methods and their effects of fatigue properties of advanced alloys in structural components

J. Xi, Imperial College, Exhibition Road, UK

Th.2.F.4

Fracture characteristics of concrete for different aggregate sizes using acoustic emission

S. Dubey, Indian Institute of Technology, Roorkee, India

Th.2.G SPECIAL SESSION: CHALLENGES AND **RECENT ADVANCES** FROM EUROPEAN **RESEARCH PROJECTS I** I. Zentner

Details on Special

Sessions, Tutorials and

Workshops from page 15

D02 - FRACTURE MECHANICS ASSESSMENT **METHODS AND** PROBABILISTIC FRACTURE ASSESSMENT

X. Duan, H. Hein

Th.2.H.1

Th.2.H

Consideration of special effects for the application of an optimized fracture mechanics approach for the RPV safety assessment (CAMERA) H. Hein, Framatome GmbH, Erlangen, Germany

Th.2.H.2

An experimental and numerical approach of the failure behavior of crack fields under different temperatures T. Schopf, MPA University of Stuttgart, Germany

Th.2.H.3

Application of JASPER **Probabilistic Analysis** to Strategic Planning for Managing SCC of J-Groove Penetrations M. Burkardt, Dominion Engineering, Inc., Reston, USA

Th.2.H.4

Assessment of International **Probabilistic Fracture** Mechanics Code Models and Capabilities for **Piping Applications** X. Duan, Candu Energy Inc, Mississauga, Ontario, Canada

Th.3.1 SPECIAL SESSION: CONCEPTS AND METHODS FOR **COOLING TOWER**

Th.2...J **TUTORIAL:**

NONLINEAR, **INELASTIC ANALYSIS OF EARTHQUAKE** SOIL STRUCTURE INTERACTION FOR NUCLEAR **INSTALLATIONS I**

B. Jeremic

Details on Special Sessions, Tutorials and Workshops from page 15 Th.2.K **D05 - SEISMIC** RESPONSE **EVALUATION** N Moussallam

Th.2.K.1

Developing Site-Specific **Coherency Function in** Kori Nuclear Power Plant Site of South Korea J. Kim, Korea Hydro & Nuclear Power, Gyeongju, South Korea

Th.2.K.2

A study on the improvement of accuracy of threedimensional seismic evaluation analysis method for nuclear buildings using a large-scale observation system A. Nishida, Japan Atomic Energy Agency, Ibaraki,

Japan Th.2.K.3

Extended NUREG-based method ductility coefficient assessment of NPP buildings M. Huguet, EGIS, Montreuil, France

