

Regional Training Workshop on Phenomenology and Numerical Simulations of Severe Accidents in Advanced WCRs

School of Advanced Nuclear Energy System Studies (SANESS) of GCNEP

Time	Monday 3 December	Tuesday 4 December	Wednesday 5 December	Thursday 6 December	Friday 7 December
09:00 – 09:45	Registration & administrative formalities	5. Classification of Severe Accident Phenomena by Levels of Scientific Knowledge and Uncertainty Quantification	11. Regulatory Requirements for Severe Accident Conditions <i>S. Rao (AERB, India)</i>	Severe Accident Management 18. SAMG Development and Implementation	22. Summary of Ongoing International Research in Advanced WCR Severe Accident Management <i>Randall Gauntt (USA)</i>
09:45 – 10:30	Inaugural session <i>GCNEP & IAEA</i>	<i>Luis Herranz (Spain)</i>	12. Fission Product Release <i>Luis Herranz (Spain)</i>	<i>M. Singhal (NPCIL, India)</i>	23. IAEA Resources and Initiatives Related to the Course Topics <i>Matthias Krause (IAEA)</i>
10:30 – 10:45	Break				
10:45 – 11:45	Introduction to Course Scope and Expectations; Group Projects(?) Assessment Quiz(?) (30min) <i>Matthias Krause (IAEA)</i>	Phenomenology in the Propagation of SAs 6. Nuclear Fuel Degradation, Relocation of Melted Fuel and Coolability of Molten Corium <i>A. K. Nayak (BARC, India)</i>	13. Fission Product Behaviour - Transport and Deposition <i>Luis Herranz (Spain)</i>	19. Active and Passive core cooling, Containment Cooling, Pressure Venting and Filtered Venting <i>Randall Gauntt (USA)</i>	24. Directions and way forward (TBF) <i>S.A. Bhardwaj (India)</i>
11:45 – 12:30	Physics and Technology of Advanced WCRs 1. Operating and Advanced WCRs <i>Matthias Krause (IAEA)</i>	7. In-Vessel Melt Retention and Ex-Vessel Corium Cooling - IAEA Activities <i>Matthias Krause (IAEA)</i>	14. Hydrogen Distribution, Management and Prevention of Hydrogen Explosions <i>S. Ganju (BARC, India)</i>	20. MELCOR Code Virtual Demo - Selected Scenario(s) <i>Randall Gauntt (USA)</i>	Technical Tour of GCNEP
12:30 – 14:00	Lunch				

14:00 – 15:00	2. Development of Advanced Reactor Technologies in India <i>A. K. Nayak (BARC, India)</i>	8. Numerical Simulations of Severe Accident Phenomena in PHWRs <i>Prasanna Majumdar (BARC, India)</i>	15. Numerical Simulations of Severe Accident Phenomena in PWRs <i>Luis Herranz (Spain)</i> <i>Randall Gauntt (USA)</i>	21. IAEA Safety Standards and Guidelines; SAMG-D Toolkit	Assessment Quiz (30min) <i>Matthias Krause (IAEA)</i>
15:00 – 16:00	3. Defense in Depth for Design Basis Accidents and design extensions in Advanced WCRs <i>Luis Herranz (Spain)</i>	9. Calandria vessel failure mechanisms <i>S.K. Gupta (BARC, India)</i>	16. Radiological impact assessment methodology and case study <i>M. Kansal (NPCIL, India)</i>	<i>Matthias Krause (IAEA)</i>	Closing remarks GCNEP & IAEA
16:00 – 16:15	Break				
16:15 – 17:30	4. Historical Overview and Fukushima Daiichi Accident Lessons Learned on Modelling Severe Accidents <i>Luis Herranz (Spain)</i>	10. Behaviour of Containment Structures of Indian PHWRs under Severe Accidents including validation <i>R. Roy (NPCIL, India)</i>	17. Emergency action levels, emergency preparedness and response in Indian NPPs <i>M. Kansal (NPCIL, India)</i> <i>Dr. S.P. Lakshmanan (AERB, India)</i>	Practical Exercise: Using the IAEA SAMG-D Toolkit <i>Matthias Krause (IAEA)</i> <i>V.B.L. Jagannad (NPCIL, India)</i> <i>Randall Gauntt (USA)</i>	

Lecturers:

1. M. Krause (M-Fr) [5]
2. LHerranz (M-W) [6]
3. R. Gauntt (W-Fr) [5]
4. A.K. Nayak (M-Tu) [2],
5. Prasanna Majumdar (Tu) [1],
6. M. Singhal (Th) [1],
7. S. Ganju (W) [1],
8. S. Rao (W) [1],
9. S.K. Gupta (Tu) [1],
10. R. Roy (Tu) [1],
11. M. Kansal (W) [2],
12. S.A. Bhardwaj (F) [1],
13. V.B.L. Jagannad (Th)[1]
14. Dr. S.P. Lakshmanan (W) [1]