Enrico

Department of Energy
Washington, D.C. 20545

Docket No. 50-537
HQ:E:82:020

JUN 0 1 1982

Mr. Paul S. Check, Director
CRBR Program Office
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Check:

CRBRP, ECONOMIC AND SOCIAL EFFECTS OF PLANT CONSTRUCTION AND OPERATION

Enclosed please find a revised description of the economic and social effects of CRBRP construction and operation reflecting the latest plant cost information. This information will be included in Amendment XIV of the Environmental Report.

Sincerely,

John R. Longenecker

John R. Longenecker, Manager
Licensing & Environmental
Coordination
Office of Nuclear Energy

Enclosure

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8.0 ECONOMIC AND SOCIAL EFFECTS OF PLANT CONSTRUCTION AND OPERATION

The information presented in this section and Appendix C represents the results of socioeconomic studies by the Project that span a number of years. The Project's initial assessment of socioeconomic impacts of the CRBRP Project was refined and revised for Amendment V of this document. The present amendment updates the Amendment V assessments and complements the analysis with results from a series of comparative case studies.

This section contains a summary of qualitative and quantitative assessments of demographic and socioeconomic effects of the project at the peak of plant construction in 1987 on a study area comprised of portions of Anderson, Knox, Loudon, and Roane Counties. Appendix C extends this assessment to include effects during plant operation and compares these construction and operation effects with those resulting under a higher work force influx assumption. Results reported here follow from an assumption of normal levels of competition for area labor (26 percent inmover rate), while those reported in the appendix also include those based upon higher levels of competition (40 percent inmover rate).

8.1 ECONOMIC AND SOCIAL CONDITIONS OF SITE AREA

Relevant social aspects of existing geographic, demographic, and economic conditions of the area surrounding the CRBRP Site are described in the following subsections. Where feasible, past trends and future projections are discussed to provide a background for the evaluation of the effects of plant construction and operation. Major emphasis is placed on the study area where most of the impact is anticipated. It should be recognized however, that this project is of national importance and therefore has additional broader effects.

8.2.2.1 DIRECT EMPLOYMENT AND INCOME

One of the main secondary benefits from any project the size of the CRBRP Project is the effect it will have in terms of economic expansion. More specifically, how many new jobs it will create and, consequently, how much it will add to local income. (The estimated number of persons required for the construction and operation phases of the CRBRP Project are presented in Table 8.2-1.)

Estimated income, based on 1981 dollar values, is shown in Table 8.2-2. The total income which can be expected to be generated by the construction force alone is $352,100,000 with an additional $51,200,000 and $92,700,000 for the operations and project office (including contractor support) groups, respectively, through 1997. The single largest amount of annual income, $119,200,000, will occur during the peak year of construction activity. The combined total income for all groups over the 14-year period amounts to $496,000,000.

Considering the long-term benefits, the salaries of the operational force can be extended over the 30-year life of the plant. For example, in addition to the initial 14-year period outlined in Table 8.2-2, the permanent employees can expect to receive another $117,300,000 between 1997 and 2020. This results in a total of $613,300,000 received from wages and salaries during construction and operation of the plant. The above figures are useful in comparing relative contributions of individual segments of the work force.

8.2.2.2 INDUCED EMPLOYMENT AND INCOME

There are a variety of effects that cannot be directly attributed to the increased employment or income created by a new nuclear facility. This is evidenced by the many recent attempts to measure indirect or "induced" impact with the aid of economic and employment multipliers.

TABLE 8.2-1

NEW EMPLOYMENT: SCHEDULE OF DIRECT EMPLOYMENT FOR THE CRBRP PROJECT BY TYPE OF EMPLOYEE*

Type of Employee	Construction Phase (year after start)**							Operation Phase (year after start up)++						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Manuals	86	693	2,551	3,835	2,924	883	55	0	0	0	0	0	0	0
Non-Manuals	211	388	546	685	655	398	81	0	0	0	0	0	0	0
Subcontractors	304	210	190	163	244	178	23	0	0	0	0	0	0	0
CRBRP Project Office	267+	274	256	240	240	223	201	141	109	81	54	44	25	0
Contractor Support Personnel	189	190	188	181	172	169	148	87	0	0	0	0	0	0
Operations Personnel	0	6	13	71	140	222	282	255	247	246	246	246	246	246
All types of Employees	971	1,761	3,744	5,175	4,375	2,073	790	483	356	327	300	290	271	246

*Reported numbers are yearly averages.
**Site preparation assumed to commence in 1983.
+237 project office staff and 142 contractor support personnel were already living in the project area as of February 1981.
++Plant operation expected to begin in 1990.

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TABLE 8.2-2

INCOME: SCHEDULE OF DIRECT EMPLOYMENT INCOME FOR THE CONSTRUCTION AND OPERATION PHASES OF THE CRBRP PROJECT BY TYPE OF EMPLOYEE

(Million Dollars)*

	Construction Phase (year after start)**								Operation Phase (year after start up)						
	1	2	3	4	5	6	7	Construction Phase Income	1	2	3	4	5	6	7
Manuals+	1.9	15.3	56.4	84.9	64.7	19.6	1.2	244.0	0	0	0	0	0	0	0
Non Manuals+	5.5	10.2	14.3	18.0	17.2	10.4	2.1	77.7	0	0	0	0	0	0	0
Subcontractors+	7.0	4.9	4.4	3.8	5.7	4.1	.5	30.4	0	0	0	0	0	0	0
CRBRP Project Office++	6.5	6.7	6.3	5.9	5.9	5.4	5.9	42.6	3.5	2.7	2.0	1.3	1.1	.6	0
Contractor Support Personnel++	5.3	5.3	6.3	5.1	4.9	4.8	4.5	36.2	2.7	0	0	0	0	0	0
Operations Personnel++	0	.1	.3	1.5	2.9	4.6	5.9	15.3	5.3	5.1	5.1	5.1	5.1	5.1	5.1
All Types of Employment	26.2	42.5	88.0	119.2	101.3	48.9	20.1	446.2	11.5	7.8	7.1	6.4	6.2	5.7	5.1

*Rounded to nearest $100,000, based on constant 1981 income numbers.

**Site preparation assumed to commence in 1983, assumed plant start up in 1990.

+Letter, Dunham, J. P., Superintendent of Construction, Stone & Webster Engineering Corporation to Chidlaw, R. A., Assistant Director for Construction, Clinch River Breeder Reactor Plant Project Office, June 1981.

