



Scientific and Engineering Centre for  
Nuclear and Radiation Safety



**ETSON**

EUROPEAN  
TECHNICAL SAFETY  
ORGANISATIONS  
NETWORK

# **Knowledge Management in TSO for Regulatory Bodies: SEC NRS Experience**

**Nataliya Saulskaya**  
HR Director, SEC NRS

**Madrid, 29-30 October 2015**

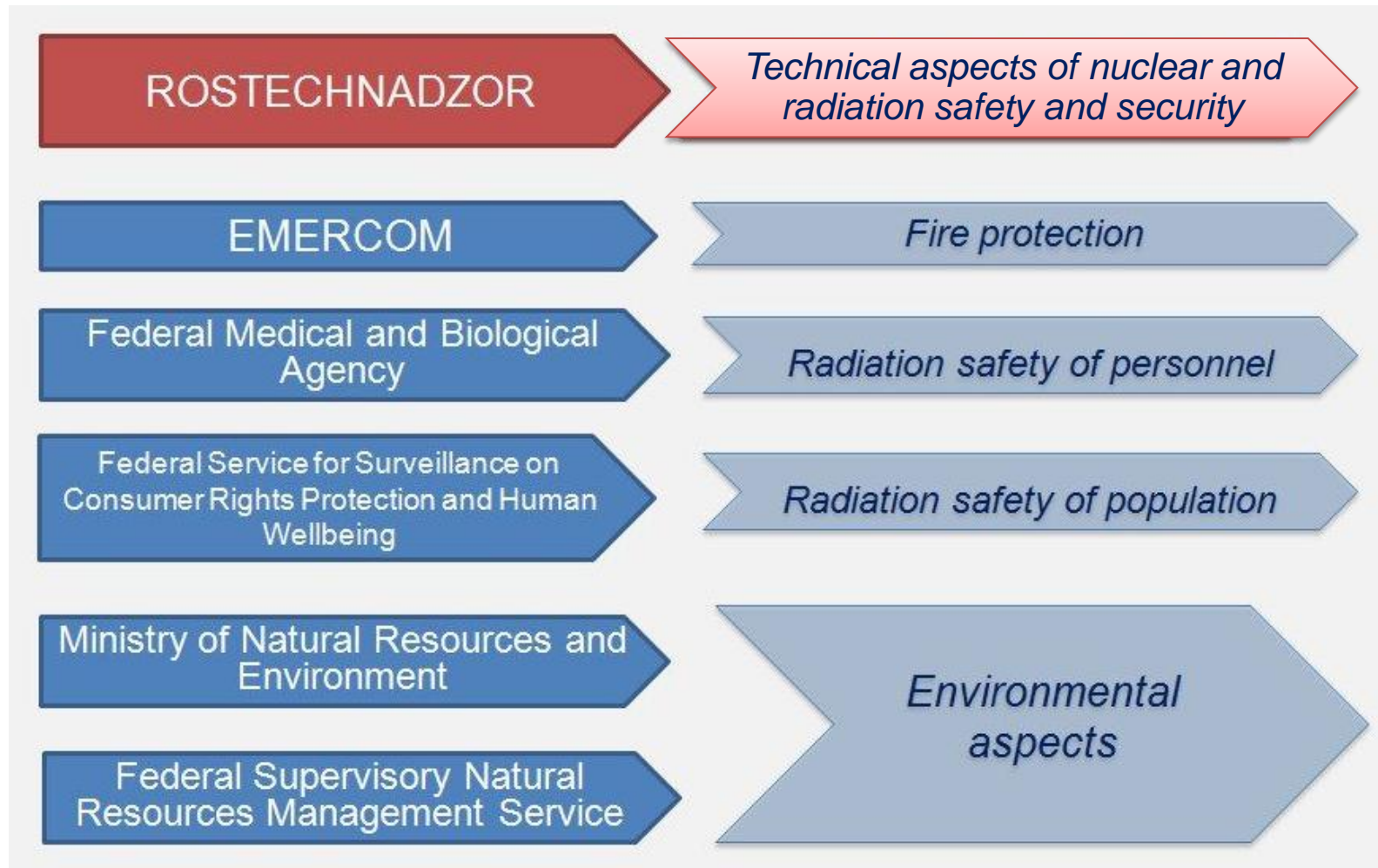
# Main Objectives

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- ✓ **SEC NRS as a TSO to nuclear regulatory authority (Rostekhnadzor)**
- ✓ **Knowledge Management (KM) in the terms of Human Resources Management (HRM)**
- ✓ **SEC NRS expertise**

