

International Conference on the Management of Spent Fuel from Nuclear Power Reactors:

Learning from the Past, Enabling the Future

24–28 June 2019

PROGRAMME

Organized by the
International Atomic Energy Agency (IAEA)

In cooperation with

European Commission
OECD / NEA
World Nuclear Association

IAEA Headquarters Vienna, Austria

Programme Committee (IAEA):

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IAEA Secretariat:

Scientific Secretaries: A. González-Espartero, NEFW
G. Bruno, NSRW

Conference Coordination: M. Neuhold, MTCD

Scientific Support L. McManniman, NEFW

Administrative Support: S. Gyay de Goyaz, NEFW

Location of the Event: International Atomic Energy Agency
Vienna International Centre (VIC)
Building C, Board Room C
Wagramer Strasse 5
A-1400 Vienna, Austria
Tel.: (+43 1) 2600 21330

Working Language: English

Resolutions: No resolutions may be submitted for consideration on any subject; no votes will be taken.

IAEA Mobile Conference Application



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Android



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Functions and features of the App shown below will be used throughout the Conference. Please fill in the participant survey at the end of the event.



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Read full-papers of speakers



Raise questions to speakers during session



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TIMETABLE

Monday, 24 June 2019

Time	Session No.	Session Title / Break	Venue
09:15–10:30		Opening Session	Board Room C
10:30–11:00		<i>Coffee/Tea Break</i>	<i>C04 Exhibition Area & C0454</i>
11:00–12:40	1.1	National Strategies for Spent Fuel Management	Board Room C
12:40–14:00		<i>Lunch Break</i>	
14:00–16:00	1.2	National Strategies for Spent Fuel Management	Board Room C
16:00–16:30	<i>P1.1</i>	<i>Poster Session Coffee/Tea Break</i>	<i>C04 Exhibition Area & C0454</i>
16:30–18:30	1.3	National Strategies for Spent Fuel Management	Board Room C
18:30–20:00		<i>Welcome Reception</i>	<i>4th floor - C-Building</i>

Tuesday, 25 June 2019

Time	Session No.	Session Title / Break	Venue
08:30–10:30	2.1	Spent Fuel and High Level Waste storage and subsequent transportability: Ageing management of storage systems (wet & dry)	Board Room C
10:30–11:00	<i>P2.1</i>	<i>Poster Session Coffee/Tea Break</i>	<i>C04 Exhibition Area & C0454</i>
11:00–12:40	2.2	Spent Fuel and High Level Waste storage and subsequent transportability: Ageing management of storage systems (wet & dry)	Board Room C
12:40–14:00		<i>Lunch Break</i>	
13:30–14:00		IAEA ESPACE Event - SRIS: Spent fuel and Radioactive Waste Information System	C0441
14:00–16:00	2.3	Spent Fuel and High Level Waste storage and subsequent transportability: Safety & security of dry storage	Board Room C
16:00–16:30	<i>P2.2</i>	<i>Poster Session Hosted Coffee/Tea Break</i>	<i>C04 Exhibition Area & C0454</i>
16:30–18:30	2.4	Spent Fuel and High Level Waste storage and subsequent transportability: Behaviour & management of spent fuel (wet & dry)	Board Room C

Wednesday, 26 June 2019

Time	Session No.	Session Title / Break	Venue
08:50–10:30	4.1	Recycling as a spent fuel management option	Board Room C
10:30–11:00	<i>P4.1</i>	<i>Poster Session 4 Coffee/Tea Break</i>	C04 Exhibition Area & C0454
11:00–12:40	4.2	Recycling as a spent fuel management option	Board Room C
12:40–14:00		<i>Lunch Break</i>	
14:00–16:00	6.1	Disposal	Board Room C
16:00–16:30	<i>P6.1</i>	<i>Poster Session Hosted Coffee/Tea Break</i>	<i>C04 Exhibition Area & C0454</i>
16:30–18:10	6.2	Disposal	Board Room C

Thursday, 27 June 2019

Time	Session No.	Session Title / Break	Venue
08:50–10:30	5.1	Impacts of advanced nuclear energy systems on the back-end of the fuel cycle	Board Room C
10:30–11:00	<i>P5.1</i>	<i>Poster Session Coffee/Tea Break</i>	<i>C04 Exhibition Area & C0454</i>
11:00–12:40	5.2	Impacts of advanced nuclear energy systems on the back-end of the fuel cycle	Board Room C
12:40–14:00		<i>Lunch Break</i>	
13:30–14:00		IAEA ESPACE Event - SRIS: Spent fuel and Radioactive Waste Information System	C0441
14:00–16:00	7.1	Challenges in an integrated approach for the back-end system	Board Room C
16:00–16:30	<i>P7.1</i>	<i>Poster Session Hosted Coffee/Tea Break</i>	<i>C04 Exhibition Area & C0454</i>
16:30–18:30	7.2	Challenges in an integrated approach for the back-end system	Board Room C

