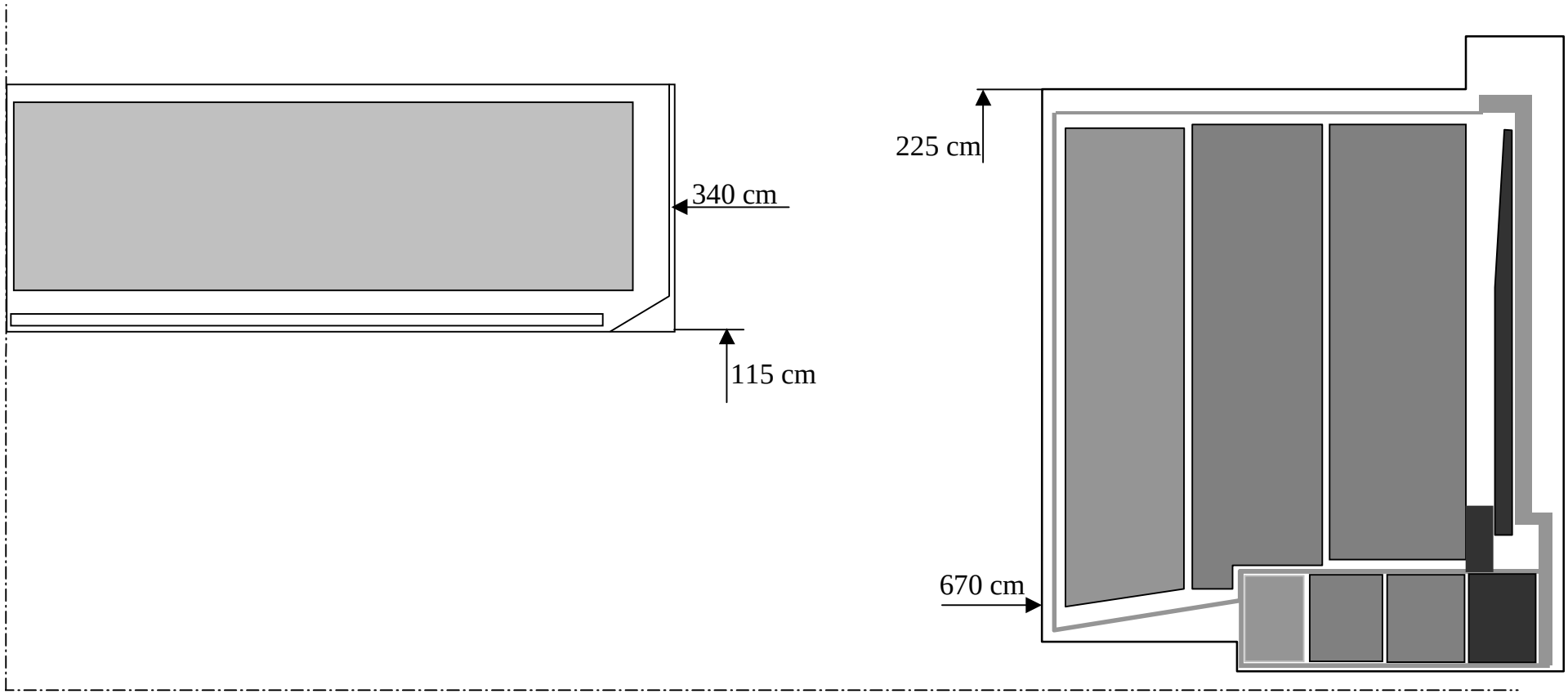

Fig. 1 To calculations of dose rate from LAr End Cap and Barrel calorimeter.

Table 1

Equivalent dose rate induced by high-energy hadrons from LAr EC and Barrel calorimeter for T= 30d, t=1d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	44.7	43.3	43.1	45.6	48.7	49.7	59.1	75.3	106.6	162.3	229.3	305.1	402	544.3	610
5- 10	5	42.9	41.5	41.3	43.7	46.5	47.5	56.5	72.1	103.1	154.3	214.6	286.9	369.7	471.7	507.4
10- 20	10	41.6	40.2	40	42.3	44.8	46	54.3	69.5	101.1	148.9	197.6	264.9	339.8	429.1	459.1
20- 30	10	39.8	38.5	38.2	40.1	42.3	43.8	50.9	65.4	96.6	137.7	182.4	239.2	300.9	380.1	412.8
30- 45	15	37.4	36.3	36.2	37.2	38.6	40.8	45.9	59.7	87	120.5	158.1	205	258	319	340.1
45- 60	15	34.5	34.1	34	34.3	35.1	37.8	41.8	55.4	78	107.3	136.5	170.4	204.4	242.9	253.5
60- 75	15	32.7	32.7	32.3	31.9	33	35	39.6	51.7	70.6	93.4	114.7	135.7	153.2	170.6	172.5
75- 95	20	31.9	31.3	30.5	30.2	30.6	32.9	37.7	46.1	61.5	79.3	89.3	99.6	106.3	108.4	106.6
95- 115	20	30	30	29.3	28.5	29	31.2	34.1	40.2	53.5	61.5	66.2	67.4	69.1	66.1	63.2
115- 125	10	30.1	29.4	28.6	27.8	28	29.2	31.5	37.3	46.6	50.8	52.1	49.7	50.7	46	43.3
125- 150	25	31.2	28.7	28.1	27.1	26.7	27.2	28.9	33.6	38	41.6	37.9	35.6	35.9	31	29
150- 175	25	28.7	26.8	26.1	24.9	24.1	24	25.2	27.8	29.4	29.4	23.9	22.3	22	17.7	16.8
175- 200	25	24	22.7	22.8	22.1	21.3	20.5	21.5	22.9	22.5	20.9	14.7	14.5	13.1	9.2	8.4
200- 225	25	19.4	18.3	18.3	17.8	16.6	16.6	18.6	18.5	17.1	14.4	8.9	9.6	7.2	4.1	3.6

Table 1 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC and Barrel calorimeter for T= 30d, t=5d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	16	15.3	14.8	15.8	17.3	17.3	20.6	25.8	36.2	54.9	76.5	96.3	124.7	167.6	191.5
5- 10	5	15.1	14.4	14.3	15.2	16.4	16.5	19.7	24.8	35.1	52.2	70.7	90.6	112.1	140.8	153.2
10- 20	10	14.6	14.1	13.8	14.9	15.9	16.1	19.1	24.2	34.9	50.3	64.4	83.3	101.9	123.2	129.7
20- 30	10	14	13.5	13.3	14.1	15	15.4	18	23	33.6	46.6	59.7	75.5	90.3	104.4	110
30- 45	15	13	12.6	12.5	13	13.5	14.3	16.1	21	30	40.5	51.8	65.3	79.7	94.3	98.6
45- 60	15	12	11.7	11.7	11.7	12.2	13.2	14.7	19.4	26.8	36.4	45.2	55.8	65.7	77.2	81.1
60- 75	15	11.3	11.2	11.1	10.9	11.6	12.3	13.9	18.2	24.5	31.5	38.4	45.1	50.7	55.8	56.7
75- 95	20	10.9	10.7	10.4	10.5	10.8	11.7	13.4	16.2	21.1	27.1	30	33.5	35.4	36.1	35.5
95- 115	20	10.3	10.3	10.2	10	10.4	11.1	12	13.9	18.6	20.8	22.3	22.7	23	21.8	20.9
115- 125	10	10.4	10.2	10	9.8	9.9	10.3	10.9	13	16.2	17.1	17.7	16.7	16.7	15.1	14.4
125- 150	25	10.5	9.9	9.8	9.5	9.3	9.4	10.1	11.9	13	14.3	12.7	11.8	11.5	10.2	9.7
150- 175	25	10	9.3	9.1	8.6	8.3	8.4	9	9.7	10	9.9	8	7.3	6.9	5.8	5.5
175- 200	25	8.6	8	8.1	7.8	7.6	7.5	7.7	7.8	7.7	6.8	4.9	4.5	4	3.1	2.9
200- 225	25	7.2	6.8	6.7	6.6	6.1	6.1	6.4	6.3	5.7	4.7	2.9	2.7	2.1	1.3	1.1

Table 1 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC and Barrel calorimeter for T= 100d, t=1d

R/Z, cm	dR\dZ	340 0	340-350 10	350-365 15	365-380 15	380-405 25	405-430 25	430-480 50	480-530 50	530-580 50	580-605 25	605-630 25	630-645 15	645-660 15	660-670 10	670 0
0- 5	5	44.7	43.3	43.1	45.6	48.7	49.7	59.1	75.3	106.6	162.3	229.3	305.1	402	544.3	610
5- 10	5	42.9	41.5	41.3	43.7	46.5	47.5	56.5	72.1	103.1	154.3	214.6	286.9	369.7	471.7	507.4
10- 20	10	41.6	40.2	40	42.3	44.8	46	54.3	69.5	101.1	148.9	197.6	264.9	339.8	429.1	459.1
20- 30	10	39.8	38.5	38.2	40.1	42.3	43.8	50.9	65.4	96.6	137.7	182.4	239.2	300.9	380.1	412.8
30- 45	15	37.4	36.3	36.2	37.2	38.6	40.8	45.9	59.7	87	120.5	158.1	205	258	319	340.1
45- 60	15	34.5	34.1	34	34.3	35.1	37.8	41.8	55.4	78	107.3	136.5	170.4	204.4	242.9	253.5
60- 75	15	32.7	32.7	32.3	31.9	33	35	39.6	51.7	70.6	93.4	114.7	135.7	153.2	170.6	172.5
75- 95	20	31.9	31.3	30.5	30.2	30.6	32.9	37.7	46.1	61.5	79.3	89.3	99.6	106.3	108.4	106.6
95- 115	20	30	30	29.3	28.5	29	31.2	34.1	40.2	53.5	61.5	66.2	67.4	69.1	66.1	63.2
115- 125	10	30.1	29.4	28.6	27.8	28	29.2	31.5	37.3	46.6	50.8	52.1	49.7	50.7	46	43.3
125- 150	25	31.2	28.7	28.1	27.1	26.7	27.2	28.9	33.6	38	41.6	37.9	35.6	35.9	31	29
150- 175	25	28.7	26.8	26.1	24.9	24.1	24	25.2	27.8	29.4	29.4	23.9	22.3	22	17.7	16.8
175- 200	25	24	22.7	22.8	22.1	21.3	20.5	21.5	22.9	22.5	20.9	14.7	14.5	13.1	9.2	8.4
200- 225	25	19.4	18.3	18.3	17.8	16.6	16.6	18.6	18.5	17.1	14.4	8.9	9.6	7.2	4.1	3.6

Table 1 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC and Barrel calorimeter for T= 100d, t=5d

R/Z, cm	dR\dZ	340 0	340-350 10	350-365 15	365-380 15	380-405 25	405-430 25	430-480 50	480-530 50	530-580 50	580-605 25	605-630 25	630-645 15	645-660 15	660-670 10	670 0
0- 5	5	22.3	21.5	21.3	22.8	24.4	24.7	29.5	37.7	53.8	81.9	115.6	151.3	204	276.9	310.7
5- 10	5	21.4	20.6	20.3	21.7	23.2	23.5	28	35.8	51.2	76.9	105.6	138.9	177	227	247.5
10- 20	10	20.6	20.1	19.8	21	22.5	22.8	27.2	34.8	50.4	72.8	94.4	124	156.1	192.4	205
20- 30	10	20	19.5	19.1	20.1	21.3	22	25.6	32.8	47.7	66.1	85.2	109	132.3	157.8	167.2
30- 45	15	18.7	18.2	18.1	18.6	19.3	20.5	22.8	29.4	41.5	55.9	71.9	90.7	111	132.8	139.4
45- 60	15	17.2	17	16.8	16.9	17.5	18.8	20.4	26.5	36.3	49.5	61.3	75.6	89.1	103.9	107.7
60- 75	15	16.3	16.2	15.8	15.5	16.2	17.1	19	24.3	32.9	42.5	51.5	60.3	67.7	74.4	75.3
75- 95	20	15.3	15.2	14.7	14.6	14.7	15.8	17.9	21.8	28.4	36.2	40.1	44.5	47.2	47.9	47.1
95- 115	20	14.3	14.4	14	13.6	13.9	14.9	16.2	18.8	24.7	27.8	29.7	30.1	30.5	29.1	28.1
115- 125	10	14.3	14	13.7	13.3	13.4	13.9	15	17.3	21.6	22.9	23.5	22	22.2	20.2	19.1
125- 150	25	14.5	13.5	13.4	12.9	12.8	12.9	13.6	15.8	17.4	19	16.9	15.8	15.5	13.6	12.8
150- 175	25	13.7	12.8	12.5	11.9	11.5	11.3	12	13	13.3	13.3	10.6	9.8	9.4	7.7	7.4
175- 200	25	11.7	11	10.9	10.6	10.2	9.9	10.3	10.6	10.3	9.2	6.5	6.1	5.5	4.1	3.8
200- 225	25	9.7	9.1	9	8.8	8.1	8	8.8	8.6	7.7	6.4	3.9	3.9	2.9	1.8	1.6