# Bodies for State Safety Regulation in Atomic Energy Use



# SEC NRS in Numbers



**Set up in 1987**

**Full-fledged scientific and technical support organization for nuclear regulatory authority (Rostechnadzor)**



**350 employees**

**59 Phd & doctors of sciences**

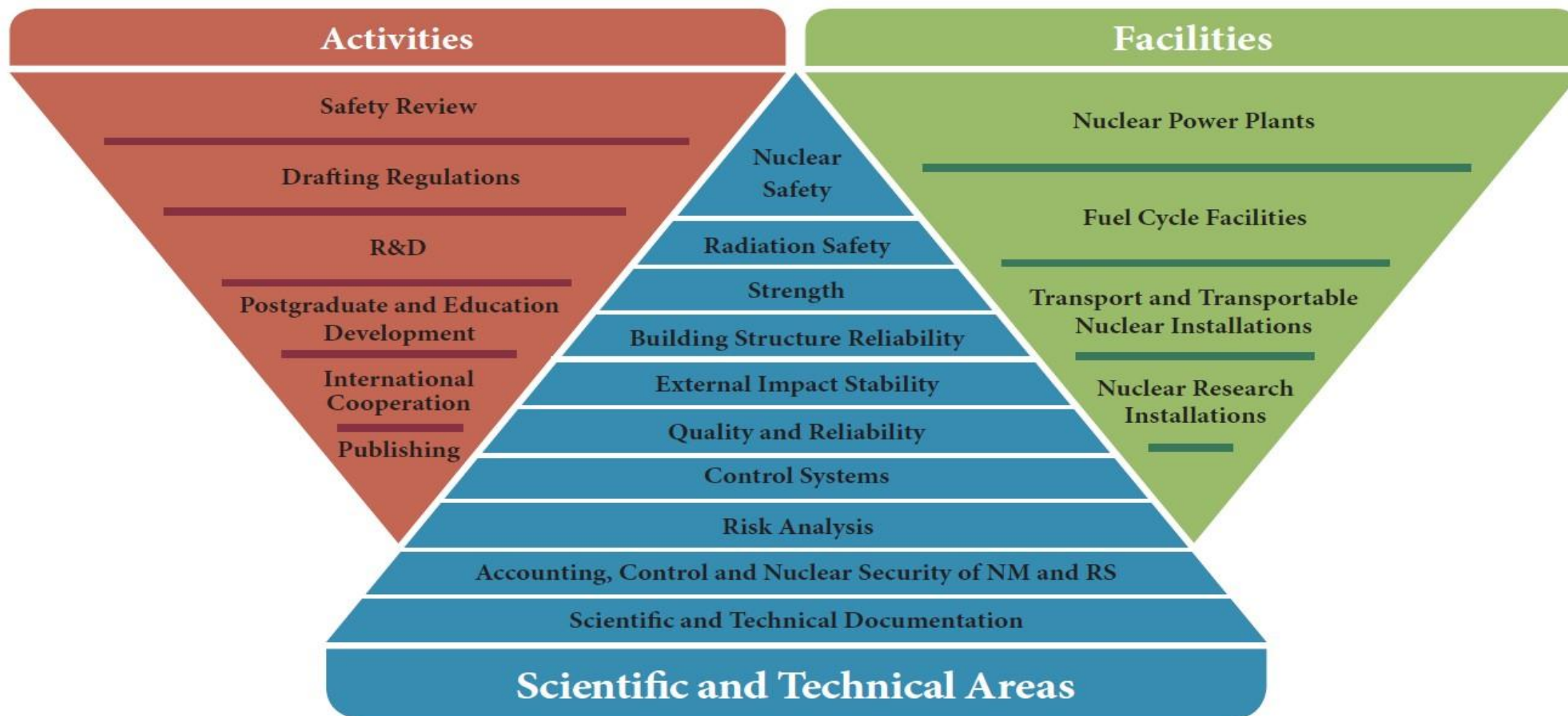
**75 % of employees are researchers**

**The average age of the employees - 45 years**

**12 Scientific & Technical Divisions**



# SEC NRS Fields of Activity



# Scientific & Technical Divisions of SEC NRS



**Nuclear Power Plants Safety Division**

**Marine Transportable Facilities  
Division**

**Nuclear Research Installation Safety  
Division**

**Division for Safety of Fuel Cycle  
Facilities**

**Nuclear and Radiation Safety  
Division**

**Radiation Safety Division**

**Quality and Reliability Division**

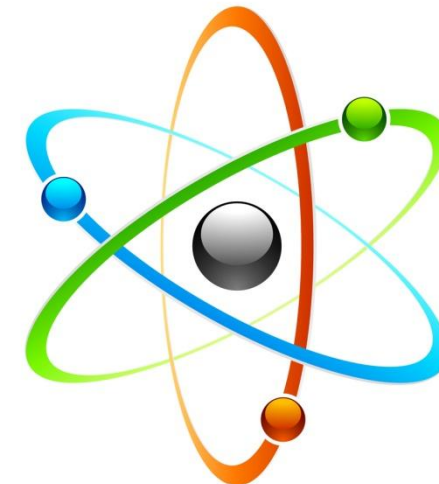
**SSC Integrity Division**

**Risk Analysis Division**

**External Impact Stability Division**

**Division of Accounting, Control and  
Physical Security of NM and RS**

**Safety of building constructions**



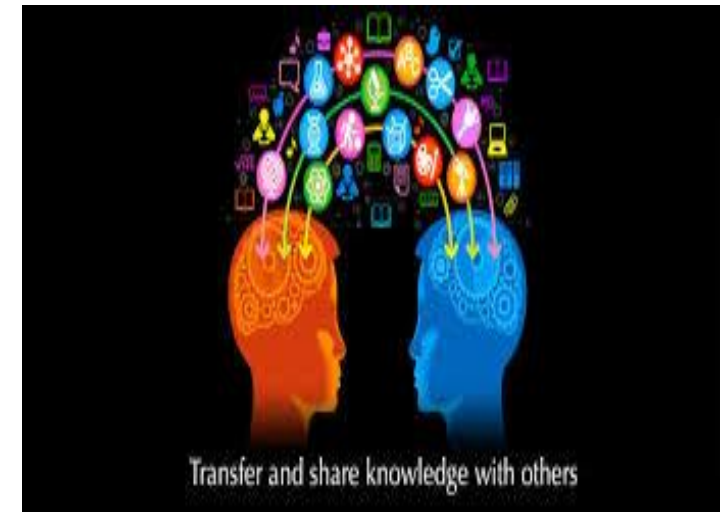
# Knowledge Management in the Terms of Human Resources Management

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## Core functions:

- ✓ **Performance Management**
- ✓ **Personal performance review and assessment**
- ✓ **Motivation to work**
- ✓ **Regulation of social psychological processes**



# Knowledge Management in the Terms of Human Resources Management (cont.)

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## Additional functions

- ✓ Workforce planning
- ✓ Personnel screening
- ✓ Personnel adaptation
- ✓ Merit based promotion system
- ✓ Personnel career planning
- ✓ Workplace organization
- ✓ Release of staff





# Nuclear Education in Russia



## Basic routes of recruitment

- ✓ Employment market
- ✓ Nuclear universities and polytechnics

# Training Approach



## Forms of training



**Lecturing**

**Local discussions and training**

**External meetings**



**On- the- job training**

**E- learning**

**Self-study**



**Coaching/mentoring**

**Post-graduate training program**

**Competition of Young Researchers**

# Main Information Resources



- National Nuclear Regulatory Portal (NNRP)
- Official site
- Various databases
- Information corporate Portal

