

Technical Program

Welcome Speech

November 3, 2014
Rokko Hall, Centennial Hall

9:20-9:30 | Fumio KOJIMA (Kobe University)

Plenary Lectures

November 2
Meeting Room (2F), Takikawa Memorial Hall
Chair: F. Kojima (Kobe University)

P-0 16:30-17:10	Utilization of Robot & Remote-Controlled Machine Technology for Accident Response and Decommissioning of Fukushima Daiichi Nuclear Power Plant Hajime ASAMA (The University of Tokyo)
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Opening Plenary Lecture

November 3
Rokko Hall, Centennial Hall
Chair: F. Kojima (Kobe University)

P-1 9:30-10:10	Lessons Learned from the Fukushima Daiichi Accident to Establish Resilience Technology for Nuclear Power Plants Based on the Defense in Depth Philosophy Tadashi NARABAYASHI (President of Japan Society of Maintenology and Hokkaido University)
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November 4
Rokko Hall, Centennial Hall
Chair: H. Miyano (Hosei University)

P-2 9:30-10:10	Update on Implementation of Severe Accident Countermeasures in the US Robert FOURNIER, Nirmal JAIN, Daniel FLAHIVE, Ryan VANSTON, Francis FERRARACIO (Westinghouse Electric Co., LLC)
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November 5
Rokko Hall, Centennial Hall
Chair: M. Takizawa (Mitsubishi Research Institute, Inc.)

P-3 9:30-10:10	TBA
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Panel Discussion

November 5

Rokko Hall, Centennial Hall

Chair: H. MIYANO (Hosei University)

T. ITOI (The University of Tokyo)

P-4

15:10-17:50

Coordinator:

Panelists:

Resilience Engineering: New Discipline for Enhancement of Nuclear Safety

Naoto SEKIMURA (The University of Tokyo), Hiroshi MIYANO (Hosei University), Tatsuya ITOI (The University of Tokyo)

Douglas CHAPIN (MPR Associates, Inc.)

Akira YAMAGUCHI (Osaka University)

Ryan VANSTON (Westinghouse Electric Co., LLC)

Kazuo FURUTA (The University of Tokyo)

et al.

Invited Lectures

November 3

Rokko Hall, Centennial Hall

Chair: T. Takagi (Tohoku University)

I-1 10:20-11:00	Determination of the Probability of Failure (POF) in a Sensitivity Study Based on a Probabilistic FAD-Approach and POD-Curves Using PAUT Gerd DOBMANN, Jochen H. KURZ, and Sergey PUDOVNIKOV (Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren)
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Chair: T. Aoki (Tohoku University)

I-2 13:50-14:30	Status of Fukushima Decommissioning and Decontamination Project Douglas CHAPIN (MPR Associates, Inc.)
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November 3

Meeting Room (2F), Takikawa Memorial Hall

Chair: K. Demachi (The University of Tokyo)

I-3 10:20-11:00	Perspective of Maintenance and Safety from Defense-in-Depth Conception Akira YAMAGUCHI (Osaka University)
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Chair: H. Yamashita (Utsue Valve Service Co., Ltd.)

I-4 13:50-14:30	Post-Fukushima Safety Enhancements of Taiwan Nuclear Power Plants Fuh- Feng TSAI (Taiwan Cogeneration Corporation)
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November 4

Rokko Hall, Centennial Hall

Chair: T. Aoki (Tohoku University)

I-5 10:20-11:00	Activities towards the Decommissioning of Fukushima-Daiichi Norimichi YAMASHITA (The Tokyo Electric Power Co., Inc.)
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Chair: T. Koyama (Central Research Institute of Electric Power Industry)

I-6 13:50-14:30	IRID's Technology Development for Decommissioning of Fukushima Daiichi NPS Shunichi SUZUKI (International Research Institute for Nuclear Decommissioning)
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November 4

Meeting Room (2F), Takikawa Memorial Hall

Chair: M. Mochizuki (Osaka University)

I-7 10:20-11:00	Resilience Index for System Safety Assessment for Nuclear Power Plant Kazuyuki DEMACHI (The University of Tokyo), Hiroshi MIYANO (Hosei University), Shigeru ARAI (Atomic Energy Society of Japan,), Masaaki SUZUKI, Tatsuya ITOI (The University of Tokyo), Atsunori YAMAGUCHI (Japan Society of Maintenance), Kenta MURAKAMI (The University of Tokyo), and Masaaki MATSUMOTO (Mitsubishi Research Institute, Inc.)
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Chair: M. Takizawa (Mitsubishi Research Institute, Inc.)

I-8 13:50-14:30	Performance of Concrete Barriers for Low and Medium Radioactive Waste Storage in El Cabril-Spain Carmen ANDRADE, Nuria REBOLLEDO (Instituto de Ciencias de la Construcción), and Manuel ORDOÑEZ (ENRESA)
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November 5

Rokko Hall, Centennial Hall

Chair: F. Kojima (Kobe University)

I-9 10:20-11:00	Perspectives on the Statistical Analysis of Inspection Data Jeremy KNOPP (Air Force Research Laboratory), Thomas BOEHNLEIN (University of Dayton Research Institute), Frank CIARALLO, and Ramana GRANDHI (Wright State University)
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Chair: A. Yamaguchi (Osaka University)

I-10 14:10-14:50	Resilience Engineering: A New Approach for Systems Safety Kazuo FURUTA (The University of Tokyo)
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November 5

Meeting Room (2F), Takikawa Memorial Hall

Chair: M. Kameyama (Japan Nuclear Safety Institute)

I-11 10:20-11:00	Maintenance Technology Basis Activities by Japan Nuclear Safety Institute Yasushi HORIMIZU (Japan Nuclear Safety Institute)
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Oral Sessions (November 3, Monday)

M1: Structural Evaluation

November 3

Rokko Hall, Centennial Hall

Chair: S. Takaya (Japan Atomic Energy Agency)
H. Matsuzawa (Mitsubishi Heavy Industries, Ltd.)