Friday, 28 June 2019

Time	Session No.	Session Title / Break	Venue
08:30–10:30	3.1	Transportation in the back-end	Board Room C
10:30–11:00	<i>P3.1</i>	<i>Poster Session Coffee/Tea Break</i>	<i>C04 Exhibition Area & C0454</i>
11:00–12:20	3.2	Transportation in the back-end	Board Room C
12:20–13:00		Closing Session	Board Room C

MONDAY, 24 June 2019

09:00-10:30 OPENING SESSION

Board Room C

Time	Name	Designating Member State/Organization	Title
09:15–09:25	S.Pickering	Conference Chairwoman United States of America	Opening Address
09:25–09:35	M. Chudakov	Deputy Director General Nuclear Energy, IAEA	Opening Address
09:35–09:50	W. Magwood	Director General, OECD- NEA (Organisation for Economic Cooperation and Development - Nuclear Energy Agency)	Opening Address
09:50–10:05	M. Garribba	Director of Nuclear Energy, Safety and ITER, European Commission	Opening Address
10:05–10:20	A. Rising	Director General, World Nuclear Association	Opening Address
10:20–10:30	A. González- Espanero	Scientific Secretary, IAEA	Administrative Remarks
10:30–11:00	<i>Coffee/Tea Break</i>		

MONDAY, 24 June 2019

11:00–12:40 **SESSION 1.1:**
National Strategies for Spent Fuel
Management

Board Room C

Chairpersons: **D. Hambley, UK**
 T. Saegusa, Japan

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
11:00–11:20	210	C. Xerri	IAEA	Spent fuel management: an asset for the future?
11:20–11:40	209	HE H. Alkaabi	United Arab Emirates	<i>Invited Speaker</i> UAE progress on the development of a national strategy on the management of nuclear waste
11:40–12:00	194	M. Martín-Ramos	European Commission	European Commission's Joint Research Centre research on the safety of spent fuel and high level radioactive waste management
12:00–12:20	23	H. Mpakany	Kenya	Kenya's policy and strategy on radioactive waste management and spent fuel
12:20–12:40	20	S. Prihastuti	Indonesia	Legislative framework for spent fuel management in Indonesia
<i>12:40–14:00 Lunch Break</i>				

14:00–16:00 **SESSION 1.2:**
National Strategies for Spent Fuel
Management

Board Room C

Chairpersons: **M. Martín-Ramos, European Commission**
 S. Prihastuti, Indonesia

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
14:00–14:20	4	A. Vidal Soares	Brazil	The need for managing spent fuel in Brazil
14:20–14:40	80	A. Kuzmin	Belarus	Spent fuel management strategy development in Belarus
14:40–15:00	143	J. Vaclav	Slovakia	Capacity extension of ISFSF Jaslovské Bohunice
15:00–15:20	101	F. Lentijo Robledo	Spain	Spanish national strategy for SF & HLW management. Considerations for a Centralized Storage Facility (CSF)

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
15:20–15:40	204	E. Touron	France	<i>Invited Speaker</i> French nuclear fuel cycle policy
15:40–16:00	203	S. Pickering	United States of America	Overview of Posters
16:00–16:30 <i>Poster Session P1.1</i> <i>Coffee/Tea Break</i>				

16:30–18:30 SESSION 1.3 Board Room C
National Strategies for Spent Fuel Management

Chairpersons: S. Salzstein, United States of America
E. Touron, France

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
16:30–16:50	74	J.S. Yadav	India	<i>Invited Speaker</i> Spent fuel management - India
16:50–17:10	171	Y. Guoan	China	<i>Invited Speaker</i> The strategy of closed nuclear fuel cycle based on fast reactor and its back-end R&D activities
17:10–17:30	180	P. Lyons	United States of America	<i>Invited Speaker</i> Lessons learned from the U.S. national strategy - a personal perspective
17:30–17:50	58	K. Yoshimura	Japan	<i>Invited Speaker</i> Japan's nuclear fuel cycle policy
17:50–18:10	160	P. Hallington	United Kingdom	<i>Invited Speaker</i> THORP - Commercial reprocessing at Sellafield
18:10–18:30	25	A. Khaperskaya	Russian Federation	SNF management in Russia: status and future development
18:30 <i>Conference Reception, 4th floor, C-building</i>				

MONDAY, 24 June 2019

Poster / E-Poster Presentations

16:00–16:30 **POSTER SESSION P1.1:
National Strategies for Spent Fuel
Management** **C04 Exhibition Area &
C0454**

Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
189	V. Keshishyan A. Petrosyan	Armenia	Spent fuel and radioactive waste management in Armenia
192	S.P. Bvumbi	South Africa	A strategy/context for the Republic of South Africa
56	A. Hamed	Sudan	Managing spent nuclear fuel for Sudan future reactors

TUESDAY, 25 June 2019

08:30–10:10 **SESSION 2.1:
Spent Fuel and High Level Waste storage
and subsequent transportability: Ageing
management of storage systems (wet &
dry)** **Board Room C**

