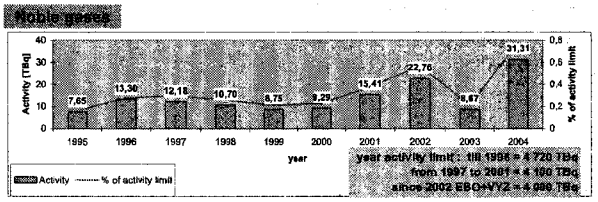
NPP Bohunice - radiation protection indicators for last 10 years.

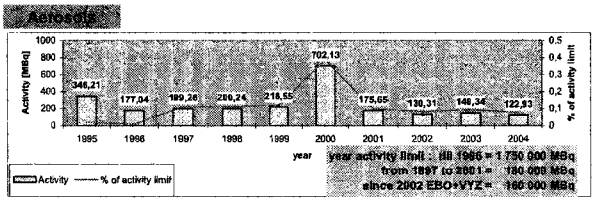
Tibor Rapant, NPP Jaslovské Bohunice

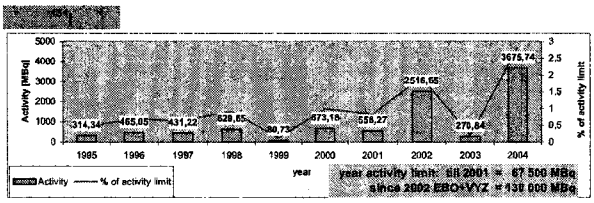
Selected radiation protection indicators of NPP Bohunice operation are published in poster - radioactive discharges to atmosphere and hydrosphere, personal doses, outage doses, maximum environmental doses. Limited parameters are also compared with authorized year limits.