M1-1 11:10-11:30	Stress Intensity Factor Evaluation for Nozzle Corner Crack of Reactor Pressure Vessel Under Pressurized Thermal Shock Event Yuji NAKASONE, Takamitsu AIDA, and Shun MIYAZAKI (Tokyo University of Science)
M1-2 11:30-11:50	Fracture Toughness Curves of Japanese Reactor Pressure Vessel Steels Considering Neutron Irradiation Embrittlement Kentaro YOSHIMOTO, Takatoshi HIROTA, and Hiroyuki SAKAMOTO (Mitsubishi Heavy Industries, Ltd.)
M1-3 11:50-12:10	Stress Intensity Factor Evaluation for Nozzle Corner Crack of Reactor Pressure Vessel Under Pressurized Thermal Shock Event Takatoshi HIROTA, Hiroyuki SAKAMOTO, and Naoki OGAWA (Mitsubishi Heavy Industries, Ltd.)
M1-4 12:10-12:30	Benchmark Evaluation of Structural Reliability Evaluation Codes for Fast Reactors Shigeru TAKAYA (Japan Atomic Energy Agency), Hideo MACHIDA (TEPCO Systems Co.), Yoshio KAMISHIMA (Mitsubishi FBR Systems Inc.), and Tai ASAYAMA (Japan Atomic Energy Agency)

M2: Risk Evaluation

November 3

Meeting Room (2F), Takikawa Memorial Hall

Chair: K. Demachi (The University of Tokyo)
T. Takata (Osaka University)

Organizer: K. Demachi (The University of Tokyo)

M2-1 11:10-11:30	Maintenance Index for System Safety Assessment for Aging Nuclear Power Plant Kazuyuki DEMACHI (The University of Tokyo), Hiroshi MIYANO (Hosei University), Shigeru ARAI (Atomic Energy Society of Japan), Masaaki SUZUKI, Tatsuya ITOI (The University of Tokyo), Atsunori YAMAGUCHI (Japan Society of Maintenance), Kenta MURAKAMI (The University of Tokyo), and Masaaki MATSUMOTO (Mitsubishi Research Institute, Inc.)
M2-2 11:30-11:50	Discussions on Cable System Safety Naoki SUGIYAMA (Mitsubishi Research Institute, Inc)
M2-3 11:50-12:10	Development of Overall Safety Evaluation Method for Operating Nuclear Power Plant Considering Aging Effects - New Risk Indicators for Maintenance Procedure- Takashi TAKATA, Akira YAMAGUCHI (Osaka University), Akio YAMAMOTO (Nagoya University), Kazuyuki DEMACHI (The University of Tokyo), Naoki SUGIYAMA (Mitsubishi Research Institute, Inc.), and Hiroshi MIYANO (Hosei University)

M2-4 12:10-12:30	Development of Overall Safety Evaluation Method for Operating Nuclear Power Plant Considering Aging Effects -Concept and Framework- Akio YAMAMOTO (Nagoya University), Takashi TAKATA (Osaka University), Kazuyuki DEMACHI (The University of Tokyo), Naoki SUGIYAMA (Mitsubishi Research Institute, Inc.), Akira YAMAGUCHI (Osaka University), and Hiroshi MIYANO (Hosei University)
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M3: Fatigue- Part I

November 3

Meeting Room A, Centennial Hall

Chair: T. Okita (The University of Tokyo)
K. Taguchi (Toshiba Corp.)

M3-1 11:10-11:30	AREVA's Fatigue Concept -AFC- for Ageing and Lifetime Management Jürgen RUDOLPH, Benedikt HEINZ, Cristoph STIEPANI, and Michael DRECHSLER (AREVA GmbH)
M3-2 11:30-11:50	Short Fatigue Crack Behavior During Low Cycle Fatigue Tests of 316 Stainless Steel in Simulated PWR Primary Water Choongmoo SHIM, Yoichi TAKEDA, Jiro KUNIYA, and Tetsuo SHOJI (Tohoku University)
M3-3 11:50-12:10	Non-Destructive Evaluation of Multiple-site Small Cracks in Low Cycle Fatigue of Austenitic Stainless Steel by Four-point Probe DC Potential Difference Method Shio NAKANISHI (Tokyo University of Science), Takayuki SUZUKI (National Institute of Advanced Industrial Science and Technology), and Yuji NAKASONE (Tokyo University of Science)
M3-4 12:10-12:30	Fatigue Strength Estimation for Socket-Weld-Jointed Pipes Shinji NOGUCHI, Masazumi IWATA, and Toshiya AKIYAMA (Shikoku Research Institute Inc.)