Chairpersons: **M. Lloret, Spain**
H. Takeda, Japan

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
08:30–08:50	22	A. Barry	Canada	The history and future plans for the wet and dry long term spent fuel storage experiments at Canadian nuclear laboratories
08:50–09:10	173	B. Shangguan	China	The PWR spent fuel dry storage project experience in China
09:10–09:30	60	M. Nyström	Sweden	<i>Invited Speaker</i> Implementing aging management program in interim wet storage
09:30–09:50	88	A. Ledger	United Kingdom	Update to the long term storage of advanced gas cooled reactor (AGR) fuel
09:50–10:10	104	H. Akkurt	United States of America	Industrywide global efforts toward long term monitoring of neutron absorber materials in spent fuel pools

10:10–10:30	115	M. Schwerdtfeger	Germany	Research towards prolonged interim storage from the regulatory body perspective
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10:30–11:00 *Poster Session P2.1*
Coffee/Tea Break

11:00–12:40 **SESSION 2.2:** **Board Room C**
Spent Fuel and High Level Waste storage and subsequent transportability: Ageing management of storage systems (wet & dry)

Chairpersons: **H. Akkurt, United States of America**
M. Nyström, Sweden

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
11:00–11:20	27	H. Takeda	Japan	Development of helium leak detection methods for canisters (Part 1) –Evaluation of minute gas leaks from canisters by small-scale models
11:20–11:40	103	P. Narayanan	United States of America	Aging management of dry storage systems in centralized interim storage facilities
11:40–12:00	162	J. Renshaw	United States of America	Robotically-deployed NDE inspection development for dry storage systems for used nuclear fuel
12:00–12:20	182	S. Kaminishi	Japan	<i>Invited Speaker</i> Lessons learned from Fukushima Daiichi nuclear accident for spent fuel storage
12:20–12:40	134	C. Roussel	France	Borosilicate glass HLW demonstrated stability during long term interim storage

12:40–14:00 *Lunch Break*

13:30–14:00 **IAEA ESPACE EVENT** **C0441**
SRIS: Spent fuel and Radioactive Waste Information System
M. Lust, IAEA

TUESDAY, 25 June 2019

14:00–16:00 **SESSION 2.3:** **Board Room C**
Spent Fuel and High Level Waste storage
and subsequent transportability: Safety &
security of dry storage

Chairpersons: **K. Agarwal, India**
 A. Presta, France

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
14:00–14:20	3	S. Alyokhina	Ukraine	Scientific basis of thermal safety analysis of dry storage of spent nuclear fuel on Zaporizhska NPP
14:20–14:40	7	A.M. Taherian	Iran	Transportation Cask, and concrete module design for managing nuclear spent fuel produced in Bushehr Nuclear Power Plant
14:40–15:00	147	F. Ledroit	France	Spent nuclear fuel storage: concepts and safety issues
15:00–15:20	164	A. Csontos	United States of America	Thermal modeling round robin of the high-burnup demonstration cask
15:20–15:40	83	Z.F. Hassan Akl	Egypt	A proposed regulatory perspective on the security requirements for spent nuclear fuel
15:40–16:00	190	T. Narita	Japan	<i>Invited Speaker</i> Overview of regulatory framework on dry cask storage in Japan
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16:00–16:30	<i>Poster Session P2.2</i> <i>Hosted Coffee/Tea Break</i>			

TUESDAY, 25 June 2019

16:30–18:30 **SESSION 2.4** **Board Room C**
Spent Fuel and High Level Waste storage
and subsequent transportability:
Behaviour & management of spent fuel
(wet & dry)

Chairpersons: **M. Schwerdtfeger, Germany**
S. Alyokhina, Ukraine

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
16:30–16:50	51	D. Papaioannou	European Commission	Mechanical loading tests on irradiated LWR fuel rods
16:50–17:10	86	D. Kook	Korea, Republic of	PWR spent nuclear fuel integrity evaluation results in Korea
17:10–17:30	122	A. Machiels	United States of America	Perspective on thermal creep and hydride reorientation for dry storage and transportation applications
17:30–17:50	114	K. Linnemann	Germany	Authority assessment experience during design approval for packages loaded with special encapsulations for damaged spent nuclear fuel
17:50–18:10	169	M. Lloret	Spain	ENUSA activities regarding spent fuel management
18:10–18:30	47	B. Ficker	Hungary	<i>YGE Challenge Winner</i> Storage capacity enhancement of SFISF at Paks in Hungary

TUESDAY, 25 June 2019

Poster / E-Poster Presentations

10:30–11:00

POSTER SESSION P2.1:
Spent Fuel and High Level Waste storage and
subsequent transportability

