

**International Forum ATOMEXPO**

# **Implementation of the WANO programs at WANO Moscow Center NPPs**

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**Governing Board Chairman WANO -MC**

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**W A N O  
Moscow Centre**

# WANO –MC Members

**In total 19 organizations are affiliated to WANO  
Moscow Center**

**In 2012, 70 units at 24 plants in 10 countries  
were in operation. Overall installed capacity of  
MC –member plants made up 52,1 MWe.**

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# **WANO-MC**

**14 units are under construction:**

**10 in Russia**

**Beloyarsk NPP-4 – since 18 July 2006**

**Kursk NPP-5**

**Leningrad NPP 2-1 – since 25 October 2008**

**Leningrad NPP 2-2 – since 15 April 2010**

**Novovoronezh NPP 2-1 – since 24 June 2008**

**Novovoronezh NPP 2-2 – since 12 July 2009**

**Rostov NPP-3 – since 15 September 2009**

**Rostov NPP-4 – since 16 June 2010**

**Academician Lomonosov - 1 and 2**

# **WANO-MC**

**14 units are under construction:**

**2 in India (Kudankulam NPP-1, 2),  
2 in Slovakia (Construction of Mochovce-3,4 units was  
resumed on 11 June 2009).**

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# WANO-MC

**17 units are decommissioned:**

**4 units in Russia (Beloyarsk NPP-1,2, Novovoronezh NPP-1,2),**

**3 in Ukraine (Chernobyl NPP -1,2,3),**

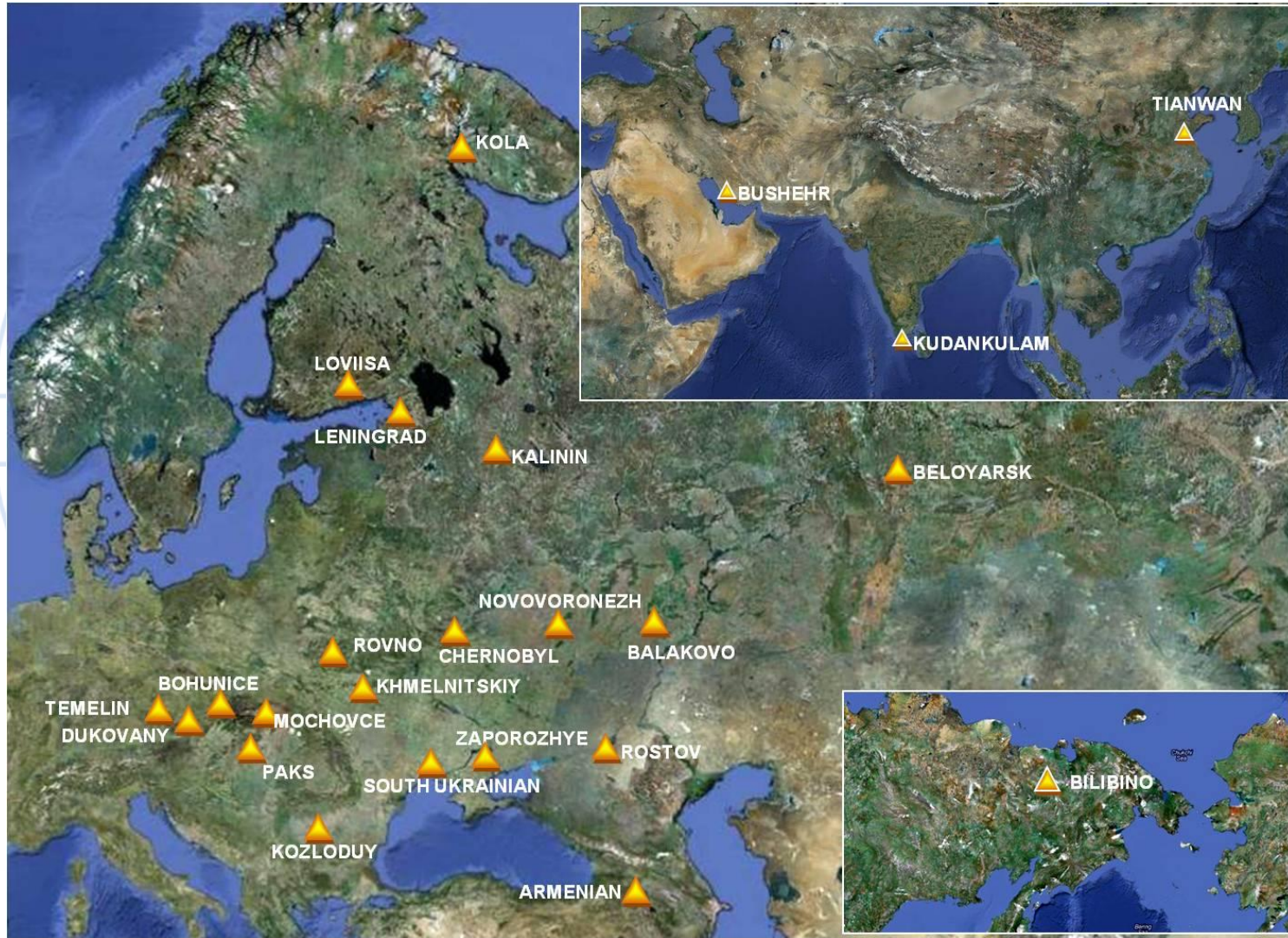
**3 in Slovakia (Bohunice A1 and Bohunice -1, 2),**