Table 1 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC and Barrel calorimeter for T= 5 y, t=1d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	52	50.6	50.9	53.7	56.7	58.2	68.9	88.4	126.9	191.1	273.5	367.6	491.4	664.7	739.2
5- 10	5	49.7	48.6	48.6	51.2	54.2	55.6	65.7	84.4	121.7	182.3	256.1	347.1	453.3	580.5	620
10- 20	10	48.3	47.1	47.1	49.2	52.1	53.7	63.2	81.1	118.3	174.8	235.3	319.8	415.5	531.6	568.5
20- 30	10	46.5	45.3	45.3	47	49.4	51.2	59.2	76	112.2	161.2	215.9	286.8	366.5	474.5	521.5
30- 45	15	43.8	42.9	42.9	43.9	45.2	48	53.4	69.4	101.3	141.7	186.7	243.6	308.1	386.8	413.2
45- 60	15	41.4	40.7	40.6	40.5	41.7	44.3	48.7	64	90.5	125.4	160.3	200.7	241.3	286.1	297.4
60- 75	15	39.3	39	38.6	37.7	39.1	40.9	45.9	59.6	81.9	109.2	133.7	158.6	179.8	198	198.2
75- 95	20	37.4	37.3	36.2	35.7	35.9	38.2	43.5	53.5	71.6	91.9	104.5	116.1	124.6	126.8	124
95- 115	20	35.4	35.4	34.6	33.4	33.8	36.2	39.8	46.8	61.9	71.9	77.1	78.8	81.5	77.8	74.2
115- 125	10	36.3	34.9	33.4	32.4	32.7	34	36.8	43.2	53.8	59.4	60.7	58.2	60.2	54.2	51
125- 150	25	37.5	34.3	33.1	31.9	31.3	31.9	33.9	38.7	44.4	48.4	44.4	41.8	42.8	36.7	34.2
150- 175	25	34.1	31.7	30.9	29.5	28.4	28.1	29	32.4	34.3	34.7	28.1	26.6	26.6	21	19.5
175- 200	25	28.2	26.7	26.7	25.9	24.6	23.6	24.8	27	26.3	24.8	17.3	17.6	16	11.1	10.1
200- 225	25	22.5	21.1	21.2	20.5	19.2	19.2	21.8	21.6	20.2	17.1	10.6	11.9	8.9	5	4.4

Table 1 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC and Barrel calorimeter for T= 5 y, t=5d

R/Z, cm	dR\dZ	340 0	340-350 10	350-365 15	365-380 15	380-405 25	405-430 25	430-480 50	480-530 50	530-580 50	580-605 25	605-630 25	630-645 15	645-660 15	660-670 10	670 0
0- 5	5	29.6	28.9	28.9	30.6	32.2	33.1	39.1	50.6	73.2	110.6	158.7	214.6	291.3	397.1	440.7
5- 10	5	28.5	27.7	27.6	29	30.6	31.4	37.1	47.8	69.5	104.3	146.3	199	260.2	335	360.1
10- 20	10	27.8	26.9	27	28.2	29.6	30.5	35.7	46.1	67.1	98.5	131.6	178.2	231.7	296.7	318.2
20- 30	10	27	26.1	26.1	27	28.1	29.3	33.7	43.2	63.1	89.4	118.3	156.2	197	251.3	274.2
30- 45	15	25.3	24.7	24.7	25.1	26	27.4	30.5	38.9	55.6	76.5	99.9	129	161.7	199.6	211.7
45- 60	15	24.1	23.3	23.3	23.2	23.8	25.2	27.4	35	48.6	67	84.6	105	125.7	146.5	151.8
60- 75	15	22.8	22.3	22	21.5	22	22.9	25.2	32.1	44.1	57.9	70.2	82.8	93.4	102.6	103.2
75- 95	20	21.5	21.2	20.4	19.9	20	21	23.6	28.9	38.3	48.6	54.7	60.6	65	66.3	64.5
95- 115	20	20	20	19.2	18.4	18.5	19.8	21.7	25.3	33	38	40.4	41.2	42.6	40.6	38.9
115- 125	10	20.2	19.3	18.5	17.8	18	18.7	20.2	23.1	28.7	31.3	31.8	30.4	31.5	28.4	26.7
125- 150	25	20.6	18.9	18.3	17.7	17.4	17.7	18.4	20.8	23.7	25.7	23.2	22	22.5	19.3	18
150- 175	25	18.9	17.5	17.2	16.4	15.7	15.3	15.7	17.5	18.3	18.4	14.7	14.1	13.9	11.1	10.4
175- 200	25	15.9	14.9	14.9	14.3	13.5	12.9	13.5	14.5	14.1	13.2	9.1	9.2	8.3	5.9	5.5
200- 225	25	12.8	11.9	11.8	11.4	10.6	10.6	11.9	11.6	10.9	9	5.6	6.2	4.6	2.7	2.4

Table 1 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC and Barrel calorimeter for T= 10y, t=1d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	53.9	53	53.3	56	59	60.9	71.9	92.5	133.3	199.7	286.3	386.3	520.6	700.4	779.2
5- 10	5	51.9	50.8	51	53.4	56.2	58	68.5	88.2	127.3	191	268.6	366.2	479.9	614	657.1
10- 20	10	50.3	49.2	49.4	51.6	54.2	56.1	65.7	84.7	123.6	182.9	247.5	336.7	440.8	565.6	607.1
20- 30	10	48.4	47.4	47.6	49.2	51.4	53.5	61.6	79.3	117.1	168.8	226.7	301.3	387.7	506.3	556.4
30- 45	15	45.8	45	45.1	45.9	47.4	50	55.9	72.4	105.8	148.1	196.2	256.5	325.2	409.6	439.5
45- 60	15	43.2	42.7	42.6	42.6	43.4	46.3	50.9	66.8	94.5	131	167.9	211.3	254.1	300.3	313.1
60- 75	15	41.3	41	40.7	39.7	41	42.8	47.9	62.1	85.3	114.4	139.3	166.1	188.9	207.6	208.2
75- 95	20	39.5	39.1	38.1	37.3	37.6	39.8	45.4	55.7	74.8	95.9	109	121.4	130.4	133.4	131.1
95- 115	20	37.4	37.2	36.3	35	35.3	37.8	41.5	49	64.5	75.1	80.6	82.4	85.4	81.8	77.8
115- 125	10	37.8	36.4	35	33.9	34.2	35.5	38.6	45.1	56.2	62	63.5	61.1	63.2	57.1	53.5
125- 150	25	39.1	35.9	34.6	33.5	32.9	33.4	35.4	40.3	46.5	50.7	46.5	43.9	45.2	38.7	36.2
150- 175	25	35.5	33	32.3	31	29.8	29.3	30.2	33.9	36	36.6	29.4	28.1	28.1	22.1	20.6
175- 200	25	29.7	27.9	28	27.1	25.7	24.5	25.9	28.2	27.5	26.1	18.2	18.7	17	11.7	10.6
200- 225	25	23.3	22	22	21.3	20	20	22.8	22.6	21.3	18	11.2	12.8	9.5	5.3	4.7

Table 1 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC and Barrel calorimeter for T= 10y, t=5d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	32	31.2	31.5	33.1	34.6	35.8	42.1	54.7	79.4	119.6	172.4	235.1	321	435.2	480.7
5- 10	5	30.8	29.9	30	31.3	32.9	33.8	39.9	51.7	75.2	112.9	159.4	217.9	287	369.2	395.8
10- 20	10	30	29.2	29.3	30.4	31.8	32.8	38.5	49.7	72.5	106.5	144.1	195.9	256.3	330.3	354.6
20- 30	10	29	28.2	28.3	29.2	30.3	31.6	36.2	46.5	68.1	96.9	129.1	171.4	218.8	282.1	307.7
30- 45	15	27.5	26.9	26.8	27.2	28	29.4	32.8	42	60	83.1	109.1	142.2	179.1	222.6	234.2
45- 60	15	26	25.4	25.2	25.2	25.7	27.1	29.5	37.8	52.7	72.9	92.3	114.9	138.2	162.1	169.8
60- 75	15	24.6	24.3	24.1	23.4	23.9	24.8	27.2	34.6	47.7	63.2	76.5	90.4	102.2	112.4	111.8
75- 95	20	23.2	23.1	22.3	21.6	21.6	22.6	25.5	31.3	41.6	52.8	59.6	66	71	72.6	70.7
95- 115	20	21.6	21.6	20.8	20	20	21.4	23.4	27.6	35.7	41.4	44	44.9	46.8	44.5	42.5
115- 125	10	22	21.1	20.1	19.5	19.6	20.2	22	25.1	31	34.1	34.7	33.3	34.7	31.2	29.4
125- 150	25	22.5	20.6	19.9	19.2	18.8	19.2	20	22.4	25.8	28	25.4	24.1	24.8	21.3	20
150- 175	25	20.7	19	18.7	17.9	17.1	16.7	16.9	19	20	20.2	16.1	15.5	15.5	12.3	11.5
175- 200	25	17.3	16.1	16.1	15.5	14.6	13.9	14.6	15.8	15.3	14.5	9.9	10.3	9.3	6.5	6
200- 225	25	13.7	12.8	12.7	12.2	11.5	11.4	12.9	12.6	12	9.9	6.2	7	5.2	3	2.7

Table 1 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC and Barrel calorimeter for T= 100d, t=100d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	4.5	4.5	4.6	4.8	4.8	5.2	6.1	8.2	12.4	19.1	28.1	41	57.9	81	90.1
5- 10	5	4.3	4.2	4.3	4.5	4.5	4.8	5.6	7.5	11.3	17.3	25.2	36	49.3	65.3	70.5
10- 20	10	4.2	4.1	4.2	4.3	4.4	4.7	5.4	7.2	10.5	15.7	21.7	30.2	41.4	55.7	60.7
20- 30	10	4.1	4.1	4.2	4.2	4.3	4.5	5.2	6.7	9.6	13.5	18.2	24.8	32.3	43.3	48.2
30- 45	15	4.1	4	3.9	4	4	4.3	4.7	5.8	7.9	10.8	14.2	18.6	23.6	29.7	31.7
45- 60	15	3.9	3.8	3.8	3.7	3.7	3.9	4	4.8	6.4	8.9	11.4	14	16.7	19.4	19.8
60- 75	15	3.6	3.5	3.5	3.4	3.3	3.3	3.4	4	5.7	7.6	8.9	10.6	11.9	12.9	12.8
75- 95	20	3.3	3.3	3.1	2.9	2.8	2.8	3	3.7	5	6.1	6.9	7.5	8.1	8.2	7.9
95- 115	20	2.9	2.8	2.7	2.5	2.5	2.5	2.9	3.4	4.1	4.8	5	5	5.4	5.1	4.7
115- 125	10	2.9	2.7	2.6	2.4	2.4	2.5	2.9	3	3.5	4	3.9	3.7	4	3.5	3.3
125- 150	25	3	2.6	2.5	2.5	2.4	2.5	2.5	2.5	3	3.2	2.9	2.7	3	2.4	2.3
150- 175	25	2.7	2.5	2.5	2.4	2.2	2.1	2	2.2	2.3	2.4	1.8	1.8	1.9	1.4	1.3
175- 200	25	2.3	2.2	2.1	2	1.7	1.6	1.7	2	1.8	1.8	1.1	1.3	1.2	0.8	0.7
200- 225	25	1.8	1.5	1.5	1.5	1.4	1.4	1.6	1.5	1.4	1.2	0.7	1	0.7	0.4	0.3