The collage displays several key Russian nuclear safety and regulatory websites:

- Top Left:** A corporate portal with a search bar and navigation tabs for "Тендеры" (Tenders), "Сотрудники" (Employees), "Документы" (Documents), "Группы" (Groups), "Общение" (Communication), and "Секции" (Sections). It features a "Доска почета" (Honorary Board) with photos and names of award recipients.
- Top Right:** The IAEA RegNet National Nuclear Regulatory Portal – Russia. It includes sections for "Country Nuclear Regulatory Profile", "Responsibilities and functions of the regulatory body", "Regulatory Knowledge Base", and "Radiation and nuclear facilities and activities".
- Bottom Left:** The website of the Federal Environmental, Industrial and Nuclear Supervision Service (Rostechnadzor). It features the Russian coat of arms and the text "«Scientific and Engineering Centre for Nuclear and Radiation Safety»".
- Bottom Center:** A page from the SEC NRS website, celebrating its 25th anniversary. It includes a search bar, a "PERSONAL CABINET" link, and a "registration" link.
- Bottom Right:** A diagram of the Russian legal system, showing a pyramid of laws from the Constitution down to technical regulations and standards.



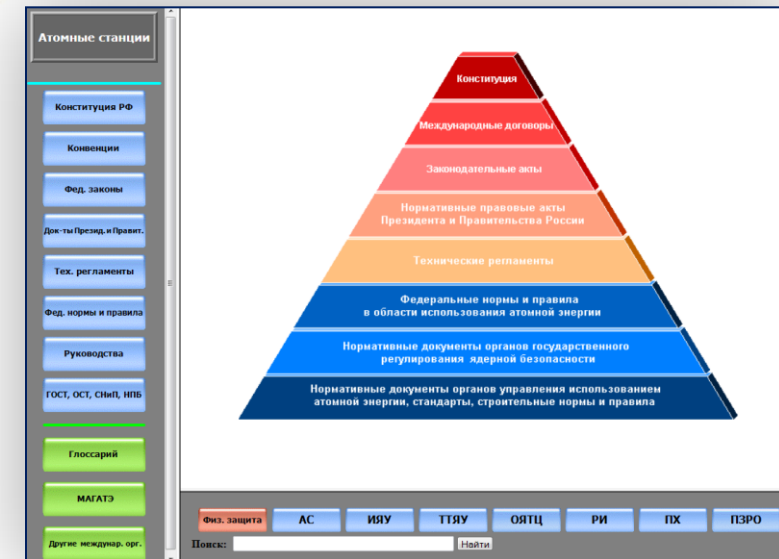
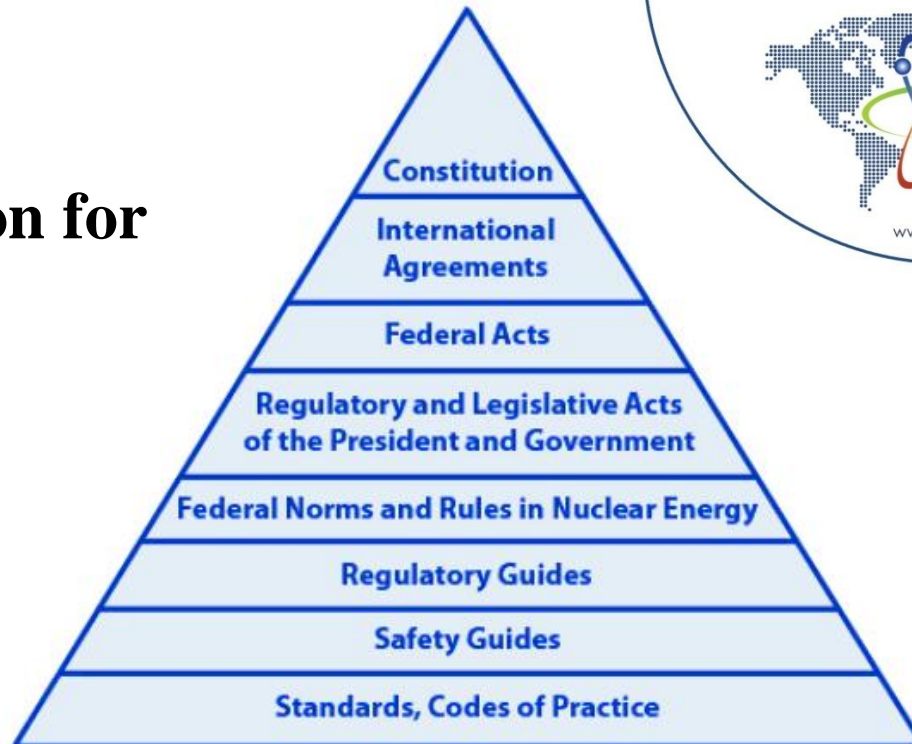
# “RIS” – Database of Normative Documents