SMiRT 26 | Berlin/Potsdam | Germany 53

M. Ries **Details on Special**

Sessions, Tutorials and Workshops from page 15

BLASTING II

Thursday, 14 July

| Hour | Congress Hall | Room 214 | Room 219 | Room 221 | Room 223 |
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| | Th.3.A D05 - SEISMIC RESPONSE OF EQUIPMENT II D. Combescure, T. Nitheanandan | Th.3.B D08 - NON- DESTRUCTIVE EVALUATION II J. Tcherner | Th.3.C SPECIAL SESSION: IMPACT TESTS AND NUMERICAL ANALYSES II J. Sievers | Th.3.D SPECIAL SESSION: SHIBATA MEMORIAL- ACHIEVEMENT OF PROF. SHIBATA IN NUCLEAR SEISMIC ENGINEERING AND CHALLENGES FOR THE COMING 50 | Th.3.E D04 - PSHA APPLICATIONS R. Borsutzky, A. Altinyollar |
| 13:15 | Th.3.A.1 | Th.3.B.1 | | YEARS IN NUCLEAR | Th.3.E.1 |
| | Development of Fuel Debris Canister -Structural Verification Test using a Full-Size Mock-Up Canister- K. Hirosaka, IRID/ Hitachi- GE Nuclear Energy Ltd., Hitachi, Japan | Experiences of the use of NDT techniques to assess compressive strength of thick reinforced concrete structures F. Al-Neshawy, Aalto University, Espoo, Finland | Sessions, Tutorials and Workshops from page 15 EXTERNAL HAZARDS II I. Nakamura Details on Special Sessions, Tutorials and Workshops from page 15 | A Report of Latest Research Progress on the Beyond Design Basis Design Considerations for GEN III & IV Nuclear Power Plant Z. Shang, SNERDI, Shanghai, China | |
| 13:35 | Th.3.A.2 | Th.3.B.2 | | | Th.3.E.2 |
| | Excitation Experiment and Fluid-structure Interaction Analysis on Scale-Model Cylindrical Tank Containing Water K. Susukida, Hitachi-GE Nuclear Energy, Ltd., 2-2, Omika-cho 5-chome, Hitachi-shi, Ibaraki-ken, Japan | Non-destructive investigation of concrete structures in nuclear facilities E. Niederleithinger, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany | | | Implementation of SSHAC Level 3 PSHA Project for the Ikata NPP, Japan T. Sakai, Central Research Institute of Electric Power Industry, Abiko, Japan |
| 13:55 | Th.3.A.3 | Th.3.B.3 | | | Th.3.E.3 |
| | Local Failure Analyses of 1/4 Scaled PCCV under a Typical Severe Accident Condition WM. Cho, KyungHee University, Yongin-Si, South Korea | Long-term measurement of concrete strains in prestressed containments: durability, accuracy and uncertainty of measurements carried out with embedded vibrating wire strain gauges (VWSG). M. Galan, EDF DTG, Lyon, France | | | A methodological approach to update Ground Motion Models using Bayesian Inference A. Gupta, North Carolina State University, Raleigh, USA |
| 14:15 | Th.3.A.4 | Th.3.B.4 | | | Th.3.E.4 |
| | Reconciliation of Experimental and Analysis Results for Electrical Cabinets in Nuclear Power Plant A. Gupta, CNEFS, NC State University, Raleigh, USA | Non-Contact Detection of the Adhesive Properties of Ceramic Coatings for High Temperature Applications Using Infrared Thermography J. Manara, ZAE Bayern, Würzburg, Germany | | | Enhancement of Sammons Map Representation of Fault Rupture Model for Probabilistic Seismic Hazard Analysis M. Nakajima, Central Research Institute of Electric Power Industry, Abilo obi |
| 14:35 | | Th.3.B.5 | | | лыко-ып, јарап |
| | | Level 3 Fitness for Service Assessment of an NPS 3 Buried Pipe with Dents and Local Wall Thinning K. Mostafa, Next Structure integrity, Burlington, Canada | | | |

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|--|--|---|---|---|---|
| Th.3.F D01 - MATERIAL PROPERTIES MODELLING AND SIMULATION I S. Weihe Th.3.F.1 Computational Prediction of Delamination in PCCVs C. Jones, Kansas State University, Manhattan, Kansas, USA | Th.3.G SPECIAL SESSION: CHALLENGES AND RECENT ADVANCES FROM EUROPEAN RESEARCH PROJECTS II I. Zentner Details on Special Sessions, Tutorials and Workshops from page 15 | Th.3.H D06 - ADVANCING STANDARDS FOR ANALYSIS AND DESIGN R. Gersinska, T. AL-Shawaf Th.3.H.1 New Development of an ISO Standard Series for the Design of Nuclear Power Plants against Seismic Events R. Gersinska, KTA-GS, BASE – Federal Office for the Safety of Nuclear Waste Management, Salzgitter, Germany | Th.3.I SPECIAL SESSION: CONCEPTS AND METHODS FOR COOLING TOWER BLASTING II M. Ries Details on Special Sessions, Tutorials and Workshops from page 15 | Th.3.J TUTORIAL: NONLINEAR, INELASTIC ANALYSIS OF EARTHQUAKE SOIL STRUCTURE INTERACTION FOR NUCLEAR INSTALLATIONS II B. Jeremic Details on Special Sessions, Tutorials and Workshops from page 15 | Th.3.K SPECIAL SESSION: OVERVIEW OF THE WORK DONE IN THE OECD SOCRAT BENCHMARK DEDICATED TO THE BEYOND DESIGN SEISMIC BEHAVIOR ASSESSMENT OF CRANE BRIDGES I I. Bitar Details on Special Sessions, Tutorials and Workshops from page 15 |
| Th.3.F.2 Testing and Analysis of Helical Spring Components to Evaluate the Effect of Exposure to Reactor Conditions on Material Properties A. Gagnon, SNC-Lavalin Nuclear (Candu Energy Inc.), Mississauga, Canada Th.3.F.3 Study of the HAZ metal of the RPV welded joints R. Poliakova, NRC «Kurchatov Institute», | | Th.3.H.2 A Canadian Regulatory Perspective On The Use Of Indirect Methods In Seismic Evaluation And Their Evolution S. Eom, Canadian Nuclear Safety Commission (CNSC), Ottawa, Canada Th.3.H.3 Revision of IAEA Safety Guide on Seismic Safety Evaluation for Nuclear Facilities M. Talaat, Simpson Gumpertz & Heger Inc., Oakland, USA | | | |
| Moscow, Russia Th.3.F.4 Material Models for the Assessment of Pressure Barrier Failure in High-Pressure Accident Scenarios C. Bläsius, GRS gGmbH, Cologne, Germany | | | | | |