++Letter, Copeland, Raymond L., Acting Assistant Director for Public Safety, Clinch River Breeder Reactor Plant Project Office to DeVeny, George, TVA, April 24, 1981. The yearly income will remain constant at about 5.1 million throughout the remaining 30-year life of the plant from the seventh year after start up.

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8.3 ANTICIPATED ECONOMIC AND SOCIAL COSTS

If the Clinch River Breeder Reactor Plant is to be an asset to the area and the nation as a whole, the benefits derived from the construction and operation must ultimately exceed the costs. These costs include not only the capital investment for equipment, material and labor, but also the inherent social costs related to any new industrial development of this type. There has been increasing realization, for example, that industrial growth can bring rising social-economic costs in terms of overcrowded housing, schools and highways, as well as noise, air and water pollution. Although these variables are much more difficult to measure than dollar values assigned to the economics of construction and operation, they must be considered in any complete impact evaluation.

8.3.1 INTERNAL COSTS

The CRBRP will be an asset to the nation. Even though the direct benefits derived from the CRBRP may not, by themselves, be of such value in the short run as to offset the cost of construction and operation, the development of a viable breeder industry will justify the overall costs and make the development of a new industry possible with great benefits for the future.

Internal cost figures for the CRBRP will ultimately reflect the cost of solving the problems of achieving reliable electrical generation with LMFBR technology along with the environmental considerations of assuring clean and safe power generation.[1]

Project cost estimates are presented in Table 8.3-1 which shows a plant investment of $2,503,200,000. In addition, the $818,100,000 for development costs and the positive net balance of operating revenue and operating costs of $124,800,000 bring the total program costs to $3,196,500,000.

8.3.2 EXTERNAL COSTS

External costs are of two basic kinds. Those resulting from the activities which occur during the temporary construction phase of the project are typically costs of short-term duration, while those associated with the more or less permanent operations phase are usually costs of long-term duration. These two kinds of external costs are assessed in the following subsections. A more detailed assessment is reported in Appendix C to this document.

8.3.2.1 COSTS OF SHORT-TERM DURATION

Direct and indirect employment associated with the CRBRP Project will result in approximately 5,500 employees to fill the positions that are scheduled and estimated for the peak of construction activity in 1987. The employment of many of these employees will have impacts upon the economic and social systems existing within the area.

Impacts of primary concern are those associated with the movement of employees into the area. These impacts include changes to the current relationship between the supply and demand for facilities and services provided by private enterprise and local government such as housing and schools. These and other kinds of effects of the CRBRP Project upon the existing social-economic conditions within the area are discussed in subsequent subsections.

Not all workers associated with the CRBRP Project will relocate to a new residence within the area. It is estimated that approximately 25 percent of the peak work force requirements for manuals, non-manuals, and subcontractors, and 50 percent for project office, contractor support, and operations personnel (over and above the number of workers already in the area as of February 1981) will be filled by workers who relocate from outside the area to a new residence within the area. This estimate

While the school enrollments resulting from the CRBRP Project contribute to the crowding in some systems and grades, these new students alone do not create unfavorable conditions. A more reflective analysis is reported in Appendix C.

8.3.2.1.3 TRANSPORTATION IMPACTS

Table 8.3-6 shows the projected increases in traffic volume generated by the day shift on the principal highway segments in the area (see Figure 8.3-1). These volumes are based on the peak construction employment. Since an estimated 80 percent of the construction work force will work day shift, the day shift commuters are anticipated to contribute the major CRBRP related traffic loads to the surrounding highway network.

The following assumptions were used as a basis to evaluate the traffic situation:

1. No sponsored van and bus program.
2. Commuter vehicle occupancy = 2.0.
3. No truck deliveries to construction site during day shift commuting hours.
4. The CRBRP construction work shift hours will be staggered such that the CRBRP commuter traffic will not coincide with the existing (non-CRBRP related) peak hour traffic on the significantly impacted highway segments.
5. Prior to significant construction employment buildup, the following intersections will be upgraded to sufficiently accommodate the projected traffic:
   a. State Route 95 and State Route 58.
   b. State Route 58 and Bear Creek Road (CRBRP Access Road).
   c. State Route 95 and Bear Creek Road (CRBRP Access Road).
6. Annual increase in non-CRBRP related traffic volumes = 2 percent.
7. Peak year of construction = 1987.

TABLE 8.3-1

CERP TOTAL PLANT COST ESTIMATE - BASE COST
In Millions of 1974 Dollars
Escalated at 8% Compounded