✓ **Online version**

✓ **Version on the CD  
(flash memory)**

✓ **Special version for  
NNRP**





# Various E-learning Courses

[Поиск](#)[Тендеры](#)[Сотрудники](#)[Документы](#)[Группы](#)[Общение](#)[Сервисы](#)[Компания](#)[CRM](#)[Экстранет](#)

Главная страница – Сервисы – Обучение

- Живая лента
- Календарь
- Группы
- Сообщения
- Задачи
- Моя страница
- Мой диск
- Фотографии

## Список курсов

Найти:  [Поиск](#)



### [Курс для новых сотрудников](#)

Чтобы не оказаться "своим среди чужих и чужим среди своих", нужно соответствовать нормам поведения в коллективе. Этот курс предназначен для новых членов нашего трудового коллектива. В нем вы узнаете о наших корпоративных нормах и ценностях, на которые вам следует ориентироваться в ежедневном поведении.



### [Курс по работе с порталом](#)

Корпоративный портал - это прежде всего программное обеспечение, с которым надо уметь работать. Научиться этому не сложно, если внимательно и вдумчиво познакомиться с этим курсом, где подробно описано как работает наш портал.

### [Международные подходы и практика](#)

- Установление инфраструктуры безопасности для ядерной энергетической программы (SSG-16);
- Структура документов МАГАТЭ;
- Цели регулирования ядерной и радиационной безопасности (по документам NEA OECD);
- Идеология безопасности.

[+ Добавить курс](#)[Управление курсами](#)

### Учебные курсы

[Мои сертификаты](#)[Журнал обучения](#)

# Main Topics of Syllabus (on the Base of General Safety Requirements of the IAEA)



- ✓ Basic international approaches and practices (IAEA initially)
- ✓ Regulatory framework in the Russian Federation
- ✓ Safety regulation in various stages of facility life cycle
- ✓ Technological fundamentals of nuclear and radiation safety of VVER NPPs
- ✓ Safety regulation of activities' types
- ✓ Safety assessment and review of facilities and related activities)

