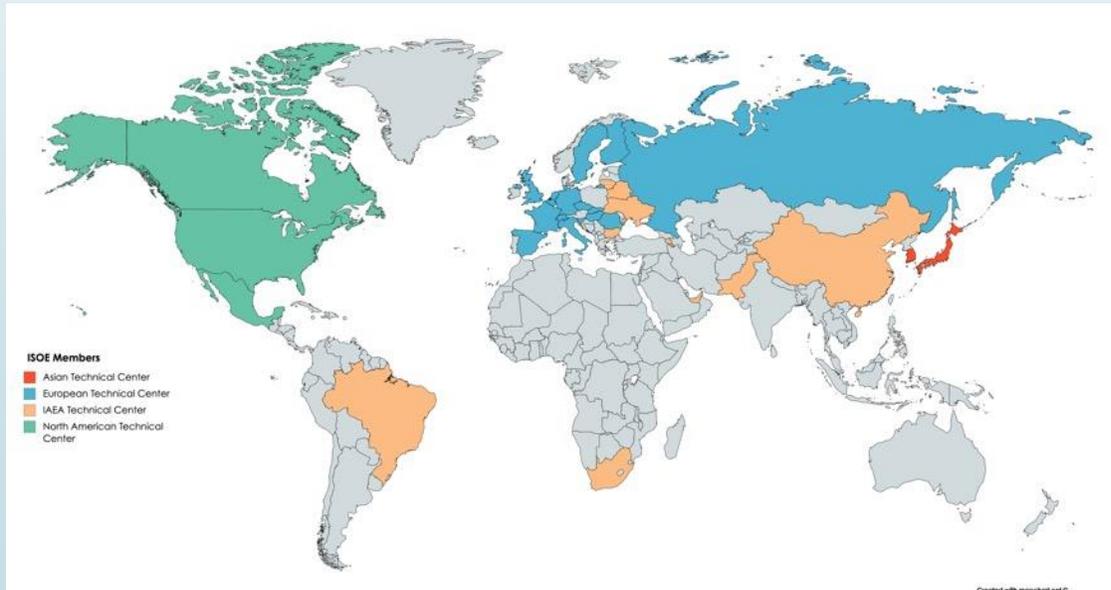


# ISOE - Information System on Occupational Exposure

## General Presentation and highlight of key activities



*Caroline Schieber*  
*ISOE International Symposium*  
*Beijing, 22-24 October 2019*



# Presentation Layout

1. ISOE Objective and membership
2. ISOE Organisation
3. ISOE Products and benefits
4. ISOE Website
5. ISOE Database



# ISOE: Objectives and membership

## ISOE Objectives

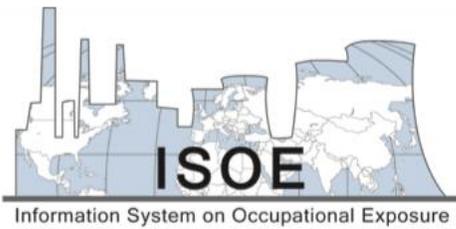
- Created in 1992
- A **network** of RP professionals from nuclear licensees and national regulatory authorities worldwide
- Objective: **to improve the management of occupational exposure at nuclear power plants** by exchanging broad and regularly updated information, data and experience on methods to optimise occupational radiological protection
- As of December 2018, the ISOE programme included:
  - **78 Nuclear Licensees in 29 countries**
  - **28 Regulatory Authorities in 26 countries**
  - **Dose data from 347 operating units; 55 shutdown units; 7 units under construction and/or commissioning**
- The ISOE is jointly sponsored by the:
  - OECD Nuclear Energy Agency (NEA), and
  - International Atomic Energy Agency (IAEA).

ISOE Organisation

ISOE Products

ISOE Website

ISOE Database



# ISOE Organisation

ISOE Objectives

ISOE Organisation

ISOE Products

ISOE Website

ISOE Database

- The ISOE operates in a decentralised manner.
  - **Management Board (MB)** composed of representatives from licensees and regulatory authorities from all participating countries takes decisions and provides overall direction (1 meeting /year)
  - **Bureau**, elected by the MB, guides ISOE and Secretariat work between MB meetings (2 meetings/year).
  - Both are supported by the joint **NEA/IAEA Secretariat**.
- **Four ISOE Technical centres** (Asia, Europe, IAEA and North America) serve the programme's day-to-day technical operations and are contact points for the transfer of information from and to participant countries.
- **A National co-ordinator** in each country provides a link between ISOE participants and the ISOE programme.
- **Specialised working groups**, mandated by the Management Board, are created on an as-needed basis to support the goals of the ISOE on specific topics.