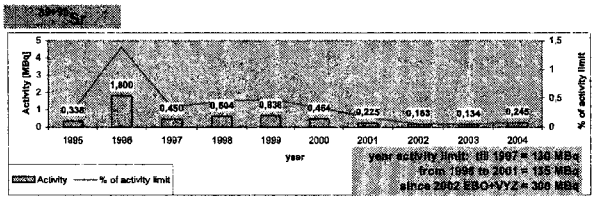
NPP V-1

Gaseous discharges

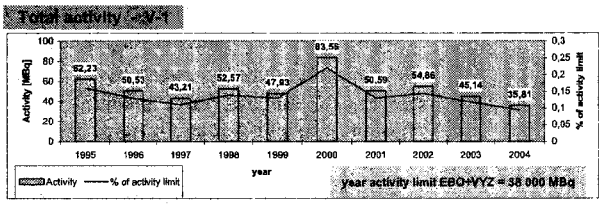


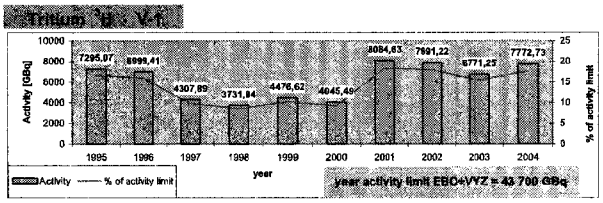






Liquid effluents

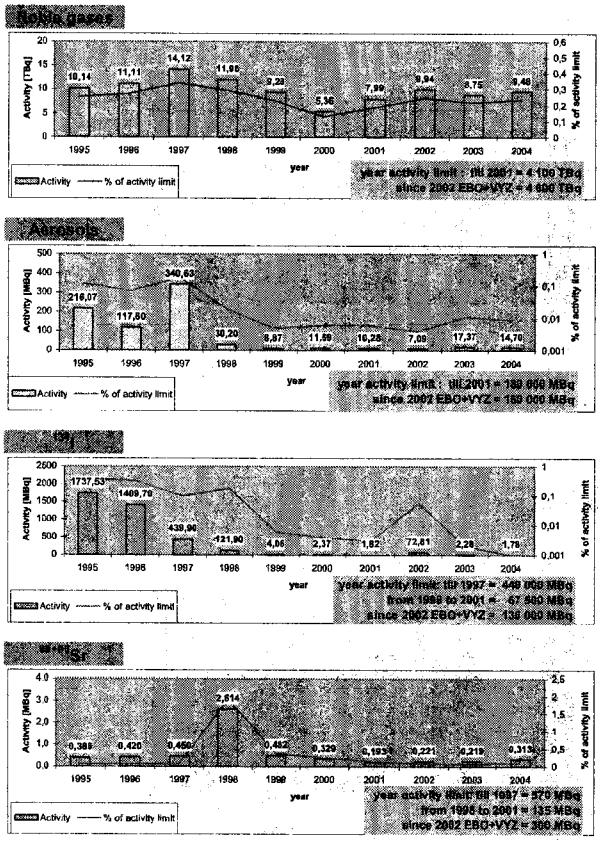




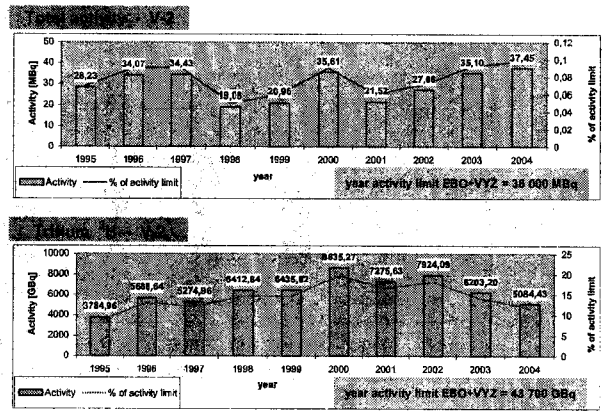
Note:
aerosols - 2000 - increase caused by 140-days GO and reconstruction of reactor no.1
noble gases, iodine ^{131}I - 2002, 2004 - increase caused by fuel element leakage of reactor no.2

NPP V-2

Gaseous discharges



Liquid effluents



Note:

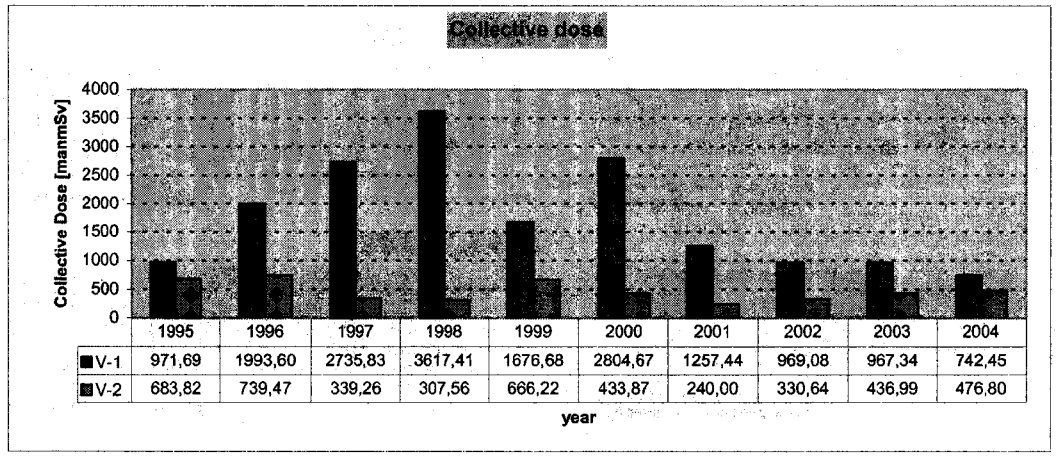
aerosols, iodine ^{131}I - 1995-1997 - aerosols and iodine discharges were measured by device Kalina with high MDA

- 1998 - from february 1998 discharges were laboratory gamaspectrometry analyzed which gave rise to very low MDA

