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NSIP-KBG-015223#P1-20

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3.1. INTRODUCTION

This report describes the current (1996) population distribution within 50 km of the Koeberg Nuclear Power Station. The population distribution information is vital for future planning and development near the power plant as well as for nuclear emergency planning. The effectiveness of countermeasures during an accident depends on the size of the population and its spatial distribution.

The population distribution must include expected population projections. This report does not, however, address this, at this stage. Population projections are currently the topic of discussion between the Licensing Authority, Eskom and the Local Authorities.

Once the Regional Planning Guidelines that accommodate both Koeberg Emergency Planning and Local Authority Developments have been established, then population projections will be determined.

3.2. DATA COLLECTION METHOD

The population distribution data being presented here was sourced from the Demographic Information Bureau (DIB) by Maps & Data Pty, Ltd which then supplied it to NSD. The data represents the population figures adjusted for 1996 based on the 1991 government census. The level of accuracy of the data is 1.5% as quoted by the supplier. There is broad agreement that some areas in the 1991 census were not properly enumerated resulting in the figures being not accurate. This was particularly so in areas where Blacks live. In areas where the other population groups live, the data was fairly accurate. To remedy the discrepancy, new DIB figures were determined from various sources. These sources include the various local authorities, Eskom, CSIR, The South African Township Manual, Municipality Yearbook, Towns of South Africa, Provincial authorities, and DIB's own data libraries. The information was in some cases inconsistent and showed wide variance.

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In such cases the DIB decided on a consensus mid-year 1996 township/town population for each population group.

For data collection purposes the west coast map with areas lying within a 50 km radius of Koeberg was divided into magisterial districts. The magisterial districts were further divided into smaller enumerator sub-districts (ESD). These sub-districts were then assigned geographic co-ordinates (in terms of latitude and longitude).

The population figures received from Maps & Data were organised in enumerator sub-districts. However, for our use the data must be organised into segments defined by radial sectors and distance bands of a radial grid. To get the data organised in this format, the code MapInfo Professional, which is a mapping software provided by Maps & Data, was used.

The population data was organised into two types of radial grids, the first one defined by 5 degree angular sectors and the second one by 22.5 degree angular sectors. The 22.5 degree radial grids consist of sectors consistent with the 16 compass directions (N, NNE, NE, ..., NNW). The 5 degree radial grid has 72 sectors. For data analysis purposes in these radial grids, the sector around the north direction represents 0° while the sector lying in the south direction represents the 180 degree direction. The population within each sector block was prepared at the following distances (in km) from site: 0.5, 1.0, 2.5, 5.0, 7.5, 10.0, 12.5, 15.0, 17.5, 20.0, 22.5, 25.0, 27.0, 30.0, 32.5, 35.0, 37.5, 40.0, 42.5, 45.0, 47.5, 50. These distances are represented by radii of circles centred on Koeberg and represent the outer radii of the distance bands. For example, 50 km represents a band falling between the circles of radii 47.5 km and 50 km (inclusive). On the r-θ grid, this would represent points whose r-co-ordinates are greater than 47.5 but less than or equal to 50 km.

The population data in ESDs is converted into the required format in the grid blocks by assuming a uniform population density within each ESD. Thus, the population within each grid block is determined by summing contributions by all ESD that have portions in the block. The population contributed by each ESD would then be the area of the portion of the ESD contained in the radial block, divided by the total area of the ESD and multiplied by the population density within the ESD. This method of extracting data, however, will yield small distortions in the population distribution estimates. The distortions are insignificant because of the population sizes involved inside the ESDs.



High density ESDs tend to be very small compared to low density ones. This means that for any sector, the contribution from big ESDs will be relatively small and that should not affect the population distribution by much.

3.3. POPULATION DATA

The Melkbosstrand ESD includes the Koeberg Nuclear Power Station within it. But we assume that the population density within each ESD is uniform, in which case Koeberg would also have a certain portion of the Melkbosstrand ESD population in it. However, since Koeberg is not residential, we assume no one resides there. This means that the final population database should show no public person residing inside the site boundary.