# ISOE members by Countries and affiliated Technical Centers

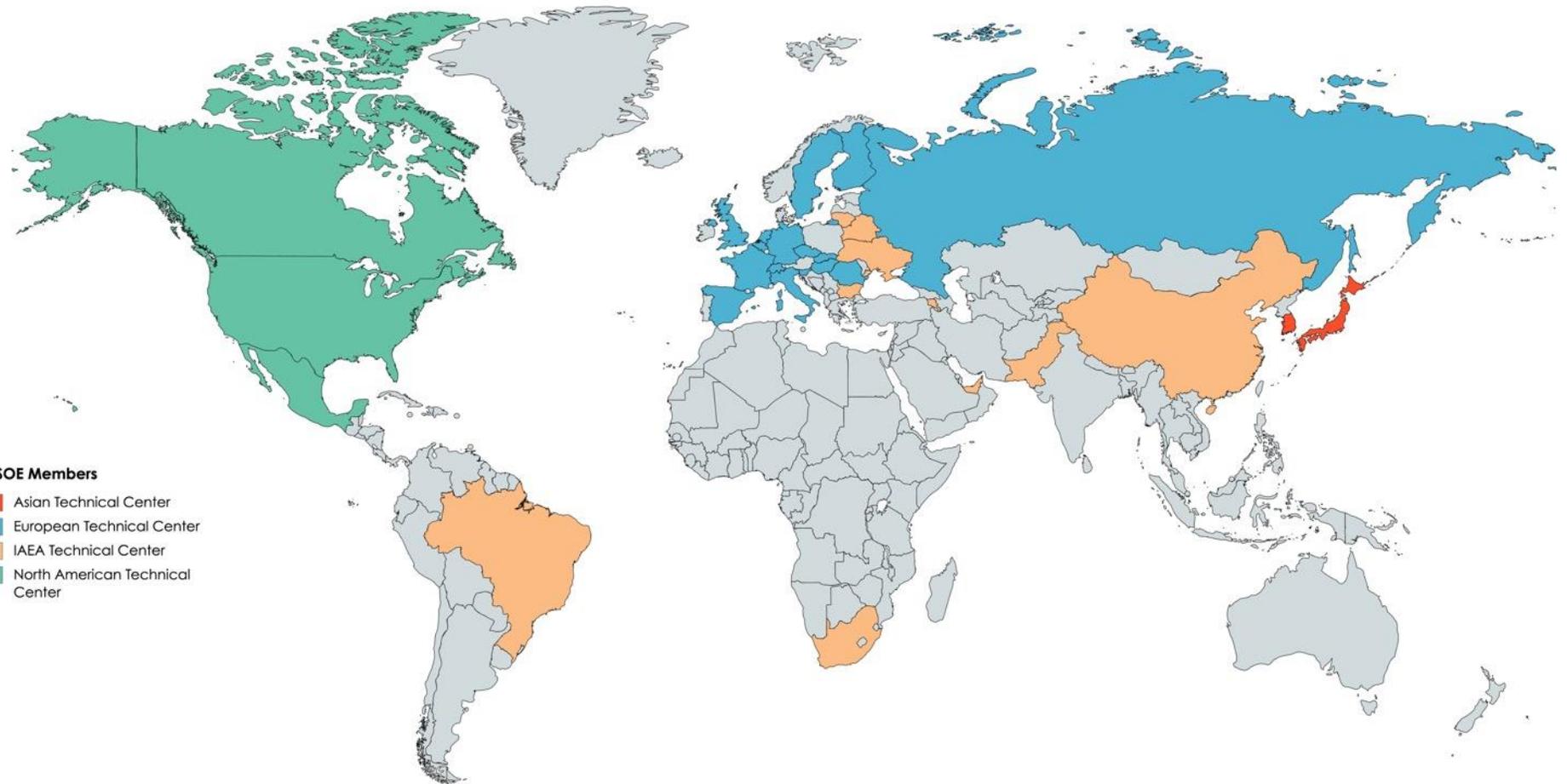
ISOE Objectives

ISOE Organisation

ISOE Products

ISOE Website

ISOE Database





# ISOE Products and Benefits (1)

ISOE Objectives

- A global **Network of RP professionals** from nuclear licensees and national regulatory authorities