C04 Exhibition Area & C0454

POSTERS

Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
49	U. Zencker K. Simbruner H Völzke	Germany	Brittle failure of spent fuel claddings under long-term dry interim storage conditions - Preliminary analysis
5	A. Wijayanto T. Sundari	Indonesia	Radiological safety assessments for sipping test on spent fuel of G.A. Siwabessy reactor 30 MWt in Indonesia
87	T. Sundari Budiyono Parjono D.S. Rahayu	Indonesia	Facility performance and aging review of the interim storage for spent nuclear fuel in Indonesia
105	S. Okazaki A. Tao M. Goto	Japan	Development effort on mitigation and detection of aging of canisters
95	D.S. Yook K. Gyeonguk H. Jung	Korea, Republic of	Preliminary evaluation for independent confirmation of source term and criticality of the dual purpose cask in Korea
186	A. Jamil K.G. Qasim	Pakistan	Spent fuel management at Pakistan NPPs, wet storage to dry storage
17	A. Peršič T. Nemec T. Bajcar	Slovenia	The requirements for construction of new spent fuel dry storage — Design extension conditions approach
78	O. Dudka I. Bilodid Y. Kostyushko	Ukraine	Aspects of state technical review of nuclear safety justification of spent nuclear fuel storage facilities in Ukraine

TUESDAY, 25 June 2019

E-POSTERS

Screen No.	Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
1	24	T. Saegusa	Japan	Recent publications on transport and storage of radioactive materials
2	163	J.B. Renshaw S.M. Chu A. Csontos	United States of America	Aging management for dry storage canisters

Poster / E Poster Presentations

16:00–16:30

POSTER SESSION P2.2:

C04 Exhibition Area & C0454

Spent Fuel and High Level Waste storage and subsequent transportability

POSTERS

Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
40	A. Caillet Bois L. Alberto Casais	Argentina	Enforcement of the thermohydraulic test and construction of the mock-up for dry storage for spent fuel elements
21	L. Zhang	China	Main concerns of nuclear safety supervision during operation of spent fuel storage facilities in China
168	P. Dyck	Germany	Independent, standalone operation of interim spent fuel storage facilities
71	T. Sundari S. Ismarwanti Parjono I Santoso M.H. Kusuma	Indonesia	Water temperature distribution in spent fuel storage pool of nuclear research reactor in Indonesia
28	K. Shimizu H. Takeda	Japan	Development of helium leak detection methods for canisters (Part 2) - Leak evaluation by a horizontal small canister model
14	S. Hashim M.A.S. Husain M.H. Rabir N. Zakaria M.R.M. Zin	Malaysia	Determination of out of core fuel burnup in TRIGA Puspatti reactor
188	G.M. Chirea	Romania	Cernavoda NPP - Management of spent fuel

Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
6	D. Lunov S. Alyokhina	Ukraine	Usage multistage approach for detailed definition of spent nuclear fuel thermal state

E-POSTERS

Screen No.	Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
1	145	B. Cordier J. Lombard F. Ledroit I. Le Bars	France	Safety options for the project of a future centralized interim wet storage facility for spent fuel assemblies
2	50	S. Caruso E. Vlassopoulos P. Grünberg T. Steinbach D. Papaioannou R. Nasyrow V.V. Rondinella G. Neumann S. Tittelbach	Switzerland	Spent nuclear fuel management after dry storage: fuel integrity and safe handling during fuel encapsulation
3	61	G.S. Rothwell	United States of America	Scale economies in extended SNF storage

WEDNESDAY, 26 June 2019

08:50–10:30 **SESSION 4.1:**
**Recycling as a spent fuel management
option**

Board Room C

Chairpersons: **C. Roussel, France**
A. Kirkin, Russian Federation (YGE Challenge Winner)

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
08:50–09:10	127	B. Morel	France	La Hague Reprocessing plant: a mature technology continuously enhancing its performances through industrialisation of R&D programs
09:10–09:30	53	A. Sheremetyev	Russian Federation	<i>Invited Speaker</i> Experience and prospects of SNF reprocessing at Mayak
09:30–09:50	33	H. Asano	Japan	Cross-sectoral study on nuclear energy system for less-impacted geological disposal of high-level radioactive waste management: Effect of various spent nuclear fuel properties and reprocessing conditions on geological disposal
09:50–10:10	126	P. Breitenstein	France	Solution for management and disposal of multiple design defective fuel elements
10:10–10:30	19	A. Rodin	Russian Federation	Reactive hazards during SNF reprocessing as possible causes of radiation accident
10:30–11:00	<i>Poster Session P4.1 Coffee/Tea Break</i>			

WEDNESDAY, 26 June 2019

11:00–12:40 **SESSION 4.2:**
Recycling as a spent fuel management option

Board Room C

Chairpersons: **A. Khaperskaya, Russian Federation**
 Y. Guoan, China

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
11:00–11:20	72	C. Delafoy	France	<i>Invited Speaker</i> Plutonium multirecycling through LWR MOX fuel: Today and tomorrow
11:20–11:40	55	A. Grol	Russian Federation	Evaluation of technical and economic indicators of REMIX fuel application in the LWR fuel cycle
11:40–12:00	92	E. Buravand	France	An oxidative digestion process applied to SFR MOX fuel recycling to recover plutonium and reduce solid residues volume
12:00–12:20	94	C. Chabert E. Touron	France	Prospective inventory of radioactive materials and waste produced by the French nuclear fleet according to different plutonium multirecycling options in the frame of the French law for waste management
12:20–12:40	10	A. Kirkin	Russian Federation	<i>YGE Challenge Winner</i> Approaches to evaluation of spent nuclear fuel reprocessing products activity and volume equivalence which is returned to a supplier state in the Russian Federation
<hr/> <i>12:40–14:00 Lunch Break</i> <hr/>				