**1 in Armenia (Armenia NPP -1),**

**4 in Bulgaria (Kozloduy NPP 1, 2, 3, 4),**

**2 in Lithuania (Ignalina NPP -1,2).**

# Situation of WANO MC NPPs



# WANO-MC

**Number of units affiliated to WANO-MC continues to increase despite of the Fukushima event.**

**This is mainly related to continued development of VVER technologies.**

**There are plans to commission new VVER units in Russia, Belarus, China, India, Bulgaria, Turkey, Vietnam and other countries.**

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# WANO-MC

**After the Fukushima accident, WANO-MC has reviewed its long-term goals and objectives, reinforced them taking into account the recommendations of the Post-Fukushima commission.**

**A WANO-MC Long Term Business Plan will be updated on a continued basis to reflect the results of working groups' efforts to address the recommendations of the Post Fukushima commission.**



# WANO-MC Long-term Plan

**The general meeting of WANO unanimously approved the PF Commission recommendations:**

- 1 Extension of the WANO scope of activities to include emergency preparedness fundamentals.**
- 2. Development of the world-wide emergency response strategy**
- 3. Improvement of peer performance in quality and effectiveness**
- 4. Promotion of the WANO visibility and transparency.**
- 5. Conduction of periodic internal peer reviews of each regional center**

# Resources



**Implementation of Post-Fukushima commission recommendations requires additional resources**

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# Resource status of the centres (2010)

<b>Centers</b>	<b>AC</b>	<b>MC</b>	<b>PC</b>	<b>TC</b>
<b>Units</b>	<b>129</b>	<b>71</b>	<b>151</b>	<b>106</b>
<b>Center staff</b>	<b>25</b>	<b>16</b>	<b>42</b>	<b>23</b>
<b>Number of staff per unit</b>	<b>**</b>	<b>0.15</b>	<b>0.28</b>	<b>0.22</b>

# Objectives as for resources - technical staff

## Reasons for the WANO MC staff number increase

- Review of the whole NPP site (Daya Bay NPP – 55 persons)
- Professional PR team (up to 50%)
- WANO program coordinators (new)
- NPP coordinators (new)
- Extension of review areas
- Increase of the program frequency (1.5 times)
- Corporate reviews (new)
- Internal reviews between centers (new)
- Public relations (becoming open)
- Work coordination with other organizations in part of emergency preparedness (new)
- Stress-tests (new)
- “Joint crisis center” (new)
- Administrative support
- Translators