ISOE Organisation

- The world's largest **database on occupational exposure from nuclear power plants**. The NEA provides IT support to further develop and maintain an internet-based system for the ISOE

**ISOE Products**

- **ISOE Website:** Access to the ISOE database, products, resources and online user fora
- Detailed **studies and analyses** on current issues in operational RP and dose trends

ISOE Website

ISOE Database



## ISOE Products and Benefits (2)

ISOE Objectives

ISOE Organisation

ISOE Products

ISOE Website

ISOE Database

### ► Reports:

- **Annual ISOE reports:** annual status of ISOE programme, occupational exposure trends, principal events in participating countries
- **Annual country reports:** annual dose information and principal events in participating countries
- **Topical reports:** working groups reports

### ► Symposia:

- **Regional and international ALARA symposia** organised yearly by Technical centres
- Radiological protection manager meetings
- Regulatory body representative meetings

- **Benchmarking visits** allow ISOE members to share their experience and good RP practices



# The ISOE Website (www.isoe-network.net)

ISOE Objectives

ISOE Organisation

ISOE Products

ISOE Website

ISOE Database



- [HOME](#)
- [PUBLICATIONS](#)
- [ACTIVITIES](#)
- [RP CONTACTS](#)
- [DECOMMISSIONING](#)
- [ISOE DATABASE](#)
- [RP FORUM](#)
- [ABOUT ISOE](#)



💡 Don't forget to login in order to access to restricted documents and resources

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✍️ [To request an account](#)

## Welcome to the ISOE Website

The Information System on Occupational Exposure (ISOE) System was created in 1992 to **provide a forum for radiation protection professionals** from nuclear electricity utilities and national regulatory authorities worldwide to **share dose reduction information, operational experience and information to improve the optimisation of radiological protection at nuclear power plants.**



## Examples of documents available on ISOE Website

ISOE Objectives

ISOE Organisation

ISOE Products

**ISOE Website**

ISOE Database

- Proceedings:
  - Symposia classified by year or by theme
  - Workshops (Reactor cavity decon., EGSAM)
  - Topical sessions
- Annual country reports
- Information sheets
- Working groups reports
- Benchmarking reports (public or restricted)
- RP Experience reports (public or restricted)
- Plant information (SGR, RVHR, Zn injection) (restricted)
- OpEx reports (restricted)
- Thematic documents (Source Term management, Severe accident management, Reactor cavity decontamination) (restricted)



# ISOE RP Forum (1)

ISOE Objectives

ISOE Organisation

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ISOE Website

ISOE Database



- HOME
- PUBLICATIONS
- ACTIVITIES
- RP CONTACTS
- DECOMMISSIONING
- ISOE DATABASE
- RP FORUM**
- ABOUT ISOE



ISOE Network forum

Forums 1

Mark forums read Search New posts

Search...

Board index

ISOE Members

Category	Topics	Posts	Latest Post
All members	16	47	Re: Cleaning Radioactive Effl... by mag → 13 Dec 2016 16:59
Utilities only	104	681	Re: Telemetry user experience by trentinl → 03 Oct 2018 09:26
Authorities only	0	0	No posts
WGDECOM	4	11	Re:Preparation for the Lyon M... by millerdw → 28 Sep 2018 16:09
RP Issues in Decommissioning	0	0	No posts
RP Operating Experience shared with all ISOE Members	0	0	No posts
RP Operating Experience shared with Utilities only	0	0	No posts



## Welcome to the

The Information System on Occupational  
**protection professionals** from nucle  
**reduction information, operational**  
**at nuclear power plants.**

in order to  
documents

ISOE Objectives

ISOE Organisation

ISOE Products

ISOE Website

ISOE Database

- **General forums** to exchange about RP issues dedicated to:
  - All members
  - Utilities only
  - Authorities only
- **WGDECOM forum** restricted to WGDECOM members to exchange about WG issues
- **RP Issues in Decommissioning** for all ISOE members
- **Forums to exchange information about events** occurring on ISOE members installations:
  - RP Operating Experiences shared with all ISOE members
  - RP Operating Experiences shared with Utilities only