M4: Safety Program- Part I

November 3

Rokko Hall, Centennial Hall

Chair: A. Tsumaya (Kobe University)
N. Tada (Hitachi-GE Nuclear Energy, Ltd.)

M4-1 14:50-15:10	The Concept of Passive Cooling Systems for Inherently Safe BWRs Naoyuki ISHIDA, Akinori TAMURA, Toshinori KAWAMURA, Kazuaki KITOU, and Mamoru KAMOSHIDA (Hitachi, Ltd.)
M4-2 15:10-15:30	New Structure Design for SCWR Internal Components Qin ZHOU, Yu SONG, Li WAN, Xiaotian LI, and Mingzhe WEI (Tsinghua University and Ministry of Education of China)
M4-3 15:30-15:50	Post-Fukushima Safety Enhancement in Taiwan's NPPs C.H. WU, Wen-Chun TENG, S. CHANG, and Y.B. CHEN (Atomic Energy Council)
M4-4 15:50-16:10	Applicability of a New Evaluation Method for Tornado-borne Missile Speed and Flight Path Based on Fujita's DBT-77 Model Yuzuru EGUCHI, Soichiro SUGIMOTO, Yasuo HATTORI, and Hiromaru HIRAKUCHI (Central Research Institute of Electric Power Industry)

M5: Flow Accelerated Corrosion- Part I

November 3

Meeting Room (2F), Takikawa Memorial Hall

Chair: T. Nakamura (Osaka University)

R. Morita (Central Research Institute of Electric Power Industry)

Organizer: T. Nakamura (Osaka University)

M5-1 14:50-15:10	Recent Technical Knowledge on Pipe Wall Thinning Management and Roadmap of R&Ds Fumio INADA (Central Research Institute of Electric Power Industry), Yutaka WATANABE (Tohoku University), and Akira NAKAMURA (Institute of Nuclear Safety System, Inc.)
M5-2 15:10-15:30	Measurement of Flow Accelerated Corrosion Rate at Elbow Pipe Koichi KAMAHORI, Yoichi UTANOHARA, Akira NAKAMURA, and Michio MURASE (Institute of Nuclear Safety System, Inc.)
M5-3 15:30-15:50	Benchmark Analyses of Prediction Models for Wall-Thinning Management Kazutoshi FUJIWARA (Central Research Institute of Electric Power Industry), Yutaka WATANABE (Tohoku University), Hidetoshi OKADA (The Institute of Applied Energy), and Nobuyuki FUJISAWA (Niigata University)
M5-4 15:50-16:10	Verification of Pipe Wall Thinning Software FALSET with FAC Data in PWR Secondary System Yuta UCHIYAMA, Kimitoshi YONEDA, Ryo MORITA, Kazutoshi FUJIWARA, and Fumio INADA (Central Research Institute of Electric Power Industry)
M5-5 16:10-16:30	Evaluation of Mass Transfer Coefficient Under Swirl Flow Generated by the Combination of Pipe Elements -Part 2 Mikiya MATSUSHITA, Kei YAMAMOTO, Takao NAKAMURA (Osaka University), Shun WATANABE, and Kimitoshi YONEDA (Central Research Institute of Electric Power Industry)

M6: Fatigue- Part II

November 3

Meeting Room A, Centennial Hall

Chair: N. Kasahara (The University of Tokyo)

M. Tanaka (Japan Atomic Energy Agency)

Organizer: N. Kasahara (The University of Tokyo)

M6-1 14:50-15:10	Recent Research Progress of Piping Thermal Fatigue Evaluation Methods Naoto KASAHARA (The University of Tokyo), Takamoto ITOH (Ritsumeikan University), Masakazu OKAZAKI (Nagaoka University of Technology), Yukihiro OKUDA (Toshiba Corp.), Masayuki KAMAYA, Akira NAKAMURA (Institute of Nuclear Safety System, Inc.), Hitoshi NAKAMURA (ITOCHU Techno-Solutions Corp.), Hideo MACHIDA (TEPCO Systems Corp.), and Masaaki MATSUMOTO (Mitsubishi Research Institute, Inc.)
M6-2 15:10-15:30	Development of Coupled Method of Fluid-Structure Thermal Interaction Simulation and Thermal Stress Analysis for T-junction Piping System Masaaki TANAKA (Japan Atomic Energy Agency), Yasuhiro MIYAKE (NDD Corporation), and Yasuhisa KARAKIDA (ITOCHU Techno-Solutions Corp.)

M6-3 15:30-15:50	Development and Applicability Evaluation of Frequency Response Function of Structures to Fluctuations of Thermal Stratification Kohei SODA, Masaaki SUZUKI, and Naoto KASAHARA (The University of Tokyo)
M6-4 15:50-16:10	Reliability-based Thermal Fatigue Evaluation Method Against Random Fluid Temperature Fluctuations Masaaki SUZUKI and Naoto KASAHARA (The University of Tokyo)

M7: Safety Program- Part II

November 3

Rokko Hall, Centennial Hall

Chair: A. Yamamoto (Nagoya University)
T. Shoji (Chubu Electric Power Co.)