Table 1 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC and Barrel calorimeter for T= 5y, t=100d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	10.9	10.9	11.3	11.6	11.6	12.5	14.5	19.4	29.3	44.3	65.4	97.9	136.1	184.6	201.5
5- 10	5	10.4	10.4	10.7	10.9	10.9	11.7	13.5	18	27.2	41.3	60.7	88.5	122.8	159.6	169.1
10- 20	10	10.2	10.2	10.5	10.5	10.5	11.3	13	17	25.3	38.3	54.7	78.1	108.7	147.2	160
20- 30	10	9.9	9.9	10.3	10.1	10.3	10.8	12.2	15.7	23	34.2	47.6	66.6	90.4	127.7	145.6
30- 45	15	9.7	9.8	9.9	9.7	9.9	10.2	11.2	14	20.4	29	39.3	53.3	69.5	90.8	98.1
45- 60	15	9.4	9.4	9.4	9.2	9.2	9.4	10	12.3	17.5	24.7	32.4	41	49.9	58.6	59.9
60- 75	15	9	9	9	8.5	8.4	8.5	8.9	11	15.6	21.6	25.8	31	35.4	38.8	38.4
75- 95	20	8.6	8.5	8.1	7.7	7.3	7.4	8.1	10.1	13.9	17.3	20.1	22.2	24.3	25	24
95- 115	20	7.8	7.7	7.4	6.9	6.5	6.9	7.7	9.2	11.4	13.9	14.7	15.1	16.4	15.6	14.6
115- 125	10	8.2	7.5	6.9	6.5	6.4	6.7	7.5	8.2	10	11.5	11.6	11.3	12.4	11.1	10.2
125- 150	25	8.5	7.4	6.9	6.6	6.6	6.7	6.8	7.1	8.7	9.2	8.7	8.3	9.3	7.7	7.1
150- 175	25	7.3	6.7	6.6	6.5	6.1	5.6	5.3	6.3	6.8	7.1	5.6	5.7	6	4.5	4.1
175- 200	25	6	5.6	5.6	5.3	4.7	4.3	4.7	5.6	5.2	5.4	3.5	4.2	3.8	2.4	2.2
200- 225	25	4.4	4.1	3.9	3.8	3.6	3.7	4.5	4.3	4.3	3.7	2.3	3.1	2.2	1.2	1.1

Table 1 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC and Barrel calorimeter for T= 10y, t=100d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	13	13.1	13.7	14	13.9	15	17.4	23.3	35.3	53	78.5	116.8	163.8	219.5	239.2
5- 10	5	12.4	12.4	13	13.2	13.1	14	16.3	21.7	32.7	49.6	73	106.5	148.6	191.9	202.3
10- 20	10	12.2	12.2	12.6	12.7	12.7	13.5	15.5	20.4	30.4	46	66.1	94.7	132	179.9	194.5
20- 30	10	12	12	12.3	12.2	12.3	13	14.6	18.8	27.7	41.3	58	81.4	111.1	158.9	182.3
30- 45	15	11.7	11.7	11.9	11.6	11.8	12.3	13.4	16.9	24.6	35.5	48.2	65.5	85.7	112.5	121.7
45- 60	15	11.4	11.3	11.3	11.1	11.1	11.3	12.1	14.9	21.3	30.3	39.8	50.5	61.6	72.6	74.1
60- 75	15	11	11	10.8	10.4	10.1	10.2	10.8	13.4	19	26.5	31.8	38.3	43.8	48	47.4
75- 95	20	10.4	10.3	9.9	9.4	8.9	9	9.8	12.4	17	21.2	24.8	27.2	30	30.9	29.7
95- 115	20	9.5	9.4	9	8.3	8	8.3	9.4	11.3	14	17.1	18.1	18.6	20.3	19.4	18.1
115- 125	10	10	9.2	8.4	8	7.9	8.2	9.2	10	12.3	14.3	14.2	14	15.5	13.8	12.6
125- 150	25	10.3	9.1	8.5	8.1	7.9	8	8.3	8.6	10.7	11.4	10.7	10.3	11.5	9.5	8.8
150- 175	25	8.9	8.1	8	7.8	7.4	6.8	6.4	7.7	8.4	8.8	6.9	7.1	7.5	5.5	5.1
175- 200	25	7.3	6.8	6.7	6.3	5.7	5.2	5.7	6.8	6.4	6.6	4.3	5.2	4.7	3	2.7
200- 225	25	5.3	4.9	4.8	4.6	4.3	4.5	5.4	5.3	5.3	4.5	2.8	3.9	2.8	1.5	1.4

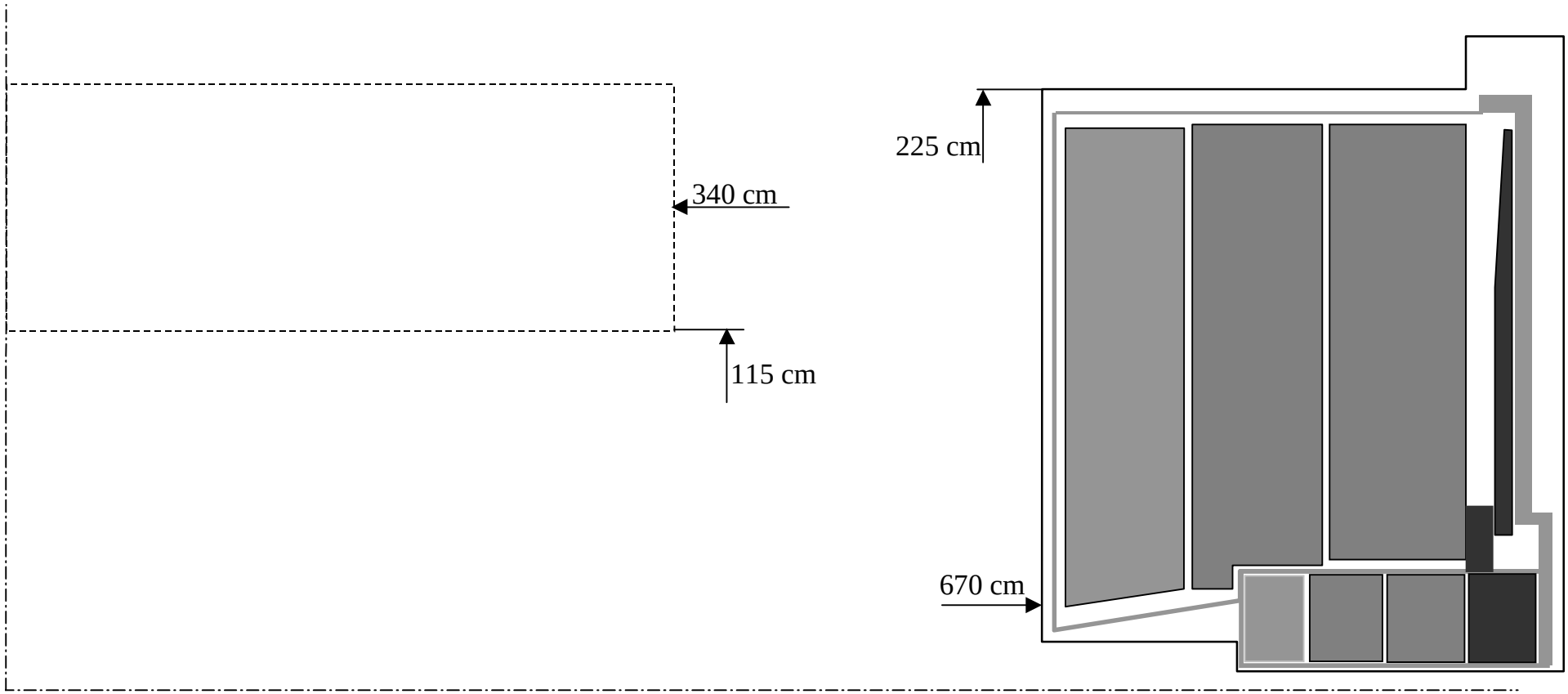

Fig. 2. To calculations of dose rate from LAr End Cap.

Table 2

Equivalent dose rate induced by high-energy hadrons from LAr EC calorimeter for T= 30d, t=1d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	29.9	30.3	32	34.2	37.5	42.1	51.3	70.2	103.5	159.4	229.3	305.1	402	544.3	610
5- 10	5	28.1	28.5	30.1	32.3	35.4	39.8	48.7	67	99.9	151.3	214.6	286.9	369.7	471.7	507.4
10- 20	10	26.9	27.2	28.8	30.9	33.8	38.1	46.6	64.4	97.7	145.9	197.6	264.9	339.8	429.1	459.1
20- 30	10	25	25.5	26.9	28.8	31.6	35.5	43.4	60.2	92.8	134.8	182.4	239.2	300.9	380.1	412.8
30- 45	15	22.7	23	24.3	25.9	28.3	31.7	38.8	54.3	82.9	117.7	158.1	205	258	319	340.1
45- 60	15	20.4	20.7	21.7	23.1	25.1	28.3	35	49.7	73.8	104.6	136.5	170.4	204.4	242.9	253.5
60- 75	15	18.6	18.8	19.7	21	22.9	25.9	32.7	46.1	66.4	90.8	114.7	135.7	153.2	170.6	172.5
75- 95	20	16.9	17	17.8	19	20.8	24.1	30.7	41	57.4	76.7	89.3	99.6	106.3	108.4	106.6
95- 115	20	15	15.2	16.2	17.5	19.6	22.7	27.5	35.3	49.5	58.9	66.2	67.4	69.1	66.1	63.2
115- 125	10	14	14.4	15.5	16.9	18.9	21.4	25	32.5	42.7	48.1	52.1	49.7	50.7	46	43.3
125- 150	25	14	14	15.1	16.3	17.8	19.6	22.6	29.1	34.4	39	37.9	35.6	35.9	31	29
150- 175	25	13.4	13.7	14.3	15	16	17.2	19.5	23.6	26	27	23.9	22.3	22	17.7	16.8
175- 200	25	12.6	12.7	13.1	13.5	14	14.3	16.1	18.8	19.4	18.7	14.7	14.5	13.1	9.2	8.4
200- 225	25	11.3	11.2	11.1	10.9	10.8	11.5	14.2	14.9	14.3	12.4	8.9	9.6	7.2	4.1	3.6

