

ГОСУДАРСТВЕННАЯ КОРПОРАЦИЯ ПО АТОМНОЙ ЭНЕРГИИ «РОСАТОМ»

## **RUSSIAN FEDERATION - OECD/NEA** COOPERATION

Andreeva-Andrievskaya L.N. Project Office for Cooperation with the OECD/NEA Department of International Cooperation State Atomic Energy Corporation "Rosatom"

MNTK-2014 Ninth International Scientific and Technical Conference "Safety, Efficiency and Economics of Nuclear Power Industry" Moscow, 21-23 May 2014

## Russia – OECD/NEA Cooperation: Historical overview

- 21 March 2007 Joint declaration on cooperation between the Government of the Russian Federation and the OECD/NEA in the field of peaceful uses of nuclear energy
- 18 October 2011 Government of Russia made decision on Russia's joining the OECD/NEA
- 23 May 2012 Russian Foreign Ministry representatives and the State Nuclear Energy Corporation "Rosatom" representatives exchanged letters with the Secretary-General of the OECD Angel Gurría on Russia's joining the OECD/NEA
- 1 January 2013 Russian Federation became a member country of the OECD/NEA ROSATOM is responsible for coordinating cooperation with the OECD/NEA



## **OECD Nuclear Energy Agency**

**The Nuclear Energy Agency (NEA)** is a specialised agency within the Organisation for Economic Co-operation and Development (OECD)

#### The OECD/NEA mission

- To assist its member countries in maintaining and further developing the scientific, technological and legal bases required for a safe, environmentally friendly and economical use of nuclear energy for peaceful purposes
- To forge common understandings on key issues of nuclear energy development and to provide authoritative assessments as input to government decisions on nuclear energy policy

#### **Cooperation and joint actions coordination**

International Energy Agency (OECD specialised agency) IAEA European Commission

## **OECD/NEA: Member countries**

#### Intergovernmental organization: 31 member countries



Together they account for approximately 90% of the world's installed nuclear capacity

## **OECD/NEA: Secretariat Structure**

#### **NEA Secretariat**



Acting Director-General (1 May-31 Aug. 2014)

Mr. William D. Magwood will take up his duties as the next Director-General of the OECD/NEA on 1 September 2014



**4** Russian experts Work in the OECD/NEA **Secretariat** 

## OECD/NEA: Work Areas

### Work areas:

- Nuclear Safety
- Nuclear Development
- Nuclear Science
- Radiological protection and public health
- Radioactive waste and decommissioning
- Nuclear Law
- Sustainable development
- Knowledge preservation
- Civil Society

### **OECD/NEA:** Tools and Instruments for Cooperation

#### **Tools and instruments for cooperation**

- **NEA Governing Body** Steering Committee for Nuclear Energy
- **Executive (working) bodies** seven standing technical committees and working and expert groups (more than 70)
- NEA Data Bank
  - Computer programs
  - Nuclear data
  - Thermochemical data
- Information systems ISOE, FINAS
- OECD/NEA projects and programmes
- Projects and programmes, where the OECD/NEA acts as Technical Secretariat (MDEP, Generation IV)
- International Peer Reviews on national programmes or specific issues defined by the member countries

## **OECD/NEA: Committees Structure**



### **OECD/NEA Technical Committees:** Methods of Work

Work of the Standing Technical Committees, Working Parties and Expert Groups	Bilateral Work with and in the Member Countries
<ul> <li>Annual plenary meetings of the groups</li> <li>Country reports on developments</li> <li>Topical sessions on specific issues</li> </ul>	Direct advice from the Secretariat on specific issues defined by the member country
<ul> <li>Twice a year meeting of the Bureau</li> <li>Discussion on specific issues</li> <li>Progress of work in projects</li> <li>Strategic planning of the PoW</li> </ul>	Organisation of international expert feed-back on specific issues defined by the member countries

### **OECD/NEA Technical Committees:** Methods of Work

Work of the Standing Technical Committees, Working Parties and Expert Groups	Bilateral Work with and in the Member Countries
International Workshops, Seminars and Conferences on issues of interest for all or most member countries	Organisation of workshops on specific issues defined by the member countries
Joint Projects on issues of interest for all or most member countries	Organisation of international peer-reviews on national programmes or specific issues defined by the member countries
publication of technical reports, consensus statements and short flyers	Country visits and feed-back to the government from the Secretariat
<ul> <li>Knowledge consolidation and transfer</li> <li>Help to advance best practice</li> </ul>	<ul> <li>Direct help for the country on specific issues</li> <li>Help in establishing international projects</li> </ul>

#### **OECD NEA joint publications** (in English)

OECD NEA independently and jointly with the International Energy Agency (IEA) and the IAEA issues publications, including:

#### «Nuclear Energy Data» - Brown Book

OECD NEA member countries provide data on electricity generation, nuclear power plants under construction, electricity grids, production and resources of uranium, enrichment and conversion capacities, fuel fabrication capacities etc.

#### **«Uranium: Resources, Production and Demand» - Red Book**

OECD NEA member countries provide data on uranium resources, production and uranium demand

#### **OECD NEA Publications** (in English)

OECD NEA publishes reports on the results of the experiments, international projects and activities of particular working groups (<u>http://www.oecd-nea.org/pub</u>)

## **OECD/NEA: Publications**

#### **OECD NEA Publications** (in English)

http://www.oecd-nea.org/pub

#### **Nuclear Safety**

http://www.oecd-nea.org/tools/publication?div=NSD&period=100y&sort=title&filter=1

#### **Radioactive Waste Management**

http://www.oecd-nea.org/tools/publication?div=RWM&period=100y&sort=title&filter=1

#### **Radiological Protection**

http://www.oecd-nea.org/tools/publication?div=RP&period=100y&sort=title&filter=1

#### **Nuclear Development**

http://www.oecd-nea.org/tools/publication?query=&div=NDD&lang=English&period=2y&sort=date&filter=1

#### **Nuclear Science**

https://www.oecd-nea.org/tools/publication?div=SCI-DB&period=100y&sort=title&filter=1

#### **Nuclear Law**

https://www.oecd-nea.org/law/nlb/

#### **Sustainable Development**

https://www.oecd-nea.org/sd/#pubs

#### **Civil Society**

https://www.oecd-nea.org/civil/#pub

#### **Committee on Safety of Nuclear Installations (CSNI)**

#### **CSNI** Mission

To assist member countries in maintaining and further developing the scientific and technical knowledge base required to assess the safety of nuclear reactors and fuel cycle facilities

CSNI cooperates with the Committee on Nuclear Regulatory Activities and Committee on Nuclear Science

#### **CSNI Scope**

- safety aspects of existing power reactors and other nuclear installation
- construction of new power reactors
- scientific and technical developments of future reactor designs

#### Committee on Safety of Nuclear Installations (CSNI): Methods of Work

#### Confidence in the validity and accuracy of tools

International Standard Problems (ISP) are **comparative exercises** in which predictions of different computer codes for a given physical problem are compared with each other or with the results of a carefully controlled experimental study.

