

Update on ISOE website and database

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The ISOE Web Site

www.isoe-network.net

What is in the ISOEDAT Database?

- ISOE 1: Dosimetric information from commercial NPPs in operation, shut down or in some stage of decommissioning, including:
 - annual collective dose for normal operation
 - maintenance/refuelling outage
 - unplanned outage periods
 - annual collective dose for certain tasks and worker categories

Who Can Access the Database?

- ISOE Participants can access the DB on-line (ISOE website) and on CD-ROM (Microsoft ACCESS)
 - Web version is routinely updated
 - CD-ROM is distributed annually after all data received
 - A set of pre-defined data queries facilitates trend analysis, benchmarking between plants, sister units, etc.
- Participating Utilities:
 - Full access to global database
- Participating Authorities:
 - Full access to ISOE 1 data from national licensees
 - Limited access to ISOE 1 data from other countries
 - General information, annual dose statistics, information about external and internal dose

Database Analyses and Benchmarking

- The extensive data in ISOEDAT 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 : Main trends in occupational exposure
 - Direct access to ISOE 1 questionnaires, including contact information and complementary data
 - For more complex analyses: Direct access to DB, requests to the technical centres, RP forum, ...

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 average collective dose per reactor
 - Annual total collective dose
 - Annual collective dose per TWh
 - Contribution of outside personnel and outages to total collective dose
 - Evolution of the number of reactor units
 - 3-yr rolling average collective dose per reactor
 - Miscellaneous queries
 - New for 2010! A set of new queries to improve outage benchmarking

