

Workshop on High Winds and Tornadoes Hazard Assessment and Protection of Nuclear Installations

Programme

Zoom Videoconference, 22-25 March 2022

Date	Session	Title	Speakers	Seoul, KST	Amsterdam/ Paris, CET	Washington/ Toronto, EDT
22 March 2022						
	Opening session	<ul style="list-style-type: none"> Welcome 	Minkyu Kim (KAERI, Korea)	20:30-20:35	12:30-12:35	07:30-07:35
	Workshop Chairs: Minkyu Kim (KAERI, Korea) & John Nakoski (NRC, USA)	<ul style="list-style-type: none"> Introduction that includes background, the purpose of the workshop and expected outcomes. 	Marina Demeshko (NEA)	20:35-20:45	12:35-12:45	07:35-07:45
		<ul style="list-style-type: none"> Introduction of the Chairs. An overview of the outline of the workshop. 	Minkyu Kim (KAERI, Korea)	20:45-20:50 20:50-20:55	12:45-12:50 12:50-12:55	07:45-07:50 07:50-07:55
		<ul style="list-style-type: none"> Introduction of the Technical Note focusing on key messages 	Vincent Rebour (IRSN, France)	20:55-21:15	12:55-13:15	07:55-08:15
		<ul style="list-style-type: none"> Priorities and challenges 	John Nakoski (US NRC, USA)	21:15-21:30	13:15-13:30	08:15-08:30
		Coffee break			21:30-21:45	13:30-13:45

<p>Session 1</p> <p>Phenomenological aspects of High Winds and Tornadoes</p> <p>Chair: Vincent Rebour (IRSN, France)</p> <p>Rapporteur: Gernot Thuma (GRS, Germany)</p>	<ul style="list-style-type: none"> • High Winds: Storm types, characterization and impact on infrastructure • Violent tornado and severe downburst in Czechia 23-24 June 2021 • Recent characteristics and future changes of tropical cyclone activities over the western North Pacific. <p>Coffee break</p> <ul style="list-style-type: none"> • Causes, Environmental and Meteorological Conditions and the Problem of Scale. Nowcasting • Duane Arnold Nuclear Power Plant Derecho Operating Experience 	<p>John Kilpatrick (RWDI)</p> <p>David Ryva, ČHMÚ (Czech National Meteorological Institute, Czech Republic)</p> <p>Dong-Hyun Cha (Korea)</p> <p>Catalin Obreja (Environment and CC Canada / Gov. of Canada)</p> <p>Kevin Quinlan/ Elena Yegorova (US NRC, USA)</p>	<p>21:45-22:15</p> <p>22:15-22:45</p> <p>22:45-23:15</p> <p>23:15-23:30</p> <p>23:30-00:00</p> <p>00:00-00:30</p>	<p>13:45-14:15</p> <p>14:15-14:45</p> <p>14:45-15:15</p> <p>15:15-15:30</p> <p>15:30-16:00</p> <p>16:00-16:30</p>	<p>08:45-09:15</p> <p>09:15-09:45</p> <p>09:45-10:15</p> <p>10:15-10:30</p> <p>10:30-11:00</p> <p>11:00-11:30</p>
23 March 2022					
<p>Session 2</p> <p>Data</p> <p>Chair: Dana Havlin Novakova (SUJB, Czech Republic)</p> <p>Rapporteur: Marina Demeshko (NEA)</p>	<ul style="list-style-type: none"> • Data Collection and Analysis Methods for Estimating Tornadoic Wind Speeds • Developing Data Sources for Extreme Winds using Meteorological Forecasting Models <p>Coffee break</p> <ul style="list-style-type: none"> • Managing disparate sources of Canadian data for the Northern Tornadoes Project • Tornado's and downbursts in the Netherlands <p>Coffee break</p> <ul style="list-style-type: none"> • From wind measurements to high winds characterization for nuclear installations 	<p>Marc Levitan (US NIST, USA)</p> <p>Ken Mylne (Met Office, UK/ WMO)</p> <p>David Sills (Northern Tornado Project, Western University – London, ON, Canada)</p> <p>Peter Siegmund (KNMI, Netherlands)</p> <p>Claire-Marie DULUC (IRSN, France)</p>	<p>20:30-21:00</p> <p>21:00-21:30</p> <p>21:30-21:45</p> <p>21:45-22:15</p> <p>22:15-22:45</p> <p>22:45-23:00</p> <p>23:00-23:30</p>	<p>12:30-13:00</p> <p>13:00-13:30</p> <p>13:30-13:45</p> <p>13:45-14:15</p> <p>14:15-14:45</p> <p>14:45-15:00</p> <p>15:00-15:30</p>	<p>07:30-08:00</p> <p>08:00-08:30</p> <p>08:30-08:45</p> <p>08:45-09:15</p> <p>09:15-09:45</p> <p>09:45-10:00</p> <p>10:00-10:30</p>