The main goal of ISP exercises is to increase confidence in the validity and accuracy of tools which are used in assessing the safety of nuclear installations.

#### Validation of the codes

Somewhat related to the ISP programme is the **establishment of sets of experiments** for use in comparing codes.

Known as a **Code Validation Matrix**, the results of such an extensive list of experiments are collected and stored in the NEA Data Bank for the purpose that they be made available to Member countries wishing to validate relevant codes.

#### State-of-the-Art reports and "situation reports"

Bring together the latest developments in a given area or give a "snapshot picture" of the international situation regarding a particular issue,

stimulate the formation of common understanding, and provide a source of up-to-date information for those countries that may not have an activity in the area

#### Committee on Safety of Nuclear Installations (CSNI): Working Groups and Task Groups

#### **CSNI Working and Task Groups**

CSNI Programme Review Group (*PRG*) Working Group on Integrity and Ageing of Components and Structures (*WGIAGE*) Working Group on Analysis and Management of Accidents (*WGAMA*) Working Group on Risk Assessment (*WGRISK*) Working Group on Fuel Safety (*WGFS*) Working Group on Fuel cycle Safety(*WGFCS*) Working Group on Human and Organisational Factor (*WGHOF*) CSNI Task Group on Sump Clogging CSNI Task Group on the Robustness of Electrical Systems of NPPs (ROBELSYS)

#### **Russian members of the CSNI and its Working Groups:**

experts from Nuclear Safety Institute (IBRAE) of the Russian Academy of Sciences, Rostechnadzor, JSC "Rusatom Overseas", National Research Centre "Kurchatov Institute", OJSC "VNIIAES", FSUE VO "Safety", Rosatom-CICE&T

**1992** - OECD/NEA **Fuel Incident Notification and Analysis System (FINAS)** was developed in order to share information on incidents and enhance safety at NFC facilities (Uranium Mines, Refining Facilities, Conversion Facilities, Enrichment Plants, Fabrication Facilities)

FINAS is established in order to collect and disseminate safety-related information concerning events occurring at nuclear fuel cycle facilities and feedback appropriate conclusions from these incidents

FINAS is intended to serve as a tool for sharing "lessons learned" from safety significant events among the technical community participating in the reporting system

- 2002 IAEA joined FINAS
- 2004 Russia joined FINAS

## **OECD/NEA Joint Projects**

	ONGOING EXPERIMENTAL PROJECTS - NUCLEAR SAFETY	
AILAS	for Water Reactors, by means of Experiments in the ATLAS Large Scale Test Facility	
BIP-2	Behaviour of Iodine Project	
BSAF	Benchmark Study of the Accident at the Fukushima Daiichi Nuclear Power Station Project	
Cabri	Cabri Water Loop Project	
PRISME-2	Fire Propagation in Elementary, Multi-room Scenarios Project	
Halden	Halden Reactor Project	
HEAF	High Energy Arcing Fault Events Project	
HYMERES	Hydrogen Mitigation Experiments for Reactor Safety	
LOFC	Loss of Forced Cooling Project	
PKL-3	Primary Coolant Loop Test Facility Project	
STEM	Source Term Evaluation and Mitigation Project	
SCIP-2	Studsvik Cladding Integrity Project	
THAI-2	Thermal-hydraulics, Hydrogen, Aerosols, Iodine Project	
	ONGOING EVENT RECORDS DATABASE PROJECTS	
CADAK	Cable Ageing Data And Knowledge Project	
CODAP	Component Operational Experience, Degradation and Ageing Programme	
FIRE	Fire Incidents Records Exchange Project	
ICDE	International Common-cause Failure Data Exchange Project	

## OECD/NEA: Completed Projects with Russian Participation

## Completed OECD/NEA Projects with participation of the Russian organisations

#### **OECD/NEA Bubbler Condenser Project**

*Goal:* study of bubbler condenser pressure suppression system behavior under loss-of-coolant-accident (LOCA)

*Participating countries:* Czech Republic, France, Germany, Hungary, Russian Federation, Slovak Republic, Ukraine, United States (countries operating NPPs of the VVER-440/213 type)

Project period:1998-2002

#### **OECD/NEA RASPLAV Project**

Goal: to refine accident management strategies during a reactor core meltdown

Project Initiator : National Research Centre "Kurchatov Institute"

*Participating countries:* Belgium, Canada, Czech Republic, Finland, France, Germany, Hungary, Italy, Japan, Netherlands, Republic of Korea, Russian Federation, Spain, Sweden, Switzerland, United Kingdom, United States.

Completed: June 2000

## OECD/NEA: Completed Projects with Russian Participation

## Completed OECD/NEA Projects with participation of the Russian organisations

#### **OECD NEA MASKA and MASKA-2 Project**

*Goal:* in-vessel phenomena investigation during a severe accident The MASCA Project was a follow-up of the RASPLAV Project and the programme of work was carried out at the site of the National Research Centre "Kurchatov Institute"

*Participating countries:* Belgium, Canada, Czech Republic, Finland, France, Germany, Hungary, Italy, Japan, Netherlands, Republic of Korea, Russia, Spain, Sweden, Switzerland, United Kingdom, United States

Project period: 2000-2007

#### **OECD/NEA Paks Fuel Project**

Project was established after the incident at the Paks NPP in April 2003, when several spent fuel assemblies were severely damaged after being cleaned by Framatome (AREVA) technology

*Project countries:* Belgium, Finland, France, Germany, Hungary, Russian Federation, Slovak Republic, United States of America

Project period: 2004-2007

### **OECD/NEA: New Projects with Russian participation**

#### In 2013-2014 Russia joined the following OECD/NEA projects

## **OECD/NEA HYMERES Project** "Hydrogen Mitigation Experiments for Reactor Safety"

*Goal:* to improve the understanding of the hydrogen risk phenomenology in containment in order to enhance its modeling in support of safety assessment

Programme period: 2013 - 2016 (4 years)

*Participating countries:* Canada, China, Czech Republic, Finland, France, Germany, India, Russia, Spain, Sweden and Switzerland

According to Agreement Russian participants are: State Atomic Energy Corporation "Rosatom" and "Rosenergoatom" Concern OJSC

*Implementer Organisation:* Nuclear Safety Institute (IBRAE) of the Russian Academy of Sciences

Russian participants of the Project: FSUE "RFNC-VNIITF", JSC "Afrikantov OKBM"

**OECD/NEA BSAF Project** "Benchmark Study of the Accident at the Fukushima Daiichi Nuclear Power Station"

*Goal:* to improve severe accident (SA) codes and analyze accident progression and current core status in detail for preparation of fuel debris removal, as a part of the R&D projects for the mid-to-long term response for decommissioning of the Fukushima Daiichi Nuclear Power Station (NPS), Units 1 to 4