	74	75	76	TQ	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	TOTAL
PLANT INVESTMENT																								
CES																								
ME EQUIPMENT	.1	3.3	11.6	4.5	41.8	30.7	22.1	19.5	29.1	48.2	60.8	46.4	23.9	8.3										348.3
NE EQUIPMENT									1.4	3.5	14.3	8.6	1.6	.2	.4									30.0
CONSTRUCTION			.3	.6	1.6	1.2	1.5	2.1	2.6	4.0	17.1	32.1	45.9	64.2	59.4	32.7	10.1	1.6	(2.8)					274.2
ME ENGINEERING	4.9	6.4	8.0	2.2	9.6	8.6	13.7	9.0	9.8	10.0	5.5	4.7	5.1	4.4	4.0	3.0	3.0	3.6						115.5
NE ENGINEERING	4.3	7.7	10.8	3.6	13.0	11.9	12.3	11.9	10.3	6.4	2.1	1.9	2.3	2.6	2.7	2.2	1.0	.7						107.7
ESCALATION		1.4	5.1	1.9	18.7	20.1	24.7	26.2	39.6	63.9	103.2	112.1	105.6	124.4	117.6	75.3	31.5	14.5	(7.9)					877.9
SUBTOTAL	9.3	18.8	35.8	12.8	84.7	72.5	74.3	68.7	92.8	136.0	203.0	205.8	182.4	204.1	184.1	113.2	45.6	20.4	(10.7)					1,753.6
NF																								
EQUIPMENT			.6		2.0	2.2	.2	1.2	1.5	3.8	15.5	9.3	1.7	.2	.4									38.6
CONSTRUCTION			.1	.2	.8	.5	1.1	.9	1.3	2.0	8.4	15.8	22.6	31.6	29.2	16.1	5.0	.8	(1.4)					135.0
NE ENGINEERING	2.8	2.4	1.1	.4	3.0	2.6	3.7	2.6	2.2	1.4	.4	.4	.5	.5	.6	.5	.2	.1						25.4
ESCALATION		.2	.3	.1	1.6	2.1	2.5	2.8	3.7	6.4	25.3	30.6	34.1	50.7	53.6	33.0	11.6	2.4	(3.9)					257.1
SUBTOTAL	2.8	2.6	2.1	.7	7.4	7.4	7.5	7.5	8.7	13.6	49.6	56.1	58.9	83.0	83.8	49.6	16.8	3.3	(5.3)					456.1
PLANT COST TOTAL	12.1	21.4	37.9	13.5	92.1	79.9	81.8	76.2	101.5	149.6	252.6	261.9	241.3	287.1	267.9	162.8	62.4	23.7	(16.0)					2,209.7
FUEL AND (INITIAL)			.1	.1	.2	.1				.3	1.0	1.4	2.1	13.2	12.7	3.3	3.1							37.6
ESCALATION					.1					.3	1.0	1.6	3.1	20.8	22.7	6.7	6.8							63.1
SPECIAL NUCLEAR MATERIAL													1.0	5.7	3.3									10.0
PLANT INVESTMENT TOTAL	12.1	21.4	38.0	13.6	92.4	80.0	81.8	76.2	101.5	150.2	254.6	264.9	247.5	326.8	306.6	172.8	72.3	23.7	(16.0)					2,320.4
DEVELOPMENT																								
ME ENGINEERING	13.0	26.5	32.1	8.8	37.3	29.9	28.4	32.6	24.6	19.1	10.7	4.8	2.1	.5	.1	.1								270.6
RESEARCH & DEVELOPMENT	.4	15.1	20.5	7.7	29.5	28.6	30.7	33.4	22.4	3.7	1.5	.5												194.0
PROJECT OFFICE	4.4	3.5	5.1	1.5	4.9	3.6	3.2	4.0	4.2	5.4	5.2	5.0	4.5	4.9	4.3	4.1	2.9							70.7
ESCALATION		3.6	9.6	3.3	20.3	24.1	31.0	43.2	37.5	24.8	17.9	12.5	9.3	8.8	8.1	8.5	6.6							269.1
DEVELOPMENT TOTAL	17.8	48.7	67.3	21.3	92.0	86.2	93.3	113.2	88.7	53.0	35.3	22.8	15.9	14.2	12.5	12.7	9.5							804.4
OPERATING																								
PROJECT OFFICE																		2.0	1.4	1.0	.8	.6	.4	6.3
OPER. & MAINTENANCE										.1			1.1	3.4	4.2	4.8	5.9	9.7	11.8	11.4	11.3	11.1		86.1
FUEL AND (REFUND)													.3	.5	5.9	6.7	12.4	12.8	8.0	4.9	2.4			53.9
ESCALATION											.1		2.1	6.4	18.1	23.0	40.8	61.1	50.6	53.2	49.3	45.0	47.5	405.2
SUBTOTAL										.1	.1		3.5	10.3	28.2	34.5	59.1	85.6	79.8	70.5	63.8	57.0	59.9	551.1
REVENUE																		(5.7)	(10.5)	(23.0)	(31.4)	(36.2)	(36.1)	(151.1)
ESCALATION																		(14.2)	(51.1)	(70.5)	(106.7)	(135.9)	(149.7)	(528.1)
OPERATING TOTAL										.1	.1		3.5	10.3	28.2	34.5	59.1	65.7	18.2	(23.0)	(74.3)	(115.1)	(127.0)	(127.7)
INFLATION TOTAL		5.2	15.0	5.3	40.7	46.3	58.2	72.2	80.8	95.4	147.5	156.8	154.3	211.1	220.1	146.5	97.3	63.8	(4.3)	(17.3)	(57.4)	(90.9)	(102.2)	348.3
PROJECT TOTAL	29.9	70.1	105.3	34.9	184.4	166.2	175.1	189.4	190.2	203.3	290.0	287.7	266.9	351.3	347.3	220.0	140.9	89.4	(5.8)	(23.0)	(74.3)	(115.1)	(127.0)	997.1
INFLATION FACTORS	1.000	1.080	1.166	1.188	1.283	1.386	1.497	1.616	1.746	1.885	2.036	2.199	2.375	2.565	2.770	2.992	3.231	3.489	3.769	4.070	4.396	4.748	5.121	

(Amend. XIV May 1982)

TABLE 8.3-1 (Continued)

CHOOZ TOTAL PLANT COST ESTIMATE - CURRENCY ALLOWANCE
In Millions of 1974 Dollars
Escalated at 8% Compounded

	74	75	76	TQT	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	TOTAL
PLANT INVESTMENT																								
COST																								
PR EQUIPMENT										1.4	2.1	1.4	.5	.2										5.6
NI EQUIPMENT										.2	.3	.2	.1											.8
CONSTRUCTION											2.0	5.1	6.0	8.0	7.5	3.7	1.0	.1						33.4
PR ENGINEERING									.6	2.1	1.2	.9	.5	.3	.3	.2	.2	.1						6.4
NI ENGINEERING									.9	1.1	.6	.5	.3	.1	.1	.1	.1							3.8
ESCALATION									1.1	4.3	6.4	9.6	10.2	13.5	14.0	8.0	2.6	1.0						70.7
SUBTOTAL									2.6	9.1	12.6	17.7	17.6	22.1	21.9	12.0	3.9	1.2						120.7
FOP																								
EQUIPMENT										.2	.3	.2	.1											.8
CONSTRUCTION											1.0	2.5	2.9	3.9	3.7	1.8	.5	.1						16.4
NI ENGINEERING									.3	.2	.1	.1												.7
ESCALATION									.2	.4	1.6	3.4	4.3	6.4	6.7	3.6	1.0	.2						27.8
SUBTOTAL									.5	.8	3.0	6.2	7.3	10.3	10.4	5.4	1.5	.3						45.7
PLANT COST TOTAL									3.1	9.9	15.6	23.9	24.9	32.4	32.3	17.4	5.4	1.5						166.4
NUCL FUEL (INITIAL)											.1	.2	.3	1.9	1.9	1.1	.4							5.9
ESCALATION											.1	.1	.5	3.1	3.5	2.3	.9							10.5
SPECIAL NUCLEAR MATERIAL																								
PLANT INVESTMENT TOTAL									3.1	9.9	15.8	24.2	25.7	37.4	37.7	20.8	6.7	1.5						182.8
DEVELOPMENT																								
Nuclear Engineering									2.9	1.0	.4	.2	.1											4.6
RESEARCH & DEVELOPMENT									.1	.1	.1													.3
PROJECT OFFICE									.6	.2	.2	.2	.2	.2	.1	.2	.1							2.0
ESCALATION									2.6	1.1	.8	.5	.4	.4	.3	.4	.3							6.8
DEVELOPMENT TOTAL									6.2	2.4	1.5	.9	.7	.6	.4	.6	.4							13.7
OPERATING																								
PROJECT OFFICE																		.1	.1	.1				.3
OPER. & MAINTENANCE																		.3	.1					.4
NUCL FUEL (RELOAD)																		1.0	.6	.1	.2	.2	.1	2.2
ESCALATION																		1.4	.8	.2	.2	.2	.1	2.9
SUBTOTAL																								
REVENUE																								
ESCALATION																								
OPERATING TOTAL																		1.4	.8	.2	.2	.2	.1	2.9
ESCALATION TOTAL									3.9	5.0	8.9	13.6	15.4	23.4	24.5	14.3	4.8	2.2	.6	.1	.2	.2	.1	118.0
PROJECT TOTAL,									9.3	17.3	17.3	25.1	26.4	38.0	38.1	21.4	7.1	2.9	.8	.2	.2	.2	.1	179.4
ESCALATION FACTORS	1.000	1.000	1.116	1.180	1.283	1.386	1.497	1.616	1.746	1.885	2.036	2.119	2.375	2.565	2.770	2.992	3.231	3.489	3.769	4.070	4.396	4.748	5.128	