Table 2 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC calorimeter for T= 30d, t=5d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	10.9	11	11.4	12.1	13.3	14.9	17.9	24.1	35.2	53.8	76.5	96.3	124.7	167.6	191.5
5- 10	5	10	10.1	10.9	11.5	12.5	14.1	17	23.1	34.1	51.1	70.7	90.6	112.1	140.8	153.2
10- 20	10	9.6	9.8	10.3	11.1	12.1	13.6	16.4	22.5	33.8	49.2	64.4	83.3	101.9	123.2	129.7
20- 30	10	9	9.2	9.7	10.3	11.3	12.7	15.4	21.2	32.3	45.5	59.7	75.5	90.3	104.4	110
30- 45	15	8.1	8.2	8.7	9.2	10	11.2	13.7	19.1	28.5	39.5	51.8	65.3	79.7	94.3	98.6
45- 60	15	7.2	7.3	7.7	8.1	8.8	9.9	12.4	17.4	25.3	35.5	45.2	55.8	65.7	77.2	81.1
60- 75	15	6.6	6.6	7	7.4	8.1	9.2	11.6	16.2	23	30.6	38.4	45.1	50.7	55.8	56.7
75- 95	20	6	6	6.3	6.8	7.5	8.7	11	14.4	19.6	26.2	30	33.5	35.4	36.1	35.5
95- 115	20	5.4	5.5	5.9	6.4	7.2	8.2	9.7	12.2	17.2	19.9	22.3	22.7	23	21.8	20.9
115- 125	10	5.2	5.3	5.7	6.2	6.8	7.6	8.6	11.3	14.8	16.1	17.7	16.7	16.7	15.1	14.4
125- 150	25	5	5.1	5.4	5.8	6.2	6.7	7.8	10.3	11.7	13.3	12.7	11.8	11.5	10.2	9.7
150- 175	25	4.7	4.7	4.9	5.1	5.4	6	7	8.2	8.8	9	8	7.3	6.9	5.8	5.5
175- 200	25	4.3	4.3	4.5	4.7	5	5.2	5.7	6.3	6.6	6	4.9	4.5	4	3.1	2.9
200- 225	25	4	4	4	4	4	4.2	4.8	5	4.7	4	2.9	2.7	2.1	1.3	1.1

Table 2 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC calorimeter for T= 100d, t=1d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	29.9	30.3	32	34.2	37.5	42.1	51.3	70.2	103.5	159.4	229.3	305.1	402	544.3	610
5- 10	5	28.1	28.5	30.1	32.3	35.4	39.8	48.7	67	99.9	151.3	214.6	286.9	369.7	471.7	507.4
10- 20	10	26.9	27.2	28.8	30.9	33.8	38.1	46.6	64.4	97.7	145.9	197.6	264.9	339.8	429.1	459.1
20- 30	10	25	25.5	26.9	28.8	31.6	35.5	43.4	60.2	92.8	134.8	182.4	239.2	300.9	380.1	412.8
30- 45	15	22.7	23	24.3	25.9	28.3	31.7	38.8	54.3	82.9	117.7	158.1	205	258	319	340.1
45- 60	15	20.4	20.7	21.7	23.1	25.1	28.3	35	49.7	73.8	104.6	136.5	170.4	204.4	242.9	253.5
60- 75	15	18.6	18.8	19.7	21	22.9	25.9	32.7	46.1	66.4	90.8	114.7	135.7	153.2	170.6	172.5
75- 95	20	16.9	17	17.8	19	20.8	24.1	30.7	41	57.4	76.7	89.3	99.6	106.3	108.4	106.6
95- 115	20	15	15.2	16.2	17.5	19.6	22.7	27.5	35.3	49.5	58.9	66.2	67.4	69.1	66.1	63.2
115- 125	10	14	14.4	15.5	16.9	18.9	21.4	25	32.5	42.7	48.1	52.1	49.7	50.7	46	43.3
125- 150	25	14	14	15.1	16.3	17.8	19.6	22.6	29.1	34.4	39	37.9	35.6	35.9	31	29
150- 175	25	13.4	13.7	14.3	15	16	17.2	19.5	23.6	26	27	23.9	22.3	22	17.7	16.8
175- 200	25	12.6	12.7	13.1	13.5	14	14.3	16.1	18.8	19.4	18.7	14.7	14.5	13.1	9.2	8.4
200- 225	25	11.3	11.2	11.1	10.9	10.8	11.5	14.2	14.9	14.3	12.4	8.9	9.6	7.2	4.1	3.6

Table (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC calorimeter for T= 100d, t=5d

R/Z,		340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
cm	dR\dZ	0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	14.9	15	16	17.2	18.7	21	25.6	35.1	52.3	80.4	115.6	151.3	204	276.9	310.7
5- 10	5	14	14.1	14.9	16	17.5	19.8	24.1	33.2	49.7	75.4	105.6	138.9	177	227	247.5
10- 20	10	13.2	13.6	14.4	15.4	16.9	19	23.3	32.2	48.7	71.3	94.4	124	156.1	192.4	205
20- 30	10	12.6	12.9	13.6	14.5	15.9	17.9	21.9	30.2	45.8	64.6	85.2	109	132.3	157.8	167.2
30- 45	15	11.4	11.6	12.3	13	14.2	15.9	19.3	26.7	39.4	54.5	71.9	90.7	111	132.8	139.4
45- 60	15	10.1	10.3	10.8	11.5	12.5	14	17.1	23.6	34.2	48.2	61.3	75.6	89.1	103.9	107.7
60- 75	15	9.2	9.3	9.7	10.2	11.1	12.6	15.6	21.5	30.8	41.2	51.5	60.3	67.7	74.4	75.3
75- 95	20	8.1	8.2	8.6	9.1	9.9	11.4	14.4	19.2	26.3	34.9	40.1	44.5	47.2	47.9	47.1
95- 115	20	7.1	7.3	7.7	8.3	9.3	10.7	12.9	16.4	22.7	26.5	29.7	30.1	30.5	29.1	28.1
115- 125	10	6.7	6.9	7.4	8	8.9	10	11.7	14.9	19.6	21.5	23.5	22	22.2	20.2	19.1
125- 150	25	6.5	6.6	7.1	7.6	8.4	9.1	10.4	13.5	15.6	17.6	16.9	15.8	15.5	13.6	12.8
150- 175	25	6.3	6.4	6.7	7	7.4	7.9	9.1	10.8	11.6	12.1	10.6	9.8	9.4	7.7	7.4
175- 200	25	5.8	5.9	6	6.2	6.5	6.7	7.5	8.5	8.7	8.1	6.5	6.1	5.5	4.1	3.8
200- 225	25	5.2	5.2	5.2	5.2	5.1	5.4	6.5	6.7	6.3	5.4	3.9	3.9	2.9	1.8	1.6

Table 2 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC calorimeter for T= 5 y, t=1d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	34.2	34.6	36.7	39.3	43.1	48.5	59.6	82.1	122.9	187.6	273.5	367.6	491.4	664.7	739.2
5- 10	5	31.9	32.6	34.4	36.9	40.6	45.8	56.3	78.1	117.7	178.8	256.1	347.1	453.3	580.5	620
10- 20	10	30.6	31.1	32.9	35.2	38.7	43.7	53.8	74.8	114	171.3	235.3	319.8	415.5	531.6	568.5
20- 30	10	28.7	29.1	30.7	33	36.2	40.8	50	69.6	107.5	157.7	215.9	286.8	366.5	474.5	521.5
30- 45	15	26.1	26.5	27.9	29.8	32.5	36.6	44.7	62.8	96.3	138.4	186.7	243.6	308.1	386.8	413.2
45- 60	15	23.6	23.9	25.1	26.6	29	32.7	40.3	57.2	85.4	122.2	160.3	200.7	241.3	286.1	297.4
60- 75	15	21.4	21.7	22.7	24.1	26.3	29.7	37.4	52.8	76.8	106	133.7	158.6	179.8	198	198.2
75- 95	20	19.2	19.4	20.3	21.6	23.7	27.4	34.9	47.2	66.6	88.7	104.5	116.1	124.6	126.8	124
95- 115	20	16.9	17.2	18.2	19.7	22.2	25.8	31.7	40.9	57.1	68.7	77.1	78.8	81.5	77.8	74.2
115- 125	10	16	16.2	17.4	19.1	21.5	24.5	29	37.4	49.2	56.2	60.7	58.2	60.2	54.2	51
125- 150	25	16	16	17.2	18.6	20.5	22.7	26.2	33.3	40.1	45.3	44.4	41.8	42.8	36.7	34.2
150- 175	25	15.6	15.9	16.6	17.5	18.6	19.9	22.2	27.2	30.2	31.8	28.1	26.6	26.6	21	19.5
175- 200	25	14.6	14.8	15.2	15.6	15.9	16.2	18.4	22.1	22.6	22.2	17.3	17.6	16	11.1	10.1
200- 225	25	12.8	12.7	12.6	12.3	12.2	13.1	16.5	17.3	16.9	14.7	10.6	11.9	8.9	5	4.4

Table (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC calorimeter for T= 5 y, t=5d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	18.9	19.3	20.5	22.1	24.2	27.3	33.5	46.8	70.8	108.6	158.7	214.6	291.3	397.1	440.7
5- 10	5	17.7	18.1	19.1	20.5	22.6	25.6	31.5	44	67.1	102.3	146.3	199	260.2	335	360.1
10- 20	10	17	17.3	18.4	19.7	21.7	24.5	30.2	42.3	64.6	96.4	131.6	178.2	231.7	296.7	318.2
20- 30	10	16.2	16.4	17.4	18.6	20.4	23.1	28.3	39.4	60.4	87.4	118.3	156.2	197	251.3	274.2
30- 45	15	14.6	14.9	15.8	16.8	18.4	20.7	25.3	35	52.6	74.5	99.9	129	161.7	199.6	211.7
45- 60	15	13.3	13.4	14.1	15	16.3	18.3	22.4	31	45.6	65.1	84.6	105	125.7	146.5	151.8
60- 75	15	12	12.2	12.6	13.4	14.5	16.3	20.2	28.1	41.1	56	70.2	82.8	93.4	102.6	103.2
75- 95	20	10.5	10.6	11.1	11.7	12.8	14.6	18.5	25.2	35.3	46.7	54.7	60.6	65	66.3	64.5
95- 115	20	9	9.2	9.7	10.4	11.7	13.7	16.9	21.8	30.1	36.1	40.4	41.2	42.6	40.6	38.9
115- 125	10	8.4	8.6	9.2	10	11.4	13.1	15.6	19.7	26	29.4	31.8	30.4	31.5	28.4	26.7
125- 150	25	8.2	8.4	9.1	9.9	11	12.3	13.9	17.6	21.1	23.8	23.2	22	22.5	19.3	18
150- 175	25	8.3	8.5	9	9.4	9.9	10.5	11.7	14.4	15.9	16.7	14.7	14.1	13.9	11.1	10.4
175- 200	25	7.9	7.9	8.1	8.2	8.3	8.5	9.7	11.6	11.9	11.6	9.1	9.2	8.3	5.9	5.5
200- 225	25	6.7	6.7	6.6	6.5	6.4	7	8.8	9	8.9	7.6	5.6	6.2	4.6	2.7	2.4

Table 2 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC calorimeter for T= 10y, t=1d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	35.2	36	38.1	40.8	44.7	50.5	62	85.8	129	196	286.3	386.3	520.6	700.4	779.2
5- 10	5	33.2	33.8	35.8	38.3	42.1	47.5	58.5	81.5	123	187.3	268.6	366.2	479.9	614	657.1
10- 20	10	31.6	32.2	34.1	36.6	40.2	45.4	55.9	78	119	179.2	247.5	336.7	440.8	565.6	607.1
20- 30	10	29.7	30.2	32	34.2	37.5	42.3	52	72.5	112.2	165.1	226.7	301.3	387.7	506.3	556.4
30- 45	15	27.1	27.5	29	30.9	33.8	38	46.6	65.4	100.5	144.6	196.2	256.5	325.2	409.6	439.5
45- 60	15	24.5	24.9	26.1	27.7	30.2	34	42	59.6	89.1	127.6	167.9	211.3	254.1	300.3	313.1
60- 75	15	22.4	22.6	23.7	25.1	27.4	30.9	38.9	55	80	111	139.3	166.1	188.9	207.6	208.2
75- 95	20	20	20.1	21.1	22.4	24.6	28.4	36.3	49.1	69.6	92.6	109	121.4	130.4	133.4	131.1
95- 115	20	17.5	17.8	18.9	20.4	22.9	26.8	32.9	42.7	59.4	71.8	80.6	82.4	85.4	81.8	77.8
115- 125	10	16.1	16.7	18	19.7	22.3	25.5	30.3	39	51.4	58.7	63.5	61.1	63.2	57.1	53.5
125- 150	25	16	16.5	17.7	19.4	21.4	23.7	27.3	34.6	41.9	47.4	46.5	43.9	45.2	38.7	36.2
150- 175	25	16	16.4	17.3	18.3	19.4	20.7	23	28.4	31.7	33.5	29.4	28.1	28.1	22.1	20.6
175- 200	25	15.4	15.5	15.9	16.2	16.5	16.7	19.2	23.1	23.6	23.3	18.2	18.7	17	11.7	10.6
200- 225	25	13.2	13.2	13	12.7	12.6	13.6	17.3	18.1	17.8	15.5	11.2	12.8	9.5	5.3	4.7