*Participating countries:* France, Germany, Japan, Korea, Spain, Switzerland, United States

Project period: 2013 - 2016

According to Agreement Russian participants are: the State Atomic Energy Corporation "Rosatom" and the Nuclear Safety Institute (IBRAE)

*Implementer Organisation:* Nuclear Safety Institute (IBRAE) of the Russian Academy of Sciences

**OECD/NEA ATLAS Project** "To address thermal-hydraulic safety issues and accident management issues relevant for water reactors, by means of experiments in the ATLAS large scale test facility"

*Goal:* computer codes validation by means of integral experiments in the ATLAS large scale test facility at KAERI (ATLAS, Advanced Thermal hydraulic Test Loop for Accident Simulation, Республика Корея)

*Participating countries:* Belgium, China, Finland, France, Hungary, Germany, India, Japan, Republic of Korea, Spain, Sweden, Switzerland, United States of America

*Project period:* 2014 – 2017

According to Agreement Russian participants are: the State Atomic Energy Corporation "Rosatom" and JSC OKB "GIDROPRESS"

Implementer Organisation: JSC OKB "GIDROPRESS"

**Generation IV International Forum** (GIF) initiated by the United States in 2000

#### **GIF Charter was signed by**

Argentina, Brasilia, Canada, China, Euratom, France, Japan, Republic of Korea, Russian Federation, Switzerland, South Africa, United Kingdom, United States

#### Purpose and vision of GIF

The development of concepts for one or more Generation IV Systems that can be licensed, constructed, and operated after 2030 and criteria of these systems

#### Six reactor technologies for further research and development

- VHTR Very High Temperature Reactor
- SFR Sodium-cooled Fast Reactor
- GFR Gas-cooled Fast Reactor
- SCWR Supercritical Water-cooled Reactor
- LFR Lead-cooled Fast Reactor
- MSR Molten Salt Reactor

**Legal basis** - Framework Agreement for International Collaboration on Research and Development of Generation IV Nuclear Energy Systems

**Framework Agreement** was signed by Canada, China, Euratom, France, Japan, Republic of Korea, Russian Federation, South Africa, Switzerland, United States

**2009 -** Russian Federation acceded to the Framework Agreement (Decree of the Government of the Russian Federation 30.07.2009 № 1050-p)

Implementing Agent - the State Atomic Energy Corporation "Rosatom"

#### Russia participates in the development of four Generation IV Systems

June 2010 - ROSATOM signed Sodium-cooled Fast Reactor (SFR) System Arrangement

July 2011 - ROSATOM signed Supercritical Water-cooled Reactor (SCWR) System Arrangement and u Lead-cooled Fast Reactor (LFR) Memorandum of Understanding

**November 2013** - Molten Salt Reactor (MSR) Memorandum of Understanding was signed

#### **Russia participated in the in the following SFR Project Arrangements**

- safety and operation (November 2012)
- system integration and assessment

#### Russia planning to join next SFR Project Arrangements

- advanced fuel development
- component design
- block of energy conversion

#### **Committee on Nuclear Regulatory Activities (CNRA)**

#### **CNRA Mission**

Facilitate the development of effective methods of regulation, licensing and inspection of nuclear installations with regard to nuclear safety

**CNRA** cooperates with the Committee on the Safety of Nuclear Installations (CSNI) and Nuclear Science Committee

#### **CRNA Scope**

- regulatory aspects of existing power reactors and other nuclear installations and the construction of new power reactors
- regulatory implications of new designs of power reactors and other types of nuclear installations

#### **CNRA Working Groups and Task Groups**

- Safety of Research Reactors Task Group
- Task Group on Accident Management (TGAM)
- Senior-level Task Group on the Characteristics of an Effective Regulator
- Working Group on Inspection Practices (WGIP)
- Working Group on Public Communication of Nuclear Regulatory Organisation (WGPC)
- Working Group on Operating Experience (WGOE)
- Working Group on the Regulation of New Reactors (WGRNR)

#### **Russian members of the CNRA and its Working Groups**

experts from Rostechnadzor, Scientific and Engineering Centre for Nuclear and Radiation Safety, OJSC "VNIIAES", National Research Centre "Kurchatov Institute"

#### **MDEP Goals**

- to enhance multilateral co-operation within existing regulatory frameworks
- to encourage multinational convergence of codes, standards and safety goals
- to implement the MDEP products in order to facilitate the licensing of new reactors, including those being developed by the Generation IV International Forum

#### **MDEP Participants**

National Regulators Authorities from Canada, China, Finland, France, India, Japan, Republic of Korea, Russian Federation, South Africa, Sweden, United Kingdom, United States

#### **MDEP Design Specific Working Groups**

VVER Working Group	- India, Finland, Russia and Turkey	
	(established in October 2013)	
EPR1600 Working Group	- China, Finland, France, India, United Kingdom,	
	United States	
AP1000 Working Group	- Canada, China, United Kingdom, United States	
APR1400 Working Group	- Finland, Republic of Korea, United Arab Emirates	

1

#### **Global objectives of the VVER Working Group**

- ⇒ Maximum use of national regulatory authorities by sharing information and experience in the field of project evaluation
- Promoting increase in project safety and standardization through cooperation (harmonization of regulatory practices)

#### Scope of the VVER Working Group

- severe accidents
- safety systems
- reactor vessel and the primary loop
- **21-22 January 2014** first meeting of VVER Working Group (Russia, Moscow, ROSTECHNADZOR)
- **17-19 June 2014** second meeting of VVER Working Group (France, Paris, the OECD NEA)

#### Radioactive Waste Management Committee (RWMC)

#### **RWMC** Mission

To support international co-operation in the management of material from nuclear installations and facility decommissioning, including development principles, strategies and solutions, promotion of best practices, consolidation and transfer of knowledge

#### **RWMC Scope**

- to assist member countries in developing strategies of radioactive waste management, which would satisfy the social demands
- to contribute to knowledge consolidation and transfer through joint projects in the sphere of radioactive waste management
- to advance best practice, e.g., by supporting international peer reviews

#### Radioactive Waste Management Committee (RWMC): Working Groups and Task Groups

#### **RWMC Working Groups and Tasks Groups**

Expert Group on Preservation of Records, Knowledge and Memory (*RK&K*) Integration Group for the Safety Case (*IGSC*)

There are two subgroups in the IGSC - Salt Club (study of repositories in rock salt formations) and Clay Club (study of repositories in argillaceous rocks)

Forum on Stakeholder Confidence (FSC)

Working Party on Management of Materials from Decommissioning and Dismantling (WPDD)

Decommissioning Cost Estimation Group (DCEG)

Task Group on Radiological Characterisation and Decommissioning (TG-RCD)

Task Group on Future R&D and Innovation Needs for Decommissioning (DECOM-R&D)