M7-1 16:30-16:50	Development of Hydrogen Monitor -Applicability Investigation of Acoustic Technique- Masaru HIRABAYASHI, Kuniaki ARA, and Ryutaro HINO (Japan Atomic Energy Agency)
M7-2 16:50-17:10	Development of New Type Passive Autocatalytic Recombiner – Part 1. Characterization of Monolithic Catalyst Yu KAMIJI (Japan Atomic Energy Agency), Masashi TANIGUCHI (Daihatsu Motor Co., Ltd.), Yasuo NISHIHATA, Ryuji NAGAISHI (Japan Atomic Energy Agency), Hirohisa TANAKA (Daihatsu Motor Co., Ltd.), Shingo HIRATA (Japan Atomic Energy Agency and Kawasaki Heavy Industries, Ltd.), Mikiya HARA, and Ryutaro HINO (Japan Atomic Energy Agency)
M7-3 17:10-17:30	Development of New Type Passive Autocatalytic Recombiner - Part 2. Proposal of Conceptual Structure Shingo HIRATA, Tomoaki MOURI, Minoru IGARASHI, Manabu SATOH (Kawasaki Heavy Industries, Ltd.), Yu KAMIJI, Yasuo NISHIHATA, (Japan Atomic Energy Agency), Masashi TANIGUCHI, Hirohisa TANAKA (Daihatsu Motor Co., Ltd.), and Ryutaro HINO (Japan Atomic Energy Agency)
M7-4 17:30-17:50	Development of Sabotage Detection Method Using Deep Learning Kazuma KAMIKA, Kazuyuki DEMACHI, Yusuke KAWASAKI, Ritu Bhusal CHHATKULI, and Naoto KASAHARA (The University of Tokyo)

M8: Flow Accelerated Corrosion- Part II

November 3

Meeting Room (2F), Takikawa Memorial Hall

Chair: F. Inada (Central Research Institute of Electric Power Industry)
K. Kamahori (Institute of Nuclear Safety System, Inc.)

Organizer: T. Nakamura (Osaka University)

M8-1 16:50-17:10	Mitigation of Risks of FAC Local Wall Thinning due to Increasing pH Shunsuke UCHIDA, Masanori NAITOH, Hidetoshi OKADA (Institute of Applied Energy), Seiichi KOSHIZUKA (The University of Tokyo), and Derek H. LISTER (University of New Brunswick)
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M8-2 17:10-17:30	Development of Thickness Measurement and Wall Thinning Monitoring Technology Using Thin-film UT Sensor for High-Temperature Use Takeshi KODAIRA, Isao SEKI, Naoto KAWASE, Takayuki MATSUURA, Yuko YAMAMOTO, and Masaaki KUROKAWA (Mitsubishi Heavy Industries, Ltd.)
M8-3 17:30-17:50	Overview of Revision Proposals for Rules on Pipe Wall Thinning Management for BWR Power Plants Ryo MORITA (Central Research Institute of Electric Power Industry), Shohei NAKAMA (The Japan Atomic Power Company), and Satoshi SUZUKA (Toshiba Corp.)
M8-4 17:50-18:10	Overview of Revision Proposals for Rules on Pipe Wall Thinning Management for PWR Power Plants Yuichiro FUJII (Mitsubishi Hitachi Power Systems, Ltd.), Takao NAKAMURA (Osaka University), Yoichi AMANO (Kansai Electric Power Company), and Junya HIRAI (Mitsubishi Hitachi Power Systems, Ltd.)
M8-5 18:10-18:30	Wall Thinning Experience of T-Pipe, and Proposal of Additional Requirement Shohei NAKAMA (The Japan Atomic Power Company), Ryo MORITA (Central Research Institute of Electric Power Industry), Satoshi SUZUKA (Toshiba Corp.), Tsuneo TAKAYANAGI (Hitachi-GE Nuclear Energy Ltd.), Takao NAKAMURA (Osaka University), Yoichi AMANO (Kansai Electric Power Company, Inc.), and Junya HIRAI (Mitsubishi Hitachi Power Systems, Inc.)

M9: Fatigue- Part III

November 3

Meeting Room A, Centennial Hall

Chair: M. Kamaya (Institute of Nuclear Safety System, Inc.)
N. Kasahara (The University of Tokyo)

Organizer: N. Kasahara (The University of Tokyo)

M9-1 16:30-16:50	Fatigue Damage Management Based on Postulated Crack Growth Curve Masayuki KAMAYA (Institute of Nuclear Safety System, Inc.), and Takao NAKAMURA (Osaka University)
M9-2 16:50-17:10	Statistical Model of Micro Crack Growth for the Evaluation of Accumulated Fatigue in NPPs Shigeki ABE, Ryouyuke FUJIKAWA, Satoshi IIDA, Takao NAKAMURA (Osaka University), and Masayuki KAMAYA (Institute of Nuclear Safety System, Inc.)
M9-3 17:10-17:30	Re-examination of Grand Design for Fatigue Evaluation (Step-2) -Fatigue Failure Analysis of Japanese NPPs- Takao NAKAMURA, Ryouyuke FUJIKAWA, Mikiya MATSUSHITA (Osaka University), and Masayuki KAMAYA (Institute of Nuclear Safety System, Inc.)

Oral Sessions (November 4, Tuesday)

T1: Decommissioning Technology for Fukushima

November 4

Rokko Hall, Centennial Hall

Chair: S. Suzuki (International Research Institute for Nuclear Decommissioning)
H. Yamashita (Utsue Valve Service Co., Ltd.)