Table (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC calorimeter for T= 10y, t=5d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	20.2	20.8	22	23.6	25.9	29.3	36	50.5	76.7	117.4	172.4	235.1	321	435.2	480.7
5- 10	5	19.1	19.4	20.5	21.9	24.2	27.3	33.8	47.5	72.5	110.7	159.4	217.9	287	369.2	395.8
10- 20	10	18.2	18.5	19.7	21	23.2	26.2	32.4	45.5	69.7	104.3	144.1	195.9	256.3	330.3	354.6
20- 30	10	17.2	17.5	18.6	19.9	21.8	24.7	30.3	42.3	65.1	94.7	129.1	171.4	218.8	282.1	307.7
30- 45	15	15.7	16	16.9	18	19.7	22.1	27.1	37.7	56.8	81	109.1	142.2	179.1	222.6	234.2
45- 60	15	14.2	14.4	15.1	16	17.5	19.6	24	33.4	49.4	70.8	92.3	114.9	138.2	162.1	169.8
60- 75	15	12.7	13	13.6	14.4	15.6	17.5	21.7	30.3	44.4	61.1	76.5	90.4	102.2	112.4	111.8
75- 95	20	11.2	11.4	11.9	12.5	13.7	15.6	19.9	27.2	38.4	50.7	59.6	66	71	72.6	70.7
95- 115	20	9.6	9.7	10.3	11.1	12.5	14.7	18.2	23.7	32.6	39.3	44	44.9	46.8	44.5	42.5
115- 125	10	8.9	9.1	9.8	10.8	12.3	14.1	16.9	21.4	28.1	32.1	34.7	33.3	34.7	31.2	29.4
125- 150	25	8.8	9	9.8	10.7	11.8	13.3	15.1	18.9	23	26	25.4	24.1	24.8	21.3	20
150- 175	25	9	9.2	9.7	10.2	10.8	11.4	12.5	15.6	17.3	18.3	16.1	15.5	15.5	12.3	11.5
175- 200	25	8.6	8.6	8.8	8.9	9	9.1	10.5	12.7	12.9	12.8	9.9	10.3	9.3	6.5	6
200- 225	25	7.2	7.2	7.1	6.9	6.9	7.5	9.5	9.8	9.8	8.4	6.2	7	5.2	3	2.7

Table 2 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC calorimeter for T= 100d, t=100d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	2.7	2.8	3	3.2	3.5	4.1	5.2	7.5	12	18.8	28.1	41	57.9	81	90.1
5- 10	5	2.5	2.5	2.7	2.9	3.2	3.7	4.7	6.8	10.9	17	25.2	36	49.3	65.3	70.5
10- 20	10	2.4	2.4	2.6	2.8	3.1	3.6	4.5	6.5	10.1	15.4	21.7	30.2	41.4	55.7	60.7
20- 30	10	2.3	2.4	2.5	2.7	3	3.4	4.3	6	9.1	13.2	18.2	24.8	32.3	43.3	48.2
30- 45	15	2.2	2.2	2.3	2.5	2.7	3.1	3.8	5.1	7.4	10.5	14.2	18.6	23.6	29.7	31.7
45- 60	15	2	2	2.1	2.2	2.4	2.7	3.1	4.1	5.9	8.6	11.4	14	16.7	19.4	19.8
60- 75	15	1.7	1.7	1.8	1.9	2	2.2	2.5	3.4	5.2	7.3	8.9	10.6	11.9	12.9	12.8
75- 95	20	1.4	1.4	1.4	1.5	1.6	1.7	2.1	3.1	4.5	5.8	6.9	7.5	8.1	8.2	7.9
95- 115	20	1	1	1.1	1.1	1.3	1.5	2.1	2.8	3.6	4.5	5	5	5.4	5.1	4.7
115- 125	10	0.9	0.9	1	1.1	1.3	1.6	2.1	2.4	3.1	3.7	3.9	3.7	4	3.5	3.3
125- 150	25	0.9	0.9	1	1.2	1.4	1.6	1.8	2	2.6	2.9	2.9	2.7	3	2.4	2.3
150- 175	25	1.1	1.1	1.2	1.3	1.3	1.3	1.3	1.7	1.9	2.1	1.8	1.8	1.9	1.4	1.3
175- 200	25	1.1	1.1	1.1	1	0.9	0.9	1.1	1.5	1.4	1.5	1.1	1.3	1.2	0.8	0.7
200- 225	25	0.8	0.7	0.7	0.7	0.7	0.8	1.1	1.1	1.1	1	0.7	1	0.7	0.4	0.3

Table 2 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC calorimeter for T= 5y, t=100d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	6.4	6.5	6.9	7.5	8.3	9.5	12.1	17.7	28.1	43.5	65.4	97.9	136.1	184.6	201.5
5- 10	5	5.9	6	6.3	6.8	7.6	8.7	11.1	16.3	26	40.5	60.7	88.5	122.8	159.6	169.1
10- 20	10	5.6	5.7	6	6.5	7.2	8.3	10.6	15.3	24.1	37.5	54.7	78.1	108.7	147.2	160
20- 30	10	5.3	5.4	5.8	6.2	6.9	7.8	9.8	14	21.8	33.4	47.6	66.6	90.4	127.7	145.6
30- 45	15	5	5.1	5.4	5.8	6.4	7.2	8.9	12.3	19.1	28.2	39.3	53.3	69.5	90.8	98.1
45- 60	15	4.6	4.7	4.9	5.2	5.7	6.4	7.7	10.6	16.2	23.9	32.4	41	49.9	58.6	59.9
60- 75	15	4.1	4.2	4.4	4.6	5	5.5	6.6	9.3	14.3	20.7	25.8	31	35.4	38.8	38.4
75- 95	20	3.5	3.5	3.6	3.8	4	4.5	5.8	8.5	12.6	16.5	20.1	22.2	24.3	25	24
95- 115	20	2.7	2.7	2.9	3.1	3.4	4.2	5.6	7.7	10.2	13.1	14.7	15.1	16.4	15.6	14.6
115- 125	10	2.4	2.4	2.6	2.9	3.5	4.3	5.5	6.7	8.9	10.8	11.6	11.3	12.4	11.1	10.2
125- 150	25	2.5	2.5	2.8	3.2	3.8	4.4	4.9	5.7	7.6	8.5	8.7	8.3	9.3	7.7	7.1
150- 175	25	2.9	3	3.2	3.5	3.6	3.6	3.6	5	5.8	6.4	5.6	5.7	6	4.5	4.1
175- 200	25	2.9	2.9	2.9	2.8	2.6	2.5	3.2	4.4	4.3	4.7	3.5	4.2	3.8	2.4	2.2
200- 225	25	2.1	2.1	1.9	1.9	1.9	2.2	3.2	3.3	3.5	3.1	2.3	3.1	2.2	1.2	1.1

Table 2 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr EC calorimeter for T= 10y, t=100d

R/Z,		340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
cm	dR\dZ	0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	7.6	7.8	8.3	9	9.9	11.4	14.5	21.2	33.8	52.1	78.5	116.8	163.8	219.5	239.2
5- 10	5	7	7.1	7.6	8.2	9.1	10.4	13.4	19.6	31.2	48.7	73	106.5	148.6	191.9	202.3
10- 20	10	6.7	6.8	7.2	7.8	8.7	9.9	12.6	18.3	28.9	45.1	66.1	94.7	132	179.9	194.5
20- 30	10	6.4	6.5	6.9	7.4	8.2	9.4	11.7	16.7	26.2	40.4	58	81.4	111.1	158.9	182.3
30- 45	15	6	6.1	6.5	6.9	7.6	8.6	10.6	14.8	23.1	34.5	48.2	65.5	85.7	112.5	121.7
45- 60	15	5.5	5.6	5.9	6.3	6.9	7.7	9.3	12.9	19.8	29.3	39.8	50.5	61.6	72.6	74.1
60- 75	15	5	5.1	5.3	5.6	6	6.6	8	11.4	17.5	25.5	31.8	38.3	43.8	48	47.4
75- 95	20	4.2	4.2	4.4	4.6	4.9	5.5	7.1	10.4	15.5	20.2	24.8	27.2	30	30.9	29.7
95- 115	20	3.3	3.3	3.5	3.7	4.2	5.1	6.9	9.4	12.6	16.2	18.1	18.6	20.3	19.4	18.1
115- 125	10	2.9	3	3.2	3.6	4.3	5.3	6.8	8.3	11	13.4	14.2	14	15.5	13.8	12.6
125- 150	25	3	3.1	3.5	3.9	4.6	5.3	6	7	9.4	10.5	10.7	10.3	11.5	9.5	8.8
150- 175	25	3.5	3.6	3.9	4.2	4.4	4.4	4.4	6.1	7.1	7.9	6.9	7.1	7.5	5.5	5.1
175- 200	25	3.6	3.6	3.5	3.4	3.2	3.1	3.9	5.4	5.3	5.8	4.3	5.2	4.7	3	2.7
200- 225	25	2.6	2.5	2.4	2.3	2.3	2.7	3.9	4	4.3	3.8	2.8	3.9	2.8	1.5	1.4

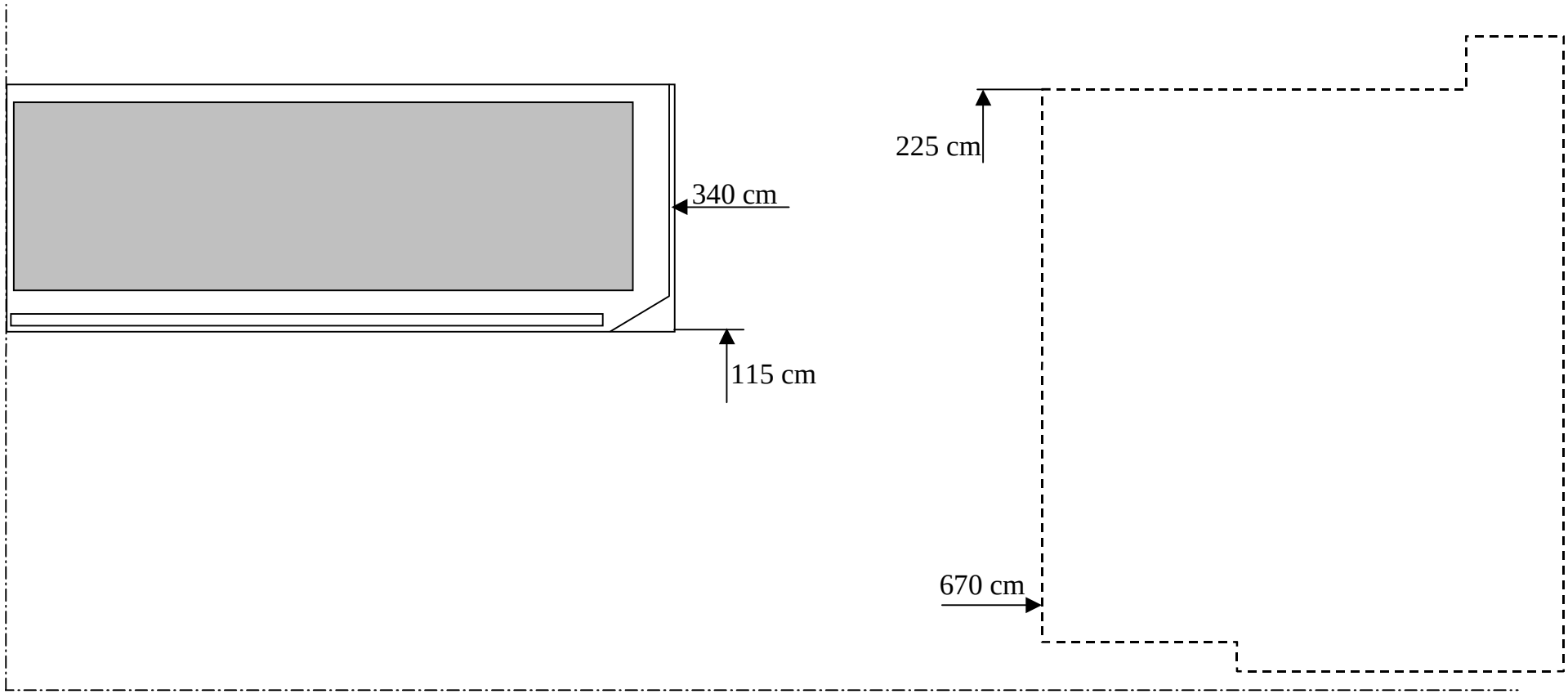

Fig. 3. To calculations of dose rate from LAr Barrel.