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TABLE 8.3-1 (Continued)

CLINCH TOTAL PLANT COST ESTIMATE - BASE COST PLUS CONTINGENCY
In Millions of 1974 Dollars
Escalated at 8% Compounded

	74	75	76	76T	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	TOTAL
PLANT INVESTMENT																								
BASE																								353.9
PH EQUIPMENT	.1	3.3	11.6	4.5	41.8	30.7	22.1	19.5	29.1	49.6	62.9	47.8	22.4	8.5										30.8
NE EQUIPMENT									1.4	3.7	14.6	8.8	1.7	.2	.4									307.6
CONSTRUCTION			.3	.6	1.6	1.2	1.5	2.1	2.6	4.0	19.1	37.2	51.9	72.2	66.9	36.4	11.1	1.7	(2.8)					121.9
PH ENGINEERING	4.9	6.4	8.0	2.2	9.6	8.6	13.7	9.0	10.4	12.1	6.7	5.6	5.6	4.7	4.3	3.2	3.2	3.7						111.5
NE ENGINEERING	4.3	7.7	10.8	3.6	13.0	11.9	12.3	11.9	11.2	7.5	2.7	2.4	2.6	2.7	2.8	2.3	1.1	.7						948.6
ESCALATION		1.4	5.1	1.9	10.7	20.1	24.7	26.2	40.7	68.2	109.6	121.7	115.8	137.9	131.6	83.3	34.1	15.5	(7.9)					1,874.3
SUBTOTAL	9.3	18.8	35.8	12.8	84.7	72.5	74.3	68.7	95.4	145.1	215.6	223.5	200.0	226.2	206.0	125.2	49.5	21.6	(10.7)					
DOE																								
EQUIPMENT			.6		2.0	2.2	.2	1.2	1.5	4.0	15.8	9.5	1.8	.2	.4									39.4
CONSTRUCTION			.1	.2	.8	.5	1.1	.9	1.3	2.0	9.4	18.3	25.5	35.5	32.9	17.9	5.5	.9	(1.4)					151.4
NE ENGINEERING	2.8	2.4	1.1	.4	3.0	2.6	3.7	2.6	2.5	1.6	.5	.5	.5	.5	.6	.5	.2	.1						26.1
ESCALATION		.2	.3	.1	1.6	2.1	2.5	2.8	3.9	6.8	26.9	34.0	30.4	57.1	60.3	36.6	12.6	2.6	(3.9)					284.9
SUBTOTAL	2.8	2.6	2.1	.7	7.4	7.4	7.5	7.5	9.2	14.4	52.6	62.3	66.2	93.3	94.2	55.0	18.3	3.6	(5.3)					501.8
PLANT COST TOTAL	12.1	21.4	37.9	13.5	92.1	79.9	81.8	76.2	104.6	159.5	268.2	285.8	266.2	319.5	300.2	180.2	67.8	25.2	(16.0)					2,376.1
FUEL FAB (INITIAL)			.1	.1	.2	.1				.3	1.1	1.6	2.4	15.1	14.6	4.4	3.5							43.5
ESCALATION					.1					.3	1.1	1.7	3.6	23.9	26.2	9.0	7.7							73.6
SPECIAL NUCLEAR MATERIAL													1.0	5.7	3.3									10.0
PLANT INVESTMENT TOTAL	12.1	21.4	38.0	13.6	92.4	80.0	81.8	76.2	104.6	160.1	270.4	289.1	273.2	364.2	344.3	193.6	79.0	25.2	(16.0)					2,503.2
DEVELOPMENT																								
PH ENGINEERING	13.0	26.5	32.1	8.8	37.3	29.9	28.4	32.6	27.5	20.1	11.1	5.0	2.2	.5	.1	.1								275.2
RESEARCH & DEVELOPMENT	.4	15.1	20.5	7.7	29.5	20.6	30.7	33.4	22.5	3.8	1.6	.5												194.3
PROJECT OFFICE	4.4	3.5	5.1	1.5	4.9	3.6	3.2	4.0	4.8	5.6	5.4	5.2	4.7	5.1	4.4	4.3	3.0							72.7
ESCALATION		3.6	9.6	3.3	20.3	24.1	31.0	43.2	40.1	25.9	18.7	13.0	9.7	9.2	8.4	8.9	6.9							275.9
DEVELOPMENT TOTAL	17.8	48.7	67.3	21.3	92.0	86.2	93.3	113.2	94.9	55.4	36.8	23.7	16.6	14.8	12.9	13.3	9.9							818.1
OPERATING																								
PROJECT OFFICE																		2.1	1.5	1.1	.8	.7	.4	6.6
OPER. & MAINTENANCE										.1			1.1	3.4	4.2	4.8	5.9	9.7	11.8	11.4	11.3	11.3	11.1	86.1
FUEL FAB (REIOAD)													.3	.5	5.9	6.7	12.4	13.1	8.1	4.9	2.4			54.3
ESCALATION											.1		2.1	6.4	18.1	23.0	40.8	62.1	59.2	53.3	49.5	45.2	47.6	407.4
SUBTOTAL										.1	.1		3.5	10.3	28.2	34.5	59.1	87.0	80.6	70.7	64.0	57.2	59.1	554.4
REVENUE																		(5.7)	(10.5)	(23.0)	(31.4)	(36.2)	(36.3)	(151.1)
ESCALATION																		(14.2)	(51.1)	(70.5)	(106.7)	(135.9)	(149.7)	(528.1)
OPERATING TOTAL										.1	.1		3.5	10.3	28.2	34.5	59.1	67.1	11.0	(22.8)	(74.1)	(114.9)	(126.9)	(124.6)
ESCALATION TOTAL		5.2	15.0	5.3	40.7	46.3	58.2	72.2	84.7	101.2	156.4	170.4	169.6	234.5	244.6	160.8	102.1	66.0	(3.7)	(17.2)	(57.2)	(90.7)	(102.1)	1,462.3
PROJECT TOTAL	29.9	70.1	105.3	34.9	184.4	166.2	175.1	189.4	199.5	215.6	307.3	312.8	279.3	309.3	305.4	241.4	140.0	92.3	(5.0)	(22.8)	(74.1)	(114.9)	(126.9)	3,196.5
ESCALATION FACTORS	1.000	1.080	1.166	1.188	1.283	1.386	1.497	1.616	1.746	1.885	2.036	2.199	2.375	2.565	2.770	2.992	3.231	3.489	3.769	4.070	4.396	4.748	5.128	