That is, the figures should show a population of 0 within a radius of 1.3 km¹ from the mid point of the two reactor units. Since extracting data from the census figures into the radial grids will give a certain number of people inside the site boundary, this number will instead be allocated, within the same sector, to the grid block in the distance band containing the site boundary, that is the 1.0 to 2.5 km distance band.

The population data arranged in radial sectors is presented in **Tables T-3-1 to 5**. **Table T-3-1** shows the population figures in radial blocks in the 5 degree radial grid. **Table T-3-2** presents total population within each 5 km distance band up to 50 km for the 5 degree radial grid. **Tables T-3-3 and 4** show similar information as in **Tables T-3-1 and 2**, respectively, for the 22.5 degree radial grid. Since the 22.5 degree radial grid is important for emergency planning purposes the cumulative population data up to 50 km is presented in **Table T-3-5**. **Figure F-3-1** shows the total population data within each 5 km distance band up to 50 km in the 5 degree radial grid. This data was obtained from **Table T-3-2**. Likewise, the total population within each 5 km distance band up to 50 km for the 22.5 degree radial grid is presented in **Figure F-3-2**. Since the 22.5 degree radial grid is important for emergency planning purposes the population distribution is presented up to 20 km on the radial grid in **Figure F-3-3**.

3.4. CONCLUSION

Several conclusions can be drawn from the graphs in **Figures F-3-1 and 2**. The cumulative population per 5 degree sector shows a sharp

¹ The site boundary in Koeberg stretches from the 1.3 km to 2.4 km.

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spike around Atlantis between the distances 10 km and 25 km from Koeberg. The population of Atlantis according to this data is 52 084. For distances greater than this the population distribution is dominated by the population in and around Cape Town. The same is true for the data arranged in a 22.5 degree radial grid.

3.5. UPDATE PHILOSOPHY

Since population distribution information is vital for nuclear emergency planning, it is important that the data stays current. It is also valuable to have projections of future growth to allow for advanced planning and to measure the impact of proposed demographic changes. It will therefore be important to have some form of regular updates undertaken. This will be in line with the philosophy of a living PRA.



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REFERENCES

Magugumela M. 1997: Population Distribution Data within 50 km of Koeberg. MWP-NSD report Number NSD-R97/009





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**POPULATION DISTRIBUTION RELATIVE TO KOEBERG POWER
STATION (5 DEGREE RADIAL GRID)**