Table3

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 30d, t=1d

R/Z,		340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
cm	dR\dZ	0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	14.8	13	11.1	11.4	11.2	7.6	7.8	5.1	3.1	2.9					
5- 10	5	14.8	13	11.2	11.4	11.1	7.7	7.8	5.1	3.2	3					
10- 20	10	14.7	13	11.2	11.4	11	7.9	7.7	5.1	3.4	3					
20- 30	10	14.8	13	11.3	11.3	10.7	8.3	7.5	5.2	3.8	2.9					
30- 45	15	14.7	13.3	11.9	11.3	10.3	9.1	7.1	5.4	4.1	2.8					
45- 60	15	14.1	13.4	12.3	11.2	10	9.5	6.8	5.7	4.2	2.7					
60- 75	15	14.1	13.9	12.6	10.9	10.1	9.1	6.9	5.6	4.2	2.6					
75- 95	20	15	14.3	12.7	11.2	9.8	8.8	7	5.1	4.1	2.6					
95- 115	20	15	14.8	13.1	11	9.4	8.5	6.6	4.9	4	2.6					
115- 125	10	16.1	15	13.1	10.9	9.1	7.8	6.5	4.8	3.9	2.7					
125- 150	25	17.2	14.7	13	10.8	8.9	7.6	6.3	4.5	3.6	2.6					
150- 175	25	15.3	13.1	11.8	9.9	8.1	6.8	5.7	4.2	3.4	2.4					
175- 200	25	11.4	10	9.7	8.6	7.3	6.2	5.4	4.1	3.1	2.2					
200- 225	25	8.1	7.1	7.2	6.9	5.8	5.1	4.4	3.6	2.8	2					

Table (continuation)

Equivalent dose rate induced by high-energy hadrons from calorimeter for T= 30d, t=5d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	5.1	4.3	3.4	3.7	4	2.4	2.7	1.7	1	1.1					
5- 10	5	5.1	4.3	3.4	3.7	3.9	2.4	2.7	1.7	1	1.1					
10- 20	10	5	4.3	3.5	3.8	3.8	2.5	2.7	1.7	1.1	1.1					
20- 30	10	5	4.3	3.6	3.8	3.7	2.7	2.6	1.8	1.3	1.1					
30- 45	15	4.9	4.4	3.8	3.8	3.5	3.1	2.4	1.9	1.5	1					
45- 60	15	4.8	4.4	4	3.6	3.4	3.3	2.3	2	1.5	0.9					
60- 75	15	4.7	4.6	4.1	3.5	3.5	3.1	2.3	2	1.5	0.9					
75- 95	20	4.9	4.7	4.1	3.7	3.3	3	2.4	1.8	1.5	0.9					
95- 115	20	4.9	4.8	4.3	3.6	3.2	2.9	2.3	1.7	1.4	0.9					
115- 125	10	5.2	4.9	4.3	3.6	3.1	2.7	2.3	1.7	1.4	1					
125- 150	25	5.5	4.8	4.4	3.7	3.1	2.7	2.3	1.6	1.3	1					
150- 175	25	5.3	4.6	4.2	3.5	2.9	2.4	2	1.5	1.2	0.9					
175- 200	25	4.3	3.7	3.6	3.1	2.6	2.3	2	1.5	1.1	0.8					
200- 225	25	3.2	2.8	2.7	2.6	2.1	1.9	1.6	1.3	1	0.7					

Table 3 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 100d, t=1d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	14.8	13	11.1	11.4	11.2	7.6	7.8	5.1	3.1	2.9					
5- 10	5	14.8	13	11.2	11.4	11.1	7.7	7.8	5.1	3.2	3					
10- 20	10	14.7	13	11.2	11.4	11	7.9	7.7	5.1	3.4	3					
20- 30	10	14.8	13	11.3	11.3	10.7	8.3	7.5	5.2	3.8	2.9					
30- 45	15	14.7	13.3	11.9	11.3	10.3	9.1	7.1	5.4	4.1	2.8					
45- 60	15	14.1	13.4	12.3	11.2	10	9.5	6.8	5.7	4.2	2.7					
60- 75	15	14.1	13.9	12.6	10.9	10.1	9.1	6.9	5.6	4.2	2.6					
75- 95	20	15	14.3	12.7	11.2	9.8	8.8	7	5.1	4.1	2.6					
95- 115	20	15	14.8	13.1	11	9.4	8.5	6.6	4.9	4	2.6					
115- 125	10	16.1	15	13.1	10.9	9.1	7.8	6.5	4.8	3.9	2.7					
125- 150	25	17.2	14.7	13	10.8	8.9	7.6	6.3	4.5	3.6	2.6					
150- 175	25	15.3	13.1	11.8	9.9	8.1	6.8	5.7	4.2	3.4	2.4					
175- 200	25	11.4	10	9.7	8.6	7.3	6.2	5.4	4.1	3.1	2.2					
200- 225	25	8.1	7.1	7.2	6.9	5.8	5.1	4.4	3.6	2.8	2					

Table 3 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 100d, t=5d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	7.4	6.5	5.3	5.6	5.7	3.7	3.9	2.6	1.5	1.5					
5- 10	5	7.4	6.5	5.4	5.7	5.7	3.7	3.9	2.6	1.5	1.5					
10- 20	10	7.4	6.5	5.4	5.6	5.6	3.8	3.9	2.6	1.7	1.5					
20- 30	10	7.4	6.6	5.5	5.6	5.4	4.1	3.7	2.6	1.9	1.5					
30- 45	15	7.3	6.6	5.8	5.6	5.1	4.6	3.5	2.7	2.1	1.4					
45- 60	15	7.1	6.7	6	5.4	5	4.8	3.3	2.9	2.1	1.3					
60- 75	15	7.1	6.9	6.1	5.3	5.1	4.5	3.4	2.8	2.1	1.3					
75- 95	20	7.2	7	6.1	5.5	4.8	4.4	3.5	2.6	2.1	1.3					
95- 115	20	7.2	7.1	6.3	5.3	4.6	4.2	3.3	2.4	2	1.3					
115- 125	10	7.6	7.1	6.3	5.3	4.5	3.9	3.3	2.4	2	1.4					
125- 150	25	8	6.9	6.3	5.3	4.4	3.8	3.2	2.3	1.8	1.4					
150- 175	25	7.4	6.4	5.8	4.9	4.1	3.4	2.9	2.2	1.7	1.2					
175- 200	25	5.9	5.1	4.9	4.4	3.7	3.2	2.8	2.1	1.6	1.1					
200- 225	25	4.5	3.9	3.8	3.6	3	2.6	2.3	1.9	1.4	1					

Table 3 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 5 y, t=1d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	17.8	16	14.2	14.4	13.6	9.7	9.3	6.3	4	3.5					
5- 10	5	17.8	16	14.2	14.3	13.6	9.8	9.4	6.3	4	3.5					
10- 20	10	17.7	16	14.2	14	13.4	10	9.4	6.3	4.3	3.5					
20- 30	10	17.8	16.2	14.6	14	13.2	10.4	9.2	6.4	4.7	3.5					
30- 45	15	17.7	16.4	15	14.1	12.7	11.4	8.7	6.6	5	3.3					
45- 60	15	17.8	16.8	15.5	13.9	12.7	11.6	8.4	6.8	5.1	3.2					
60- 75	15	17.9	17.3	15.9	13.6	12.8	11.2	8.5	6.8	5.1	3.2					
75- 95	20	18.2	17.9	15.9	14.1	12.2	10.8	8.6	6.3	5	3.2					
95- 115	20	18.5	18.2	16.4	13.7	11.6	10.4	8.1	5.9	4.8	3.2					
115- 125	10	20.3	18.7	16	13.3	11.2	9.5	7.8	5.8	4.6	3.2					
125- 150	25	21.5	18.3	15.9	13.3	10.8	9.2	7.7	5.4	4.3	3.1					
150- 175	25	18.5	15.8	14.3	12	9.8	8.2	6.8	5.2	4.1	2.9					
175- 200	25	13.6	11.9	11.5	10.3	8.7	7.4	6.4	4.9	3.7	2.6					
200- 225	25	9.7	8.4	8.6	8.2	7	6.1	5.3	4.3	3.3	2.4					

Table 3 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 5 y, t=5d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	10.7	9.6	8.4	8.5	8	5.8	5.6	3.8	2.4	2					
5- 10	5	10.8	9.6	8.5	8.5	8	5.8	5.6	3.8	2.4	2					
10- 20	10	10.8	9.6	8.6	8.5	7.9	6	5.5	3.8	2.5	2.1					
20- 30	10	10.8	9.7	8.7	8.4	7.7	6.2	5.4	3.8	2.7	2					
30- 45	15	10.7	9.8	8.9	8.3	7.6	6.7	5.2	3.9	3	2					
45- 60	15	10.8	9.9	9.2	8.2	7.5	6.9	5	4	3	1.9					
60- 75	15	10.8	10.1	9.4	8.1	7.5	6.6	5	4	3	1.9					
75- 95	20	11	10.6	9.3	8.2	7.2	6.4	5.1	3.7	3	1.9					
95- 115	20	11	10.8	9.5	8	6.8	6.1	4.8	3.5	2.9	1.9					
115- 125	10	11.8	10.7	9.3	7.8	6.6	5.6	4.6	3.4	2.7	1.9					
125- 150	25	12.4	10.5	9.2	7.8	6.4	5.4	4.5	3.2	2.6	1.9					
150- 175	25	10.6	9	8.2	7	5.8	4.8	4	3.1	2.4	1.7					
175- 200	25	8	7	6.8	6.1	5.2	4.4	3.8	2.9	2.2	1.6					
200- 225	25	6.1	5.2	5.2	4.9	4.2	3.6	3.1	2.6	2	1.4					

Table 3 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 10y, t=1d

R/Z,		340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
cm	dR\dZ	0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	18.7	17	15.2	15.2	14.3	10.4	9.9	6.7	4.3	3.7					
5- 10	5	18.7	17	15.2	15.1	14.1	10.5	10	6.7	4.3	3.7					
10- 20	10	18.7	17	15.3	15	14	10.7	9.8	6.7	4.6	3.7					
20- 30	10	18.7	17.2	15.6	15	13.9	11.2	9.6	6.8	4.9	3.7					
30- 45	15	18.7	17.5	16.1	15	13.6	12	9.3	7	5.3	3.5					
45- 60	15	18.7	17.8	16.5	14.9	13.2	12.3	8.9	7.2	5.4	3.4					
60- 75	15	18.9	18.4	17	14.6	13.6	11.9	9	7.1	5.3	3.4					
75- 95	20	19.5	19	17	14.9	13	11.4	9.1	6.6	5.2	3.3					
95- 115	20	19.9	19.4	17.4	14.6	12.4	11	8.6	6.3	5.1	3.3					
115- 125	10	21.7	19.7	17	14.2	11.9	10	8.3	6.1	4.8	3.3					
125- 150	25	23.1	19.4	16.9	14.1	11.5	9.7	8.1	5.7	4.6	3.3					
150- 175	25	19.5	16.6	15	12.7	10.4	8.6	7.2	5.5	4.3	3.1					
175- 200	25	14.3	12.4	12.1	10.9	9.2	7.8	6.7	5.1	3.9	2.8					
200- 225	25	10.1	8.8	9	8.6	7.4	6.4	5.5	4.5	3.5	2.5					