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| Thursday, 14 July | | Th.4.A D09 - DECOMMISSIONING S. McDuffie, P. Ford | Th.4.B D08 - AGEING MANAGEMENT C. Heil, R. Krivanek | Th.4.C SPECIAL SESSION: IMPACT TESTS AND NUMERICAL ANALYSES III J. Sievers | Th.4.D D05 - VERCORS EXPERIENCE PREDICTING CONTAINMENT AGEING FROM THE MOCKUP TO THE DIGITAL TWIN G. Hervé-Secourgeon, G. Nahas | Th.4.E D07 - FAULT DISPLACEMENT PRA M. Nakajima, YY. Bayraktarli |
| | 15:15 | Th.4.A.1 | Th.4.B.1 | | Th.4.D.1 | Th.4.E.1 |
| | | How to minimize the effort of structural engeneering of deconatmination tasks A. Bauer, Wölfel Engineering GmbH + Co. KG, Höchberg, Germany | Long term operation of nuclear power plants SALTO missions observations and trends R. Krivanek, NRG, Petten, Netherlands | Details on Special Sessions, Tutorials and Workshops from page 15 | Numerical Study on Prestressed concrete containment building: Creep, ageing and leakage. Application to VERCORS mockup T. Meng, CEA, Paris, France | Probabilistic fault displacement hazard analysis method for capable faults in case of scarce empirical evidence and diffuse seismotectonic environment T.J. Katona, University of Pécs, Hungary |
| | 15:35 | Th.4.A.2 | Th.4.B.2 | | Th.4.D.2 | Th.4.E.2 |
| | | Strategies for dismantling of the safety containment M. Hildmann, Wölfel Engineering GmbH + Co. KG, Höchberg, Germany | Factors Limiting Lifetime of Nuclear Power Plants with Pressurized-water Reactors R. Krivanek, NRG, Petten, Netherlands | | Digital Twins factory for long-term operation management of Concrete Containment Building in Nuclear Power Plants: from VeRCoRs to Civaux 1 G. El Tabbal, EDF, Saclay, France | Failure Mechanism and Fragility Analysis of RC Box Culvert Subjected to Fault Rupture Displacement T. Sasaki, Obayashi Corp., Kiyose, Tokyo, Japan |
| | 15:55 | Th.4.A.3 | Th.4.B.3 | | | |
| | 17-00 | Blast demolition of power plant structures at Lünen power station C. Rapps, Wölfel Engineering GmbH + Co. KG, Höchberg, Germany | Life Assessment and Aging Management of Cernavoda Unit 1 and 2 Reactor Buildings J. Tcherner, SNC-Lavalin, Mississauga, Canada | | | |
| | 17:00 – 24:00 | Conference Dinner at TIPI Bus shuttle from Kongres | i in Berlin shotel Potsdam | | | |