Dir	1.0 km	2.5 km	5.0 km	7.5 km	10.0 km	12.5 km	15.0 km	17.5 km	20.0 km	22.5 km	25.0 km	27.5 km	30.0 km	32.5 km	35.0 km	37.5 km	40.0 km	42.5 km	45.0 km	47.5 km	50.0 km	
000°	0	54	9	9	6	8	10	12	666	131	18	24	25	29	32	34	37	41	46	51	53	
005°	0	57	10	8	6	8	10	62	1145	1203	97	24	25	29	32	34	36	39	42	48	50	
010°	0	60	11	7	6	8	10	147	1154	794	21	24	30	29	32	36	48	54	67	46	49	
015°	0	64	12	8	6	12	5517	852	715	92	21	24	45	39	39	57	66	67	51	51	49	
020°	0	70	14	11	6	2936	9399	5819	34	19	21	24	37	53	57	62	66	70	72	83	56	
025°	0	78	17	14	8	5449	9404	4571	99	19	21	24	29	52	57	61	65	70	97	120	76	
030°	0	80	22	14	17	1485	6642	319	382	21	29	61	25	45	55	59	64	92	110	103	61	
035°	0	73	26	14	19	25	114	162	384	160	322	268	25	32	55	59	66	102	83	53	51	
040°	0	66	26	14	19	39	75	84	147	258	356	206	76	76	43	59	71	96	54	51	51	
045°	0	62	24	14	19	55	81	84	121	206	136	89	93	648	1833	4196	2863	418	85	52	54	
050°	0	58	23	14	20	67	83	89	107	145	78	119	148	606	1225	4633	3433	144	109	115	116	
055°	0	56	22	14	25	69	84	93	105	101	58	110	163	216	169	422	147	116	84	92	93	
060°	0	54	22	14	20	60	85	99	68	69	614	35	71	154	128	148	164	188	85	92	107	
065°	0	53	22	14	19	35	85	68	45	41	272	38	88	118	128	154	205	225	89	96	112	
070°	0	53	28	44	19	25	60	40	43	29	31	36	89	118	124	159	206	232	114	112	119	
075°	0	53	43	62	19	25	32	39	36	28	31	37	73	104	111	197	211	181	183	252	285	
080°	0	53	46	67	19	25	265	56	29	28	31	45	91	103	231	488	1038	235	190	269	316	
085°	0	64	52	68	19	26	197	35	25	28	33	84	99	153	215	191	133	391	382	327	568	
090°	0	81	68	65	19	26	33	30	27	26	55	172	102	152	156	124	133	296	691	1493	1612	
095°	0	81	72	64	19	25	32	39	42	38	163	260	105	111	119	136	168	317	297	469	10110	
100°	0	81	77	64	19	25	32	38	43	48	60	205	158	103	113	145	170	181	211	222	5347	
105°	0	81	84	66	19	46	31	37	43	58	133	189	237	140	115	273	225	452	543	856	2084	
110°	0	81	95	70	32	77	31	41	58	78	148	176	223	166	108	235	410	570	1792	653	797	
115°	0	81	108	75	43	97	31	56	72	82	129	305	221	169	216	519	388	821	462	520	603	
120°	0	81	108	77	65	125	31	59	72	82	98	266	460	981	7051	1502	511	825	964	531	940	
125°	0	81	97	77	108	139	60	57	72	82	106	2429	7330	15176	25607	594	612	750	1000	13492	21411	
130°	0	81	117	77	108	138	59	58	94	169	708	8718	4340	11537	19775	1165	463	588	765	1541	3591	
135°	0	81	153	77	104	99	185	74	103	144	651	5512	13087	12950	4505	1682	399	677	847	557	521	
140°	0	81	208	77	100	33	41	69	98	304	341	4706	7991	15867	9381	15199	3627	2714	3127	671	537	
145°	0	81	243	136	99	33	41	74	167	168	221	2748	15352	12276	16092	29100	3826	12903	33683	23802	14314	
150°	0	81	243	237	83	33	45	97	1525	2440	9560	12262	21516	42610	21087	8761	6445	15897	60432	97914	96127	
155°	0	81	243	277	97	35	63	964	5790	3834	11555	14664	30630	68620	45427	27825	81390	42980	95158	84424	21032	
160°	0	81	243	283	99	34	65	4392	4962	2231	1929	11928	8819	66481	81790	171533	91007	24596	54485	43002	22	
165°	0	69	214	269	77	33	583	5774	155	1832	10201	21231	10085	59865	42509	48104	1868	1464	2753	16253	0	
170°	0	20	35	250	74	31	870	0	0	0	1835	10319	11625	17079	29398	19159	40594	42913	2956	1086	0	
175°	0	10	0	183	48	2	0	0	0	0	0	0	744	26740	15009	22926	25907	33663	28724	65062	8091	2468

Dir	1.0 km	2.5 km	5.0 km	7.5 km	10.0 km	12.5 km	15.0 km	17.5 km	20.0 km	22.5 km	25.0 km	27.5 km	30.0 km	32.5 km	35.0 km	37.5 km	40.0 km	42.5 km	45.0 km	47.5 km	50.0 km	
180°	0	6	0	22	0	0	0	0	0	0	0	0	3004	17495	1248	2859	4168	6242	7349	10877	529	2607
185°	0	4	0	0	0	0	0	0	0	0	0	1879	20265	22139	1192	368	819	1203	911	195	841	3978
190°	0	3	0	0	0	0	0	0	0	0	0	15593	6255	6808	105	1193	2282	6702	4850	614	351	
195°	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	124	799	971	26	0	0	
200°	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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205°	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
210°	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
215°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
220°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
225°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
230°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
235°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
240°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
245°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
250°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
255°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
260°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
265°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
270°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
275°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
280°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
285°	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
290°	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
295°	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
300°	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
305°	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
310°	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
315°	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
320°	0	9	0	0	0	0	10	2	0	0	0	0	0	0	0	0	0	0	0	0	
325°	0	19	0	0	5	5	4	12	8	0	0	0	0	0	1	8	91	624	36	1	
330°	0	48	5	3	8	8	10	12	14	8	5	6	11	16	23	31	35	37	31	23	23
335°	0	53	6	9	6	8	10	12	14	15	17	24	26	28	30	33	35	35	22	23	23
340°	0	52	8	11	6	8	10	12	14	15	18	24	26	28	30	32	34	24	21	23	24
345°	0	52	8	14	7	8	10	12	14	15	19	24	26	28	30	32	26	20	21	23	24
350°	0	52	8	13	9	8	10	12	14	15	20	24	25	28	2262	845	36	32	39	42	24
355°	0	53	9	10	6	8	10	12	14	15	19	24	25	28	1802	851	42	45	48	51	50