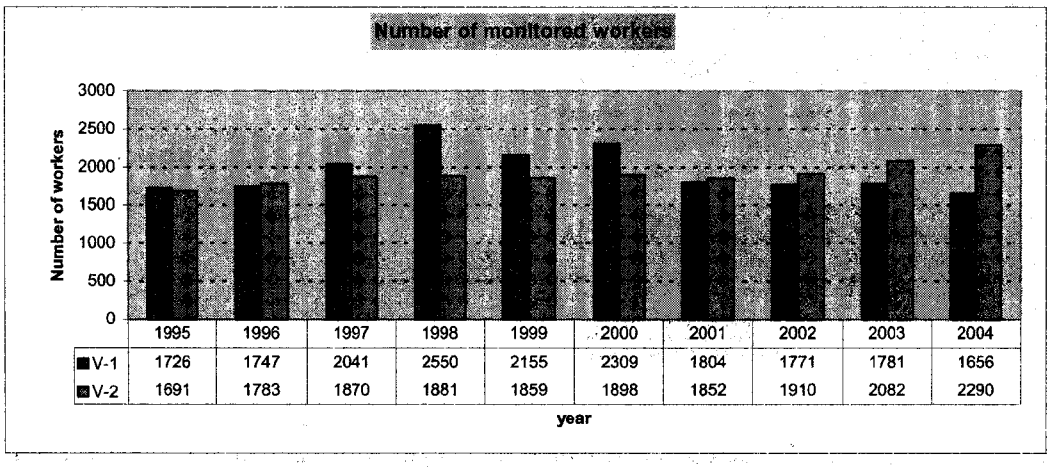
iodine ^{131}I - 2002 - increase caused by fuel element leakage of reactor no.3

strontium - 1998 - increase measured during GO of reactor no.4

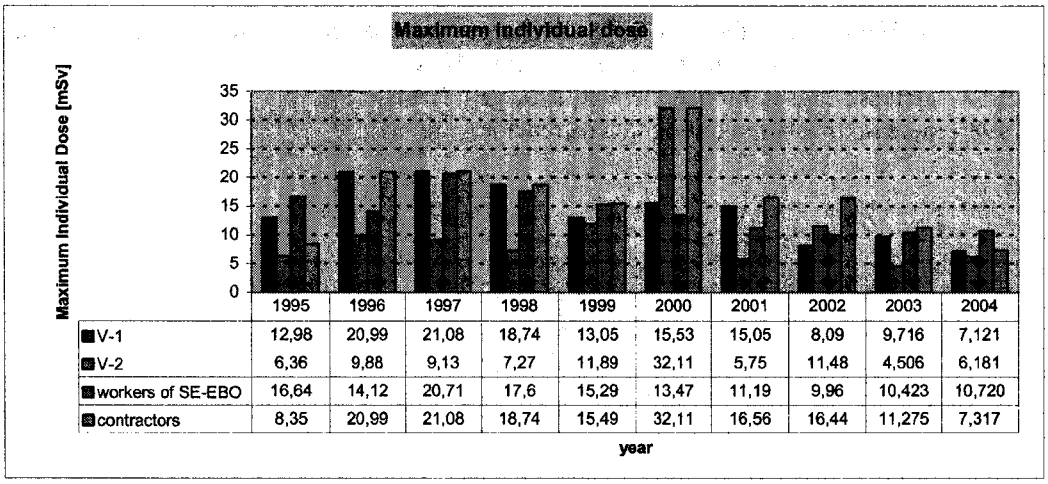
Doses at NPP Bohunice



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
V-1	971,69	1993,60	2735,83	3617,41	1676,68	2804,67	1257,44	969,08	967,34	742,45
V-2	683,82	739,47	339,26	307,56	666,22	433,87	240,00	330,64	436,99	476,80



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
V-1	1726	1747	2041	2550	2155	2309	1804	1771	1781	1656
V-2	1691	1783	1870	1881	1859	1898	1852	1910	2082	2290