| Room 225 | Room 227 | Room 229 | Room 231 | Room 226 | Room 241 |
|----------|---|--|---|---|---|
| | Th.4.G D05 - STEEL PLATE COMPOSITE CONSTRUCTION: PAST PRESENT AND FUTURE OPPORTUNITIES / SHEAR WALLS T. Nitheanandan, O. Furuya | Th.4.H D06 - CODES AND LICENSING ISSUES I Y. Mihara, T. AL-Shawaf | Th.4.I D02 - LEAK BEFORE BREAK I J. Wallace, S. Blasset | Th.4.J WORKSHOP: NONLINEAR SSI ANALYSIS B. Jeremic | Th.4.K SPECIAL SESSION: OVERVIEW OF THE WORK DONE IN THE OECD SOCRAT BENCHMARK DEDICATED TO THE BEYOND DESIGN SEISMIC BEHAVIOR ASSESSMENT OF CRANE BRIDGES II I. Bitar |
| | Th.4.G.1 | Th.4.H.1 | Th.4.I.1 | | |
| | Parametric Study of Contact Conditions for SC Walls Subject to Out-of-Plane Dynamic Loading E. Kjolsing, Karagozian & Case, Glendale, USA | Modernizing the Standard Review Plan S. Samaddar, United States Nuclear Regulatory Commission, Rockville, USA | International Leak Rate Benchmark: Phase One Results of the OECD/ NEA/CSNI Activity F. Silber, MPA University of Stuttgart, Germany | Details on Special Sessions, Tutorials and Workshops from page 15 | Details on Special Sessions, Tutorials and Workshops from page 15 |
| | Th.4.G.2 | Th.4.H.2 | Th.4.I.2 | | |
| | Preliminary study on multi-axial hybrid simulation of a shear wall in the auxiliary building of APR1400-type NPP subjected to lateral force OS. Kwon, University of Toronto, Canada | Non linear analyses in the RCC-MRx code C. Petesch, CEA, Saclay, France | CSNI Leak-Before-Break Benchmark - Summary of Phase 1 J. Wallace, U.S. Nuclear Regulatory Commission, Washington, DC, USA | | |
| | | | Th.4.I.3 | | |
| | | | Leak Before Break Determination: Sensitivity of Analyst Input Parameter Choices J. Wallace, U.S. NRC, Washington, DC, USA | | |

Friday, 15 July

| Hour | Congress Hall | Room 214 | Room 219 | Room 221 | Room 223 |
|-------|---|--|--|----------|----------|
| | Fr.1.A SPECIAL SESSION: PERFORMANCE ASSESSMENT OF SPENT FUEL IN STORAGE AND TRANSPORTATION YY. Liu | Fr.1.B SPECIAL SESSION: CAPTURING DATA AND ASSESSING RESULTS OF IN-SERVICE INSPECTIONS OF NUCLEAR STRUCTURES J. Tcherner | Fr.1.C D05 - SEISMIC ISOLATION tbd | | |
| 09:00 | | | Fr.1.C.1 | | |
| | Details on Special Sessions, Tutorials and Workshops from page 15 | Details on Special Sessions, Tutorials and Workshops from page 15 | 3-d support systems for the seismic control of NPP structures D. Siepe, GERB Schwingungsisolierungen GmbH & Co.KG, Essen, Germany | | |
| 9:20 | | | Fr.1.C.2 | | |
| | | | Development and Expectation of Seismic Isolation of Nuclear Power Plant Structure N. Hou, Institute of Nuclear and New Energy Technology, Tsinghua University, Beijing, China | | |
| 9:40 | | | Fr.1.C.3 | | |
| | | | Experimental Study on the Small Laminated Rubber Bearings for Nuclear Component Seismic Isolation S. Ma, Korea National University of Transportation, Chungju, South Korea | | |
| 0:00 | | | Fr.1.C.4 | | |
| | | | Regulatory Guide Development for Seismic Base Isolation for Advanced Reactors N. Chokshi, Consultant, Silver Spring, USA | | |
| 10:00 | | | Fr.1.C.5 | | |
| | | | A Study on Seismic SSI Analysis of A Base-Isolated Storage Structure Founded on Firm Soil V. Kostarev, CVS, St. Petersburg, Russia | | |
| 10:40 | Break | | | | |