**TOTAL POPULATION WITHIN EACH 5 km DISTANCE BANDS
AROUND KOEBERG
(5 DEGREE RADIAL GRID)**

Dir	5 km	10 km	15 km	20 km	25 km	30 km	35 km	40 km	45 km	50 km
000°	63	15	18	678	149	49	61	71	87	104
005°	67	14	18	1207	1300	49	61	70	81	98
010°	71	13	18	1301	815	54	61	84	121	95
015°	76	14	5529	1567	113	69	78	123	118	100
020°	84	17	12335	5853	40	61	110	128	142	139


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025°	95	22	14853	4670	40	53	109	126	167	196
030°	102	31	8127	701	50	86	100	123	202	164
035°	99	33	139	546	482	293	87	125	185	104
040°	92	33	144	231	614	282	119	130	150	102
045°	86	33	136	205	342	182	2481	7059	503	106
050°	81	34	150	196	223	267	1831	8066	253	231
055°	78	39	153	198	159	273	385	569	200	185
060°	76	34	145	167	683	106	282	312	273	199
065°	75	33	120	113	313	126	246	359	314	208
070°	81	63	85	83	60	125	242	365	346	231
075°	96	81	57	75	59	110	215	408	364	537
080°	99	86	290	85	59	136	334	1526	425	585
085°	116	87	223	60	61	183	368	324	773	895
090°	149	84	59	57	83	274	308	257	987	3105
095°	153	83	57	81	201	365	230	304	614	10579
100°	158	83	57	81	108	363	216	315	392	5569
105°	165	85	77	80	191	426	255	498	995	2940
110°	176	102	108	99	226	399	274	645	2365	1450
115°	189	118	128	128	211	526	385	907	1283	1123
120°	189	142	156	131	180	726	8032	2013	1789	1471
125°	178	185	199	129	188	3162	40783	1206	1750	34903
130°	198	185	197	152	877	13058	31312	1628	1353	5132
135°	234	181	284	177	795	18599	17455	2081	1524	1078

Dir	5 km	10 km	15 km	20 km	25 km	30 km	35 km	40 km	45 km	50 km
140°	289	177	74	167	645	12697	25248	18826	5886	1208
145°	324	235	74	241	389	18100	28368	32926	46586	38116
150°	324	320	78	1622	12000	33778	63697	15206	76329	194041
155°	324	374	98	6754	15389	45294	114047	109215	138138	105456
160°	324	382	99	9354	4160	20747	148271	262540	79081	43024
165°	283	346	616	5929	12033	31316	102374	49972	4217	16253
170°	55	324	901	0	1835	21944	46477	59753	45869	1086
175°	10	231	2	0	0	27484	37935	59570	93786	10559
180°	6	22	0	0	0	20499	4107	10410	18226	3136