# ISOE Contacts

ISOE Objectives

ISOE Organisation

ISOE Products

ISOE Website

ISOE Database



- HOME
- PUBLICATIONS
- ACTIVITIES
- RP CONTACTS**
- DECOMMISSIONING
- ISOE DATABASE
- ABOUT ISOE



- National Coordinators**
- RP Managers
- Authorities
- Decom. Experts



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## Welcome to the ISOE Website

The Information System on Occupational Exposure (ISOE) System was created in 1992 to **provide a forum for radiation protection professionals** from nuclear electricity utilities and national regulatory authorities worldwide to **share dose reduction information, operational experience and information to improve the optimisation of radiological protection at nuclear power plants.**

ISOE is jointly sponsored by the [OECD Nuclear Energy Agency](#) and the [International Atomic Energy Agency](#).



## Use of ISOE Contacts

ISOE Objectives

- **Organisation of benchmarking visits** – examples with reports available on ISOE website:

- EDF visit at Exelon corporate
- Comanche Peak visit at Doel NPP
- Japanese delegation visits to US plants (Fermi, Limerick, Susquehanna, Dresden, etc.)

ISOE Organisation

- **Sending of requests** directly to National coordinators, Authorities or RPMs:

- Example: Survey on the values and uses of the monetary value of the man.Sievert realised in 2017.  
Results published in ISOE ETC Information Sheet No. 61

ISOE Products

ISOE Website

ISOE Database



# Access to the ISOE Database

ISOE Objectives

ISOE Organisation

ISOE Products

ISOE Website

ISOE Database

The screenshot shows the ISOE website interface. At the top left is the ISOE logo. The navigation menu includes: HOME, PUBLICATIONS, ACTIVITIES, RP CONTACTS, DECOMMISSIONING, **ISOE DATABASE** (highlighted with a red box and arrow), and RP FORUM. Below the menu is the ISOE Database title and a 'Please log-in' message. A login form is displayed with fields for 'Username' and 'Password', a 'Remember Me' checkbox, and a 'GO' button. Links for 'Forgotten password?' and 'request an account' are also visible. At the bottom, there are buttons for 'Return to ISOE Network' and 'Retrieve password'.



Welcome to

The Information System on protection professionals for radiation reduction information, operation at nuclear power plants.

Don't forget to login in order to access to restricted documents and resources

Username

Password

Remember Me

[Forgotten password?](#)

[request an account](#)

Return to ISOE Network

Retrieve password



## Content of the ISOE Database

ISOE Objectives

ISOE Organisation

ISOE Products

ISOE Website

ISOE Database

- **Occupational dosimetric information** from commercial NPPs in operation or in some stage of decommissioning, including:
  - annual collective dose for normal operation
  - maintenance/refueling outage dose
  - forced outage dose
  - annual collective dose for certain tasks and worker categories
  - dose rates

# Database Analyses and Benchmarking

ISOE Objectives

ISOE Organisation

ISOE Products

ISOE Website

ISOE Database

- Data available in database provides a solid basis for analyses on issues in operational RP such as dose trends, doses related to certain jobs and tasks, identification of good performance, etc.
- Several ways to use the database:
  - MADRAS analysis package : **A set of pre-defined data queries** to facilitate analysis of main trends in occupational exposure, benchmarking between plants, sister units, etc.
  - **Direct access to ISOE questionnaires**, including contact information and complementary data
  - Direct access to all the data available using the **data extraction module**

# Using ISOE Database as a Benchmarking Tool

ISOE Objectives

## ► Analyses at **country or regional level:**

- Trends in Annual average collective dose per reactor /
- Annual total collective dose
- Between countries or regions: by country/region for a given reactor type, or all reactors, including rolling average over several years
- Within a country: Specific unit versus another unit or by type of reactor

ISOE Organisation

## ► Analyses at **utility level:**

- Specific utility versus other utilities
- Specific utility by reactor type

ISOE Products

## ► Analyses at **unit level**

- Specific unit versus another unit / sister group / reactor type
- Benchmarking at the job and task level