# Methods of Assessment (on a periodic basis)



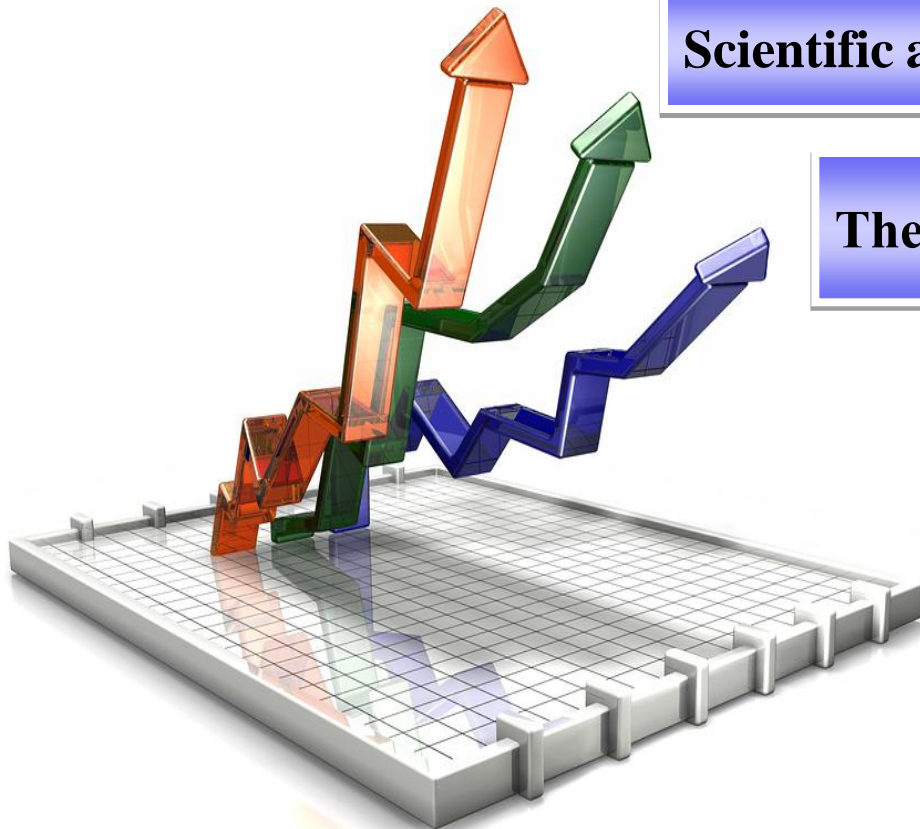
**Personnel Review Commission - 7 experts (personnel competences assessment, gap analysis)**

**Scientific and Technical Council- 30 members (assessment of achievements)**

**The '360 degree' approach (self -assessment, tutorship, colleagues, leader)**

**Annual Scientific Rank (based on research activities)**

**Self-assessment (Questionnaire)**



# Annual Scientific Rank



- ✓ Thesis defence, award of Scientific Degree
- ✓ Publishing activities (including electronic media)
- ✓ Citation Index
- ✓ Research & Development activities
- ✓ Intellectual Property Rights authorization
- ✓ Supervision of research groups
- ✓ Participation at the International Committees & working groups of International Organisations (IAEA, ETSON, WENRA, etc.)
- ✓ Lecturing activities
- ✓ Participation at the meetings with reports
- ✓ Tutoring



# **Annual Competition of Young Researchers**

## **(case story 2015)**

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- ✓ **Design & experimental study of indicators of nuclear & radiation safety in transportation of spent nuclear fuel using containers TUK-153**
- ✓ **Assessment of operation safety of a near-surface storage of nuclear waste during their placing or removing**
- ✓ **A model of express-assessment of the safety op NPP with VVER reactors**
- ✓ **Analysis of the ground velocity & displacement during the earthquake at the NPP “Kashiwazaki-Kariva”**
- ✓ **The calculation of the potential population doses living in areas contaminated with natural uranium with the use software RESRAD**
- ✓ **The use of three-dimensional ligament codes QUABOX/CUBBOX-ATHLET for the calculation of transients in the reactor RBMK-1000**
- ✓ **The forecast of the long-term safety of near-surface repository for invasion options**

# Conclusions

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- ✓ 20 students are on the fixed-term labour contracts
- ✓ 23 graduates were recruited
- ✓ 3 postgraduate students work on their doctoral thesis
- ✓ 5 young researches of SEC NRS gained a PhD

# Conclusions (cont.)

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✓ 5 young researchers participated at VI Scientific Conference of young scientists of nuclear industry (St. Petersburg, 2015)

✓ 2 junior experts of SEC NRC applied ETSON Award 2015 (in collaboration with young colleagues from the other countries)

***Thank you for your time and attention!***







Scientific and Engineering Centre for  
Nuclear and Radiation Safety



# SEC NRS

**More than 25 Years at Service for Regulation  
of Nuclear and Radiation Safety**

tel. +7 499 264 0003

fax: +7 499 264 2859

E-mail: [secnrs@secnrs.ru](mailto:secnrs@secnrs.ru)

[www.secnrs.ru](http://www.secnrs.ru)