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185°	4	0	0	0	1879	42404	1560	2022	1106	4819
190°	3	0	0	0	0	21848	6913	3475	11552	965
195°	3	0	0	0	0	0	0	923	997	0
200°	2	0	0	0	0	0	0	0	0	0
205°	2	0	0	0	0	0	0	0	0	0
210°	2	0	0	0	0	0	0	0	0	0
215°	1	0	0	0	0	0	0	0	0	0
220°	1	0	0	0	0	0	0	0	0	0
225°	1	0	0	0	0	0	0	0	0	0
230°	1	0	0	0	0	0	0	0	0	0
235°	1	0	0	0	0	0	0	0	0	0
240°	1	0	0	0	0	0	0	0	0	0
245°	1	0	0	0	0	0	0	0	0	0
250°	1	0	0	0	0	0	0	0	0	0
255°	1	0	0	0	0	0	0	0	0	0
260°	1	0	0	0	0	0	0	0	0	0
265°	1	0	0	0	0	0	0	0	0	0
270°	1	0	0	0	0	0	0	0	0	0
275°	1	0	0	0	0	0	0	0	0	0
280°	1	0	0	0	0	0	0	0	0	0
285°	1	0	0	0	0	0	0	0	0	0
290°	2	0	0	0	0	0	0	0	0	0
295°	2	0	0	0	0	0	0	0	0	0

Dir	5 km	10 km	15 km	20 km	25 km	30 km	35 km	40 km	45 km	50 km
300°	2	0	0	0	0	0	0	0	0	0
305°	3	0	0	0	0	0	0	0	0	0
310°	4	0	0	0	0	0	0	0	0	0
315°	5	0	0	0	0	0	0	0	0	0
320°	9	0	0	12	0	0	0	0	0	0
325°	19	5	9	20	0	0	0	9	715	37
330°	53	9	18	26	13	17	39	66	68	46
335°	62	15	18	26	32	50	58	68	57	46
340°	60	17	18	26	33	50	58	66	45	47
345°	60	21	18	26	34	50	58	58	41	47

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350°	60	22	18	26	35	49	2290	881	71	66
355°	62	16	18	26	34	49	1630	893	93	101

POPULATION DISTRIBUTION RELATIVE TO KOEBERG POWER STATION (22.5 DEGREE RADIAL GRID)

Dir	DISTANCE (km)																				Total	
	1.0	2.5	5	7.5	10	12.5	15	17.5	20	22.5	25	27.5	30	32.5	35	37.5	40	42.5	45	47.5		50
N	0	251	41	42	30	37	45	239	2624	1958	148	106	117	130	4196	1529	174	185	214	215	206	12487
NNE	0	329	73	51	43	10184	31159	11224	1689	302	131	169	161	206	229	265	294	341	374	369	263	57856
NE	0	289	111	62	91	226	352	447	757	839	904	727	469	1562	3495	9460	6185	705	362	309	330	27684



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ENE	0	244	130	148	91	172	296	286	234	194	971	177	412	577	562	781	890	888	520	603	703	8879
E	0	329	282	297	87	115	541	182	146	150	317	695	486	579	793	973	1532	1352	1675	2417	16737	29685
ESE	0	370	440	325	187	380	143	218	274	332	547	1062	1330	3016	8034	2686	1743	2939	3997	7858	9846	45727
SE	0	370	726	377	470	406	364	303	434	783	2079	23811	38192	64823	70030	29740	7068	18897	36704	29787	23385	346729
SSE	0	347	1043	1165	397	151	1110	11536	12359	10832	35088	63924	77818	249658	200421	283361	178932	100112	222705	240849	121707	1813315
S	0	36	15	407	107	27	584	0	0	0	2510	50124	81130	38077	47445	45996	77854	78884	76722	11598	9711	519207
SSW	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	486	1587	2532	4096	0	0	8705
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	28	0	0	3	3	1	18	6	0	0	0	0	0	0	0	0	77	489	38	0	663
NNW	0	226	32	40	30	36	44	53	60	57	64	82	93	105	119	136	142	130	233	98	100	1880
Total	0	2819	2893	2914	1536	11739	34619	24506	18583	15447	42759	140877	200012	358733	335324	375413	276401	203042	348091	294141	182968	2872817

