



Use of ISOE Database and website

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- ISOE website and Database provide resources to perform benchmarking analyses at various levels and to request information from all ISOE users.

- This presentation will address the following aspects:
 - Documents available on ISOE website
 - Use of ISOE forum
 - Presentation of available ISOE contacts
 - Use of ISOE Database
 - Use of data extraction module

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



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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.**

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

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Examples of documents available on ISOE Website

- 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)
- OpEx reports
- Thematic documents (Source Term management, Severe accident management, Reactor cavity decontamination)

ISOE RP Forum



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- ISOE DATABASE
- ABOUT ISOE



Welcome to the

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

ISOE Network forum

Forums

Mark forums read Search New posts

Board index

ISOE Members

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

in order to documents



Examples of requests on ISOE forum for Utilities only

- Telemetry user experience
- Special radiation shieldings for outages
- RCP operation practices during shutdown
- Mobile air radioactivity monitoring device alarm
- Management of alpha contamination
- Pre-use check of portable monitoring instruments



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 - National Coordinators
 - RP Managers
 - Authorities
- DECOMMISSIONING
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ISOE is jointly sponsored by the [OECD Nuclear Energy Agency](#) and the [International Atomic Energy Agency](#).

- 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.)

- 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

Access to the ISOE Database

CEPN



Welcome to the

The Information System on Occupational Exposure (ISOE) provides access to a wide range of information for nuclear protection professionals from around the world. It offers a central source of information on occupational exposure reduction information, operational data and safety information at nuclear power plants.

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ISOE Database

Please log-in

A login form for the ISOE Database. The form has a blue background with a globe and the ISOE logo. It includes fields for "USER ID" and "PASSWORD", a "GO" button, and a "LOG-IN MEMBERS LOGIN" button. The text "OECD Nuclear Energy Agency" and "International Atomic Energy Agency" is displayed at the top of the form area.

OECD Nuclear Energy Agency
International Atomic Energy Agency

ISOE

LOG-IN
MEMBERS LOGIN

USER ID

PASSWORD

GO

Return to ISOE Network

Retrieve password

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

Name

Password

Remember Me

Forgot your password?

Request an account




Content of the ISOE Database

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

Database Analyses and Benchmarking

- 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:
 - a) MADRAS analysis package : main trends in occupational exposure
 - b) Direct access to ISOE 1 questionnaires, including contact information and complementary data
 - c) Direct access to all the data available using the data extraction module

Database Analyses and Benchmarking



ISOE

ISOE

+ ISOE 1 Questionnaires

- Database
- Create
- Export

+ Analysis Modules

- MADRAS Analyses
- Data completeness
- Data extraction



+ Contact

→ ISOE > Analysis Modules





• MADRAS Analyses

Warning: In some cases in Japan and in USA, the total annual collective dose of the reactor corresponds to the site collective dose divided by the number of units of the site. Please refer to the questionnaire for detailed information.



BENCHMARKING REPORT

-  For a plant unit
-  1 unit vs. other units




ANNUAL COLLECTIVE DOSE


-  Total annual collective dose
-  Average annual collective dose per reactor
-  Rolling average collective dose per reactor
-  Average annual collective dose per energy produced


PLANT UNIT RANKINGS


-  Quartile ranking
-  Plant unit ranking


OUTAGE COLLECTIVE DOSE


-  Total Outage collective dose
-  Average Outage collective dose per reactor
-  Contribution of Outage collective dose to Total Annual collective dose

 DOSE INDEX: Outage collective dose/Outage man-hours

 JOB COLLECTIVE DOSE

 TASK COLLECTIVE DOSE

 OCCUPATIONAL CATEGORY COLLECTIVE DOSE

 DOSE RATES

• GENERAL INFORMATION

MADRAS Data Analysis Package

- A set of pre-defined data queries to facilitate analysis of main trends in occupational exposure, benchmarking between plants, sister units, etc.
 - Benchmarking at unit level
 - Annual collective dose
 - Outage collective dose
 - Plant unit ranking
 - Total annual collective dose vs. number of operating reactors
 - Total annual collective dose by reactor age
 - Job collective dose
 - Occupational category collective dose
 - Dose rates