## Objectives as for resources - technical staff

<b>Year</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<b>Number of units</b>	<b>69</b>	<b>71</b>	<b>79</b>	<b>81</b>	<b>83</b>
<b>Targeted indicator as for technical staff, man/unit</b>	<b>0.35</b>	<b>0.5</b>	<b>0.65</b>	<b>0.8</b>	<b>0.8</b>
<b>Targeted indicator as for technical staff, man</b>	<b>25</b>	<b>37</b>	<b>51</b>	<b>65</b>	<b>66</b>
<b>Planned number of technical staff, man</b>	<b>9</b>	<b>45</b>	<b>57</b>	<b>65</b>	<b>66</b>
<b>Plan of recruiting new staff, man</b>	<b>3</b>	<b>36</b>	<b>12</b>	<b>8</b>	<b>1</b>

# Increase of resources

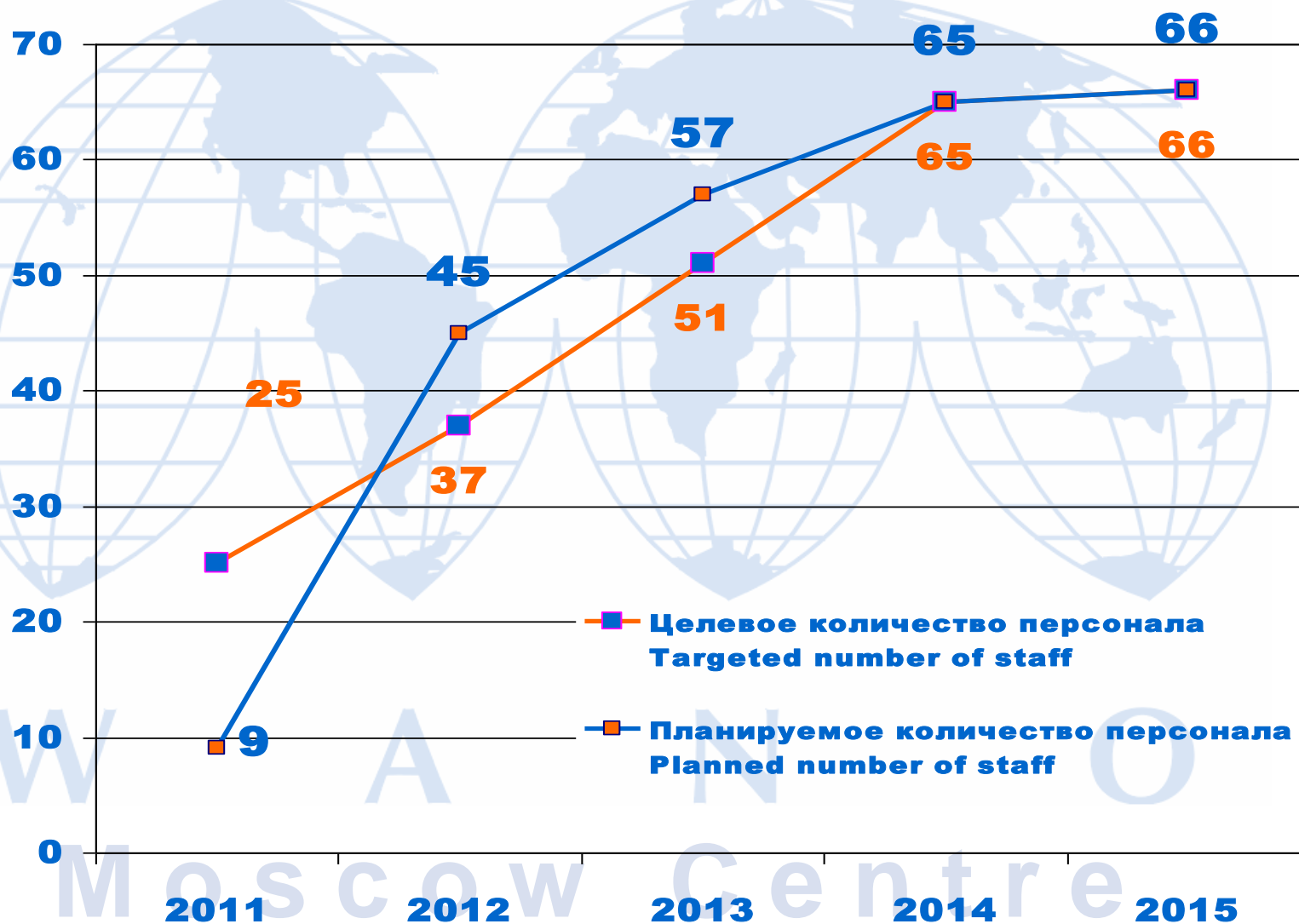
- **To implement the recommendations of the commission as soon as possible it was necessary to provide WANO-MC with the necessary resources already in 2012.**
- **WANO-MC Governing Board made a decision to institute WANO-MC on-site representation offices at every plant site and add human resources to the WANO-MC Secretariat.**
- **The WANO-MC 2012 Budget has been revised respectively.**