**TOTAL POPULATION WITHIN EACH 5 KM DISTANCE BAND
AROUND KOEBERG
(22.5 DEGREE RADIAL GRID)**

DIRECTION	SECTOR	0-5 km	5-10 km	10-15 km	15-20 km	20-25 km	25-30 km	30-35 km	35-40 km	40-45 km	45-50 km
N	1	292	72	82	2863	2106	223	4326	1703	399	421
NNE	2	402	94	41343	12913	433	330	435	559	715	632
NE	3	400	153	580	1204	1743	1196	5057	15645	1067	639
ENE	4	374	239	468	520	1165	589	1139	1671	1408	1306
E	5	611	384	656	328	467	1181	1372	2505	3027	19154
ESE	6	810	512	523	492	879	2392	11050	4429	6936	17704
SE	7	1096	847	770	737	2862	62003	134853	36808	53601	53152
SSE	8	1390	1567	1261	23895	45920	141542	450079	462293	322817	362556
S	9	51	514	591	0	2510	131254	85522	123850	153606	21309
SSW	10	0	0	0	0	0	4	0	2073	6682	0

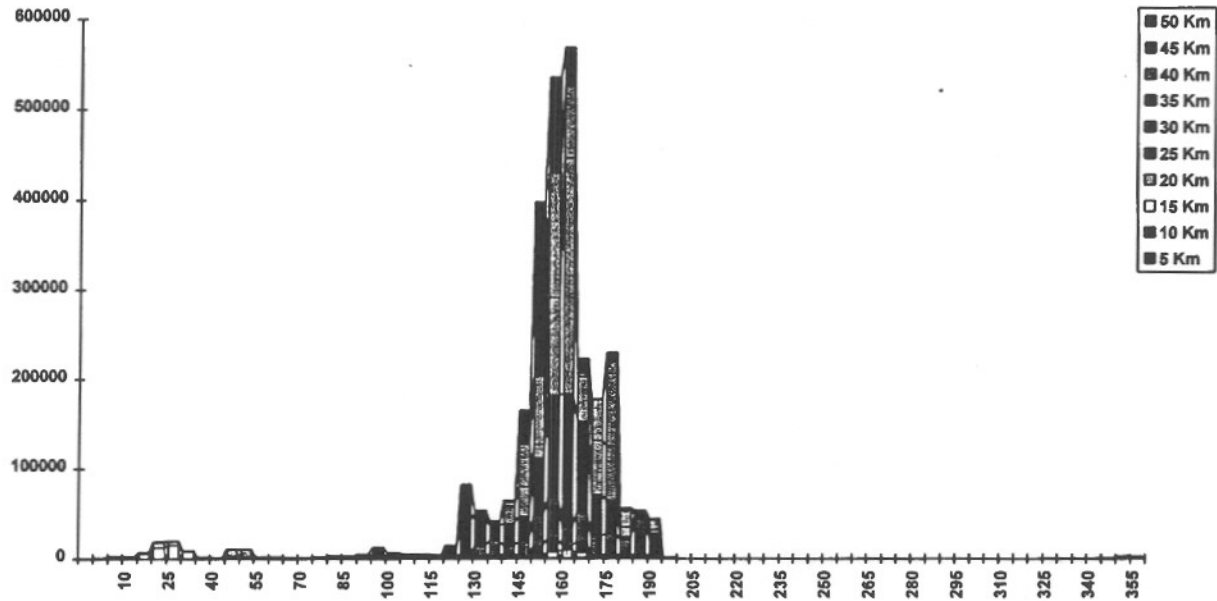

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SW	11	0	0	0	0	0	0	0	0	0	0
WSW	12	0	0	0	0	0	0	0	0	0	0
W	13	0	0	0	0	0	0	0	0	0	0
WNW	14	0	0	0	0	0	0	0	0	0	0
NW	15	28	3	4	24	0	0	0	0	566	38
NNW	16	258	70	80	113	121	175	224	278	363	198

**KOEBERG CUMULATIVE POPULATION DATA UP TO 50 KM
(22.5 DEGREE SECTORS)**

Dir	0-5 km	0-10 km	0-15 km	0-20 km	0-25 km	0-30 km	0-35 km	0-40 km	0-45 km	0-50 km
N	292	364	446	3309	5415	5638	9964	11667	12066	12487
NNE	402	496	41839	54752	55185	55515	55950	56509	57224	57856
NE	400	553	1133	2337	4080	5276	10333	25978	27045	27684
ENE	374	613	1081	1601	2766	3355	4494	6165	7573	8879
E	611	995	1651	1979	2446	3627	4999	7504	10531	29685
ESE	810	1322	1845	2337	3216	5608	16658	21087	28023	45727
SE	1096	1943	2713	3450	6312	68315	203168	239976	293577	346729
SSE	1390	2952	4213	28108	74028	215570	665649	1127942	1450759	1813315
S	51	565	1156	1156	3666	134920	220442	344292	497898	519207

