REDUCTION OF RADIOLOGICAL ACCIDENT CONSEQUENCES

MAIN INFORMATION

SCOPE OF THE WORKSHOP

Participate to the final Open Workshop of the R2CA project to learn about the main results and outcomes of the project dedicated to Design Basis and Design Extension of Loss-Of-Coolant and Steam Generator Tube Rupture Accidents, Accident Management and Procedures, Innovative Tools and Devices.

Main topics to be addressed:

- Fuel/clad thermomechanics
- Fission products behaviour in fuel
- Fission product transport from primary to secondary circuit and behaviour
- Accident Tolerant Fuels
- Accident prevention & management procedures
- Methodologies for radiological consequence assessments

FREE REGISTRATION

Deadline: **NOVEMBER 21ST**

Informations:

- Remote participants will be provided with a link few days before the workshop
- For on-site participants direct access to IRSN headquarters from Avenue Division Leclerc (T6 tramway line from Châtillon-Montrouge to "Division Leclerc" stop)

R2CA TARGET

R2CA project is devoted to the increase of Nuclear Power Plants safety level by providing more realistic evaluations of the radiological consequences of accidents in the Design Basis and Design Extension Condition domains (DBA and DEC-A) and optimizing their managements. It focused on Loss-of-Coolant (LOCA) and Steam Generator Tube Rupture (SGTR) transients. Main expected results are improved calculation methodologies as well as innovative measures or tools for an early diagnosis and better management of accidents.

https://r2ca-h2020.eu/

R2CA H2020 EURATOM PROJECT

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R2CA

R2CA OPEN WORKSHOP

IRSN Headquarters
(Building 01-Auditorium)
Fontenay-aux-Roses, France
November 29-30, 2023

Organized in hybrid mode by

IRSN

This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement n° 847656

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WORKSHOP PROGRAM

Day 1: November 29

14:15-14:30 Welcome. *Introduction*

14:30-16:00 *Session 1: Introductory session*

14:30-15:00 Invited lecturer

15:00-15:30 An overview of IAEA safety standards in the area of safety analyses (specific for innovative reactors)

15:30-16:00 Methodologies for DEC-A analyses (OECD work)

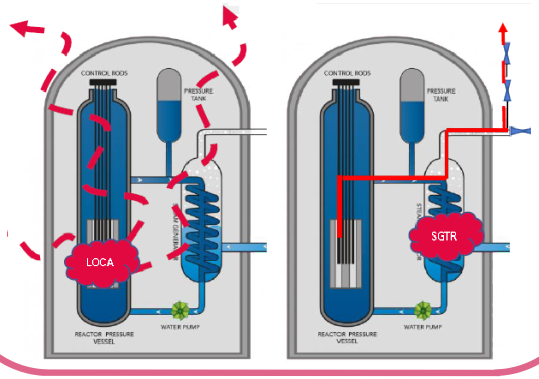
16:00-16:15 Coffee Break

16:15-17:25 *Session 2: R2CA project foundations*

16:15-16:45 Overview of the R2CA project

16:45-17:05 Overview of methodologies for LOCAs & SGTR DBA & DEC-A safety analyses

17:05-17:25 Experimental database & modelling tools in support : what is available & further major needs



R2CA

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Day 2: November 30

09:00-10:30 *Session 3: Source Term Evaluation in LOCAs*

09:00-09:30 Evaluation of failed fuel rods : major improvements in clad creep/burst models, core modelling &

09:30-09:50 Fission product releases: major improvements in modelling FP behaviour in fuel and releases in primary

09:50-10:10 Fission product transport: major improvements in modelling FP behaviour in primary circuit and containment

10:10-10:30 Discussion

10:30-10:45 Coffee Break

10:45-12:15 *Session 4: Source Term Evaluations in SGTRs*

10:45-11:15 Main issues & model improvements related to defective fuel rod behaviour & improved clad behaviour

11:15-11:35 Fission product releases: major model improvements in defective fuel rod releases

11:35-11:55 Fission product trasnport: major model improvements in FP primary to secondary circuit transport

11:55-12:15 Discussion

12:15-13:45 Lunch

13:45-15:05 *Session 5: Accident Management & Prevention*

13:45-14:05 Main progress performed in AMP optimisation

14:05-14:25 Development of neural networks for early diagnosis of defective fuel rods

14:25-14:45 Main progress performed for improved ATF evaluation

14:45-15:05 Discussion

15:05-15:20 Coffee Break

15:20-16:55 *Session 6: Reactor calculations and RC evaluation methodologies*

15:20-15:45 LOCA Initial & Final Reactor Calculations: Gains from the R2CA Project

15:45-16:10 SGTR Initial and Final Reactor Calculations : Gains from the R2CA Project

16:10-16:35 Work performed in Uncertainty Quantification

16:35-16:55 Discussion

16:55-18:00 *Session 7: Closing session*

16:55-17:20 Major insights and outcomes from the R2CA Project

17:20-17:45 Recommendations for methodologies harmonisation

17:45-18:00 Final open discussion & closing words