#### **Russian members of the RWMC and its Working Groups**

experts from the State Atomic Energy Corporation "Rosatom", OJSC "VNIIAES", JSC "VNIINM", FSUE "NO RAW", FSUE "RADON", JSC "VNIPIET"

#### Radioactive Waste Management Committee (RWMC): Technical Visit to Russia

**July 2013** – technical visit of the OECD/NEA Secretariat delegation led by the Head of Department of Radiation Protection and Radioactive Waste Management Mr. Michael Siemann to Russia

*Goal of visit*: acquaintance with the Russian legal framework and practices in the sphere of spent nuclear fuel and radioactive waste management as well as in the sphere of decommissioning of nuclear and radiation hazardous facilities and radiation protection

*Russian participants*: experts from the State Atomic Energy Corporation "Rosatom", Rostechnadzor, Scientific and Engineering Centre for Nuclear and Radiation Safety, Federal Medical Biological Agency of Russia, "Rosenergoatom" Concern OJSC, FSUE "NO RAW", FSUE "RADON", JSC "VNIINM", IBRAE RAS, JSC "VNIIAES"

OECD/NEA Secretariat delegation visited the following organisations: FSUE "RADON" (Moscow Region, Sergiev Posad) Federal State Institution A.I. Burnazyan Federal Medical and Biophysical Center

OECD NEA Presentation «The work of the OECD NEA in Radioactive Waste Management», Dr.Michael Siemann, Head of Division Radiation Protection and Radioactive Waste Management, can be sent by request

## Radioactive Waste Management Committee (RWMC): 15<sup>th</sup> WPDD Meeting in Russia

**14-16 October 2014** – the 15<sup>th</sup> meeting of the RWMC Working Party on Management of Materials from Decommissioning and Dismantling will be held in Russia

WPDD meeting will be attended by experts from Belgium, Canada, Czech Republic, Finland, France, Germany, Hungary, Italy, Japan, Republic of Korea, Holland, Norway, Poland, Romania, Slovak Republic, Spain, Sweden, United Kingdom, United States and Russian Federation

#### WPDD meeting: Draft Agenda

#### 14 October 2014

Meeting in conformity with the agenda prepared by the OECD NEA, presentations of participants

#### 15 October 2014

Special session on aspects of decommissioning in the Russian Federation. Session on optimizing the final disposal of radioactive waste and materials resulting from decommissioning

#### 16 October 2014

Technical visit (JSC "VNIINM", NRC "Kurchatov Institute" – preliminary)

#### Radioactive Waste Management Committee (RWMC): International Peer Reviews

#### **International Peer Reviews**

International Peer Reviews are performed by independent reviewers under the aegis of the OECD/NEA.

International Peer Reviews procedure is similar to the IAEA missions

International Peer Reviews help not only to requesting country, but also contribute to the OECD/NEA scientific and technical base

International Peer Review Results are discussed within the RWMC and its Working Groups.

Between 1984 and 2012 the following Peer Reviews in the sphere of the radioactive waste management were carried out

Country	Year	Country	Year
Belgium	1992	United States	2000, 2004
United Kingdom	2011	France	2003, 2006
Germany	2012	Switzerland	2004
Holland	1989, 1993	Sweden	1984, 1992, 1995, 1999, 2011
Canada	1995	Japan	1999
Total: 17 Peer Reviews in 10 OECD/NEA member countries			

1

#### Radioactive Waste Management Committee (RWMC): 2 International Peer Reviews

1984	Sweden	KBS-3 Proposal on Final Storage of Spent Nuclear Fuel	
1304	UNCUCII		
1989	Netherlands	Research programme for Onshore Geological Disposal of Radioactive Waste in the Netherlands (OPLA)	
1992	Sweden	SKI's Project 90	
1993	Netherlands	Research programme for Onshore Geological Disposal of Radioactive Waste in the Netherlands (OPLA-1a)	
1995	Sweden	SKI's SITE-94 Project	
1995	Canada	AECL - Environment Impact Statement of the Disposal of Canada's Nuclear Fuel Waste	
1996	USA	Performance Assess-ment for Compliance Certification of the US Waste Isolation Pilot Plant (WIPP)	
1999	UK	NIREX Methodology for Scenario and Conceptual Model Development – An International Peer Review	
1999	Japan	JNC H-12 Project to establish the technical basis of HLW disposal in Japan	
1999-2000	Sweden	SKB's Safety Report 97: Post-closure Safety of a Deep Repository for Nuclear Spent Fuel in Sweden	
2000	USA	Yucca Mountain Project's Total System Performance Assessment for the Site Recommendation (TSPA-SR)	
2002	Belgium	SAFIR 2: Belgian R&D Programme on the Deep Disposal of High-level and Long-lived Radioactive Waste	

# Committee on Radiation Protection and Public Health (CRPPH): Mission, Scope

#### **Committee on Radiation Protection and Public Health (CRPPH)**

#### **CRPPH Mission**

The goal of the OECD/NEA in this area is to assist member countries in the regulation and implementation of the system of radiological protection by identifying and addressing conceptual, scientific, policy, regulatory, operational and societal issues in a timely and prospective fashion, and clarifying their implications

#### **CRPPH Scope**

- To identify emerging issues in radiological protection science and improve the implementation of scientific knowledge for practical uses
- To assist policy makers in developing and improving policies to best reflect state-of-the-art science and technology, as well as modern approaches to risk governance
- To contribute to reach common understanding of regulatory issues in radiological protection
- To facilitate the improvement of member's operational radiological protection capabilities
# Committee on Radiation Protection and Public Health (CRPPH): Objectives

#### **CRPPH Objectives**

- Identifying the optimal ways to integrate radiation protection concepts into modern concepts and approaches of risk management. To address this issue internationally recognised principles of radiation protection are found as the result of current process of reviewing and updating. Mainly on these principles all national legislation is based
- Searching for a consensus among experts in the field of radiation protection, which should be considered when new approaches and international recommendations are developed
- Decision making in complex areas such as stakeholders involvement and environmental protection

# Committee on Radiation Protection and Public Health (CRPPH): Working Groups

#### **CRPPH Working Groups and Expert Groups**

Working Party on Nuclear Emergency Matters (WPNEM) Expert Group on the Implications of ICRP Recommendations (EGIR) Expert Group on Radiological Protection Aspects of the Fukushima Accident (EGRPF)

#### Expert groups which have completed their mandates

Expert Group on Best Available Techniques (EGDAT) Expert Group on Ocupational Exposure (EGOE) Expert Group on the Public Health perspective in Radiological Protection (EGPH) Expert Group on Stakeholder Involvement and Organisational Structures (EGSIOS) Expert Group on the CRPPH Collective Opinion (EGCO) Expert Group on the Implications of Radiological Protection Science (EGIS) Expert Group on Radiological Protection Science at the Service of Stakeholders (EGSS) Expert Group on the Implementation of International Recommendations for Emergence