WEDNESDAY, 26 June 2019

14:00–16:00 **SESSION 6.1:
Disposal**

Board Room C

Chairpersons: **H. Zaccai, France**
J. Home, UK (YGE Challenge Winner)

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
14:00–14:20	31	S. Kondo	Japan	<i>Invited Speaker</i> Recent progress in geological disposal of radioactive wastes and strategic issues to be dealt with in the process: EDRAM's perspective
14:20–14:40	185	P. Swift	United States of America	<i>Invited Speaker</i> Impacts of nuclear fuel cycle choices on permanent disposal of high-activity radioactive wastes
14:40–15:00	159	J-M. Hoorelbeke	France	The place of Cigéo in the French management of Spent Fuel
15:00–15:20	120	T. Žagar	IFNEC (International Framework for Nuclear Energy Cooperation)	<i>Invited Speaker</i> Development of the Multinational Repository Concept: Exploring alternative approaches to financing a multinational repository
15:20–15:40	106	M. Kojo	Finland	Role of the host communities in final disposal of spent nuclear fuel in Finland and Sweden
15:40–16:00	130	L. Frizzell	Canada	<i>Invited Speaker</i> Stakeholder communications and engagement in the site selection process for Canada's deep geological repository for used nuclear fuel
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16:00–16:30 <i>Poster Session P6.1</i> <i>Hosted Coffee/Tea Break</i>				

WEDNESDAY, 26 June 2019

16:30–18:10 **SESSION 6.2**
Disposal

Board Room C

Chairpersons: **T. Tate, United States of America**
 M. Kari, Finland

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
16:30–16:50	195	I. Tsvetkov	IAEA	Safeguards-by-design for encapsulation plants and geological repositories
16:50–17:10	150	A. Sjöland	Sweden	<i>Invited Speaker</i> Decay heat and characterisation of spent nuclear fuel for repositories and transport
17:10–17:30	117	P. Mäenalanen	Finland	Regulatory control in the construction of spent fuel disposal facility in Finland
17:30–17:50	137	P. Blokhin	Russian Federation	Evaluation of radionuclide compositions of accumulated high level radioactive waste: features and solution method
17:50–18:10	54	J. Home	United Kingdom	<i>YGE Challenge Winner</i> Strategies for post-closure long term information management.

WEDNESDAY, 26 JUNE 2019

Poster / E Poster Presentations

10:30–11:00 POSTER SESSION P4.1: C04 Exhibition Area &
Recycling as a spent fuel management C0454
option

Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
29	R.F. Abou Alou M. Shaat M.M. Abdu	Egypt	Core modeling and source term calculations using MCNPX code for Fukushima Daiichi Unit-1 Nuclear Power Plant Accident
16	N. Mohamed	Egypt	A new design of a PWR fuel assembly for direct recycling of spent fuel
59	N.V. Kovalev N.D. Goletskiy B.Y. Zilberman A.B. Sinyukhin	Russian Federation	A new approach to nuclear fuel recycling for LWR – REMIX fuel concept: status and trends
155	S. Aldawahra	Syrian Arab Republic	Increasing plutonium disposition rate in the thermal reactors (VVER and RBMK)
13	B. Bulut Acar H.O. Zabunoglu	Turkey	Complete co-processing of spent fuel as a back-end nuclear fuel cycle strategy

WEDNESDAY, 26 JUNE 2019**16:00–16:30 POSTER SESSION P6.1:
Disposal****C04 Exhibition Area &
C0454****POSTERS**

Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
70	S. Maharramova W. Beere K. Eitrheim T. Walderhaug O. Reistad	Azerbaijan	Analysis for radiotoxicity estimation of the Halden BWR spent fuel
85	E.R. Atta M. Abdelgeleel P.E.I. Tawfick A.A. Mohammed N.A. Abdel Raheim	Egypt	Investigation of novel composites as backfill materials in radioactive waste disposal facilities
42	P.E.I. Tawfick	Egypt	Efficient implementation of safeguards by design for disposed spent nuclear fuel
121	S.E. Shaban R.A. El-Tayebany M.H. Hazzaa	Egypt	Safeguards approaches of the spent nuclear fuel: The route to detect partial and gross defects
45	A. Šmaizys E. Narkūnas P. Poškas	Lithuania	Criticality and radiation safety evaluation of the canisters that could be used for RBMK-1500 SNF disposal
140	D.V. Biriukov A.N. Dorofeev A.V. Khaperskaya P.A. Blohkin N.I. Drobyshevsky A.A. Samylov S.S. Utkin	Russian Federation	Formation of requirements for the system of disposal of radioactive waste in the context of plans for reprocessing of spent nuclear fuel
77	A. Namhata C. Li A. Papafotiou	Switzerland	Model-based assessment of repository induced effects in the vicinity of repositories for SF/HLW