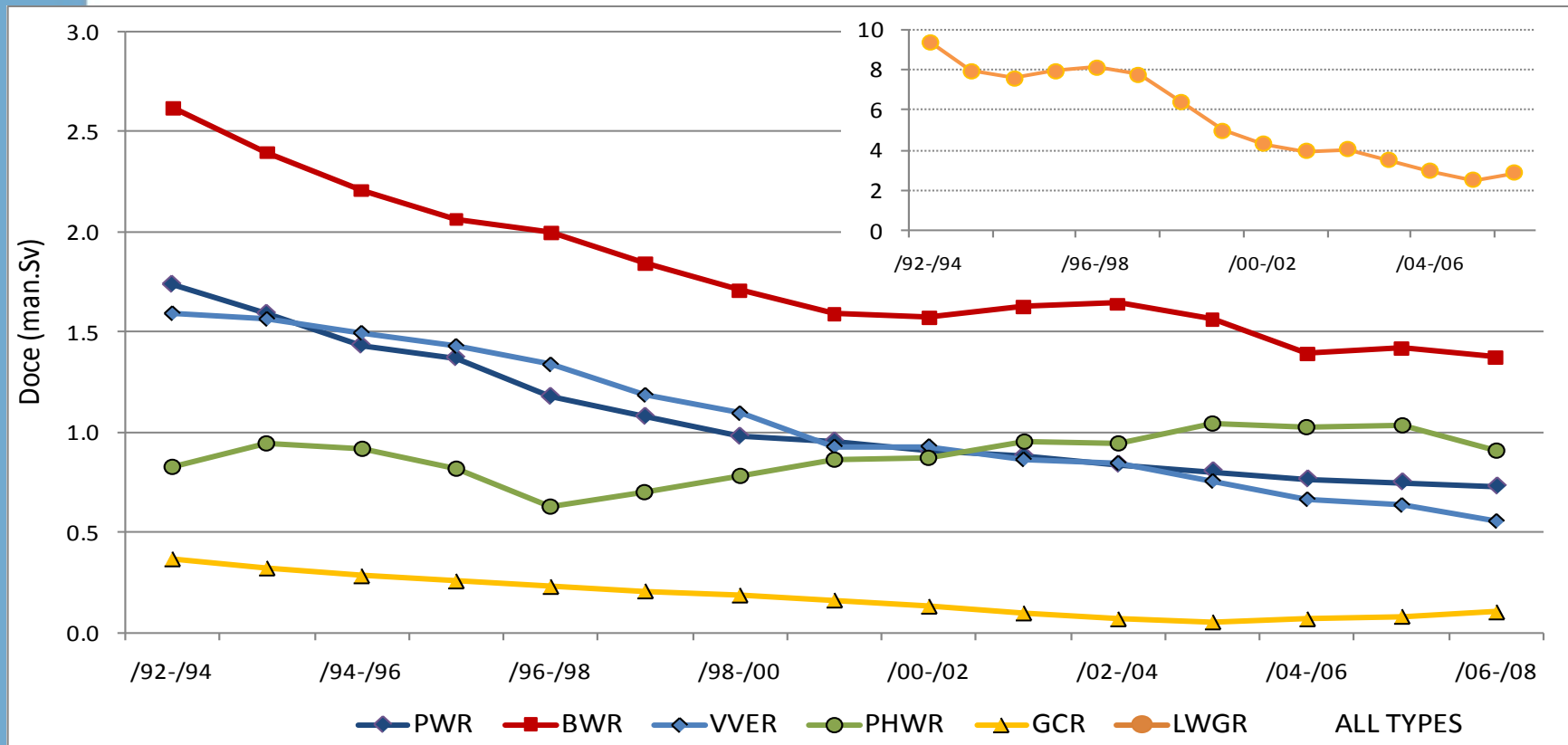
Using ISOEDAT as a Benchmarking Tool

- 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 3-yr rolling average
 - Within a country: Specific unit against another unit or by type of reactor
- Analyses at utility level: benchmarking of reactors within a utility
 - Specific unit against another unit
 - Specific unit against its sister group / reactor type
- Analyses at unit level
 - Specific unit against another unit / sister group / reactor type
 - Benchmarking at the job and task level

Example 1

Global dose trends by reactor type

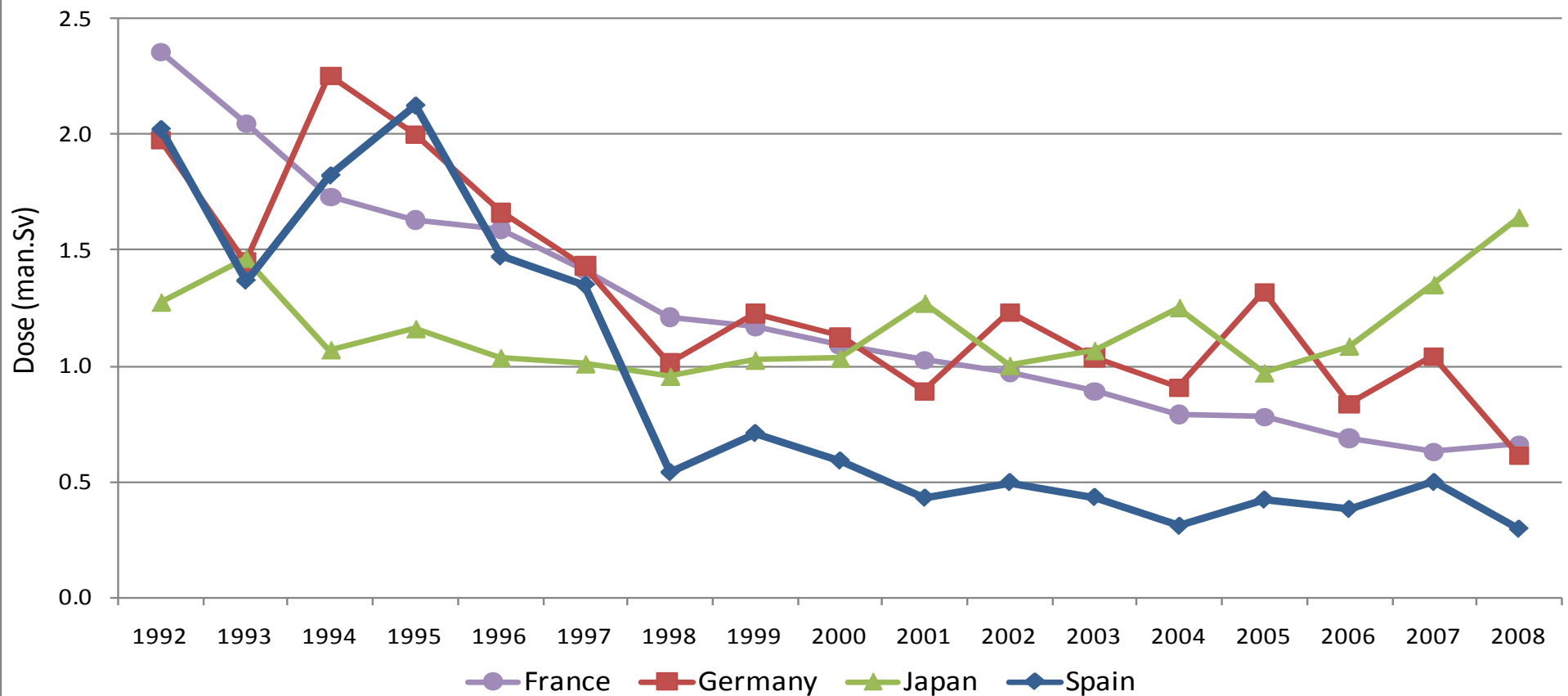
- For most reactor types, the annual average collective dose per operating reactor has consistently decreased over the time period covered in by ISOE