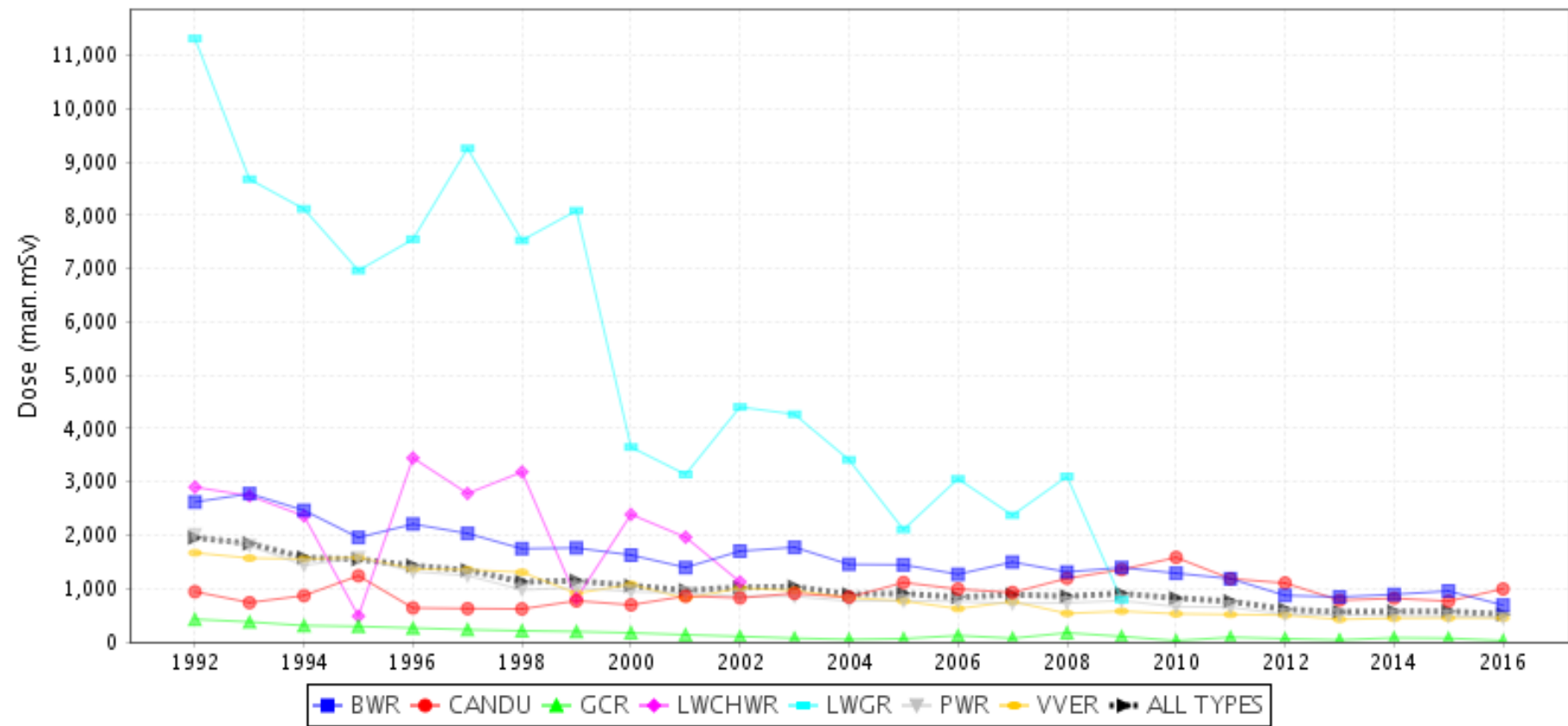
Using ISOE Database as a Benchmarking Tool