Organizer: S. Suzuki (International Research Institute for Nuclear Decommissioning)

T1-1 14:50-15:10	First Application of Dry Ice Blasting Decontamination to Equipment in Japanese PWR Akira TANIGUCHI, Osamu SUZUKI, Norikazu NAKAMURA, Masatoshi SAKAI (The Japan Atomic Power Company), Ryo NAGATA (Mitsubishi Heavy Industry, Inc.), and Tomoki SHIGENAGA (Nuclear Plant Service Engineering Co., Ltd.)
T1-2 15:10-15:30	Cosmic-Ray Muon Imaging of Fukushima Daiichi Haruo MIYADERA (Toshiba Corp. and Los Alamos National Laboratory), Christopher MORIS, Jeffery D. BACON (Los Alamos National Laboratory), Konstantin N. BOROZDIN (Decision Sciences International Corporation), Kyouichi FUJITA, Mikio IZUMU, Naoto KUME, (Toshiba Corp.), Shinya MIZOKAMI (Tokyo Electric Power Company), Koichi NAKAYAMA (Toshiba Corp.), Yasuyuki OTSUKA (Tokyo Electric Power Company), Kei TAKAKURA (Toshiba Corp.), John O. PERRY (Los Alamos National Laboratory), Tsukasa SUGITA (Toshiba Corp.), Daichi YAMADA (Tokyo Electric Power Company), and Kenichi YOSHIOKA (Toshiba Corp.)
T1-3 15:30-15:50	Remote Control Monitoring Robot System in Large-Scale Disaster Scenes Tomotaka MORI, Kenichi OTANI, Yutaka KOMETANI (Hitachi-GE Nuclear Energy, Ltd.), and Hirofumi KINOSHITA (Hitachi-GE Nuclear Energy, Ltd. and International Research Institute for Nuclear Decommissioning)
T1-4 15:50-16:10	Inventory Estimation of ¹³⁷Cs in Radioactive Wastes Generated from Contaminated Water Treatment System in Fukushima Daiichi Nuclear Power Station Jun KATO and Yoshihiro MEGURO (Japan Atomic Energy Agency and International Research Institute for Nuclear Decommissioning)

T2: Concrete Degradation Management

November 4

Meeting Room (2F), Takikawa Memorial Hall

Chair: M. Takizawa (Mitsubishi Research Institute, Inc.)
I. Maruyama (Nagoya University)

Organizer: M. Takizawa (Mitsubishi Research Institute, Inc.)

T2-1 14:50-15:10	Fundamental Concept of ASR Management and Required Researches for Concrete Structures in Nuclear-Relating Facilities Kazuo YAMADA (National Institute for Environmental Studies)
T2-2 15:10-15:30	Multiscale Approach for Performance Evaluation of Concrete Member Under Drying Ippei MARUYAMA (Nagoya University)

T2-3 15:30-15:50	On The Evaluation of Strength Characteristics of Concrete after Elevated Temperature Exposure Hideo KASAMI, Takahumi TAYAMA (Japan Association for Building Research Promotion), Hironobu NISHI (Flowric Co., Ltd.), and Toshinobu MAENAKA (Takenaka Corp.)
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T3: Maintenance Robot- Part I

November 4

Meeting Room A, Centennial Hall

Chair: Y. Yokokohji (Kobe University)
T. Tsubouchi (University of Tsukuba)

Organizer: Y. Yokokohji (Kobe University)

T3-1 14:50-15:10	Development of Robot Technology Used for Decommissioning Jun FUJITA and Ken ONISHI (Mitsubishi Heavy Industries, Ltd. and International Research Institute for Nuclear Decommissioning)
T3-2 15:10-15:30	Correction of Over and Under Exposure Images Using Multiple Lighting System Jonghoon IM, Atsushi YAMASHITA, Hiromitsu FUJII, and Hajime ASAMA (The University of Tokyo)
T3-3 15:30-15:50	Calibration of a Binocular Stereo Camera with Super-Wide-Angle and Low-Distortion Lenses Takashi TSUBOUCHI, Hajime KAWANISHI, Yoshitaka HARA, and Akihisa OHYA (University of Tsukuba)
T3-4 15:50-16:10	Study on Motion Control of A Redundant Robot Manipulator to Improve Teleoperation Maneuverability Toki HORII (Kobe University), Noriko ONISHI (Mitsubishi Heavy Industries, Inc.), and Yasuyoshi YOKOKOHJI (Kobe University)

T4: Containment Filtration Venting

November 4

Rokko Hall, Centennial Hall

Chair: N. Yusa (Tohoku University)
K. Takeuchi (The Japan Atomic Power Company)

T4-1 16:30-16:50	Development of High Efficiency Filtered Containment Venting System by Using AgX Tadashi NARABAYASHI, Yasuhiro FUJII (Hokkaido University), Tasuku ISHII, Nobuaki SATO (Tohoku University), Go CHIBA, and Masashi TSUJI (Hokkaido University)
T4-2 16:50-17:10	Properties and Applications of Silver Zeolite (AgX) Jifeng WANG, Toshiki KOBAYASHI, and Koji ENDO (Rasa Industries, Ltd.)
T4-3 17:10-17:30	Noble Gas Control Room Accident Filtration System for Severe Accident Conditions (N-CRAFT) Axel HILL, Cristoph STIEPANI, and Michael DRECHSLER (AREVA GbmH)
T4-4 17:30-17:50	Refractoriness, Chemical Stability and Thermal Shock Performance of Advanced Ceramics for New Design Core Catcher for Nuclear Reactors Marta ZIEMNICKA-SYLWESTER, Tadashi NARABAYASHI, Go CHIBA, Masashi TSUJI, Sho KUBOTA, and Daichi MIYAWAKI (Hokkaido University)

T5: SCC

November 4

Meeting Room (2F), Takikawa Memorial Hall

Chair: M. Mochizuki (Osaka University)
M. Kurata (Hokuriku Electric Power Co.)

