

# Invited Talk - Advances in the analysis and management of accidents and future challenges: the OECD/NEA WGAMA and the Joint Safety Research Projects

Monday, 13 November 2023 13:50 (20 minutes)

The OECD Nuclear Energy Agency (NEA) Working Group on Analysis and Management of Accidents (WGAMA) addresses activities in the three technical fields of thermal-hydraulics (T/Hs), computational fluid dynamics (CFD) and severe accidents (SAs) related to safety aspects of potential accidental situations in nuclear power plants (NPPs). WGAMA covers existing nuclear reactors and related technologies as well as emerging challenges in evolutionary and innovative reactor designs and nuclear technologies, including small modular reactors (SMRs). WGAMA's objective is to assess and, where necessary, strengthen the technical basis needed for the prevention, mitigation and management of potential accidents in nuclear reactors and related technologies, and to facilitate international convergence on safety issues, safety assessments and accident management (AM) measures and strategies.

The WGAMA's achievements have been outstanding in providing technical reports and position papers which are reference publications, and in organizing workshops and conferences to discuss innovative methods, materials and technologies in the fields of T/Hs, CFD and SAs.

The paper aims to review and summarize the recent WGAMA activities and outcomes by focusing on T/H analysis of water-cooled nuclear reactors and possible applications to advanced designs, including CFD applications to nuclear reactor safety.

The paper will also describe benefits from, and opportunities for, NEA Joint Safety Research Experimental Projects (JPs) which aim to enhance the technical bases on reactor accidents and CFD and T/H codes' validation, with performing series of SETs or IETs to support the analysis of outstanding safety issues. Such projects also contribute to the development and preservation of key technical capabilities, research infrastructure and expertise in participating organizations/countries. Joint Safety Research project also contribute to education and training of the future generation of nuclear safety experts.

## KEYWORDS

WGAMA, thermal hydraulics analysis, joint safety research projects

## Speaker Bio

**Primary author:** Dr ADORNI, Martina (OECD Nuclear Energy Agency (NEA))

**Co-authors:** Dr BENTAIB, Ahmed (Institut de Radioprotection et de Sureté Nucléaire (IRSN)); Dr JACQUEMAIN, Didier (OECD Nuclear Energy Agency (NEA)); Dr NAKAMURA, Hideo (Japan Atomic Energy Agency (JAEA))

**Presenter:** Dr ADORNI, Martina (OECD Nuclear Energy Agency (NEA))

**Session Classification:** Day 1 - Parallel Session - I Thermal-Hydraulics

**Track Classification:** Nuclear Thermal-hydraulics