- 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
- Analyses at **utility level**:
 - Specific utility versus other utilities
 - Specific utility by reactor type
- Analyses at **unit level**
 - Specific unit versus another unit / sister group / reactor type
 - Benchmarking at the job and task level

Global Dose Trends by Reactor Type

- The annual average collective dose per operating reactor has consistently decreased over the time period covered in by ISOE

Average annual collective dose per reactor by reactor type



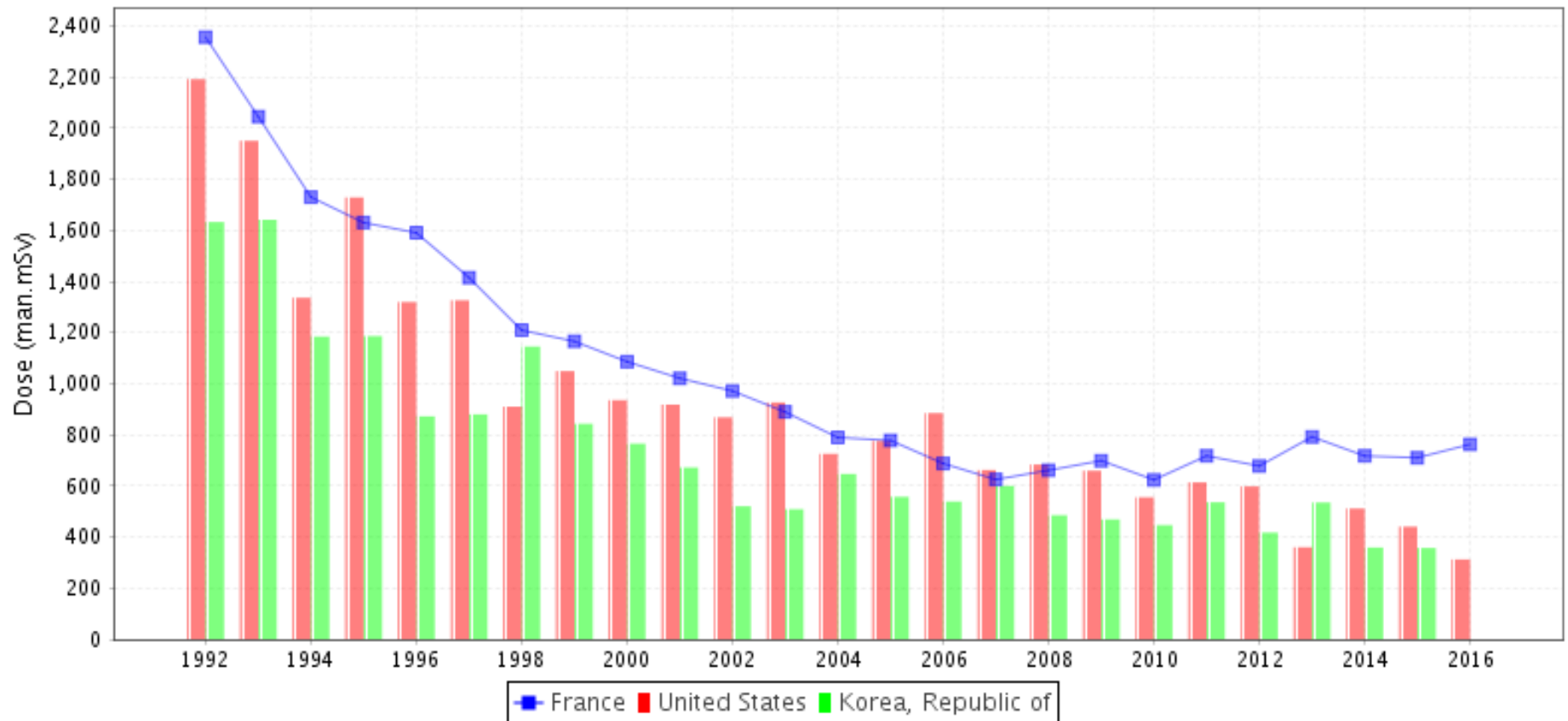
#6-f2

Source: ISOE

Country Dose Trends by Reactor Type (PWRs)