T5-1 16:10-16:30	Effect of Surface Preparation on Oxidation Behavior and Cracking Susceptibility of Nickel Base Alloy in Hydrogenated Steam Daisuke KUMAGAI, Hiroshi ABE, and Yutaka WATANABE (Tohoku University)
T5-2 16:30-16:50	
T5-3 16:50-17:10	An Elementary Model to Evaluate Microscopic Stress Distribution due to Dislocation Channel in Irradiated Austenitic Stainless Steel Yoshiki MIKAMI, Takamasa MIZOGUCHI, and Masahito MOCHIZUKI (Osaka University)
T5-4 17:10-17:30	About Cracks Found in the Disk Rim Blade Attachments of Low Pressure Turbines in Unit 1 of the Shika Nuclear Power Plant Koichi MURASHIMA, Jun HOJO, Kazutomo NAKANO, Chikahide NAKADA, Kazuhiro NAGASAKA, Kazuya URAKAMI, and Naohiro KUNIEDA (Hokuriku Electric Power Co.)
T5-5 17:30-17:50	Current Status of Japanese Performance Demonstration in FY 2013 Keiji WATANABE, Hajime SHOHJI, and Koichiro HIDE (Central Research Institute of Electric Power Industry)

T6: Maintenance Robot- Part II

November 4

Meeting Room A, Centennial Hall

Chair: Y. Yokokohji (Kobe University)
J. Fujita (Mitsubishi Heavy Industries, LTD.)
Organizer: Y. Yokokohji (Kobe University)

T6-1 16:30-16:50	Difficulties in Development of High-Access Survey Robot Tomoki SAKAUE and Shin YOSHINO (The Tokyo Electric Power Company)
T6-2 16:50-17:10	High-Access Survey Robot for Fukushima Daiichi Nuclear Power Station Natsuki YAMANOBE, Shin KATO, Woo-Keun YOON, Yasushi MORIKAWA, Takuya OGURE, and Kazuhito YOKOI (National Institute of Advanced Industrial Science and Technology)
T6-3 17:10-17:30	Toshiba's Activities for Radiation Reduction of Fukushima Daiichi NPS Hitoshi SAKAI, Katsuhiko SATO, Yumi YAITA, Masayuki KANEDA, and Kenji FUJIHATA (International Research Institute for Nuclear Decommissioning and Toshiba Corp.)
T6-4 17:30-17:50	The Development of Dual-arm Heavy Machinery-type Robot "ASTACO-SoRa" and the Application in Fukushima Daiichi Nuclear Power Plant Satoru TAKESHI, Daisuke TOZAWA, Yasuhiro USAMI, and Hisashi YATSUZUKA (Hitachi Power Solutions Co., Ltd.)

Oral Sessions (November 5, Wednesday)

W1: Advanced Inspection/ Evaluation Technology

November 5

Rokko Hall, Centennial Hall

Chair: Y. Tsuchida (Oita University)

I. Komura (Japan Power Engineering and Inspection Corporation)

W1-1 11:10-11:30	Evaluation of the Capability to Estimate a Crack Profile by 3D SAFT UT Toshihiro YAMAMOTO, Yoshinori KAMIYAMA, Takashi FURUKAWA, and Ichiro KOMURA (Japan Power Engineering and Inspection Corporation)
W1-2 11:30-11:50	Development of an Image Based Ultrasonic Examination Toshihiko SASAHARA (NDI Research Corporation)
W1-3 11:50-12:10	Development of an Automatic Echo Discrimination Method Using Ultrasonic Image Simulation Yuki OHSHIMA and Masahiro MIKI (Hitachi, Ltd.)
W1-4 12:10-12:30	Non-destructive Evaluation for Creep Damage of High-chrome Steels by Measuring Magnetic Properties Yuji TSUCHIDA (Oita University)
W1-5 12:30-12:50	Numerical Investigation of the Ill-Posedness of Inverse Problems to Size a Crack from Eddy Current Signals Noritaka YUSA, Hiroki SHISHIDO, and Hidetoshi HASHIZUME (Tohoku University)
W1-6 12:50-13:10	Development of the Electric Shock Prevention Transparent Cover for Infrared Thermography Diagnosis Akira HASEGAWA (The Japan Atomic Power Company)

W2: Safety Enhancement

November 5

Meeting Room (2F), Takikawa Memorial Hall

Chair: K. Furuta (The University of Tokyo)