Figure F-3-1
Total Population within each 5 km Distance Band around Koeberg
up to 50 km (5 degree radial grid)





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**Figure F-3-2
Total Population within each 5 km Distance Band around Koeberg
up to 50 km (22.5 degree radial grid)**

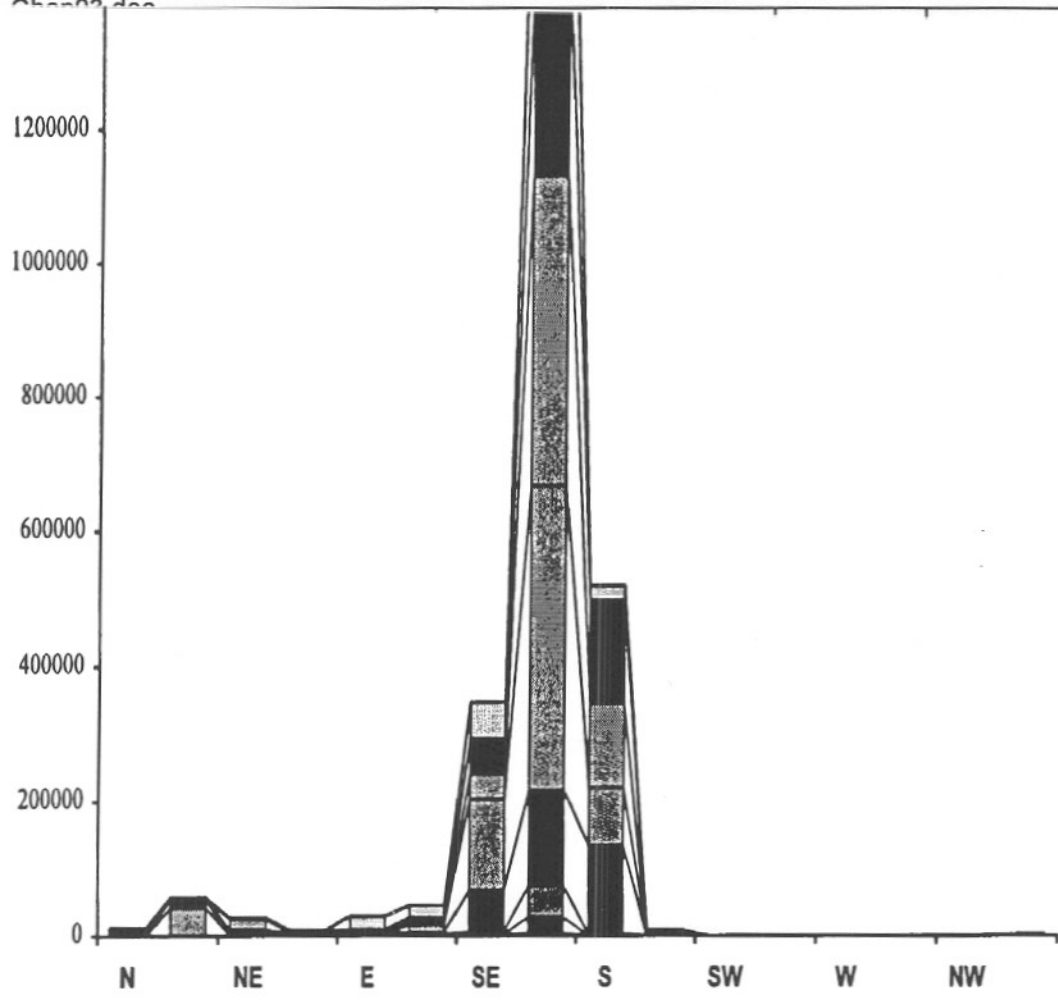


Figure F-3-3
Population Distribution in Radial grid up to 20 km Radius
(22.5 degree radial grid)



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