WEDNESDAY, 26 JUNE 2019

E-POSTERS

Screen No.	Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
1	102	C. Clementi L. Capineri F. Littmann	Italy	Ultrasonic method to keep the continuity of knowledge of spent nuclear fuel from the encapsulation plant to the geological repository
2	64	E.J. Bonano J.E. Meacham P.G. Meacham	United States of America	Practical observations regarding knowledge management for a nuclear waste management project
	65	E.J. Bonano J.E. Meacham G.J. Appel	United States of America	Radioactive Waste Management - It's not all Science and Engineering
3	187	T. Frazier	United States of America	Deep Isolation: An innovative horizontal drillhole solution

THURSDAY, 27 June 2019

08:50–10:30 **SESSION 5.1:** **Board Room C**
Impacts of advanced nuclear energy
systems on the back-end of the fuel cycle

Chairpersons: **A. Bychkov, Russian Federation**
 T. Okamura, Japan (YGE Challenge Winner)

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
08:50–09:10	139	L. Van Den Durpel	Belgium	Back-End fuel cycle strategies in uncertain 'Gen-IV' futures: Effective scenarios towards sustainable nuclear energy futures
09:10–09:30	167	K. Tsujimoto	Japan	Research and development on partitioning and transmutation technology based on double-strata concept in JAEA
09:30–09:50	38	S. Bourg	France	GENIORS, an EU R&D project on MOX fuel reprocessing in GEN IV systems
09:50–10:10	68	A. Shadrin	Russian Federation	<i>Invited Speaker</i> Fast reactor SNF reprocessing for closed nuclear fuel cycle
10:10–10:30	193	C.P. Kaushik	India	<i>Invited Speaker</i> Partitioning of High Level Liquid Waste for value recovery – a step toward advance fuel cycle
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10:30–11:00 <i>Poster Session P5.1</i>				
<i>Coffee/Tea Break</i>				

THURSDAY, 27 June 2019

11:00–12:40

SESSION 5.2:
**Impacts of advanced nuclear energy
systems on the back-end of the fuel cycle**

Board Room C

Chairpersons: **S. Bourg, France**
A. Barry, Canada

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
11:00–11:20	62	D. Goddard	United Kingdom	<i>Invited Speaker</i> Spent fuel management considerations for accident tolerant fuels
11:20–11:40	170	T. Sugawara	Japan	Design of accelerator-driven system consistent to partitioning technology
11:40–12:00	172	C. Xu	China	<i>Invited Speaker</i> Partitioning of high level liquid waste in China
12:00–12:20	8	V. Ignatiev	Russian Federation	Molten Salt Reactor for the management of minor actinides from VVER 1000/1200 used fuel
12:20–12:40	34	T. Okamura	Japan	<i>YGE Challenge Winner</i> Reduction of geological disposal area by introducing partitioning technologies under conditions of high burn-up operation and high content vitrified waste
12:40–14:00 Lunch Break				

13:30–14:00

IAEA ESPACE EVENT
**SRIS: Spent fuel and Radioactive Waste
Information System**

C0441

M. Lust, IAEA

THURSDAY, 27 June 2019

14:00–16:00 **SESSION 7.1:**
Challenges in an integrated approach for
the back-end system

Board Room C

Chairpersons: **I. Seelev, Russian Federation**
 B. Carlsen, United States of America

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
14:00–14:20	99	R. Stoll	United States of America	Evolution of an execution strategy analysis (ESA) capability and tool for the disposition of spent nuclear fuel (SNF) and high level waste (HLW)
14:20–14:40	107	A. Presta	France	Global acceptance on management and transport of spent fuel
14:40–15:00	110	J. Wise	United States of America	An integrated approach to aging management of spent fuel dry storage systems in the United States
15:00–15:20	57	J. Choi	United States of America	A resilient back-end fuel cycle for managing spent fuel from nuclear power reactors
15:20–15:40	90	E. Zhurbenko	Russian Federation	Nuclear infrastructure in the field of nuclear fuel cycle for the newcomer-country: main principles and step-by-step algorithm of development
15:40–16:00	161	L. Van Den Durpel	Belgium	<i>Invited Speaker</i> Cost/Risk-optimised fuel cycle decision-making in uncertain market futures
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<i>16:00–16:30</i> <i>Poster Session P7.1</i> <i>Hosted Coffee/Tea Break</i>				

THURSDAY, 27 June 2019

16:30–18:30 **SESSION 7.2**
Challenges in an integrated approach for
the back-end system

Board Room C

Chairpersons: **C. Evans, France**
 C.P. Kaushik, India

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
16:30–16:50	152	H. Zaccai	WNA	The responsible management of the used nuclear fuel by the nuclear industry
16:50–17:10	174	J-M. Hoorelbeke P. Devin S. Missrian	France	French “Cycle Impact” approach
17:10–17:30	178	I. Seelev	Russian Federation	Closing the nuclear fuel cycle at FNO FSUE “MCC”
17:30–17:50	144	B. Carlsen	United States of America	<i>Invited Speaker</i> Facing the reality of indefinite storage — What does it mean?
17:50–18:10	93	J. Czerwin	France	<i>Invited Speaker</i> Valuing flexibility and integrating risks in used nuclear fuel management
18:10–18:30	119	A. Bednarek	United States of America	Cooperative spent fuel management partnership in the Pacific Rim