- For most countries, the annual average collective dose per operating reactor decreased over the time period

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



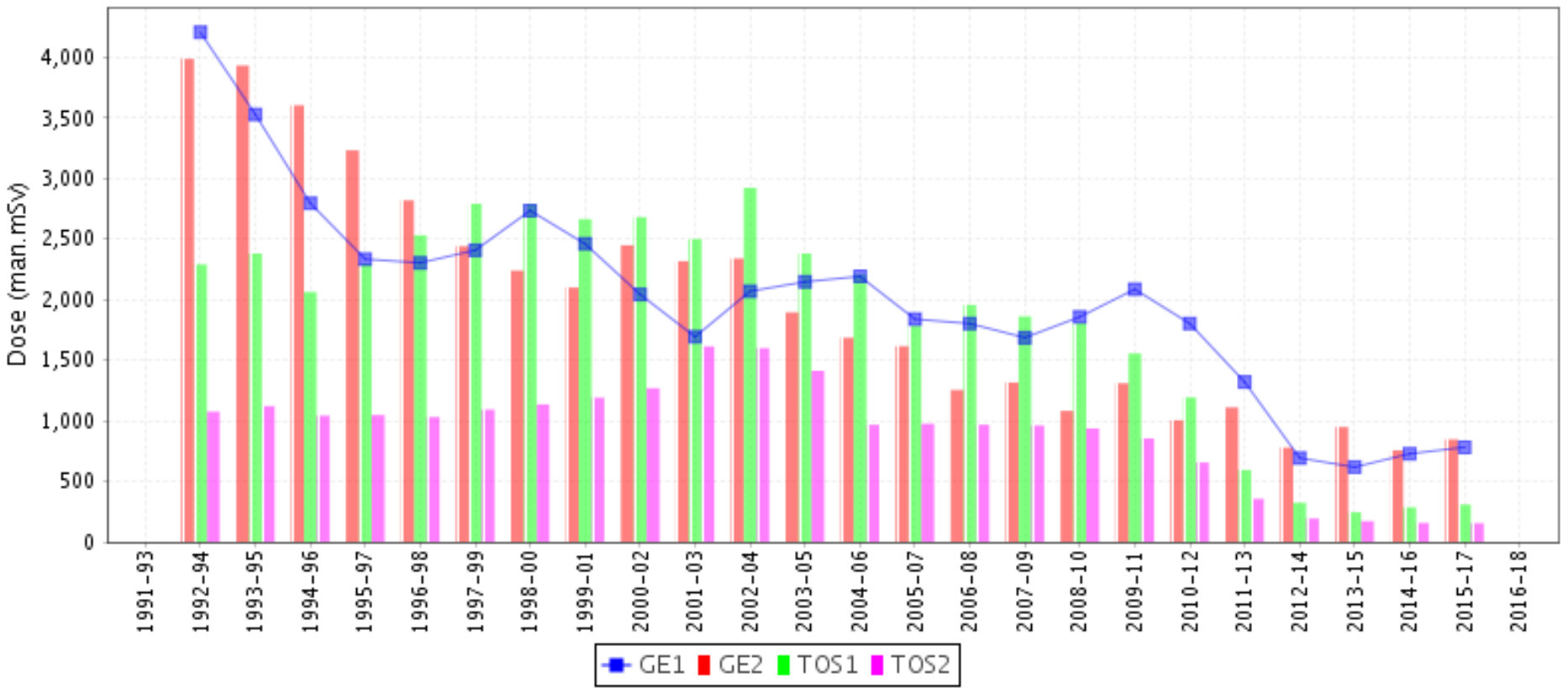
#6-fx

Source: ISOE

Collective Dose Trends by Sister Unit Group Comparison Toshiba – General Electric reactors