ISOE Website

ISOE Database

# Collective Dose Trends by Reactor Type

ISOE Objectives

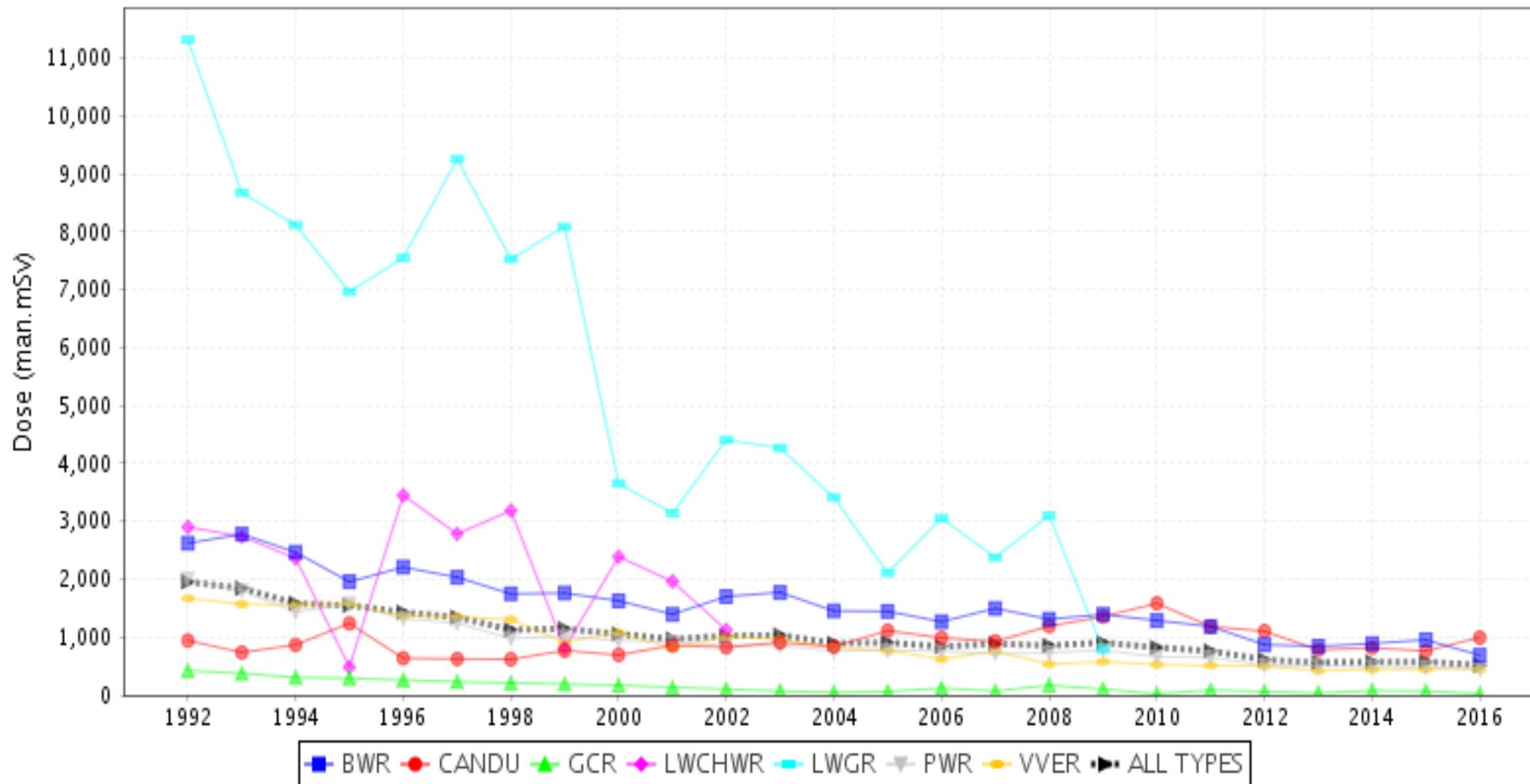
ISOE Organisation

ISOE Products

ISOE Website

ISOE Database

Average annual collective dose per reactor by reactor type