Table 3 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 10y, t=5d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	11.8	10.4	9.5	9.5	8.7	6.5	6.1	4.2	2.7	2.2					
5- 10	5	11.7	10.5	9.5	9.4	8.7	6.5	6.1	4.2	2.7	2.2					
10- 20	10	11.8	10.7	9.6	9.4	8.6	6.6	6.1	4.2	2.8	2.2					
20- 30	10	11.8	10.7	9.7	9.3	8.5	6.9	5.9	4.2	3	2.2					
30- 45	15	11.8	10.9	9.9	9.2	8.3	7.3	5.7	4.3	3.2	2.1					
45- 60	15	11.8	11	10.1	9.2	8.2	7.5	5.5	4.4	3.3	2.1					
60- 75	15	11.9	11.3	10.5	9	8.3	7.3	5.5	4.3	3.3	2.1					
75- 95	20	12	11.7	10.4	9.1	7.9	7	5.6	4.1	3.2	2.1					
95- 115	20	12	11.9	10.5	8.9	7.5	6.7	5.2	3.9	3.1	2.1					
115- 125	10	13.1	12	10.3	8.7	7.3	6.1	5.1	3.7	2.9	2					
125- 150	25	13.7	11.6	10.1	8.5	7	5.9	4.9	3.5	2.8	2					
150- 175	25	11.7	9.8	9	7.7	6.3	5.3	4.4	3.4	2.7	1.9					
175- 200	25	8.7	7.5	7.3	6.6	5.6	4.8	4.1	3.1	2.4	1.7					
200- 225	25	6.5	5.6	5.6	5.3	4.6	3.9	3.4	2.8	2.2	1.5					

Table 3 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 100d, t=100d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	1.8	1.7	1.6	1.6	1.3	1.1	0.9	0.7	0.4	0.3					
5- 10	5	1.8	1.7	1.6	1.6	1.3	1.1	0.9	0.7	0.4	0.3					
10- 20	10	1.8	1.7	1.6	1.5	1.3	1.1	0.9	0.7	0.4	0.3					
20- 30	10	1.8	1.7	1.7	1.5	1.3	1.1	0.9	0.7	0.5	0.3					
30- 45	15	1.9	1.8	1.6	1.5	1.3	1.2	0.9	0.7	0.5	0.3					
45- 60	15	1.9	1.8	1.7	1.5	1.3	1.2	0.9	0.7	0.5	0.3					
60- 75	15	1.9	1.8	1.7	1.5	1.3	1.1	0.9	0.6	0.5	0.3					
75- 95	20	1.9	1.9	1.7	1.4	1.2	1.1	0.9	0.6	0.5	0.3					
95- 115	20	1.9	1.8	1.6	1.4	1.2	1	0.8	0.6	0.5	0.3					
115- 125	10	2	1.8	1.6	1.3	1.1	0.9	0.8	0.6	0.4	0.3					
125- 150	25	2.1	1.7	1.5	1.3	1	0.9	0.7	0.5	0.4	0.3					
150- 175	25	1.6	1.4	1.3	1.1	0.9	0.8	0.7	0.5	0.4	0.3					
175- 200	25	1.2	1.1	1	1	0.8	0.7	0.6	0.5	0.4	0.3					
200- 225	25	1	0.8	0.8	0.8	0.7	0.6	0.5	0.4	0.3	0.2					

Table 3 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 5y, t=100d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	4.5	4.4	4.4	4.1	3.3	3	2.4	1.7	1.2	0.8					
5- 10	5	4.5	4.4	4.4	4.1	3.3	3	2.4	1.7	1.2	0.8					
10- 20	10	4.6	4.5	4.5	4	3.3	3	2.4	1.7	1.2	0.8					
20- 30	10	4.6	4.5	4.5	3.9	3.4	3	2.4	1.7	1.2	0.8					
30- 45	15	4.7	4.7	4.5	3.9	3.5	3	2.3	1.7	1.3	0.8					
45- 60	15	4.8	4.7	4.5	4	3.5	3	2.3	1.7	1.3	0.8					
60- 75	15	4.9	4.8	4.6	3.9	3.4	3	2.3	1.7	1.3	0.9					
75- 95	20	5.1	5	4.5	3.9	3.3	2.9	2.3	1.6	1.3	0.8					
95- 115	20	5.1	5	4.5	3.8	3.1	2.7	2.1	1.5	1.2	0.8					
115- 125	10	5.8	5.1	4.3	3.6	2.9	2.4	2	1.5	1.1	0.7					
125- 150	25	6	4.9	4.1	3.4	2.8	2.3	1.9	1.4	1.1	0.7					
150- 175	25	4.4	3.7	3.4	3	2.5	2	1.7	1.3	1	0.7					
175- 200	25	3.1	2.7	2.7	2.5	2.1	1.8	1.5	1.2	0.9	0.7					
200- 225	25	2.3	2	2	1.9	1.7	1.5	1.3	1	0.8	0.6					

Table 3 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 10y, t=100d

R/Z, cm	dR\dZ	340	340-350	350-365	365-380	380-405	405-430	430-480	480-530	530-580	580-605	605-630	630-645	645-660	660-670	670
		0	10	15	15	25	25	50	50	50	25	25	15	15	10	0
0- 5	5	5.4	5.3	5.4	5	4	3.6	2.9	2.1	1.5	0.9					
5- 10	5	5.4	5.3	5.4	5	4	3.6	2.9	2.1	1.5	0.9					
10- 20	10	5.5	5.4	5.4	4.9	4	3.6	2.9	2.1	1.5	0.9					
20- 30	10	5.6	5.5	5.4	4.8	4.1	3.6	2.9	2.1	1.5	0.9					
30- 45	15	5.7	5.6	5.4	4.7	4.2	3.7	2.8	2.1	1.5	1					
45- 60	15	5.9	5.7	5.4	4.8	4.2	3.6	2.8	2	1.5	1					
60- 75	15	6	5.9	5.5	4.8	4.1	3.6	2.8	2	1.5	1					
75- 95	20	6.2	6.1	5.5	4.8	4	3.5	2.7	2	1.5	1					
95- 115	20	6.2	6.1	5.5	4.6	3.8	3.2	2.5	1.9	1.4	0.9					
115- 125	10	7.1	6.2	5.2	4.4	3.6	2.9	2.4	1.7	1.3	0.9					
125- 150	25	7.3	6	5	4.2	3.3	2.7	2.3	1.6	1.3	0.9					
150- 175	25	5.4	4.5	4.1	3.6	3	2.4	2	1.6	1.3	0.9					
175- 200	25	3.7	3.2	3.2	2.9	2.5	2.1	1.8	1.4	1.1	0.8					
200- 225	25	2.7	2.4	2.4	2.3	2	1.8	1.5	1.3	1	0.7					

Table 4

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 30d, t=1d

R/Z, cm	dR\dZ	0- 25	25- 50	50- 75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-340
		25	25	25	25	25	25	25	25	25	25	25	25	25	15
0- 5	5	10.4	12.4	13.7	15.2	16.2	17.5	18.7	18.3	18.3	19.2	17.5	17.7	14.5	15.5
5- 10	5	10.4	12.4	13.7	15.2	16.2	17.6	18.7	18.2	18.4	19.2	17.6	17.7	14.5	15.5
10- 20	10	10.3	12.5	13.8	15.2	16.4	17.6	18.5	18.3	18.8	19.2	17.6	17.8	14.5	15.4
20- 30	10	10.3	12.5	13.8	15.3	16.6	17.7	18.3	18.9	19	19	17.9	17.8	14.5	15.3
30- 45	15	10.2	12.5	14	15.5	16.8	17.8	18.5	19	19.1	19.1	18.1	17.9	14.6	15.2
45- 60	15	10.1	12.5	14.2	15.8	17.1	18	18.7	19.2	19.9	19.1	18.7	18.2	14.8	15.2
60- 75	15	10.3	12.7	14.5	16.1	17.3	18.1	19	19.6	20	19.5	19.3	18.5	15.2	15.1
75- 95	20	10.6	13.4	15.2	16.6	17.7	18.7	19.3	20.1	20.5	20.4	20.2	19.4	15.9	15.5
95- 115	20	11.3	14.4	16.2	17.3	18.4	19.3	20.2	21.1	21.6	21.5	21.5	20.6	17.4	16.2

Table 4 (continuation)

Equivalent dose rate induced by high-energy hadrons from calorimeter for T= 30d, t=5d

R/Z, cm	dR\dZ	0- 25	25- 50	50- 75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-340
		25	25	25	25	25	25	25	25	25	25	25	25	25	15
0- 5	5	3.1	3.7	4.1	4.7	5	5.5	5.9	5.7	5.9	6.2	5.6	5.9	4.6	5.3
5- 10	5	3.1	3.7	4.1	4.7	5	5.5	5.9	5.7	5.9	6.2	5.6	5.9	4.6	5.3
10- 20	10	3.1	3.7	4.1	4.7	5	5.5	5.9	5.8	6	6.2	5.6	5.9	4.6	5.3
20- 30	10	3.1	3.7	4.2	4.7	5.1	5.5	5.8	5.9	6	6.2	5.7	5.9	4.6	5.2
30- 45	15	3	3.7	4.2	4.7	5.2	5.5	5.7	6	6.1	6.1	5.8	5.9	4.6	5.2
45- 60	15	3	3.7	4.3	4.8	5.2	5.5	5.7	6	6.2	6	6	5.9	4.7	5.1
60- 75	15	3	3.7	4.3	4.8	5.2	5.5	5.7	6	6.2	6.1	6.1	5.9	4.7	5
75- 95	20	3	3.8	4.4	4.9	5.2	5.5	5.8	6.1	6.2	6.2	6.3	6.1	4.9	5
95- 115	20	3.1	4	4.5	4.9	5.2	5.5	5.8	6.1	6.3	6.3	6.5	6.2	5.2	5.2

Table 4 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 100d, t=1d

R/Z, cm	dR\dZ	0- 25	25- 50	50- 75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-340
		25	25	25	25	25	25	25	25	25	25	25	25	25	15
0- 5	5	10.4	12.4	13.7	15.2	16.2	17.5	18.7	18.3	18.3	19.2	17.5	17.7	14.5	15.5
5- 10	5	10.4	12.4	13.7	15.2	16.2	17.6	18.7	18.2	18.4	19.2	17.6	17.7	14.5	15.5
10- 20	10	10.3	12.5	13.8	15.2	16.4	17.6	18.5	18.3	18.8	19.2	17.6	17.8	14.5	15.4
20- 30	10	10.3	12.5	13.8	15.3	16.6	17.7	18.3	18.9	19	19	17.9	17.8	14.5	15.3
30- 45	15	10.2	12.5	14	15.5	16.8	17.8	18.5	19	19.1	19.1	18.1	17.9	14.6	15.2
45- 60	15	10.1	12.5	14.2	15.8	17.1	18	18.7	19.2	19.9	19.1	18.7	18.2	14.8	15.2
60- 75	15	10.3	12.7	14.5	16.1	17.3	18.1	19	19.6	20	19.5	19.3	18.5	15.2	15.1
75- 95	20	10.6	13.4	15.2	16.6	17.7	18.7	19.3	20.1	20.5	20.4	20.2	19.4	15.9	15.5
95- 115	20	11.3	14.4	16.2	17.3	18.4	19.3	20.2	21.1	21.6	21.5	21.5	20.6	17.4	16.2