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TABLE 1-1

AREA POPULATION RESULTING FROM CRBRP DIRECT EMPLOYMENT FOR MIGRATION CONDITION A

Place	Construction Phase (Year After Start)+							Typical Year Of++ Plant Operation
	1	2	3	4	5	6	7	1
Anderson County*	30	50	130	160	160	80	30	20
Oak Ridge	80	150	390	480	470	230	80	50
Knox County	230	440	1180	1450	1400	700	230	140
Loudon County	50	100	260	320	310	160	50	30
Roane County	130	240	660	800	780	390	130	80
Four County Area	520	980	2620	3210	3120	1560	520	320

+Site preparation projected to begin in 1983.

++Plant operation projected to begin in 1990. Area population resulting from CRBRP direct employment for migration Condition A is the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

TABLE 1-2

AREA POPULATION RESULTING FROM CRBRP DIRECT EMPLOYMENT FOR MIGRATION CONDITION B

Place	Construction Phase (Year After Start)[+]							Typical Year Of[++] Plant Operation
	1	2	3	4	5	6	7	1
Anderson County*	40	80	210	250	240	120	30	20
Oak Ridge	120	230	620	760	730	350	90	50
Knox County	350	680	1850	2270	2180	1040	270	140
Loudon County	80	150	410	500	480	230	60	30
Roane County	190	380	1030	1260	1210	580	150	80
Four County Area	780	1520	4120	5040	4840	2320	600	320

[+]Site preparation projected to begin in 1983.

[++]Plant operation projected to begin in 1990. Area population resulting from CRBRP direct employment for migration Condition B is the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

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TABLE 2.1-1

CRBRP PROJECT RELATED CUMULATIVE REQUIREMENTS FOR

CONVENTIONAL HOUSES FOR MIGRATION CONDITION A

Place	Construction Phase (year after start)*							Typical Year of Plant Operation**
	1	2	3	4	5	6	7	1
Anderson County*	4	7	18	24	22	10	3	4
Oak Ridge	18	34	91	112	109	55	18	9
Knox County	46	89	238	294	283	143	50	26
Loudon County	11	21	54	65	63	31	10	6
Roane County	20	36	96	118	114	57	18	15
Four County Area	99	187	497	613	591	296	99	60

*Site preparation projected to begin in 1983.

**Plant operation projected to begin in 1990. CRBRP project-related requirements for conventional houses for migration condition A are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

TABLE 2.1-2

CRBRP PROJECT RELATED CUMULATIVE REQUIREMENTS FOR

MOBILE HOME SITES FOR MIGRATION CONDITION A

Place	Construction Phase (year after start)+							Typical Year of Plant Operation++
	1	2	3	4	5	6	7	1
Anderson County*	4	8	23	27	27	14	4	2
Oak Ridge	0	0	0	0	0	0	0	0
Knox County	20	40	103	127	122	61	20	12
Loudon County	8	15	42	51	50	24	8	5
Roane County	26	47	126	157	150	76	26	17
Four County Area	58	110	294	362	349	175	58	36

+Site preparation projected to begin in 1983.

++Plant operation projected to begin in 1990. CRBRP project-related requirements for mobile home sites for migration condition A are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

TABLE 2.1-3

CRBRP PROJECT RELATED CUMULATIVE REQUIREMENTS FOR

APARTMENTS AND ROOMS FOR MIGRATION CONDITION A

Place	Construction Phase (year after start)[+]							Typical Year of Plant Operation[++]
	1	2	3	4	5	6	7	1
Anderson County*	2	4	11	14	12	6	3	2
Oak Ridge	13	24	64	78	76	39	13	8
Knox County	24	46	119	149	144	73	21	13
Loudon County	2	3	8	9	9	5	3	2
Roane County	7	13	36	45	43	20	7	4
Four County Area	48	90	238	295	284	143	47	29

[+]Site preparation projected to begin in 1983.

[++]Plant operation projected to begin in 1990. CRBRP project-related requirements for apartments and rooms for migration condition A are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

Amend. XIV
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TABLE 2.1-4

CRBRP PROJECT RELATED CUMULATIVE REQUIREMENTS FOR ALL

HOUSING TYPES FOR MIGRATION CONDITION A

	Construction Phase (year after start)*							Typical Year of Plant Operation**
Place	1	2	3	4	5	6	7	1
Anderson County*	10	20	52	65	61	30	10	6
Oak Ridge	31	58	155	190	185	93	31	19
Knox County	90	173	460	570	549	277	90	55
Loudon County	21	39	104	125	122	60	21	13
Roane County	53	97	258	320	307	154	51	31
Four County Area	205	387	1,029	1,270	1,224	614	203	125

*Site preparation projected to begin in 1983.

**Plant operation projected to begin in 1990. CRBRP project-related requirements for all housing types for migration condition A are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

TABLE 2.1-5

CRBRP PROJECT RELATED CUMULATIVE REQUIREMENTS FOR

CONVENTIONAL HOUSES FOR MIGRATION CONDITION B

	Construction Phase (year after start)[+]							Typical Year of[++] Plant Operation
Place	1	2	3	4	5	6	7	1
Anderson County*	6	11	29	36	34	16	4	4
Oak Ridge	27	52	145	176	169	81	21	9
Knox County	71	137	375	463	440	209	56	26
Loudon County	15	31	84	102	98	46	12	6
Roane County	28	54	149	182	178	85	22	15
Four County Area	147	285	782	959	919	437	115	60

[+]Site preparation projected to begin in 1983.