THURSDAY, 27 JUNE 2019

Poster / E Poster Presentations

10:30–11:00

POSTER SESSION P5.1:
Impacts of advanced nuclear energy
systems on the back-end of the fuel cycle

C04 Exhibition Area &
C0454

POSTERS

Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
39	A. Khakim A. Waluyo	Indonesia	Identification of important fission product nuclides from spent fuel of pebble bed HTGR at maximum burn-up
30	M. Nakase E. Minari T. Okamura H. Asano H. Sagara M. Saito K. Takeshita	Japan	Effective use of U-234 in thorium fuel cycle
181	T. Okamura E. Minari M. Nakase H. Asano K. Takeshita	Japan	Reduction of geological disposal area by introducing partitioning technologies under conditions of high burn-up operation and high content vitrified waste
15	S.M. Fadzil P. Hrma	Malaysia	Immobilization of rare earth waste stream from reprocessing using vitrification
98	L. Podrezova K. Dvoeglazov S. Liventsov A. Gozhimov	Russian Federation	Verification of CODE-TP model of liquid chromatography process used in processing technology for fast reactors SNF.
116	L.I. Tkachenko D.V. Riabkov	Russian Federation	The options of spent fuel reprocessing and partition in the frame of future advanced fuel cycles in Russia
91	S. Semin M. Baryshnikov U. Voroshilov S. Lukin D. Ryabkob	Russian Federation	High level waste partitioning as an obligatory part of the used nuclear fuel management
82	A. Bashir Ahmed B. Liu	Sudan	Transmutation of minor actinide in AP1000 reactor

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E-POSTERS

Screen No.	Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
1	35	E. Minari T. Okamura M. Nakase H. Asano K. Takeshita	Japan	Environmental load reduction of geological repository by minor actinide separation: Utilization of MOX fuel in future fuel cycle system
2	52	A. Sheremetyev D. Kolupaev	Russian Federation	Perspective solutions for the back-end of the nuclear fuel cycle

16:00–16:30 **POSTER SESSION P7.1:** **C04 Exhibition Area &**
Challenges in an integrated approach for **C0454**
the back-end system

POSTERS

Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
138	L. Van Den Durpel	Belgium	Cost/risk-decisioneering on spent fuel management: financial risk analysis in the EU
109	A.F. Miranda	Brazil	Spent fuel management at Almirante Alvaro Alberto Nuclear Power Center
97	O. Elhefnawy	Egypt	Considerations to enhance public understanding of the radioactive materials management
149	D. Subbotnitskiy P. Warren S. Dardour	IAEA	Funding strategies for spent fuel liabilities
112	P.M. Jawale	India	In the name of sustainable development: socio-legal challenges of nuclear energy and spent fuel management.
89	M. Baryshnikov E. Zhurbenko	Russian Federation	Service platform in nuclear fuel cycle: practical solution for the used nuclear fuel issue and securing of the fuel supply

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E-POSTERS

Screen No.	Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
1	212	C. Evans F. Laugier E. Touron	France	The French fuel cycle: An integrated industrial system
2	146	F. Gauthier J.P. Daubard	France	French "Cycle Impact" approach: Integrated approaches to the back end of the fuel cycle
3	211	I. Seelev	Russian Federation	Closing the nuclear fuel cycle at MCC

FRIDAY, 28 June 2019

08:30–10:30 **SESSION 3.1:**
Transportation in the back-end

Board Room C

Chairpersons: **M. Golshan, UK**
B. Ficker, Hungary (YGE Challenge Winner)

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
08:30–08:50	12	S. Maheras	United States of America	Lessons learned in planning for the removal of spent nuclear fuel from shutdown nuclear power plant sites in the U.S.
08:50–09:10	75	S. Bzuni	Armenia	Validation of the WWER type spent fuel transport cask shielding model
09:10–09:30	108	Y. Solignac	France	Management program for sustainable transportation of used fuel
09:30–09:50	111	R. Torres	United States of America	Review guidance for the safe transport and dry storage of high burnup spent nuclear fuel
09:50–10:10	124	A. Palacio Alonso	Spain	New challenges in the dry storage and transportation of spent nuclear fuel from Spanish nuclear power plants
10:10–10:30	128	J. Tuunanen	Finland	Preparation for the future spent fuel transportation and disposal at Loviisa NPP
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10:30–11:00	<i>Poster Session P3.1 Coffee/Tea Break</i>			

FRIDAY, 28 June 2019

11:00–12:20 **SESSION 3.2:**
Transportation in the back-end

Board Room C

Chairpersons: **J. Heinonen, Finland**
J-P. Carreton, France

Time	Paper No.	Name	Designating Member State/Organization	Title of Paper
11:00–11:20	177	A. Leshchenko	Russian Federation	<i>Invited Speaker</i> International multimodal transport of spent nuclear fuel through the example of research reactor spent fuel return programs
11:20–11:40	184	S. Saltzstein	United States of America	<i>Invited Speaker</i> International multi-modal spent nuclear fuel transportation test: The transportation test triathlon
11:40–12:00	205	S. Whittingham	IAEA	<i>Invited Speaker</i> Evolution of transport regulations for spent fuel
12:20–12:20	196	M. Crowther	WNTI (World Nuclear Transport Institute)	<i>Invited Speaker</i> International shipments of sensitive nuclear materials; Experience of International Nuclear Services in safe and secure transport of sensitive nuclear materials across international borders