3-year rolling average/reactor for all operating reactors in ISOE by reactor type, 1992-2008 (man.Sv)

Country dose trends by reactor type (PWRs)

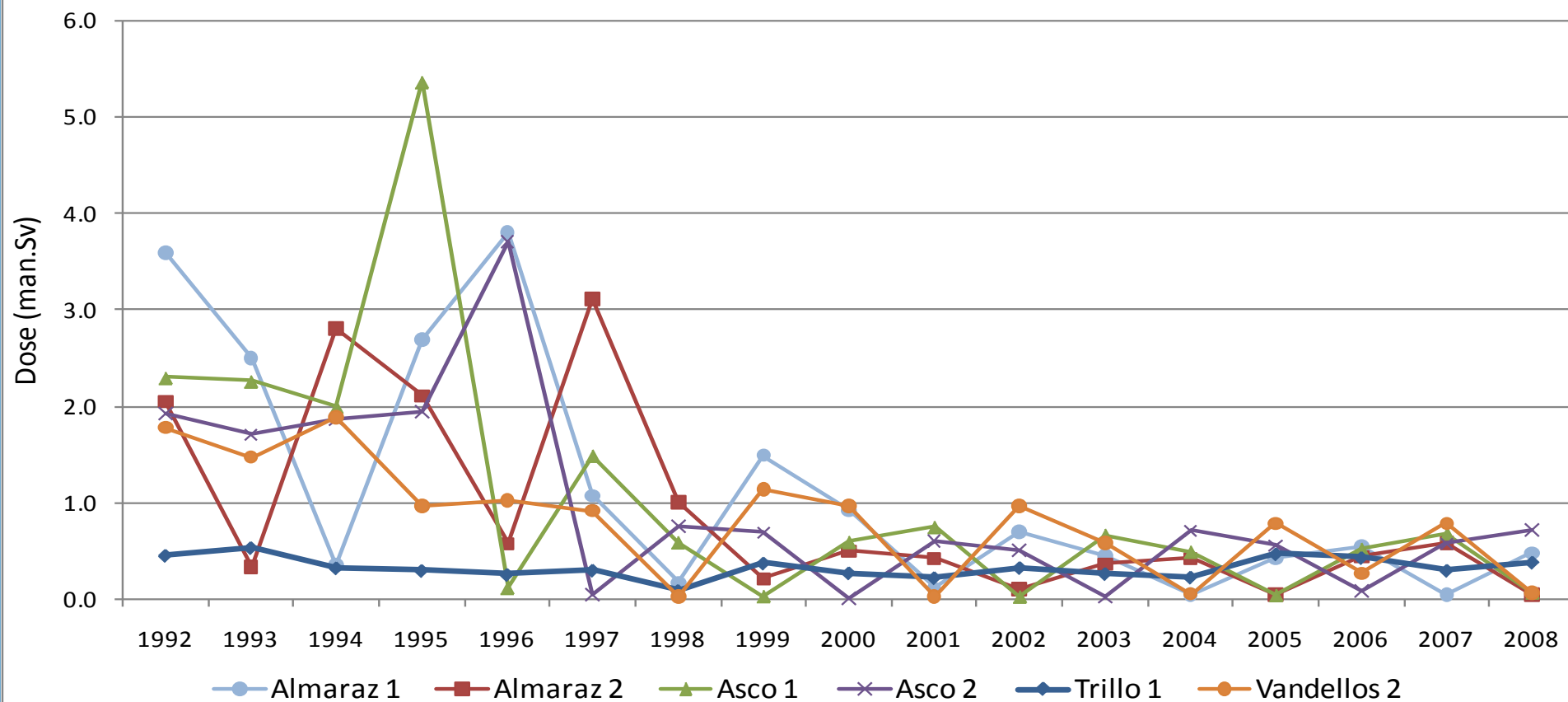
Annual collective dose per reactor for PWRs