11:00 Closing

| Room 225 | Room 227 | Room 229 | Room 231 |
|----------|----------|----------|----------|
| | | | |

Room 241

Fr.1.H D06 - CODES AND

LICENSING ISSUES II R. Gersinska Fr.1.I D02 - LEAK BEFORE BREAK II J. Wallace, S. Blasset

Fr.1.H.1

UKs Regulatory Safety Assessment of Nuclear Plants Highest Reliability Components A Multi-Discipline View A. Alexiou, Office for Nuclear Regulation, Bootle, United Kingdom ATLAS+ Round Robin Studies B. Daniels, Jacobs, Warrington, United Kingdom

Fr.1.H.2

2022 RCC-MRx Code edition: context, overview, on-going developments T. Lebarbé, CEA, Saclay, France

Fr.1.I.2

Fr.1.I.3

Fr.1.1.1

Leak-before-Break (LBB) and other concepts of Break-Preclusion (BP) S. Blasset, Framatome, Erlangen, Germany

Fr.1.H.3

AFCEN RCC-CW Code: 40 years of nuclear industrial experience in the Design and Construction of Safety Class Civil Structures A. Courtois, EDF, Lyon, France Approach to the justification of the safety concept «Leak before break» for the flange connections of reactor unit VVER A. Alekseev, NRC

"Kurchatov Institute", Moscow, Russia

Fr.1.I.4

Leak-Before-Break Developments Under ATLAS+ Horizon 2020 Project

B. Daniels, Jacobs, Warrington, United Kingdom

POSTERS

| D01 - F | Properties and Modelling of Nuclear Concrete |
|---------|---|
| P1 | Investigation of Viscoelastic Properties of Irradiated Cement Paste Using Statistical Creep Nanoindentation |
| | P. Patil, Kansas State University, Manhattan, Kansas, USA |
| D06 - F | atigue and Thermal Design |
| P2 | Design Curves for the Reactor Enclosure System of the Molten Chloride Reactor Experiment |
| | R. Christensen, TerraPower, LLC, Bellevue, USA |
| D01 - N | Aechanics of Materials |
| P3 | Annealing Studies on FeCrAl Fuel Cladding |
| | J. Eapen, North Carolina State University, Raleigh, USA |
| P4 | Reconsideration of Wall-Base Mat Shear for PCCVs to Estimate Limit States |
| | C. Jones, Department of Civil Engineering, Kansas State University, Manhattan, USA |
| P5 | Creep Response in Ultra High Performance Concrete |
| | R. Rogowski, Kansas State University, Manhattan, Kansas, USA |
| P6 | The fracture energy of fibre reinforced concrete under high strain rates |
| | V. Zohrabyan, Institute of Concrete Structures, UniBW, Munich, Germany |
| D04 - E | external, Internal Hazards and Load Characterisation |
| P7 | Study on the Strong Ground Motion Prediction Method by HERP, Japan, to 2010 Mw8.8 Maule Earthquake, Chile |
| | S. Dorjpalam, Ohsaki Research Institute, Inc., Tokyo, Japan |
| P8 | Impact Testing in VTT |
| | A. Fedoroff, VTT Technical Research Centre of Finland Ltd, Espoo, Finland |
| D05 - N | Andelling, Testing & Response Analysis of Structures, Systems and Components |
| P9 | Analysis of dynamic characteristics of reactor vessel including adjacent equipment |
| | Eh. Lee, Yonsei University, Seoul, South Korea |
| P10 | Effect of Shell Element Mesh Size on Finite Element Results |
| | T. Naumov, Mott MacDonald, Sofia, Bulgaria |
| P11 | A study on Methodologies of time-history analysis of the nuclear power plant piping for the multi-support excitation |
| | C. Ra, Yonsei. Univ., Seoul, South Korea |
| D07 - S | iafety, Reliability, Risk and Safety Margins |
| P12 | Response Reduction Effect of Seismic Isolation System Considering Uncertainty Parameters for Seismic Margin Assessmen |
| | H. Yamano, Japan Atomic Energy Agency, Oarai, Japan |