- **BWR reactors:** 1st and 2nd generation of Toshiba reactors shows globally lower dose than respective generations of General Electric reactors

3-Year rolling average collective dose per reactor for GE1 compared with other sister unit groups



#6-fz

Source: ISOE

The screenshot shows the ISOE Analysis Modules interface. On the left is a navigation menu with options like 'ISOE 1 Questionnaires', 'Database', 'Create', 'Export', 'Analysis Modules', 'MADRAS Analyses', 'Data completeness', 'Data extraction', and 'Contact'. A blue arrow points to the 'Data extraction' option. The main area is titled 'ISOE > Analysis Modules' and contains 'ISOE 1 Data extraction' filters. The filters are: Country (Sweden), Utility (empty), Type (empty), Plant unit (empty), Year (2016), Reactor status (Operational), and a 'Clear' button. Below the filters, the 'Table' is set to 'MAN_HOURS'. Navigation links for 'Prev.', 'Next', and 'Page: [1]' are visible. The main data table has the following columns: Country / Plant unit, Year, Planned outage annual collective dose (person.rem), Outage RWP man.hours, Annual collective dose (person.rem), Total RWP man.hours, Comments, and Actions. The table lists data for various reactors in Sweden for the year 2016.

Country / Plant unit	Year	Planned outage annual collective dose (person.rem)	Outage RWP man.hours	Annual collective dose (person.rem)	Total RWP man.hours	Comments	Actions
Sweden Forsmark 1	2016	13.8700	30,838.00	27.5700	106,626.00		
Sweden Forsmark 2	2016	68.2400	127,163.00	74.4100	164,359.00		
Sweden Forsmark 3	2016	38.4900	63,040.00	50.3500	112,333.00		
Sweden Oskarshamn 1	2016	81.6500	49,391.10	93.4400	132,344.60		
Sweden Oskarshamn 3	2016	27.3200	51,942.00	41.4400	102,744.30		
Sweden Ringhals 1	2016	30.5100	25,265.12	41.4800	51,455.56		
Sweden Ringhals 2	2016			7.4600	15,670.48		
Sweden Ringhals 3	2016	73.4600	48,107.18	76.3700	58,669.39		
Sweden Ringhals 4	2016	22.3000	15,103.00	25.0000	27,056.00		

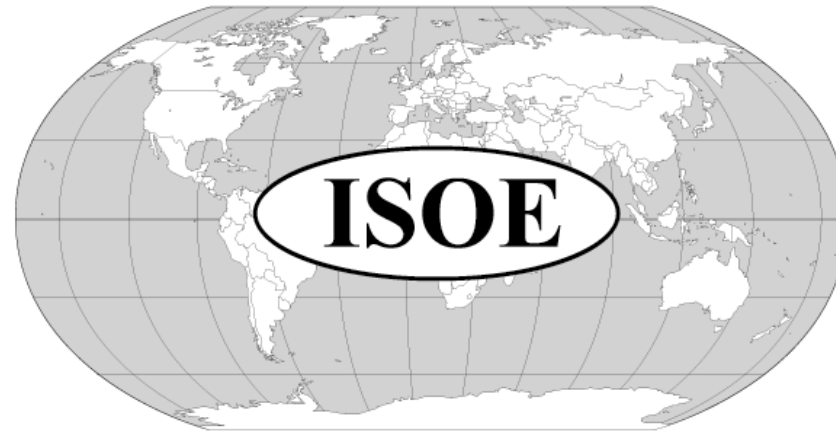
Download table as CSV file

Possibility to extract any type of data of the ISOE Operational and Shutdown Questionnaires in order to perform your own analyses

The ISOE Website and Database

Thank you for your attention!

OECD Nuclear Energy Agency
International Atomic Energy Agency



INFORMATION SYSTEM ON OCCUPATIONAL EXPOSURE

For more information, please visit:

www.isoe-network.net