[++]Plant operation projected to begin in 1990, CRBRP project-related requirements for conventional houses for migration condition B are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

TABLE 2.1-6

CRBRP PROJECT RELATED CUMULATIVE REQUIREMENTS FOR

MOBILE HOME SITES FOR MIGRATION CONDITION B

Place	Construction Phase (year after start)[+]							Typical Year of Plant Operation[++]
	1	2	3	4	5	6	7	1
Anderson County*	7	14	37	44	43	20	5	2
Oak Ridge	0	0	0	0	0	0	0	0
Knox County	31	59	162	199	190	90	22	12
Loudon County	12	24	65	81	77	37	8	5
Roane County	37	72	198	243	233	111	2	17
Four County Area	87	169	462	567	543	258	61	36

[+]Site preparation projected to begin in 1983.

[++]Plant operation projected to begin in 1990. CRBRP project-related requirements for mobile home sites for migration condition B are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

TABLE 2.1-7

CRBRP PROJECT RELATED CUMULATIVE REQUIREMENTS FOR

APARTMENTS AND ROOMS FOR MIGRATION CONDITION B

Place	Construction Phase (year after start)[+]							Typical Year of[++] Plant Operation
	1	2	3	4	5	6	7	1
Anderson County*	3	6	16	19	18	9	2	2
Oak Ridge	19	36	101	123	119	56	15	8
Knox County	35	69	190	234	224	107	27	13
Loudon County	3	5	13	16	15	8	2	2
Roane County	11	22	58	72	69	32	10	4
Four County Area	71	138	378	464	445	212	56	29

[+]Site preparation projected to begin in 1983.

[++]Plant operation projected to begin in 1990. CRBRP project-related requirements for apartments and rooms for migration condition B are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

TABLE 2.1-8

CRBRP PROJECT RELATED CUMULATIVE REQUIREMENTS FOR

ALL HOUSING TYPES FOR MIGRATION CONDITION B

	Construction Phase (year after start)[+]							Typical Year of Plant Operation[++]
Place	1	2	3	4	5	6	7	1
Anderson County*	15	31	81	99	95	45	11	6
Oak Ridge	46	89	245	299	288	137	36	19
Knox County	136	265	727	896	854	407	107	55
Loudon County	31	59	162	199	191	91	23	13
Roane County	77	148	407	497	479	227	61	31
Four County Area	305	592	1,622	1,990	1,907	907	238	125

[+] Site preparation projected to begin in 1983.

[++] Plant operation projected to begin in 1990. CRBRP project-related requirements for all housing types for migration condition B are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

of 90 students, less than 1 percent of the school system capacity. During the peak year of plant construction, only the Knox County School System is expected to have enrollments exceeding capacities by a noticeable level, and even in this case it would be only about 4 percent (550 students).

Table 2.2-8 shows the projected school system excess capacities including the project-related students for migration condition B. During the peak year of construction, only the Knox County School System could experience enrollment levels noticeably exceeding system wide capacity. The over-enrollment for this system could be about 6 percent of the school system capacity (930 students). Other school systems that would have enrollments exceeding capacities during the peak year of construction would be the Harriman and Loudon County systems. Harriman would experience over-enrollment by about 5 percent with the Loudon County School System overenrollment only about 3 percent of the projected school system capacity for the school year coinciding with the peak year of plant construction.

TABLE 2.2-3

CRBRP PROJECT RELATED REQUIREMENTS FOR SCHOOL TEACHERS
FOR MIGRATION CONDITION A+

System	Peak Year of Plant Construction++		Typical Year of Plant Operation+++	
	Students	Teachers	Students	Teachers
Anderson				
K	1	*	0	0
1-6	8	*	1	*
7-12	6	*	1	*
K-12	15	*	2	*
Clinton				
K	2	*	0	0
1-6	13	*	2	*
K-6	15	*	2	*
Oak Ridge				
K	5	*	1	0
1-6	43	1	4	*
7-12	52	1	5	*
K-12	100	2	10	0
Roane				
K	7	*	1	*
1-6	65	2	6	*
7-12	58	2	5	*
K-12	130	4	12	*
Harriman				
K	2	*	0	0
1-6	13	*	2	*
7-12	15	*	1	*
K-12	30	*	3	*
Knox				
K	16	1	1	*
1-6	108	4	10	*
7-12	116	3	24	*
K-12	240	8	22	*
Knoxville				
K	2	*	0	0
1-6	13	*	1	*
7-12	15	*	2	*
K-12	30	*	3	*
Loudon				
K	4	*	0	*
1-6	20	1	2	*
7-12	16	*	2	*
K-12	40	1	4	*
Lenoir City				
K	1	*	0	0
1-6	7	*	1	*
7-12	12	*	1	*
K-12	20	*	2	*
Total				
K-12	620	15	60	0

+Tennessee pupil-per-teacher standards are 25 for K, 30 for 1-6, and 35 for 7-12.

++Peak year of plant construction expected to occur in 1987.

+++Plant operation expected to begin in 1990. CRBRP project-related requirements for students and teachers for migration condition A are the same for all years after the first year of plant operation.

*Less than one-half.

TABLE 2.2-4

CRBRP PROJECT RELATED REQUIREMENTS FOR SCHOOL TEACHERS
FOR MIGRATION CONDITION B*

System	Peak Year of Plant Construction** Students	Peak Year of Plant Construction** Teachers	Typical Year of Plant Operation*** Students	Typical Year of Plant Operation*** Teachers
Anderson				
K	2	*	0	0
1-6	13	*	1	*
7-12	10	*	1	*
K-12	25	*	2	*
Clinton				
K	3	*	0	0
1-6	22	1	2	*
K-6	25	1	2	*
Oak Ridge				
K	9	*	1	*
1-6	64	2	4	*
7-12	77	2	5	*
K-12	150	4	10	*
Roane				
K	13	*	1	*
1-6	97	3	6	*
7-12	90	2	5	*
K-12	200	5	12	*
Harriman				
K	3	*	0	0
1-6	22	1	2	*
7-12	25	1	1	*
K-12	50	2	3	*
Knox				
K	27	1	1	*
1-6	171	6	10	*
7-12	182	5	11	*
K-12	380	12	22	*
Knoxville				
K	2	*	0	0
1-6	22	1	1	*
7-12	25	1	2	*
K-12	50	2	3	*
Loudon				
K	5	*	0	0
1-6	33	1	2	*
7-12	27	1	2	*
K-12	65	2	4	*
Lenoir City				
K	2	*	0	0
1-6	12	*	1	*
7-12	21	1	1	*
K-12	35	1	2	*
Total				
K-12	980	29	60	0

*Tennessee pupil-per-teacher standards are 25 for K, 30 for 1-6, and 35 for 7-12.