Example 3

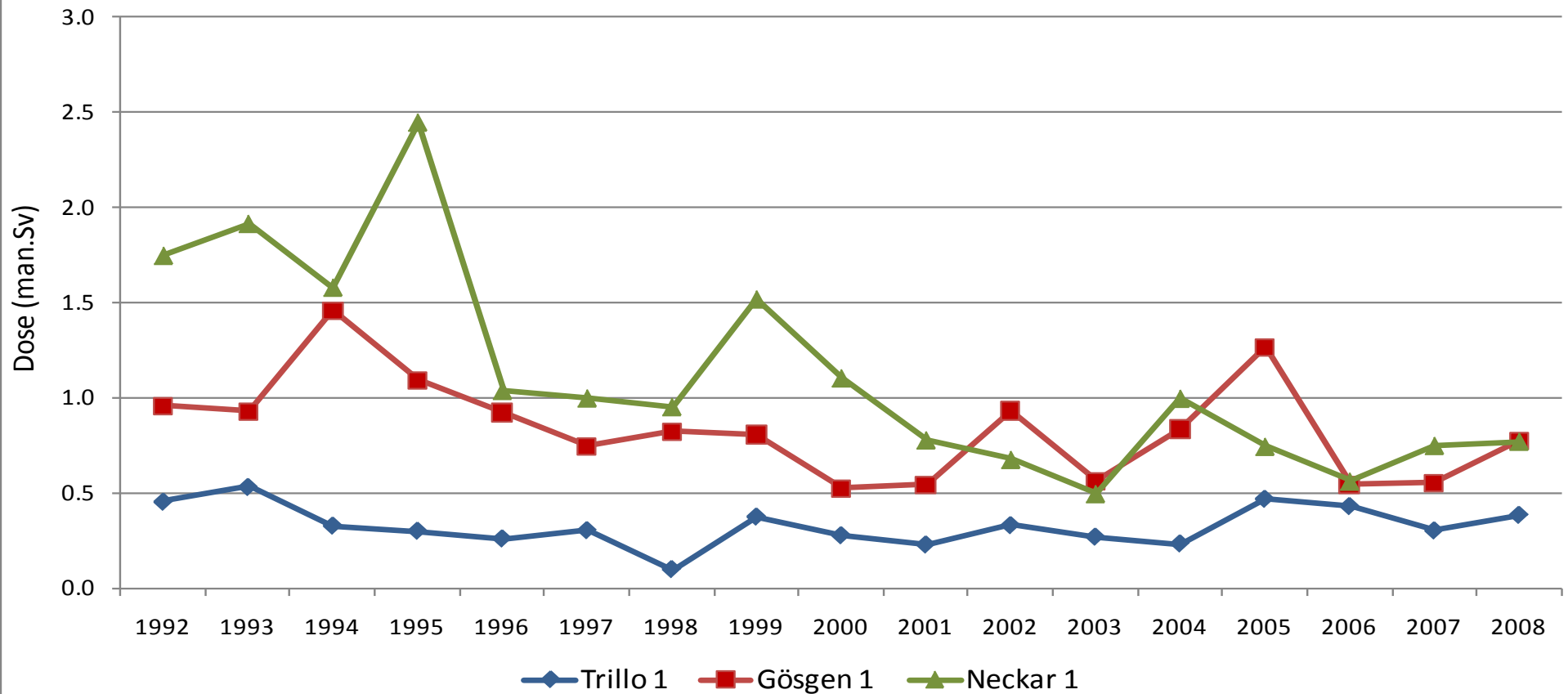
Dose trends for 1 country by reactor type (Spain-PWRs)