Expert Group on the Implementation of International Recommendations for Emergency Situations *(EGIRES)* 

#### **Russian members of CRPPH and its Working Groups**

Experts from the State Atomic Energy Corporation "Rosatom", Rostechnadzor, Burnasyan Federal Medical Biophysical Centre Federal Medical Biological Agency of Russia, Seversk Biophysics Research Centre FMBA of Russia, Southern Urals Biophysics Institute (SUBI) FMBA of Russia, Urals Research Center For Radiation Medicine FMBA of Russia, IBRAE RAS, National Research Centre «Kurchatov Institute»

**June 2014** – visit of the OECD/NEA Secretariat to Moscow in order to prepare CRPPH Working Groups meetings in 2015 in Russia

Hosting Organisation: Burnasyan Federal Medical Biophysical Centre Federal Medical Biological Agency of Russia

# Information System on Occupational Exposure (ISOE)

#### Information System on Occupational Exposure (ISOE)

- 1992 OECD/NEA was established ISOE
- 1993 IAEA joined ISOE

#### **ISOE Goals**

- Optimisation of worker doses in nuclear power plants through an information exchange and experience exchange network for radiation protection professionals of NPPs and national regulatory authorities
- Publication of technical data on management of activities based on ALARA principle

#### **ISOE Participation** (as of May 2014)

72 utilities in 27 countries (332 operating reactors, 40 shutdown reactors) 20 regulatory authorities in 18 countries *(France and Slovenia are represented by two organisations)* 

# Information System on Occupational Exposure (ISOE)

#### **ISOE Management**

Four Technical Centres manage the programme's day-to-day technical operations European Technical Centre (*for non OEC/NEAR member countries*) Asian Technical Centre IAEA Technical Centre (*for non OEC/NEAR member countries*) North American Technical Centre

#### 2002 - Russia joined ISOE (IAEA Technical Centre)

#### **ISOE Russian National Coordinator** – "Rosenergoatom" Concern OJSC

2013 - Russia became European ISOE Technical Centre participant (after joining OECD/NEA)

#### Participation in ISOE provides a forum for

- information exchange on individual and occupational exposures of workers at NPPs
- tracking of the world's trends in radiological protection of professionals
- further the development of effective national measures on occupational exposures reduction

### Nuclear Development Committee (NDC): Mission

#### **Nuclear Development Committee (NDC)**

(the Committee for Technical and Economic Studies on Nuclear Energy Development and the Fuel Cycle, NDC)

#### **NDC Mission**

To provide authoritative, reliable information on nuclear technologies, economics, strategies and resources to governments for use in policy analyses and decision-making, as well as on the future role of nuclear energy in a sustainable development perspective and within the broad context of national and international energy policies

## Nuclear Development Committee (NDC): Objectives

#### **NDC Objectives**

- To analyse the economics of nuclear power across the full nuclear fuel cycle in the context of changes in electricity markets, social acceptance and technological advances, and to assist member countries in evaluating the role of nuclear energy in their energy policies
- To promote international co-operation on the development of innovative nuclear energy systems
- To review the role of nuclear power in the broader perspective of climate change and sustainable development
- To assess the availability of nuclear fuel and infrastructure required for the deployment of existing and future nuclear power and to identify the eventual gaps
- To assist member countries, upon request, in addressing emerging concerns related to nuclear technology and radioactive materials, including medical radioisotopes, within the constraints of financial limitations and as augmented by voluntary contributions
- To establish a communication network within and outside the OECD framework aiming to provide factual information on nuclear issues
- To review the role of research and development in new nuclear technologies and their impact on energy generation and non-power applications

# Nuclear Development Committee (NDC): Working Groups

#### **NDC Working Groups**

- Working Party on Nuclear Energy Economics (WPNE)
- High-level Group on the Security of Supply of Medical Radioisotopes (HLG MR)
- Joint NEA/IAEA Group on Uranium (UG)
- Ad hoc Expert Group on Climate Change, Assessment of the Vulnerability of Nuclear Power Plants and Cost of Adaptation (NUCA)
- Ad-hoc Expert Group on the Costs of Decommissioning (COSTDEC)
- Expert Group on Costs on Nuclear Accidents, Liability Issues and their Impact on Electricity Cost (COSTNA)
- Ad-hoc Expert Group on Managing Environment and Health Impacts of Uranium Mining (MEHIUM)

#### **Russian members of the NDC and its Working Groups**

Experts from the State Atomic Energy Corporation "Rosatom", "Rosenergoatom" Concern OJSC, "TVEL" JSC, JSC "Rusatom Overseas", JSC Isotope, OJSC Atomredmetzoloto, National Research Centre "Kurchatov Institute"

# High Level Group on the Security of Supply of Medical Radioisotopes (HLG-MR)

**June 2010** - State Atomic Energy Corporation joined HLG-MR. Experts from the "Rusatom Overseas" JSC and JSC Isotope participating in the HLG-MR activities

Participation in the HLG-MR provides the opportunities for interaction with other interested Mo-99 market participants, influence on development of policy on security of supply, obtaining first-hand information, including access to the experts of the nuclear medicine from public health authorities

#### **Results of the HLG-MR Activities (2009-2011)**

- Major issues that affect the short-, medium- and long-term reliability of 99Mo/99mTc supply examined and concrete measures identified
- Contacts between Mo-99 producers and nuclear medicine community established
- Supply schedule of the Mo-99 production developed to move to an economically sustainable basis and ensure the security of supply
- The Methodology of full cost of the Mo-99 production developed
- Capabilities of maintaining of the Mo-99 outage reserve capacities estimated
- Policy approach based on six principles developed to help the supply chain to move to an economically sustainable basis and ensure the security of supply

#### HLG-MR Policy approach is based on the following six principles:

**Principle 1**: All 99mTc supply chain participants should implement full-cost recovery, including costs related to capital replacement

**Principle 2**: Reserve capacity should be sourced and paid for by the supply chain. A common approach should be used to determine the amount of reserve capacity required and the price of reserve capacity options

Principle 3: Recognising and encouraging the role of the market, governments should:

- establish the proper environment for infrastructure investment
- set the rules and establish the regulatory environment for safe and efficient market operation
- ensure that all market-ready technologies implement full-cost recovery methodology
- refrain from direct intervention in day-to-day market operations as such intervention may hinder long-term security of supply.

These changes should occur expeditiously, recognising however that time will be required to allow for the market to adjust to the new pricing paradigm

**Principle 4:** Given their political commitments to non-proliferation and nuclear security, governments should provide support, as appropriate, to reactors and processors to facilitate the conversion of their facilities to low enriched uranium or to transition away from the use of highly enriched uranium, wherever technically and economically feasible. **Principle 5:** International collaboration should be continued through a policy and information sharing forum, recognising the importance of a globally consistent approach to addressing security of supply of 99Mo/99mTc and the value of international consensus in encouraging domestic action.