**Peak year of plant construction expected to occur in 1987.

***Plant operation expected to begin in 1990. CRBRP project-related requirements for students and teachers for migration condition B are the same for all years after the first year of plant operation.

*Less than one-half.

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TABLE 2.2-5

CRBRP PROJECT RELATED REQUIREMENTS FOR SCHOOL CLASSROOMS
FOR MIGRATION CONDITION A*

System	Peak Year of Plant Construction** Students	Classrooms	Typical Year of Plant Operation*** Students	Classrooms
Anderson				
K	1	*	0	0
1-6	8	*	1	*
7-12	6	*	1	*
K-12	15	*	2	*
Clinton				
K	2	*	0	0
1-6	13	*	2	*
K-6	15	*	2	*
Oak Ridge				
K	5	*	1	*
1-6	43	1	4	*
7-12	52	1	5	*
K-12	100	2	10	*
Roane				
K	7	*	1	*
1-6	65	2	6	*
7-12	58	2	5	*
K-12	130	4	12	*
Harriman				
K	2	*	0	0
1-6	13	*	2	*
7-12	15	*	1	*
K-12	30	*	3	*
Knox				
K	16	1	1	*
1-6	108	4	10	*
7-12	116	3	11	*
K-12	240	8	22	*
Knoxville				
K	2	*	0	0
1-6	13	*	1	*
7-12	15	*	2	*
K-12	30	*	3	*
Loudon				
K	4	*	0	0
1-6	20	1	2	*
7-12	16	*	2	*
K-12	40	1	4	*
Lenoir City				
K	1	*	0	0
1-6	7	*	1	*
7-12	12	*	1	*
K-12	20	*	2	*
Total				
K-12	620	15	60	0

*Tennessee pupil-per-teacher standards are 25 for K, 30 for 1-6, and 35 for 7-12.

**Peak year of plant construction expected to occur in 1987.

***Plant operation expected to begin in 1990. CRBRP project-related requirements for students and teachers for migration condition A are the same for all years after the first year of plant operation.

*Less than one-half.

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TABLE 2.2-6

CRBRP PROJECT RELATED REQUIREMENTS FOR SCHOOL CLASSROOMS
FOR MIGRATION CONDITION B+

System	Peak Year of Plant Construction++		Typical Year of Plant Operation+++	
	Students	Classrooms	Students	Classrooms
Anderson				
K	2	*	0	0
1-6	13	*	1	*
7-12	10	*	1	*
K-12	25	*	2	*
Clinton				
K	3	*	0	0
1-6	22	1	2	*
K-6	25	1	2	*
Oak Ridge				
K	9	*	1	*
1-6	64	2	4	*
7-12	77	2	5	*
K-12	150	4	10	*
Roane				
K	13	*	1	*
1-6	97	3	6	*
7-12	90	2	5	*
K-12	200	5	12	*
Harriman				
K	3	*	0	*
1-6	22	1	2	*
7-12	25	1	1	*
K-12	50	2	3	*
Knox				
K	27	1	1	*
1-6	171	6	10	*
7-12	182	5	11	*
K-12	380	12	22	*
Knoxville				
K	4	*	0	0
1-6	23	1	1	*
7-12	23	1	2	*
K-12	50	2	3	*
Loudon				
K	5	*	0	*
1-6	33	1	2	*
7-12	27	1	2	*
K-12	65	2	4	*
Lenoir City				
K	2	*	0	0
1-6	12	*	1	*
7-12	21	1	1	*
K-12	35	1	2	*
Total				
K-12	980	29	60	0

+Tennessee pupil-per-teacher standards are 25 for K, 30 for 1-6, and 35 for 7-12.

++Peak year of plant construction expected to occur in 1987.

+++Plant operation expected to begin in 1990. CRBRP project-related requirements for students and teachers for migration condition B are the same for all years after the first year of plant operation.

*Less than one-half.

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TABLE 2.2-7

PRESENT AND PROJECTED SCHOOL SYSTEM CAPACITIES

ENROLLMENT, AND EXCESS CAPACITIES

	1981			Peak Year of Plant Construction[+]		
System	Capacity	Enrollment	Excess	Capacity	Enrollment	Excess
Anderson	9,278	8,032	1,246	9,278	8,558	720
Clinton	1,065	905	160	1,065	877	188
Oak Ridge	6,200	5,042	1,158	6,200	6,000	200
Roane	7,139	6,652	487	7,230	6,060	1,170
Harriman	2,265	2,204	61	2,265	2,327	-62
Knox[*]	15,113	15,203	-90	15,300	15,850	-550
Knoxville	37,800	25,931	11,869	NA	NA	NA
Loudon	3,806	3,756	50	3,806	3,842	-36
Lenoir City	2,057	1,984	73	2,057	2,000	57

[+]Peak year of plant construction expected to occur in 1987.

[*]Only the north, northwest, and southwest sectors of the Knox School System.

NA - Not available.

Source: TVA phone survey of school system superintendents, September 1981.

TABLE 2.2-8

PROJECTED SCHOOL SYSTEM EXCESS CAPACITIES AND INCREMENTAL CRBRP PROJECT ENROLLMENT FOR PEAK YEAR OF PLANT CONSTRUCTION (MIGRATION CONDITION B)+

System	Without Project Excess Capacity	Project Enrollment	With Project Excess Capacity
Anderson	720	25	695
Clinton	188	25	163
Oak Ridge	200	150	50
Roane	1,170	200	970
Harriman	-62	50	-112
Knox	-550	380	-930
Loudon	-36	65	-101
Lenoir City	57	35	22

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+Peak year of plant construction projected to occur in 1987.

*The Knoxville City System is not included in this table because they were unable to provide projections for 1987 because of the uncertainty of Knoxville's annexation proposals. The K-12 project enrollment is 50 for this system.

TABLE 2.3-1

CRBRP PROJECT RELATED REQUIREMENTS FOR HOSPITAL BEDS FOR MIGRATION CONDITION A

Place	Peak Year of Plant Construction[+] Population	Beds	Typical Year of Plant Operation[++] Population	Beds
Anderson County*	160	1	20	**
Oak Ridge	480	2	50	**
Knox County	1,450	6	140	1
Loudon County	320	1	30	**
Roane County	800	3	80	**
Area	3,210	13	320	1

[+]Peak year of plant construction projected to occur in 1987.