Table 4 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 100d, t=5d

R/Z, cm	dR\dZ	0- 25	25- 50	50- 75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-340
		25	25	25	25	25	25	25	25	25	25	25	25	25	15
0- 5	5	5.2	6.2	6.9	7.7	8.2	9	9.5	9.2	9.4	9.7	8.8	9	7.2	7.8
5- 10	5	5.2	6.2	6.9	7.7	8.2	9	9.5	9.3	9.4	9.7	8.8	9	7.2	7.8
10- 20	10	5.2	6.3	6.9	7.7	8.3	9	9.4	9.3	9.5	9.7	8.8	9	7.2	7.8
20- 30	10	5.2	6.3	7	7.7	8.4	9	9.3	9.5	9.6	9.7	8.9	8.9	7.2	7.7
30- 45	15	5.1	6.3	7.1	7.9	8.5	9	9.4	9.6	9.8	9.7	9.1	8.9	7.2	7.7
45- 60	15	5.1	6.3	7.2	8	8.7	9	9.4	9.8	10	9.7	9.3	9	7.2	7.6
60- 75	15	5.1	6.4	7.3	8.1	8.8	9.2	9.5	9.9	10	9.8	9.6	9.1	7.4	7.5
75- 95	20	5.3	6.6	7.6	8.3	8.9	9.4	9.8	10	10	10	9.9	9.4	7.6	7.5
95- 115	20	5.5	7	7.9	8.5	9.1	9.6	9.9	10.3	10.9	10.6	10.4	9.7	8	7.7

Table 4 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 5 y, t=1d

R/Z, cm	dR\dZ	0- 25	25- 50	50- 75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-340
		25	25	25	25	25	25	25	25	25	25	25	25	25	15
0- 5	5	13.7	16.2	17.8	19.8	20.6	22.5	23.8	23.7	23.3	23.8	22.3	22.2	18.5	18.8
5- 10	5	13.7	16.2	17.9	19.8	20.7	22.6	23.9	24	23.5	23.9	22.3	22.2	18.5	18.8
10- 20	10	13.7	16.3	18	19.8	21.1	22.6	23.7	24	24	24.1	22.4	22.2	18.5	18.8
20- 30	10	13.7	16.4	18.1	19.9	21.4	22.8	23.7	24	24.1	24.4	22.4	22.3	18.6	18.8
30- 45	15	13.6	16.4	18.3	20.2	21.8	22.9	23.9	24.3	24.7	24.6	23	22.4	18.6	18.8
45- 60	15	13.5	16.4	18.5	20.6	22.3	23.3	24.1	25	25.2	24.9	23.7	22.8	18.9	18.6
60- 75	15	13.6	16.8	19.1	21	22.6	23.8	24.5	25.3	26	25.3	24.7	23.3	19.4	18.7
75- 95	20	14.2	17.7	20.1	21.8	23.3	24.4	25.3	26.1	26.6	26.3	25.8	24.7	20.4	19.3
95- 115	20	15.3	19.3	21.6	23	24.4	25.6	26.6	27.7	28.3	28.1	27.8	26.5	22.8	20.4

Table 4 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 5 y, t=5d

R/Z, cm	dR\dZ	0- 25	25- 50	50- 75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-340
		25	25	25	25	25	25	25	25	25	25	25	25	25	15
0- 5	5	8.4	9.9	11.1	12	12.8	14	14.6	14.6	14.1	14.7	13.4	13.3	11	11
5- 10	5	8.4	9.9	11.1	12	12.9	14	14.6	14.6	14.1	14.7	13.4	13.3	11	11
10- 20	10	8.4	9.9	11.2	12.1	13	14	14.5	14.9	14.6	14.7	13.4	13.3	11	11
20- 30	10	8.4	10	11.2	12.3	13.2	14	14.5	15	15	14.8	13.6	13.4	11	11
30- 45	15	8.3	10.1	11.3	12.5	13.5	14	14.9	15	15	14.9	14	13.4	11	11
45- 60	15	8.3	10.2	11.5	12.8	13.8	14.3	15	15	15.3	15	14.2	13.6	11.2	11.2
60- 75	15	8.5	10.4	11.8	13	14	14.8	15	15.6	16	15.3	14.9	13.9	11.6	11.2
75- 95	20	8.8	11	12.4	13.5	14.4	15	15.6	16.1	16.3	16	15.5	14.7	12.2	11.4
95- 115	20	9.3	11.9	13.3	14.2	15.1	15.8	16.4	17	17.4	17.3	16.7	15.6	13.3	11.9

Table 4 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 10y, t=1d

R/Z, cm	dR\dZ	0- 25	25- 50	50- 75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-340
		25	25	25	25	25	25	25	25	25	25	25	25	25	15
0- 5	5	14.7	17.5	19.1	21.2	22.3	24.1	25.2	25.4	25	25.7	24	23.5	20	19.8
5- 10	5	14.7	17.5	19.1	21.2	22.3	24.2	25.1	25.3	25.1	25.7	24	23.5	20	19.8
10- 20	10	14.7	17.6	19.3	21.3	22.6	24.4	25.2	25.3	25.3	25.7	24	23.6	20	19.8
20- 30	10	14.7	17.6	19.4	21.4	23	24.5	25.2	25.8	25.9	25.8	24.1	23.7	20	19.8
30- 45	15	14.6	17.7	19.6	21.8	23.4	24.6	25.6	26	26.2	26.2	24.4	23.9	20	19.8
45- 60	15	14.5	17.8	19.9	22.2	23.8	24.9	25.9	26.7	27	26.4	25.2	24.2	20.3	19.9
60- 75	15	14.7	18.1	20.6	22.6	24.3	25.6	26.2	27.2	27.9	27	26.2	25	20.9	19.9
75- 95	20	15.4	19.2	21.7	23.5	25.1	26.3	27.2	28.1	28.5	28.2	27.6	26.4	21.8	20.5
95- 115	20	16.5	20.9	23.3	24.9	26.3	27.6	28.7	29.8	30.4	30.4	29.8	28.4	24.6	21.8

Table 4 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 10y, t=5d

R/Z, cm	dR\dZ	0- 25	25- 50	50- 75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-340
		25	25	25	25	25	25	25	25	25	25	25	25	25	15
0- 5	5	9.5	11.1	12.5	13.8	14.3	15.5	16	16	16	15.9	15	14.7	12.5	12.2
5- 10	5	9.5	11.1	12.5	13.8	14.3	15.6	16	16	16	15.9	15	14.7	12.4	12.2
10- 20	10	9.5	11.2	12.5	13.8	14.5	15.6	16	16	16	16	15	14.8	12.4	12.2
20- 30	10	9.5	11.3	12.6	13.8	14.8	15.7	16	16.1	16.3	16.4	15.1	14.9	12.4	12.2
30- 45	15	9.3	11.4	12.7	14	15	15.9	16.4	16.9	17	16.6	15.3	14.9	12.4	12.3
45- 60	15	9.3	11.5	12.8	14.4	15.3	16	16.8	17	17	16.9	15.9	15.2	12.6	12.3
60- 75	15	9.5	11.7	13.3	14.6	15.7	16.4	17	17.3	17.9	17.2	16.6	15.5	13.1	12.4
75- 95	20	9.9	12.4	14.1	15.2	16.2	17	17.5	18	18.3	18	17.3	16.4	13.5	12.6
95- 115	20	10.7	13.6	15.1	16.1	17	17.8	18.5	19.2	19.6	19.4	18.7	17.6	15.1	13.3

Table 4 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 100d, t=100d

R/Z, cm	dR\dZ	0- 25	25- 50	50- 75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-340
		25	25	25	25	25	25	25	25	25	25	25	25	25	15
0- 5	5	1.8	2.1	2.3	2.5	2.6	2.8	2.9	2.9	2.7	2.8	2.6	2.4	2.1	1.9
5- 10	5	1.8	2.1	2.3	2.5	2.6	2.8	2.9	2.9	2.8	2.8	2.6	2.4	2.1	1.9
10- 20	10	1.8	2.1	2.3	2.5	2.7	2.8	2.9	2.9	2.8	2.8	2.6	2.4	2.1	1.9
20- 30	10	1.8	2.1	2.3	2.5	2.7	2.8	2.9	2.9	2.9	2.8	2.6	2.5	2.1	1.9
30- 45	15	1.8	2.1	2.4	2.6	2.8	2.9	3	3	3	2.9	2.6	2.5	2.1	2
45- 60	15	1.8	2.2	2.4	2.7	2.8	2.9	3.1	3.1	3	3	2.7	2.5	2.1	2
60- 75	15	1.8	2.2	2.5	2.7	2.9	3.1	3.1	3.2	3.2	3	2.8	2.6	2.2	2
75- 95	20	1.9	2.4	2.7	2.9	3.1	3.2	3.3	3.3	3.4	3.2	3	2.8	2.3	2
95- 115	20	2.1	2.6	2.9	3.1	3.3	3.4	3.5	3.6	3.7	3.6	3.3	2.9	2.5	2.1

Table 4 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 5y, t=100d

R/Z, cm	dR\dZ	0- 25	25- 50	50- 75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-340
		25	25	25	25	25	25	25	25	25	25	25	25	25	15
0- 5	5	4.6	5.4	5.9	6.5	6.7	7.1	7.3	7.6	7	7	6.7	6.2	5.7	4.9
5- 10	5	4.6	5.4	6	6.5	6.7	7.2	7.3	7.6	7.1	7.1	6.8	6.3	5.6	4.9
10- 20	10	4.6	5.4	6	6.5	6.8	7.2	7.3	7.5	7.2	7.1	6.8	6.3	5.6	4.9
20- 30	10	4.6	5.5	6	6.5	7	7.3	7.5	7.5	7.4	7.3	6.8	6.4	5.6	5
30- 45	15	4.6	5.5	6.1	6.7	7.1	7.4	7.7	7.7	7.6	7.5	6.8	6.4	5.6	5
45- 60	15	4.6	5.6	6.2	6.9	7.3	7.6	7.9	7.9	7.8	7.7	7.1	6.6	5.7	5.1
60- 75	15	4.8	5.8	6.5	7.1	7.5	7.9	8.1	8.2	8.2	7.9	7.4	6.9	5.9	5.2
75- 95	20	5	6.2	7	7.5	8	8.3	8.5	8.6	8.7	8.5	7.9	7.4	6.3	5.4
95- 115	20	5.6	7	7.7	8.2	8.6	8.9	9.2	9.5	9.7	9.5	8.9	8.2	7.3	5.9

Table 4 (continuation)

Equivalent dose rate induced by high-energy hadrons from LAr Barrel calorimeter for T= 10y, t=100d

R/Z, cm	dR\dZ	0- 25	25- 50	50- 75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-340
		25	25	25	25	25	25	25	25	25	25	25	25	25	15
0- 5	5	5.6	6.6	7.2	7.9	8.1	8.6	8.8	9.2	8.5	8.5	8.2	7.5	6.9	5.9
5- 10	5	5.6	6.6	7.2	7.9	8.1	8.6	8.8	9.2	8.6	8.5	8.2	7.6	6.9	5.9
10- 20	10	5.6	6.6	7.3	7.9	8.3	8.7	8.9	9.1	8.8	8.6	8.2	7.6	6.8	6
20- 30	10	5.6	6.7	7.3	7.9	8.4	8.8	9	9.1	9	8.8	8.2	7.7	6.8	6
30- 45	15	5.6	6.7	7.4	8.1	8.6	9	9.3	9.2	9.2	9	8.3	7.8	6.9	6.1
45- 60	15	5.6	6.8	7.5	8.3	8.8	9.2	9.6	9.6	9.5	9.3	8.6	8	7	6.2
60- 75	15	5.8	7	7.9	8.5	9.1	9.5	9.8	9.9	9.9	9.6	9	8.4	7.2	6.3
75- 95	20	6.1	7.6	8.5	9.1	9.6	9.9	10.1	10.4	10.6	10.2	9.6	9	7.7	6.6
95- 115	20	6.8	8.5	9.4	9.9	10.4	10.9	11.2	11.5	11.7	11.5	10.7	10	9	7.2