**Principle 6:** There is a need for periodic review of the supply chain to verify whether 99Mo/99mTc producers are implementing full-cost recovery and whether essential players are implementing the other approaches agreed by the HLG-MR, and that the coordination of operating schedules or other operational activities have no negative effects on market operations

April 2013 - the OECD/NEA Steering Committee adopted Statement by the OECD/NEA Steering Committee for Nuclear Energy Regarding the Implementation of Policy Actions to Ensure the Long-term Security of Supply of Medical Radioisotopes which was sent to the governments of the member countries

#### **Results of the HLG-MR Activities (2011-2013)**

- Supply chain participants are moving towards full-cost recovery for the production of Mo-99and maintaining reserve capacity for unintended security of supply
- Governments of some producing countries have reduced subsidising ongoing production of Mo-99 at the reactors therebly supporting commercialization of the Mo-99 production
- Increased communication among supply chain participants, diversification of suppliers, improved co-ordination of reactor schedules, and more efficient utilisation of isotopes by end-users have all contributed to a more reliable supply and better use of 99Mo/99mTc. This has helped to address the identified vulnerabilities in the supply chain
- Progress towards the Mo-99 production using HEU to LEU outlined to some extend in spite of technical and economical problems

5

# Nuclear Law Committee (NLC): Mission, Scope

#### **Nuclear Law Committee (NLC)**

#### **NLC Mission**

To maintain work aimed at minimizing the legal obstacles to the safe use of nuclear energy, to encourage fair and adequate compensation for the nuclear damage and to promote international trade in nuclear materials and equipment

#### **NLC Scope**

- Interpretation, implementation, improvement and modernisation
  of the international nuclear liability regime, primarily through a consideration
  of the Paris Convention, the Brussels Convention Supplementary to the
  Paris Convention and the Joint Protocol relating to the Application of the
  Vienna Convention and the Paris Convention
- Identification of ways to deal with potential collisions between the international law and the European Community legislation primarily in the field of nuclear liability

NLC also provides a forum for discussions concerning the development and harmonisation of legislation on other aspects of nuclear activity

**2013 -** one of the major aspects was the study of liability issues in relation to the ITER project

Several options are being discussed:

- to amend the Paris Convention to make the ITER facility fall under the scope of the Convention
- to change French legislation
- to develop new Convention relevant to the nuclear fission facilities
- to make clarifications to the ITER Agreement

# Nuclear Law Committee (NLC): International School of International Law

**2001** - the ISNL was established by the OECD/NEA in cooperation with the University of Montpellier

Comprehensive lectures are delivered by renowned specialists in the field of nuclear law

The following subjects are usually covered during the ten day programme:

- introduction to nuclear law
- international organisations and institutions
- international radiological protection standards
- nuclear accident notification
- nuclear safety
- nuclear regulatory regimes
- transport of nuclear materials and fuel
- liability, compensation and insurance for nuclear damage
- environmental protection

#### **Application and admission process**

1. Applicants must have an undergraduate university degree in a relevant discipline. Significant professional work experience is also significant factor in the application process

2. Knowledge of English. All course instruction and discussion will take place in English. Simultaneous interpretation will not be available during the Course

#### 3. Registration fee

- 2250 EUR for professionals
- 500 EUR for students

Costs associated with travel and accommodation are not covered by the registration fee

Every year Russian experts study in the ISNL

## Nuclear Science Committee (NSC): Mission, Scope

#### Nuclear Science Committee (NSC)

#### **NSC Mission**

To help member countries identify, collate, develop and disseminate basic scientific and technical knowledge required to ensure safe, reliable and economic operation of current nuclear systems and to develop next-generation technologies

#### **NSC Scope**

Reacor physics, fuel cycle physics and chemistry, criticality safety, material science, radiation shielding

The secretarial support to the NSC is provided by the NEA Nuclear Science section

Close co-operation with the NEA Data Bank is maintained

#### **NSC Working Groups**

- Working Party on International Nuclear Data Evaluation Co-operation (WPEC)
- Working Party on Scientific Issues of the Fuel Cycle (WPFC)
- Working Party on Scientific Issues of Reactor Systems (WPRS)
- Working Party on Nuclear Criticality Safety (WPNCS)
- Working Party on Multi-scale Modelling of Fuels and Structural Materials for Nuclear Systems (*WPMM*)
- Expert Group on the High Priority Request List for Nuclear Data

There are 26 Working Groups in the NSC structure

# Nuclear Science Committee (NSC): Working Groups

#### Working Party on Scientific Issues of Reactor Systems (WPRS)

Expert Group on Reactor Physics and Advanced Nuclear Systems Expert Group on Uncertainty Analysis in Modeling Expert Group on Reactor Fuel Performance Expert Group on Radiation Transport and Shielding

#### Working Party on Scientific Issues of the Fuel Cycle (WPFC)

Expert Group on Heavy Liquid Metal Technologies Expert Group on Fuel Recycling Chemistry Expert Group on Advanced Fuel Cycle Scenarios Expert Group on Innovative Structural Materials Expert Group on Innovative Fuels) Task Force on Benchmarking of Thermal-hydraulic Loop Models for Lead-alloy-Cooled Advanced Nuclear Energy Systems (LACANES)

# Nuclear Science Committee (NSC): Working Groups

#### Working Party on Nuclear Criticality Safety (WPNCS)

Expert Group on Advanced Monte Carlo Techniques Expert Group on Criticality Safety Benchmarks Expert Group on Burn-up Credit Expert Group on Criticality Excursions Expert Group on Assay Data of Spent Nuclear Fuel Expert Group on Uncertainty Analysis for Criticality Safety Assessment International Criticality Safety Benchmark Evaluation Project (ICSBEP) Working Group

Working Party on Multi-scale Modelling of Fuels and Structural Materials for Nuclear Systems (WPMM)

Expert Group on Validation and Benchmarks of Methods Expert Group on Multi-Scale Modeling Methods Expert Group on Structural Materials Modelling Expert Group on Multi-scale Modelling of Fuels Expert Group on Primary Radiation Damage

#### Working Party on International Nuclear Data Evaluation Co-operation (WPEC)

Expert Group on the High Priority Request List for Nuclear Data Expert Group on Methods and Issues for the Combined Use of Integral Experiments and Covariance Data Expert Group on Co-ordinated Evaluation of 239Pu in the Resonance Region Expert Group on Scattering Angular Distribution in the Fast Energy Range Expert Group on Evaluation of Experimental Data in the Resolved Resonance Region

## Nuclear Science Committee (NSC): Working Groups Meetings in Russia

**21-25 October 2013** - Russia hosted in Moscow (IBRAE RAS and National Research Centre "Kurchatov Institute") meetings of NSC Working Groups