# Increase of resources

- **WANO-MC** conducted a competition to fill in seconded personnel positions and hired **15** individuals for on-site representative positions and **12** **WANO-MC** seconded staff.
- Hence, an additional **27** individuals will start working in **WANO-MC** already in **2012**. This will allow to make a successful breakthrough in **WANO** programmes with training provided to **WANO-MC** staff during the year **2013**.
- Additionally, **WANO-MC** will have a **five-fold** increase in premises in the **VNIIAES** building in the year **2012**.

# Цели по ресурсам - технический персонал

## Objectives as for resources - technical staff





# WANO-MC



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# Focus on safety

- **Plant safety will be the main focus of WANO-MC programmes (peer reviews, technical support missions, workshops).**
- **In response to the Fukushima event WANO-MC set up a dedicated team to gather and analyze stress test results in the Moscow Center region and issued a respective confidential report.**

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# Focus on safety

- **WANO-MC** came out also with an initiative of creating a **Regional Emergency Center** to address emergency response and communication weaknesses revealed after the **Fukushima** event and is currently working aggressively in this direction.
- This has identified that it is expedient **to consider possible creation of a Unified Emergency Centre** with the involvement of other regional centers.

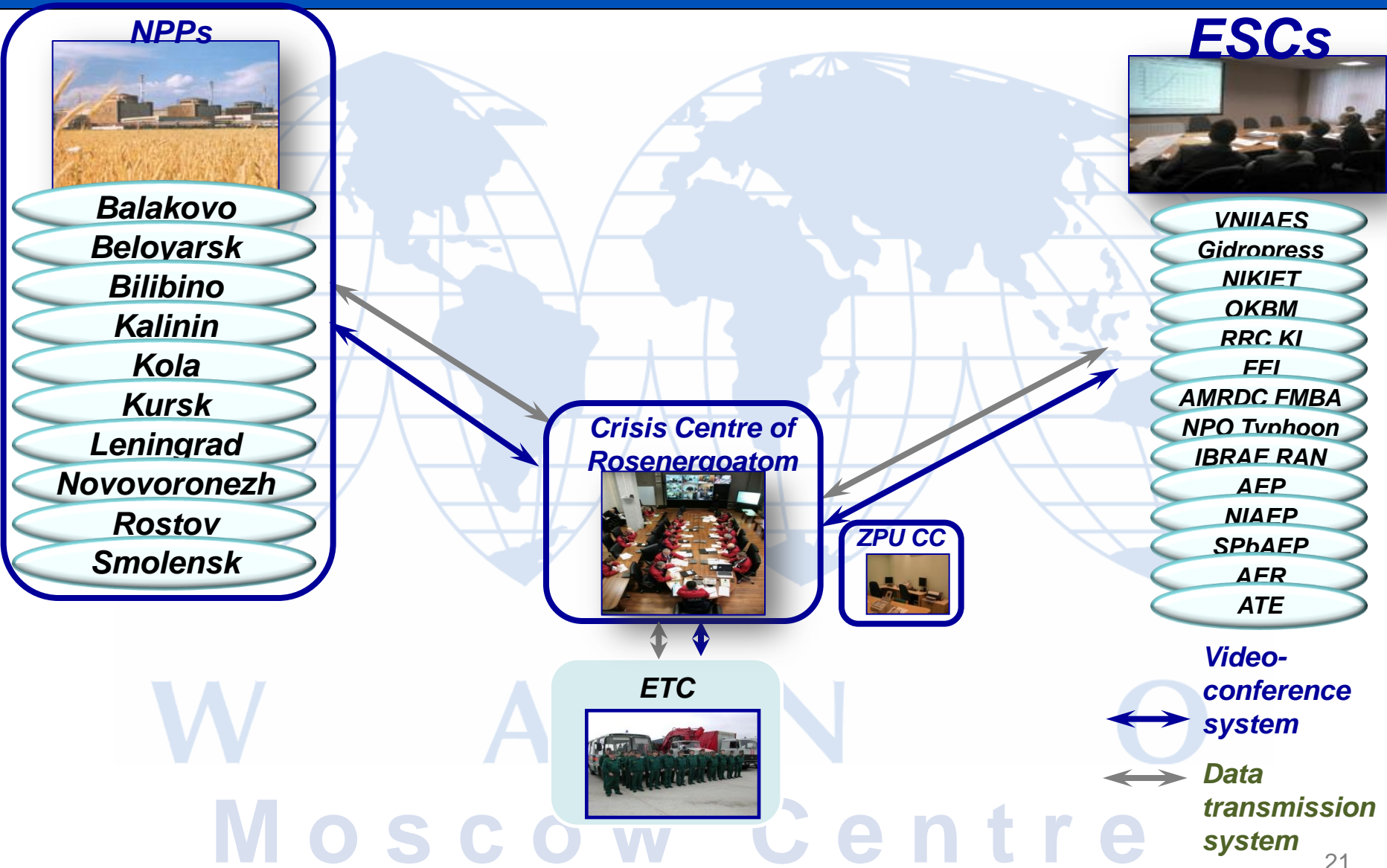
# Objectives of the Regional Crisis Center

- 1. Access to expertise and material resources / equipments** – enables each MC plant to quickly and easily reach the best support in form of experts or other resources to mitigate and ease in case of crisis
  - Up-to-date information of available expertise and other resources centralized
  - Provide help to mobilize mitigating actions and deploy best possible resources
- 2. Information flow** – each MC- plant knows appropriate level of details in case of crisis in any other plant
  - Two-way accurate and timely information sharing
  - Interaction based on agreed protocol
  - Full confidentiality and trust between parties not to disclose any shared information publicly
  - Quick response