# Country Dose Trends by Reactor Type

ISOE Objectives

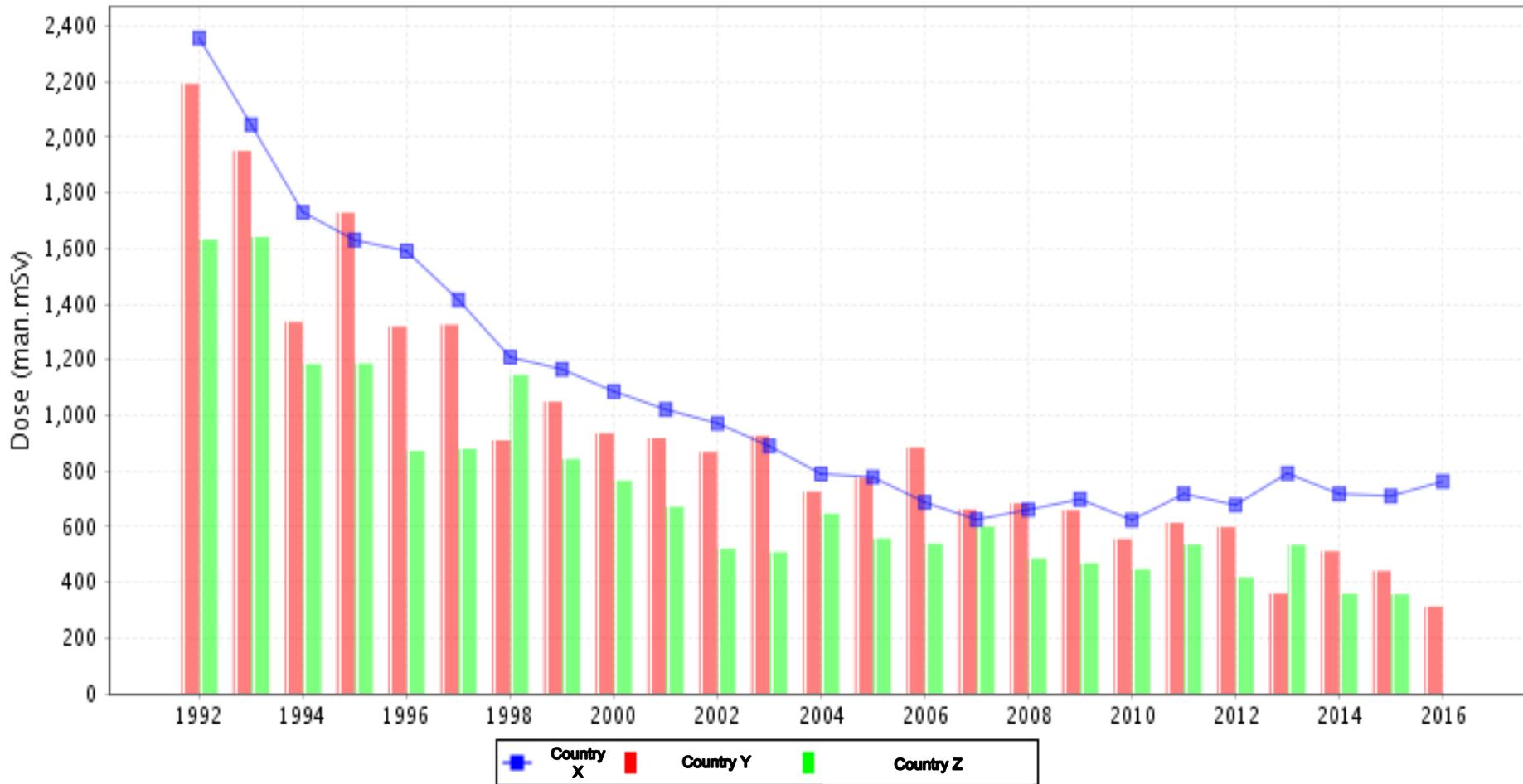
ISOE Organisation

ISOE Products

ISOE Website

ISOE Database

Average annual collective dose per reactor for Country X compared with other countries for PWR