- Reactor Physics Experiment Evaluation Project Technical Review Group
- Expert Group on Uncertainty Analysis for Criticality Safety Assessment
- Expert Group on Advanced Monte Carlo Techniques

# NEA Data Bank: Goals, Objectives, Scope

#### **NEA DB Goals**

- To assist its member countries with respect to basic nuclear tools, such as computer codes and nuclear data, used for the analysis and prediction of phenomena in the nuclear field
- To provide a direct service to its users by developing, improving and validating these tools and making them available as requested

#### **NEA DB Objectives**

- To improve and develop the Data Bank services to scientists in its member countries
- To assist its members countries in preserving know-how in computer program and nuclear data validation

#### **NEA DB Scope**

- To provide scientists in member countries with reliable nuclear data and computer programs for use in different nuclear applications
- To provide scientists in member countries with thermochemical data for radioactive waste management applications

# **NEA Data Bank: Member Countries**



# NEA Data Bank: Programme of Work

#### Nuclear Science

- International computer code comparisons and integral experiments
- Results from international benchmark comparisons are incorporated in the Data Bank's documentation of the computer programs and nuclear data concerned
- Experimental databases
  - SINBAD radiation shielding experiments
  - ICSBEP criticality safety benchmark experiments
  - fuel performance
  - atmospheric dispersion tracer experiments

#### RW Management

- **TDB** thermochemical database (project studying the key elements required for geochemical modelling)
- Nuclear Safety
  - Code validation matrix integral test data and separate effects test data for thermo-hydraulic transient experiments to be used in validating the large thermo-hydraulic computer codes for the safety analysis of reactor transients

# NEA Data Bank: Projects and Activities

• Joint Evaluated Fission and Fusion (JEFF)

The JEFF library contains sets of evaluated nuclear data, including neutron and proton interaction data, radioactive decay data and fission yield data

#### • Working Party on Evaluation Co-operation (WPEC)

WPEC was established to promote the exchange of information on nuclear data evaluations, validation, and related topics

• High Priority Nuclear Data Request List (HPRL) HPRL is a compilation of the highest priority nuclear data requirements

#### • Nuclear Reaction Data Centres (NRDC)

This is a world-wide co-operation of nuclear data centres, under the auspices of the IAEA

# Java-based nuclear information software (JANIS) Java is a display program designed to facilitate the visualisation and manipulation of nuclear data

# NEA Data Bank: Computer Programs

#### **Computer Program Services**

- The NEA Data Bank collects and distributes computer programs which fall into the subject categories and are given in alphabetical order by program name
- All computer programs are contained in the Computer Program Catalogue
- Every computer program has an "abstract number" assigned in order to make the identification of the program unique and facilitate searching process
- Computer codes labelled:
  - NEA developed in the NEA Data Bank member countries
  - CCC and PSR packaged at the Radiation Safety Information Computational Center (US)
  - NESC packaged at the former National Energy Software Center (US)
  - USCD are of United States origin but were released from a university
  - IAEA developed in IAEA member countries which are not members of the OECD

# NEA Data Bank: Russian liaison officers

Organisation	
IBRAE RAS	JSC "Afrikantov OKBM"
Keldysh Institute of Applied Mathematics RAS	JSC "TVEL"
NRC "Kurchatov Institute"	JSC "FCNRS"
National Research Nuclear University	Joint Institute For Nuclear Research (JINR)
Rosatom CICE&T	FSUE "RFNC-VNIITF"
Sosny Research and Development Company	FSUE "RFNC – VNIIEF"
JSC "VNIINM"	Petersburg Nuclear Physics Institute
JSC "SSC RIAR"	FSUE "SSC RF-IPPE"
JSC "NIKIET"	FSUE "Alexandrov NITI"
JSC OKB "GIDROPRESS"	

# NEA Data Bank: Task and Duties of the Liaison Officers



AGENCE DE L'OCDE POUR L'ÉNERGIE NUCLÉAIRE OECD NUCLEAR ENERGY AGENCY

#### NEA DATA BANK COMPUTER PROGRAM SERVICES

#### TASKS AND DUTIES OF THE LIAISON OFFICER

- To ensure efficient contact between the laboratories, institutions and centres participating in the work of the Data Bank Computer Program Services, a liaison group of users has been formed. Following notification of the Data Bank Committee of those laboratories, institutions or centres intending to take part in the activities of the Program Services, each establishment should nominate an experienced member of its staff to act as its liaison officer with the Data Bank.
- 2. Liaison officers should transmit to the Data Bank the abstracts, descriptions and packages of those programs developed at their establishments with the potential of being released into the public domain. The program abstracts should be submitted either in English or French. The program description should follow the general standard established by the Data Bank, and again it should preferably be written either in English or in French. The copy of the program package to be sent to the Data Bank should be such that it contains all the necessary records and files (free from reproduction errors), information for running the program and a sample input/output case. The liaison officer should ensure that the package is assembled in such a way that it can be used immediately.
- 3. Liaison officers have the obligation to take all reasonable steps to provide the Data Bank with all program information requested, which they are free to divulge. They should submit to the Data Bank details of the computing platforms existing in their establishment whenever requested. When an establishment is developing a new program or modifying an existing program, the liaison officer is responsible for sending a provisional program abstract to the Data Bank. When the program or modification has been satisfactorily implemented, a description and complete package should then be forwarded.
- 4. The linison officers receive the Data Bank publications and electronic newsletters and are responsible for their circulation and distribution to all interested parties in their establishments. Linison officers should forward to the Data Bank all requests from their establishments for additional information, descriptions or computer program packages. Contacts between the Data Bank and the individual establishments should normally be effected through the liaison officers. This avoids unnecessary contact between the Data Bank and individual users.
- 5. Although program authors, liaison officers and the Data Bank itself make every effort to ensure that all program material is accurate, it should be understood that no guarantee of accuracy can be given or implied by any source with regard to information or statements contained in such material. Furthermore, the Data Bank can accept no responsibility for any damage resulting from the use of the material it provides.
- 6. Whenever liaison officers wish to relinquish their position as such or are otherwise unable to continue in this office, the NEA Data Bank should be informed as soon as possible of the successor.
- The liaison officer agrees to adhere to the established rules and returns a signed copy of this page to the NEA Data Bank.

AGENCE DE L'OCDE POUR L'ÉNERGIE NUCLÉAIRE

OECD NUCLEAR ENERGY AGENCY

Restrictions on the use of programs and data distributed by the NEA Data Bank

AEN

Authors and their establishments must be consulted if an organisation receiving programs and data intends to use them to provide commercial service to outside users.

Programs and data are provided on the understanding that the agreement of the originating establishment shall be obtained before a service is offered involving sale or use on a fee-paying basis of any program or data set distributed by the NEA Data Bank. This restriction applies also to modified versions derived from program copies obtained from the NEA Data Bank.