Y. Shikami (The Kansai Electric Power Co., Inc.)

W2-1 11:10-11:30	Safety Measures at Tomari Nuclear Power Station Hiroki UEHARA, Takahiro KAWAMOTO, Sotaro KANEDA, Keiichi ISHIKAWA, and Kazuya NUMATA (Hokkaido Electric Power Co., Inc.)
W2-2 11:30-11:50	Strategy of Installation of Permanent and Mobile Equipment for Countermeasures against Severe Accident at Tokai-2 Shuji KANAIDA, Nobuo ITOU, Akira UENO, and Yoshimasa TAKABAYASHI (The Japan Atomic Power Company)
W2-3 11:50-12:10	Safety Measures for Severe Accident on the Kansai Nuclear Power Plants Toshihiko TANAKA, Naoki SASAGAWA, Kuniyoshi KOMATSU, Yoshinao TSUJI, and Ippei UEYAMA (The Kansai Electric Power Co., Inc.)
W2-4 12:10-12:30	Education and Training for Severe Accident Response at the Shimane Nuclear Power Station Yasuhira KAWAMOTO, Tsukasa HAYASHI, Katsunori SUZAWA, Sei OGAWA, and Hiroyasu OTANI (The Chugoku Electric Power Co., Inc.)

W2-5 12:30-12:50	Development of an Augmented Reality Based Simulation System for Cooperative Plant Dismantling Work Hirotake ISHII, Zhiyuan MAN, Weida YAN, Hiroshi SHIMODA (Kyoto University), and Masanori IZUMI (Japan Atomic Energy Agency)
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W3: Degradation Management

November 5

Meeting Room A, Centennial Hall

Chair: K. Morishita (Kyoto University)
H. Kobayashi (The Japan Atomic Power Company)

W3-1 11:10-11:30	Numerical Evaluation of Material Degradation Under Various Irradiation Conditions Toshiki NAKASUJI, Yasunori YAMAMOTO, and Kazunori MORISHITA (Kyoto University)
W3-2 11:30-11:50	Prediction on Irradiation Embrittlement of HTR Reactor Pressure Vessel Steels Qin ZHOU, Xiaowei LUO, Li SHI, Xiaotian LI, (Tsinghua University and Ministry of Education of China), and Zhengcao LI (Tsinghua University)
W3-3 11:50-12:10	Effect of Chromium Content on the Oxidation Behavior of Ni-Base Alloys in Superheated Steam Fethi HAMDANI (Tohoku University and INSA-Lyon), Hiroshi ABE, and Yutaka WATANABE (Tohoku University)
W3-4 12:10-12:30	Declining Axial Tension of Bolt of Flange Applied Rubber-Gasket Yusuke ASAZUMA, Keisuke SHIRAKI, Osamu SUZUKI, Masatoshi SAKAI (The Japan Atomic Power Company), Koichi TSUMORI, Tsutomu TANAKADATE, and Michiaki KUROSAKI (Hitachi-GE Nuclear Energy, Ltd.)
W3-5 12:30-12:50	Repair Works of the Steam Turbine After the Earthquake at Onagawa NPS Tatsuo KUSAKAI, Kunihiro SATO, Hiroyuki WATANABE, and Yasuhiro SAITO (Tohoku Electric Power Co., Inc.)
W3-6 12:50-13:10	Potentiostatic Etching Method for Detection of Pre-existing Plastic Strain for Austenitic Stainless Steel: Relation with Plastic Deformation Mechanism in Temperature Range 30°C-300°C Shota HOKARI, Kohei YAMAMOTO, and Yutaka WATANABE (Tohoku University)

Poster Session (November 4, Tuesday)