10:30–11:00 **POSTER SESSION P3.1:**
Transportation in the back-end

C04 Exhibition Area & C0454

Paper No.	Author(s) [presenting author in bold]	Designating Member State/Organization	Title of Paper
26	M. Abdelgeleel	Egypt	Egyptian safety requirements proposal for storage and transport of spent fuel
67	M.A. Ibrahim	Egypt	Management of the storage and transportation of PWR spent fuel cask in normal and accident conditions
36	G.U. Kang D.S. Yook J.H. Cha	Korea, Republic of	Establishment of thermal analysis scenario of spent fuel dry cask on short-term operation process

FRIDAY, 28 June 2019

12:20–13:00 CLOSING SESSION

Board Room C

Time	Name	Designating Member State/Organization	Title of Paper
12:20-12:35	S. Pickering	Conference Chairwoman, United States of America	Closing Remarks
12:35-12:45	J.C. Lentijo	Deputy Director General Nuclear Safety and Security, IAEA	Closing Remarks

IAEA PUBLICATIONS RELATED TO THE SUBJECT OF THE EVENT

IAEA Proceedings Series STI/PUB/1836	Fast Reactors and Related Fuel Cycles: Next Generation Nuclear Systems for Sustainable Development (FR17); Proceedings of an International Conference Held in Yekaterinburg, Russian Federation, 26-29 June 2017
IAEA Proceedings Series STI/PUB/1850	Management of Spent Fuel from Nuclear Power Reactors: An Integrated Approach to the Back End of the Fuel Cycle, Proceedings of an International Conference Held in Vienna, Austria, 15–19 June 2015
Nuclear Energy Series No. NF-T-3.3	Storing Spent Fuel until Transport to Reprocessing or Disposal
IAEA-TECDOC-1774	Potential Interface Issues in Spent Fuel Management
IAEA-TECDOC-1862	Behaviour of Spent Power Reactor Fuel during Storage
IAEA Safety Standards Series No. GSR Part 2	Leadership and Management for Safety
IAEA Safety Standards Series No. GSR Part 4 (Rev. 1)	Safety Assessment for Facilities and Activities
IAEA Safety Standards Series No. GSR Part 5	Predisposal Management of Radioactive Waste
IAEA Safety Standards Series No. SSR-4	Safety of Nuclear Fuel Cycle Facilities
IAEA Safety Standards Series No. SSR-6 (Rev.1)	Regulations for the Safe Transport of Radioactive Material
IAEA Safety Standards Series No. SSG-7	Safety of Uranium and Plutonium Mixed Oxide Fuel Fabrication Facilities
IAEA Safety Standards Series No. SSG-15	Storage of Spent Nuclear Fuel
IAEA Safety Standards Series No. SSG-26	Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material (2012 Edition)
IAEA Safety Standards Series No. SSG-42	Safety of Nuclear Fuel Reprocessing Facilities
IAEA Safety Reports Series No. 90	Safety Reassessment for Nuclear Fuel Cycle Facilities in Light of the Accident at the Fukushima Daiichi Nuclear Power Plant

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International Symposium on Trends in Radiopharmaceuticals (ISTR-2019) (CN-276), 28 October–1 November, Vienna, Austria

International Conference on Effective Regulatory Systems for Nuclear and Radiation Safety (CN-270), 4-7 November, The Hague, Netherlands

International Conference on Research Reactors: (CN-277), 25–29 November, Buenos Aires, Argentina

2020

International Conference on Nuclear Security (ICONS-2020) (CN-278), 10-14 February, Vienna, Austria

International Conference on Operational Safety of Nuclear Power Plants (CN-284), TBC

International Conference on Knowledge Management and Human Resources Development: Challenges and Opportunities (CN-282), 15-19 June, Moscow, Russia

International Symposium on Sustainable Animal Production and Health – Current Status and Way Forward (CN-281), 22-26 June, Vienna, Austria

International Conference on the Safe Transport of Radioactive Material (CN-280), 29 June - 3 July, Vienna, Austria

Scientific Forum (CN-283), September, Vienna, Austria

28th IAEA Fusion Energy Conference (FEC2020) (CN-286), 12-17 October, Nice, France

International Conference on the Management of Naturally Occurring Radioactive Materials (NORM) in Industry (CN-287), 19-23 October, Vienna, Austria

International Conference on Radiation Safety (CN-279), 9-13 November, Vienna, Austria

International Conference on Molecular Imaging and Clinical PET-CT: Paving the Way Towards Personalized Medicine and Theranostics (IPET-2020) (CN-285), 24-27 November, Vienna, Austria

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