Transfer of a program or data to a user in a given establishment confers only the right to use the program within that organisation: in particular, copies of programs and data should not be distributed to persons outside their own establishment; users in other centres should contact the NEA Data Bank directly in order to obtain program copies.

Computer programs and data are provided on the understanding that whenever the use of programs obtained through the NEA Data Bank, or locally modified versions of them, results in a publication (a journal, conference proceedings, laboratory report, book etc.), the program and its author or laboratory of origin shall be acknowledged in the publication.

To be more specific as to how these restrictions must be interpreted the following should be noted:

- the codes users receive from the Data Bank cannot be further distributed, thereby prohibiting the sale of such material,
- if users modify codes, they must inform the authors. Improved versions may not be sold without users coming to an agreement with the principal authors,
- users are not permitted to set up the code on a shared computer which allows other users to access the code by paying a royalty for its use,
- however, there is no objection to expert users within a contract or project with a third party, modelling
  a problem, interpreting results and recovering the cost of their work and expertise by using a code
  received from the Data Bank.
- In order to hold training courses/classes and workshops with hands-on use of computer codes distributed by the NEA Data Bank, the Data Bank must be consulted and specific authorisation must be obtained if the authors or managers of the code concerned are not directly involved in the course/class/workshop.

#### Disclaimer

Neither the Organisation for Economic Co-operation and Development or any of its Member countries, nor any person acting either on behalf of any of them or otherwise in furtherance of the activities of the Nuclear Energy Agency assumes any liabilities with respect to the use of, or for damage resulting from the use of, any information, method or process disclosed in the distributed material.

This applies also to non-Member countries and Organisations that have contributed to the distributed information.

"I agree with these restrictions and conditions" Date: Signature:

(Revision: 13 June 2007)

PLEASE READ, SIGN AND RETURN

Le Seine St-Germain , 12, Boulevard des Iles , 92130 Issy-les-Moulineaux , France www.oecd-nea.org contact: programs@oecd-nea.org (Tel: +33 1 45 24 10 78 - Fax: +33 1 45 24 11 09)

Le Seine St-Germain , 12, Boulevard des lles , 92130 Issy-les-Moulineaux , France www.oecd-nea.org contact: programs@oecd-nea.org (Tel: +33 1 45 24 10 78 - Fax: +33 1 45 24 11 09)

### NEA Data Bank, Nuclear Science Section: Technical Visit to Russia

**March 2014** - technical visit of the OECD/NEA Secretariat delegation led by the Head of the NEA Data Bank Mr. Kiyoshi Matsumoto to Russia

*Goal of visit*: to identify the areas of cooperation and get acquainted with the Russian experimental base

*Russian participants*: experts from the State Atomic Energy Corporation "Rosatom", Rostechnadzor, IBRAE RAS, National Research Centre "Kurchatov Institute", "Rosenergoatom" Concern OJSC, National Research Nuclear University, JSC "VNIINM", JSC "VNIIHT", PJSC SPA CNIITMASH, JSC "SSC RIAR", JSC OKB "GIDROPRESS", JSC "Afrikantov OKBM", JSC "EREC", FSUE "Scientific Research Institute Scientific Industrial Association "LUCH", JSC "NIKIET", FSUE "RADON", FSUE "RISI", FSUE "SSC RF-IPPE", FSUE "Alexandrov NITI", FSUE "RFNC – VNIIEF"

OECD/NEA Secretariat delegation visited the following organisations: FSUE "SSC RF-IPPE" (Kaluga region, Obninsk) National Research Centre "Kurchatov Institute" (Moscow)

OECD/NEA presentations: "The OECD Nuclear Energy Agency (NEA) Data Bank", "NEA-Data Bank & Nuclear Science: Overview of Activities and Experimental Needs", "Progress in NEA DB-Russia cooperation" can be sent by request

# Conclusion

The OECD/NEA is an internationally recognized organisation for the coordination and development of multilateral cooperation, mainly in developed countries

1 January 2013 was a start of a new stage in the cooperation between Russia and the OECD/NEA which includes the development of joint solutions and specific recommendations for sustainable, safe, economical and environmentally friendly use of nuclear energy for peaceful purposes

Russia, being a strong player on the global nuclear energy market and being one of the foremost countries in the world in the field of scientific and technical development in the sphere of reactor design, nuclear fuel, NPPs operating experience, NPP staff professional skills and being one of the few countries where an extensive research and development program is carried out

- ⇒ can share experience and knowledge with the OECD/NEA member countries
- ⇒ can make intellectual contribution to the maintenance and development of innovative nuclear energy technologies and
- ⇒ can spread best practices in the field of safe nuclear energy development

# Conclusion

Wide applied experience the OECD/NEA and NEA Data Bank is of particular interest to the nuclear industry of our country

Russian Federation participation as the OECD/NEA member country

- provides additional conditions for promoting Russian nuclear power technologies to world markets
- contributes to our work on the harmonization of existing Russian certification requirements of reactor technologies with international practice
- allows to use of the NEA Data Bank which contains computer codes, numerous of useful information, including the results of integral experiments, reactor materials properties and information on experimental base of the member countries
- promotes the adaptation of best Russian practices in the field of world nuclear power



Participation of the Russian organisations in the OECD/NEA projects and programmes provides the following opportunities

- Russian nuclear energy technologies theoretical and experimental safety justification improvement, including validation and verification of computer codes
- Russian experimental base development and improvement
- Legal framework harmonization and improvement

The process of active involvement of Russian nuclear industry organizations in the cooperation with the OECD/NEA has already started

Active participation in the Technical Committees and Working Groups provides the following opportunities

- to include to the committees' programme of work issues and questions relevant to the Russian nuclear industry
- to prepare proposals on the OECD/NEA new projects and programmes aimed at solving problems of current importance of the Russian nuclear industry
- to use Russian experimental facilities as a base for the OECD/NEA international projects

Д

#### **RWMC Working Groups Chairs**


Being the NEA Data Bank member country means not only to receive but also to provide computer codes and data

Fill-in information on the existing Russian experimental base is already being provided to the NEA Data Bank

Work on preparation of the computer codes and experimental results data for transfer to the NEA Data Bank of Russian is being carried out (subject to the requirements of the Interagency Order and Single Industry Order on interaction with the OECD/NEA)

## Thank you for your attention!



State Atomic Energy Corporation "Rosatom" Department of International Cooperation Project Office for Cooperation with the OECND/NEA Andreeva-Andrievskaya Liudmila , Head Email: <u>LNAndreeva@rosatom.ru</u> Tel.: +7 499 949 27 09

## **Russian Contact Point:**

Khramova Elena Email: <u>EVKhramova@rosatom.ru</u> Tel.: +7 499 949 27 80



## Rostekhnadzor

**International Relations Department** 

Contact point: Kolobov Valeriy E-mail: <u>V.Kolobov@gosnadzor.ru</u> Phone: +7 495 911 64 56