Annual collective dose per reactor for Spanish PWRs



Dose trends for 1 sister unit group (S32)

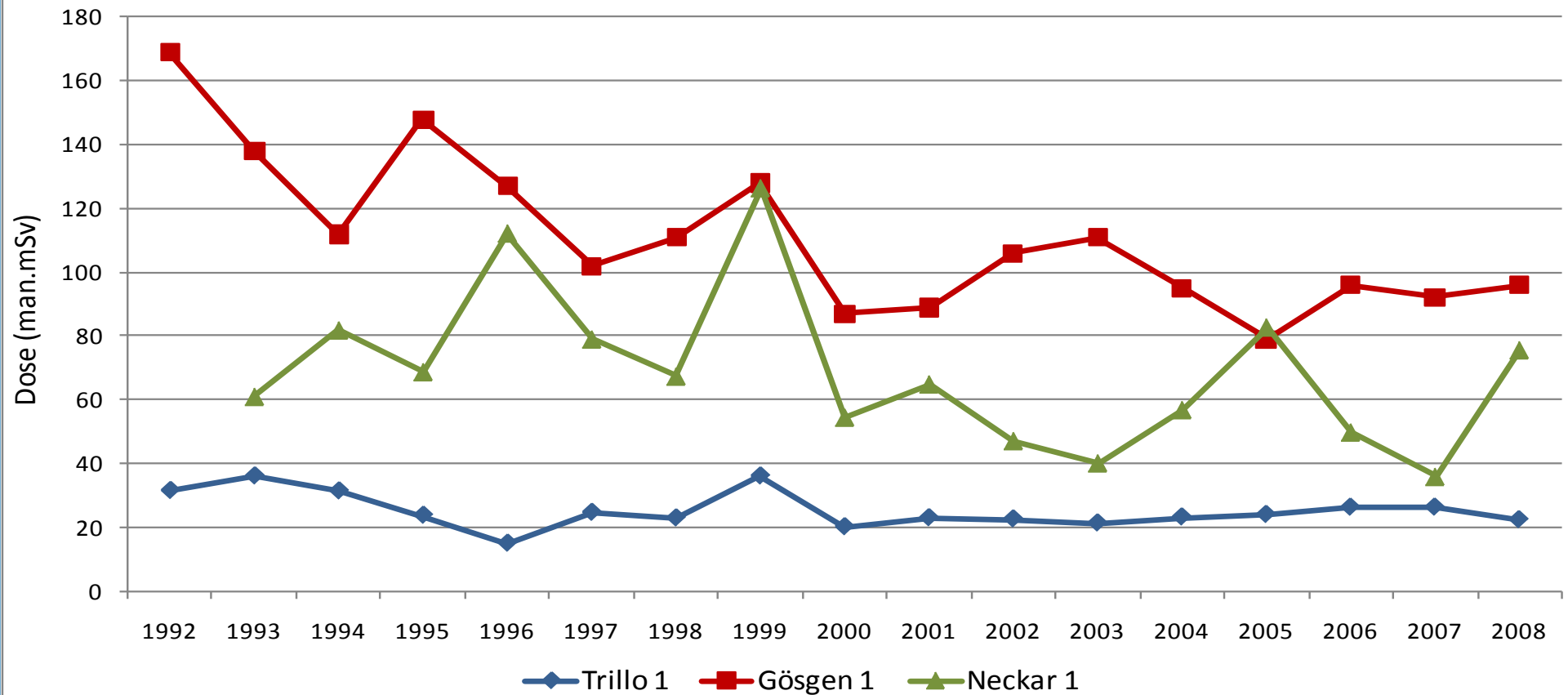
Annual collective dose per reactor for sister unit group S32