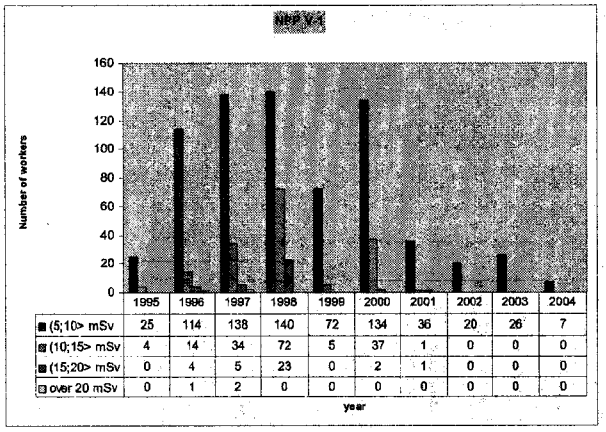


	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
V-1	12,98	20,99	21,08	18,74	13,05	15,53	15,05	8,09	9,716	7,121
V-2	6,36	9,88	9,13	7,27	11,89	32,11	5,75	11,48	4,506	6,181
workers of SE-EBO	16,64	14,12	20,71	17,6	15,29	13,47	11,19	9,96	10,423	10,720
contractors	8,35	20,99	21,08	18,74	15,49	32,11	16,56	16,44	11,275	7,317

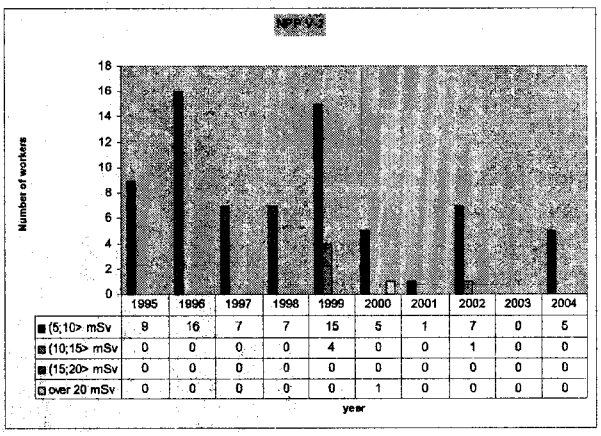
Note:

1997 - 2000 - reconstruction of reactors no.1 and no.2 gave rise to increase of number of monitored workers and collective dose on NPP V-1.

Dose distribution at NPP Bohunice

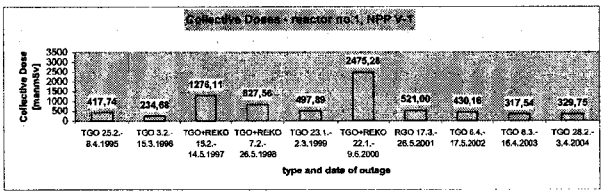


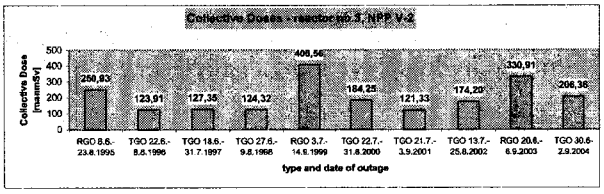
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
(5;10> mSv	25	114	138	140	72	134	36	20	26	7
(10;15> mSv	4	14	34	72	5	37	1	0	0	0
(15;20> mSv	0	4	5	23	0	2	1	0	0	0
over 20 mSv	0	1	2	0	0	0	0	0	0	0