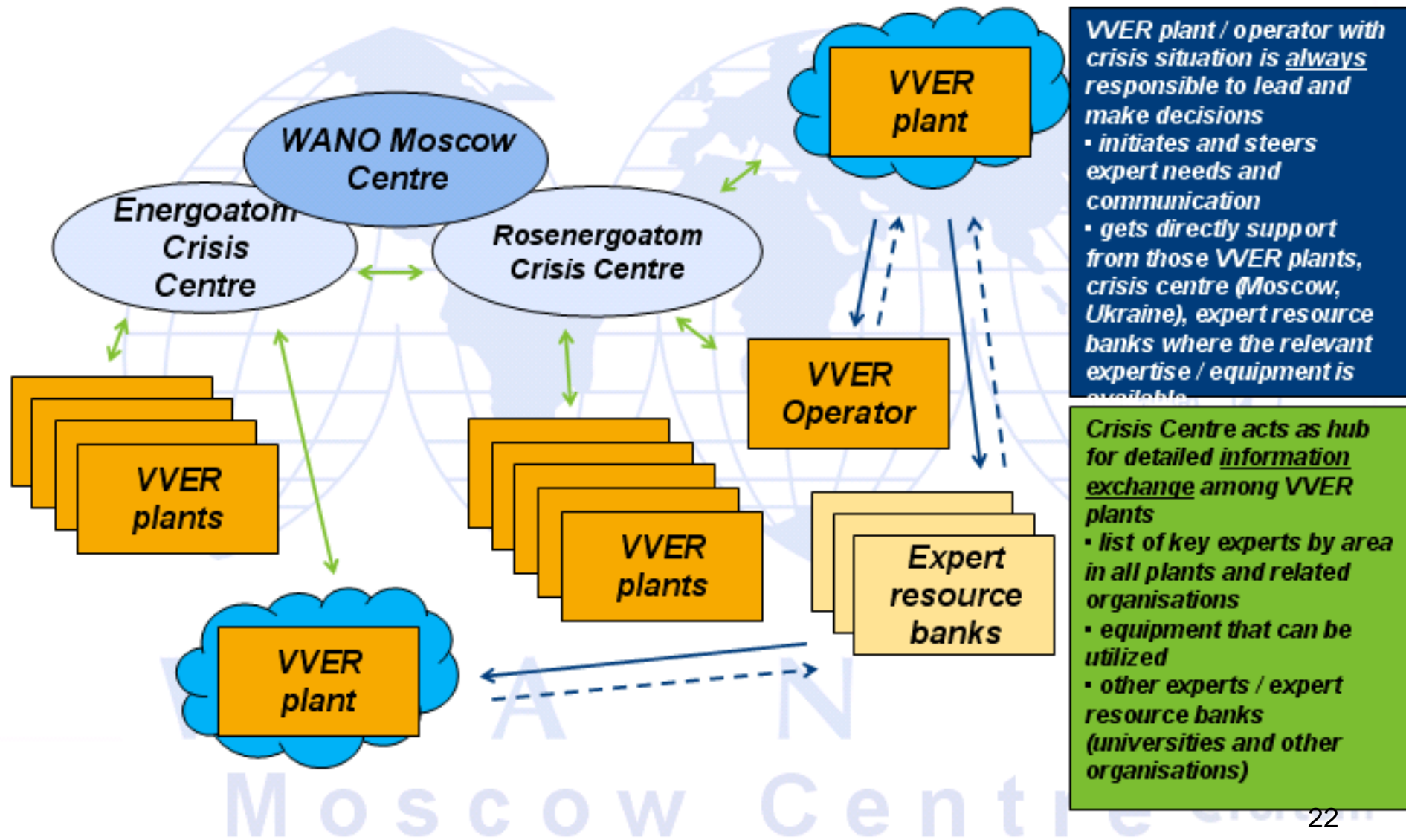
*Routine  
Operation  
mode*

*Higher alert  
&  
Emergency  
mode*

# The Rosenergoatom Crisis Centre is "Operational Core" of the WANO MC RCC



# Higher alert & Emergency mode



# WANO-MC

- **In addition to the existing WANO regional center governance system, WANO-MC has two additional structures that we consider to be important from the point of safety significance.**
- **They are the WANO-MC Directors' Board and Chief Engineers' Board. Two WANO-MC Directors' and one WANO-MC .**
- **Chief Engineers' meetings were held already.**
- **Feedback revealed high effectiveness of such events. Thus, the frequency of WANO-MC directors' meetings was increased from once every two years to twice every year.**

# WANO-MC



**WANO-MC has demonstrated high commitment to significant reinforcement in response to the Fukushima event and plans on completing the process by the 2015 Biennial General Meeting.**

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# WANO-MC



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