November 4

Foyer

10:50-13:50

Poster-1	<p>Effect of Irradiation Hardening on Microscopic Stress Distribution in Austenitic Stainless Steels Takamasa MIZOGUCHI, Yoshiki MIKAMI, and Masahito MOCHIZUKI (Osaka University)</p>
Poster-2	<p>Numerical Simulation of Hydrogen Diffusion Under Stress Field in SSRT Test Nao KAWABE, Yoshiki MIKAMI (Osaka University), Nobuyuki ISHIKAWA (JFE Steel Corporation), and Masahito MOCHIZUKI (Osaka University)</p>
Poster-3	<p>Assessment Method of Pipe Operation Time by Using Hazard Rate Based on Fusion of Prediction and Inspection Hiroyuki NAKAMOTO, Fumio KOJIMA, and Sho KATO (Kobe University)</p>
Poster-4	<p>Evaluation of Creep Damage in High Cr Ferritic Steels Using Non-linear Eddy Current Testing Takanori MATSUMOTO, Tetsuya UCHIMOTO, Toshiyuki TAKAGI (Tohoku University), and Shigeru TAKAYA (Japan Atomic Energy Agency)</p>
Poster-5	<p>Semi-nondestructive Measurement of Weld Residual Stress Distribution in Austenitic Stainless Steel Using Indentation Technique without Reference Load under Non-stress State Daisuke KANAMARU, Shigetaka OKANO, and Masahito MOCHIZUKI (Osaka University)</p>
Poster-6	<p>Development of Immersion Ultrasonic Technique for NDT of HIP Welding Surface of Wu-Cu Mono-block in Tokamak Structure Zhensheng YUAN, Haochen LIU, Guicai YANG, Yong LI, and Zhenmao CHEN (Xi'an Jiaotong University)</p>
Poster-7	<p>Evaluation of the Applicability of Efficient Nondestructive Testing Using Microwave for Wall Thinning Inside a Long-range Metal Pipe Kota SASAKI, Noritaka YUSA, and Hidetoshi HASHIZUME (Tohoku University)</p>
Poster-8	<p>Door Opening Operation by Teleoperated Hand/Arm Robot Kouhei FUJIMOTO, Futoshi KOBAYASHI, Hiroyuki NAKAMOTO, and Fumio KOJIMA (Kobe University)</p>
Poster-9	<p>Evaluation of Micro Fatigue Crack Growth under Equi-biaxial Stress by Membranous Pressure Fatigue Test Satoshi IIDA, Shigeki ABE, Takao NAKAMURA (Osaka University), and Masayuki KAMAYA (Institute of Nuclear Safety System Inc.)</p>
Poster-10	<p>Evaluations of Environmental Effect on Micro Crack Initiation and Propagation by Surface Observations of Fatigue Specimens Ryosuke FUJIKAWA, Shigeki ABE, Takao NAKAMURA (Osaka University), and Masayuki KAMAYA (Institute of Nuclear Safety System Inc.)</p>
Poster-11	<p>Developments of Flat ∞ Coil for Defect Searching in the Curved Surfaces Kouki MARUYAMA (Hosei University), Iliana MARINOVA (Technical University of Sofia), and Yoshifuru SAITO (Hosei University)</p>
Poster-12	<p>A Study on Electrical Condition Monitoring Technique for Assessing Thermal Degradation of NPPs Cables Insulations Tariq ALSHAKETHEEP, Kenta MURAKAMI, and Naoto SEKIMURA (The University of Tokyo)</p>
Poster-13	<p>Effect of Welding Condition on Residual Stress Distribution Generated by Welding after Surface Machining Ryohei IHARA and Masahito MOCHIZUKI (Osaka University)</p>

Poster-14	<p>A Study on Conductivity of Stress Corrosion Crack Based on 4-Probe DC Potential Drop Method Wenlu CAI, Shejuan XIE, Xiaojuan WANG, Yong LI, and Zhenmao CHEN (Xi'an Jiaotong University)</p>
Poster-15	<p>Development of Guided Wave Transmit-Receiving System Using EMAT and Evaluation of the Propagation of L and T-mode Guided Wave Atsushi MORIKAWA, Akinori FURUSAWA, and Fumio KOJIMA (Kobe University)</p>
Poster-16	<p>Estimation of Pipe Wall Thinning Configuration Based on Velocity Dispersions of Longitudinal Guided Wave Hirofuka NAKAJIMA, Akinori FURUSAWA, and Fumio KOJIMA (Kobe University)</p>
Poster-17	<p>Field Test of the Backside Defect Searching by Low Frequency ∞ Coil Shunichi HAMANAKA (Hosei University), Iliana MARINOVA (Technical University of Sofia), Yoshifuru SAITO (Hosei University), Manabu OHUCHI, Hideo MOGI, and Yoshiro OIKAWA (Denshijiki Industry Co., Ltd.)</p>
Poster-18	<p>Harmonic Balance Analysis for Magnetic Hysteresis under Static and Dynamic Stresses Hideaki NEMORI (Hosei University), Iliana MARINOVA (Technical University of Sofia), and Yoshifuru SAITO (Hosei University)</p>
Poster-19	<p>All Frequency Analysis of Finite Length Solenoid Inductors by Quasi-Analytical Approach Rena IWANAGA (Hosei University), Iliana MARINOVA (Technical University of Sofia), and Yoshifuru SAITO (Hosei University)</p>
Poster-20	<p>Experimental Studies on the Correction of Improper Compression and Gap Elimination of Spring Pack in Limitorque Actuator Yu-Chang HSU (Institute of Nuclear Energy Research)</p>
Poster-21	<p>Semi-Nondestructive Determination on Anisotropic Stress - Strain Curve Using Asymmetric Indenters with Different Vertical Angle Shigetaka OKANO, Misa MIYABE, and Masahito MOCHIZUKI (Osaka University)</p>
Poster-22	<p>Backscattering X-ray System Using 950 keV Linac for Nondestructive Inspection Changheng LIU, Ryota YANO, Mitsuru UESAKA, Takeshi FUJIWARA, and Katsuhiko DOBASHI (The University of Tokyo)</p>
Poster-23	<p>Development of Human Interface in Immersion Type 3D Dynamic Simulator Shingo KATOH, Sheng CAO, and Zhiwei LUO (Kobe University)</p>
Poster-24	<p>Influence of Machining Process and Heat Treatment on ECT Signal of Fatigue Crack Hao FENG, Ryoichi URAYAMA, Tetsuya UCHIMOTO, and Toshiyuki TAKAGI (Tohoku University)</p>
Poster-25	<p>Development of a Tilt-rotor UAV for Information Gathering Naoki INOUE, Gakuyo HAYASHIDA, Takateru URAKUBO, and Takanori FUKAO (Kobe University)</p>
Poster-26	<p>Fundamental Investigation on Removal of Low Concentration Cesium from Radioactive Polluted Water with Reverse Osmosis Membrane Junichi KAKEHI, Eiji KAMIO, and Hideto MATSUYAMA (Kobe University)</p>