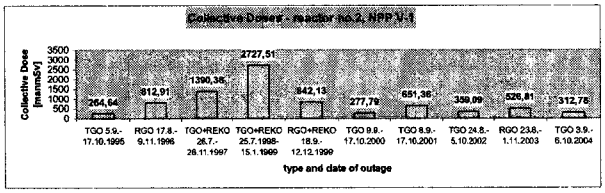


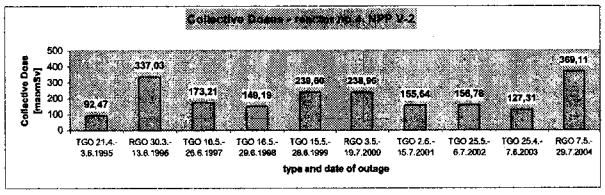
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
(5;10> mSv	9	16	7	7	15	5	1	7	0	5
(10;15> mSv	0	0	0	0	4	0	0	1	0	0
(15;20> mSv	0	0	0	0	0	0	0	0	0	0
over 20 mSv	0	0	0	0	0	1	0	0	0	0

Doses at NPP Bohunice - outages



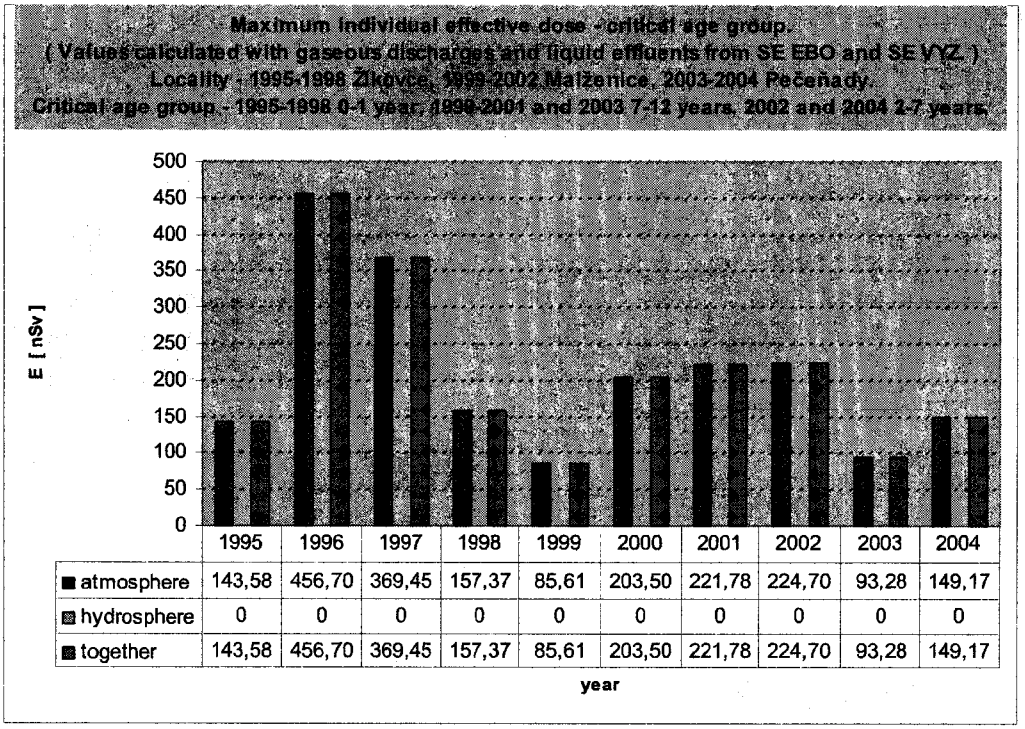






Note:
TGO - standard outage
RGO - extended outage
REKO - reconstruction

Environmental doses at NPP Bohunice



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
atmosphere	143,58	456,70	369,45	157,37	85,61	203,50	221,78	224,70	93,28	149,17
hydrosphere	0	0	0	0	0	0	0	0	0	0
together	143,58	456,70	369,45	157,37	85,61	203,50	221,78	224,70	93,28	149,17

Note:
Since 1995 all liquid effluents from NPP are released by pipe system Sokoman to river Váh which gave rise to zero hydrosphere individual dose near NPP.