

**Proceedings of
2022 29th International Conference on
Nuclear Engineering
(ICONE29)**

Volume 6

**August 8-12, 2022
Shenzhen, China and Virtual, Online**

Conference Sponsor
Nuclear Engineering Division

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Two Park Avenue * New York, N.Y. 10016

© 2022, The American Society of Mechanical Engineers, 2 Park Avenue, New York, NY 10016, USA
(www.asme.org)

All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

INFORMATION CONTAINED IN THIS WORK HAS BEEN OBTAINED BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS FROM SOURCES BELIEVED TO BE RELIABLE. HOWEVER, NEITHER ASME NOR ITS AUTHORS OR EDITORS GUARANTEE THE ACCURACY OR COMPLETENESS OF ANY INFORMATION PUBLISHED IN THIS WORK. NEITHER ASME NOR ITS AUTHORS AND EDITORS SHALL BE RESPONSIBLE FOR ANY ERRORS, OMISSIONS, OR DAMAGES ARISING OUT OF THE USE OF THIS INFORMATION. THE WORK IS PUBLISHED WITH THE UNDERSTANDING THAT ASME AND ITS AUTHORS AND EDITORS ARE SUPPLYING INFORMATION BUT ARE NOT ATTEMPTING TO RENDER ENGINEERING OR OTHER PROFESSIONAL SERVICES. IF SUCH ENGINEERING OR PROFESSIONAL SERVICES ARE REQUIRED, THE ASSISTANCE OF AN APPROPRIATE PROFESSIONAL SHOULD BE SOUGHT.

ASME shall not be responsible for statements or opinions advanced in papers or . . . printed in its publications (B7.1.3). Statement from the Bylaws.

For authorization to photocopy material for internal or personal use under those circumstances not falling within the fair use provisions of the Copyright Act, contact the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923, tel: 978-750-8400, www.copyright.com.

Requests for special permission or bulk reproduction should be addressed to the ASME Publishing Department, or submitted online at: <https://www.asme.org/publications-submissions/journals/information-for-authors/journalguidelines/rights-and-permissions>

ISBN: 978-0-7918-8640-3

CONTENTS

Proceedings of 2022 29th International Conference on Nuclear Engineering Volume 6

Nuclear Codes, Standards, Licensing, and Regulatory Issues

ICONE29-89097	V006T06A001
Effect of the Plasticity of Piping and Support Structures on the Seismic Response of Piping Systems <i>Takahiro Okuda, Hideki Takahashi, Tomoyoshi Watakabe, and Masaki Morishita</i>	
ICONE29-90172	V006T06A002
On Multiaxial Strain Characteristics of Piping Systems Subjected to Earthquake Loads <i>Masaki Morishita and Akihito Otani</i>	
ICONE29-90363	V006T06A003
Codes Comparative Study on Mechanical Properties of Core Forgings of Reactor Pressure Vessel <i>Hao Yu, Yinbiao He, Xinxin Wu, Shenjie Gu, Xin Liu, and Hongchang Wang</i>	
ICONE29-90525	V006T06A004
Establishment of Engineering Economics Standard System for Nuclear Power Plants in China <i>Wen Yang, Shaolin Zhang, Jun Huang, and Feifei Wu</i>	
ICONE29-90645	V006T06A005
The Drafting and Discussion of Terminology of Aging and Life Management for Nuclear Power Plant in China <i>Zhimin Zhong</i>	
ICONE29-91362	V006T06A006
Research on the Construction of the Advanced Nuclear Power Standards System Platform <i>Shaolin Zhang, Wen Yang, Ruilin Dong, Yun Liang, and Shangyuan Liu</i>	
ICONE29-91363	V006T06A007
Analysis of Different Requirements of Dissimilar Metal Joint Welding Procedure Qualification Between RCC-M and ASME BPVC <i>Wang Pei, Chen Dongxu, and Yang Shumin</i>	
ICONE29-91803	V006T06A008
ISO 19443: Fundamental Requirements of the New Quality Management Standard for the International Nuclear Supply Chain <i>Jeanne Bargsten, Clemens Treier, Özlem Yilmaz, Amandine Pades, Andrea Kim, and Jung-Kyu Lee</i>	
ICONE29-92241	V006T06A009
Application of ALARP Concept in Nuclear Power Plant Design — A Case Study in HPR1000 <i>Dongyuan Li, Shi Qing, Haiying Luo, Jinkai Wang, and Jiaoshen Xu</i>	
ICONE29-92414	V006T06A010
Analysis of Water Consumption in Nuclear Power Plants and National Standard Formulation for Norm of Water Intake <i>Rui Wang, Kechen Xu, Kehao Zeng, Hongmei Yan, and Wei Bai</i>	

ICONE29-92500	V006T06A011
Research on the Practice Qualification System of Registered Nuclear Safety Engineer From the Perspective of Access Professional Qualification <i>Fangqiang Chen, Yang Zhang, Wei Jia, Zhaotong Li, and Guanyi Wang</i>	
ICONE29-92615	V006T06A012
Discussion on Selection of Codes and Standards on Nuclear Power Plant Safety <i>Chen Yuxiu, Wang Yuhong, Luo Haiying, Wang Jinkai, Shi Qing, Zhu Zengpei, and Wu Bei</i>	
ICONE29-93037	V006T06A013
Studies on the Principles for Developing In-Service Inspection Acceptance Standards of Reactor Pressure Vessels <i>Jun Pan, Chang Liu, and Xihui Su</i>	
ICONE29-93238	V006T06A014
Practice and Discussion on Safety Categorisation and Classification of Defence in Depth Level 1/2 Functions Based on IAEA-SSG-30 <i>Fan He, Jiangwei Ji, Jiaoshen Xu, Zengpei Zhu, and Kewei Cai</i>	
ICONE29-93561	V006T06A015
Overview of AFCEN Non-Linear Benchmark in China – Improving Rules for Vessel Ratcheting Evaluation <i>Yu Tan, Xuejiao Shao, Enming Liang, Shuchun Zuo, Feng Lv, Thomas Metais, and Han Liu</i>	
ICONE29-93642	V006T06A016
Comparative Analysis and Research on Nuclear Power Regulation & Standard System and Standardization Works Among China, the U.S. and Japan <i>Shangyuan Liu, Ran Wei, Shaolin Zhang, Feifei Wu, and Jian Du</i>	
ICONE29-93746	V006T06A017
Integration and Future Development of Technical Standards for PWR Nuclear Pressure Equipment <i>Feifei Wu, Zhenbang Dong, Jun Huang, and Shangyuan Liu</i>	
ICONE29-93834	V006T06A018
Analysis and Research of Code Revision for Design of Nuclear Safety Related Concrete Structures of Pressurized Water Reactor Nuclear Power Plants in China <i>Jun Huang, Weiguo Zhang, Xueyuan Liang, Feifei Wu, Jing Xu, Shaolin Zhang, Wen Yang, and Zhiyao Tang</i>	
ICONE29-93863	V006T06A019
Development of China's Nuclear Power Standard System and Brief Comparison With American and French Standards <i>Ruiyuan Deng, Feifei Wu, Zhenbang Dong, Shangyuan Liu, Jian Du, Hongwei Zhang, Yecong Sun, and Xueyao Zhang</i>	
ICONE29-94327	V006T06A020
A Step Towards Rules to Identify Bounding Conditions in Terms of Fatigue Damage for NPP Operational Transients <i>Feng Lv, Zhengyu Zhou, Zhilin Chen, Han Liu, and Zihao Zheng</i>	