#6-fx

Source: ISOE

# Dose trends by sister units

ISOE Objectives

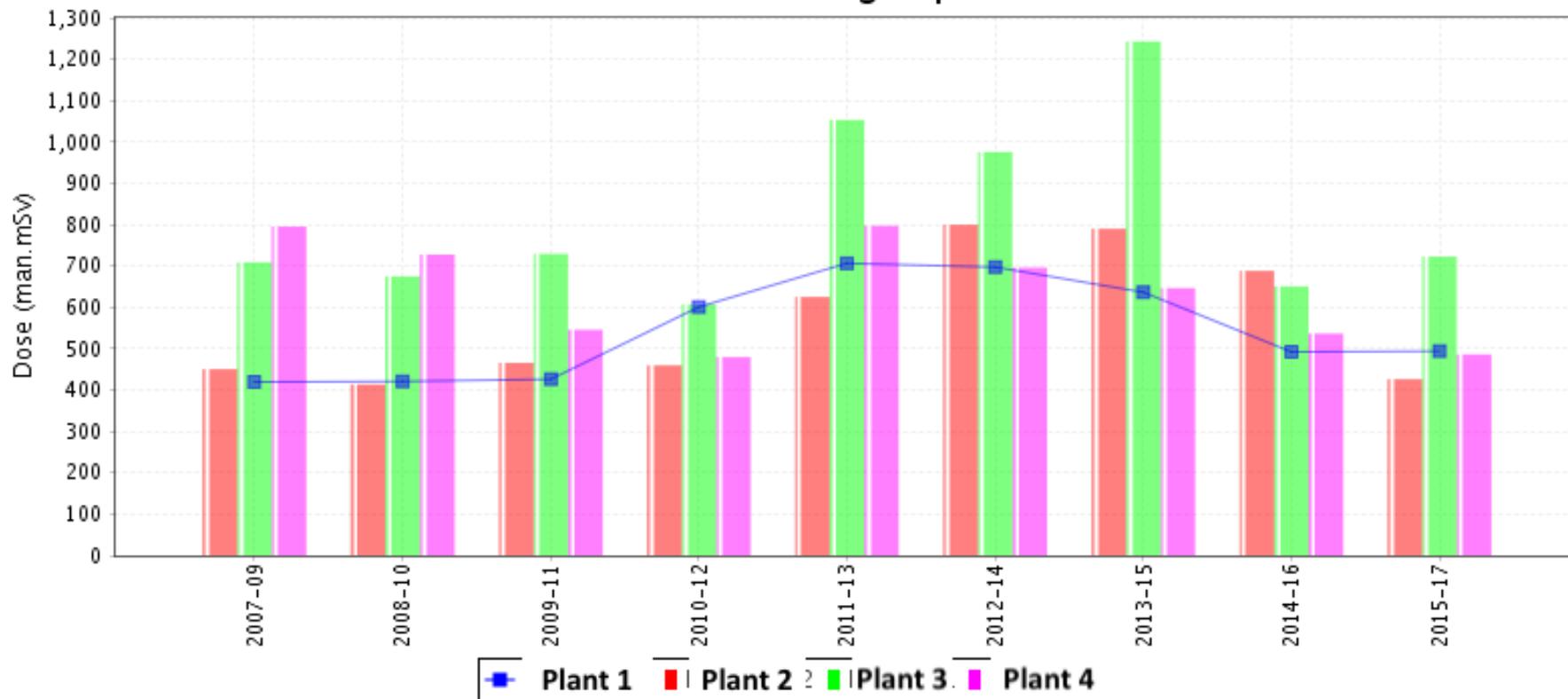
ISOE Organisation

ISOE WG

ISOE Website

ISOE Database

3-Year rolling average collective dose per reactor for Plant 1 compared with other units in its sister unit group



#U-23

Source: ISOE

## How to Join ISOE

- ISOE is open to Nuclear Licensees and National Regulatory Authorities
- In order to participate to the ISOE Programme, eligible parties must notify the ISOE Secretariat of their **acceptance of the ISOE Terms and Conditions**, available on the ISOE Network Website: [www.isoe-network.net](http://www.isoe-network.net)
- A specific form to join the System is available on the ISOE Network Website
- Members are affiliated to a Technical Center, according to their countries

# Thank you for your attention!



*For more information:*  
[www.isoe-network.net](http://www.isoe-network.net)

*ISOE Secretariat:*  
[isoe.secretariat@oecd-nea.org](mailto:isoe.secretariat@oecd-nea.org)