24 March 2022	Session 3	<ul style="list-style-type: none"> Recent updates form IAEA Safety Guides and Technical documents on extreme meteorological events Tornado Load Methodology in the new ASCE 7-22 Standard Coffee break <ul style="list-style-type: none"> High Winds: Structural design considerations Tornado Wind Speed Design Data in the U.S. Coffee break <ul style="list-style-type: none"> Design Basis Tornado (DBT) – Site evaluation from operators point of view Nuclear Plant Safety Advancements and PRA Standard 	Paolo Contri (IAEA)	20:30-21:00	12:30-13:00	07:30-08:00	
	Design & Operation		Marc Levitan, (US NIST, USA).	21:00-21:30	13:00-13:30	08:00-08:30	
	Chairs: Joey Wang (CNSC, Canada) & Shizhong Lei (CNSC, Canada)		Coffee break	John Kilpatrick (RWDI, Canada)	21:30-21:45	13:30-13:45	08:30-08:45
	Rapporteurs: John Nakoski (NRC, USA) & Vincenzo Tiberi (IRSN, France)			Kevin Quinlan (US NRC, USA)	21:45-22:15	13:45-14:15	08:45-09:15
					22:15-22:45	14:15-14:45	09:15-09:45
					22:45-23:00	14:45-15:00	09:45-10:00
				Španihel Vojtěch (ČEZ, Czech Republic)	23:00-23:30	15:00-15:30	10:00-10:30
25 March 2022	Session 4	<ul style="list-style-type: none"> High Wind & Tornado Safety Case USNRC Independent Core Cooling requirements for the Swedish NPPs, and how the licensees met them Coffee break <ul style="list-style-type: none"> Development of Probabilistic High Wind Risk Assessment Methodology for Korean Nuclear Power Plants Review of Tornado Parameters for Temelin NPP 	Kevin Quinlan & Elena Yegorova (US NRC, USA)	20:30-21:00	12:30-13:00	07:30-08:00	
	Safety case approaches		Lars Bennemo, (SSM, Sweden).	21:00-21:30	13:00-13:30	08:00-08:30	
	Chair: John Nakoski (NRC, USA)		Coffee break	Minkyu Kim (KAERI, S. Korea)	21:30-21:45	13:30-13:45	08:30-08:45
	Rapporteur: Joey Wang (CNSC, Canada)				21:45-22:15	13:45-14:15	08:45-09:15
				Carl Mazzola, (Jacobs/Numark, Czech Republic)	22:15-22:45	14:15-14:45	09:15-09:45
					22:45-23:00	14:45-15:00	09:45-10:00
					23:00-00:00	15:00-16:00	10:00-11:00
	Session 5	<ul style="list-style-type: none"> Rapporteurs' reports (60 min) + Sessions Chairs' conclusions (identify key topic) Closing Session (10 min) 		00:00-00:10	16:00-16:10	11:00-11:10	
	Wrap-up session Chair: Minkyu Kim (KAERI, Korea)						