Example 5

Dose trends for sister group and job (S32-refueling)

Collective dose for sister unit group S32 and job Refueling



- Quartile Ranking based on rolling average collective dose per reactor
 - For a country
 - For a country and a reactor type
 - For a reactor type
 - By number of loops (PWR)
- Plant Unit Ranking based on rolling average collective dose per reactor
 - For a country
 - For a country and a reactor type
 - For a reactor type
 - By number of loops (PWR)

Plant unit quartile ranking based on rolling average collective dose per reactor for 1 country

Year to take into account: 2010

Rolling years: 3

Country: Republic of Korea

 Run  Return to list  Bookmark query

Quartile ranking for Republic of Korea

Quartile	Plant unit	2008 - 2010 (man.mSv)	2007 - 2009 (man.mSv)	Percent change from 2007 - 2009	2007 - 2009 Quartile (if changed)	
1	Ulchin 5	147.54	173.04	-15%	4	
	Ulchin 6	148.96	151.40	-2%		
	Yonggwang 6	290.62	251.21	16%		
	Yonggwang 5	364.18	327.87	11%		
	Kori 1	438.43	806.41	-46%		
2	Ulchin 3	452.20	575.34	-21%	4	
	Wolsong 2	455.05	488.51	-7%		
	Ulchin 2	489.79	562.01	-13%		
	Ulchin 1	494.97	597.40	-17%		
	Yonggwang 4	502.22	709.26	-29%		
3	Yonggwang 1	513.07	609.43	-16%	1	
	Ulchin 4	525.76	359.19	46%		
	Yonggwang 2	555.16	650.15	-15%	2	
	Yonggwang 3	557.00	483.50	15%		
	Wolsong 3	615.68	669.46	-8%		
4	Kori 4	621.26	609.57	2%	3	Average: 705.24 man.mSv
	Kori 2	652.27	669.98	-3%	3	
	Wolsong 4	676.62	715.57	-5%		
	Kori 3	712.97	755.23	-6%		
	Wolsong 1	4890.95	2923.52	67%		

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Example of
quartile ranking
for a country

Plant unit ranking based on rolling average collective dose per reactor for 1 reactor type

Year to take into account: 2010

Rolling years: 1

Top N: 20

Reactor type: PWR

 Run  Return to list  Bookmark query

Top 20 plant units for PWR

Plant unit	2010 - 2010 (man.mSv)
Beaver Valley 2	2.00
Arkansas Nuclear One 2	17.00
Comanche Peak 2	20.71
Summer 1	21.29
Doel 4	26.57
Almaraz 1	26.92
Asco 1	28.54
Vogtle 1	30.21
Yonggwang 4	30.54
Indian Point 3	31.03
Ginna 1	31.68
Braidwood 2	33.43
Salem 2	33.72
Prairie Island 1	34.11
McGuire 2	34.77
Paloverde 2	34.88
Byron 1	35.65
Sequoyah 2	37.15
Seabrook 1	44.88
Kewaunee 1	46.90

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- Plant Ranking
- Top 20 for PWRs

The ISOE Data Base

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