[++]Plant operation projected to begin in 1990. CRBRP project-related requirements for hospital beds for migration condition A are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

**Less than one-half.

Amend. XIV
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TABLE 2.5-2

CRBRP PROJECT RELATED REQUIREMENTS FOR HOSPITAL BEDS FOR MIGRATION CONDITION B

Place	Peak Year of Plant Construction[+]		Typical Year of Plant Operation[++]	
	Population	Beds	Population	Beds
Anderson County*	250	1	20	**
Oak Ridge	760	3	50	**
Knox County	2,270	9	140	1
Loudon County	500	2	30	**
Roane County	1,260	5	80	**
Area	5,040	20	320	1

[+]Peak year of plant construction projected to occur in 1987.

[++]Plant operation projected to begin in 1990. CRBRP project-related requirements for hospital beds for migration condition B are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

**Less than one-half.

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TABLE 2.3-3

CRBRP PROJECT RELATED REQUIREMENTS FOR PHYSICIANS FOR MIGRATION CONDITION A

Place	Peak Year of Plant Construction[+]		Typical Year of Plant Operation[++]	
	Population	Physicians	Population	Physicians
Anderson County*	160	**	20	**
Oak Ridge	480	**	50	**
Knox County	1,450	1	140	**
Loudon County	320	**	30	**
Roane County	800	1	80	**
Area	3,210	2	320	**

[+]Peak year of plant construction projected to occur in 1987.

[++]Plant operation projected to begin in 1990. CRBRP project-related requirements for hospital beds for migration condition A are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

**Less than one-half.

TABLE 2.3-4

CRBRP PROJECT RELATED REQUIREMENTS FOR PHYSICIANS FOR MIGRATION CONDITION B

Place	Peak Year of Plant Construction[+]		Typical Year of Plant Operation[++]	
	Population	Physicians	Population	Physicians
Anderson County*	250	**	20	**
Oak Ridge	760	1	50	**
Knox County	2,270	2	140	**
Loudon County	500	1	30	**
Roane County	1,260	1	80	**
Area	5,040	5	320	**

[+]Peak year of plant construction projected to occur in 1987.

[++]Plant operation projected to begin in 1990. CRBRP project-related requirements for hospital beds for migration condition B are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

**Less than one-half.

TABLE 2.3-5

CRBRP PROJECT RELATED REQUIREMENTS FOR DENTISTS FOR MIGRATION CONDITION A

Place	Peak Year of Plant Construction[+] Population	Dentists	Typical Year of Plant Operation[++] Population	Dentists
Anderson County*	160	**	20	**
Oak Ridge	480	**	50	**
Knox County	1,450	**	140	**
Loudon County	320	**	30	**
Roane County	800	**	80	**
Area	3,210	1	320	**

[+]Peak year of plant construction projected to occur in 1987.

[++]Plant operation projected to begin in 1990. CRBRP project-related requirements for hospital beds for migration condition A are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

**Less than one-half.

TABLE 2.3-6

CRBRP PROJECT RELATED REQUIREMENTS FOR DENTISTS FOR MIGRATION CONDITION B

Place	Peak Year of Plant Construction[+]		Typical Year of Plant Operation[++]	
	Population	Dentists	Population	Dentists
Anderson County*	250	**	20	**
Oak Ridge	760	**	50	**
Knox County	2,270	1	140	**
Loudon County	500	**	30	**
Roane County	1,260	**	80	**
Area	5,040	1	320	0

[+]Peak year of plant construction projected to occur in 1987.

[++]Plant operation projected to begin in 1990. CRBRP project-related requirements for hospital beds for migration condition B are the same for all years after the first year of plant operation.

*Outside of Oak Ridge.

**Less than one-half.

TABLE 2.5-1

CRBRP PROJECT RELATED REQUIREMENTS FOR WATER SUPPLY FOR MIGRATION CONDITION A

Place	Peak Year of Plant Construction+ Population	Peak Year of Plant Construction+ Water (1,000 gpd)	Typical Year of Plant Operation++ Population	Typical Year of Plant Operation++ Water (1,000 gpd)
Anderson County*				
Urban	80	10.7	10	1.4
Rural	80	7.4	10	0.9
Oak Ridge				
Urban	480	63.8	50	6.7
Roane County				
Urban	400	53.2	40	5.3
Rural	400	37.0	40	3.7
Knox County				
Urban	160	21.3	15	2.0
Rural	1,290	119.5	125	11.5
Loudon County				
Urban	160	21.3	15	2.0
Rural	160	14.8	15	2.0
Area	3,210	349.0	320	35.5

+Peak year of plant construction projected to occur in 1987.

++Plant operation projected to begin in 1990. CRBRP project-related requirements for water supply for migration condition A are the same for all years after the first year of plant operation.

*Outside of Oak Ridge

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TABLE 2.5-2

CRBRP PROJECT RELATED REQUIREMENTS FOR WATER SUPPLY FOR MIGRATION CONDITION B

Place	Peak Year of Plant Construction+ Population	Peak Year of Plant Construction+ Water (1,000 gpd)	Typical Year of Plant Operation++ Population	Typical Year of Plant Operation++ Water (1,000 gpd)
Anderson County*				
Urban	125	16.6	10	1.4
Rural	125	11.6	10	0.9
Oak Ridge				
Urban	760	101.0	50	6.7
Roane County				
Urban	630	84.2	40	5.3
Rural	630	58.3	40	3.7
Knox County				
Urban	250	33.3	15	2.0
Rural	2,020	187.0	125	11.5
Loudon County				
Urban	250	33.2	15	2.0
Rural	250	23.1	15	2.0
Area	5,040	548.3	320	35.5

+Peak year of plant construction projected to occur in 1987.

++Plant operation projected to begin in 1990. CRBRP project-related requirements for water supply for migration condition B are the same for all years after the first year of plant operation.

*Outside of Oak Ridge

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TABLE 2.6-1

CRBRP PROJECT RELATED REQUIREMENTS FOR WASTEWATER DISPOSAL FOR MIGRATION CONDITION A

Place	Peak Year of Plant Construction+		Typical Year of Plant Operation++	
	Population	Wastewater (1,000 gpd)	Population	Wastewater (1,000 gpd)
Anderson County*	160	16.0	20	2.0
Oak Ridge	480	48.0	50	5.0
Roane County	800	80.0	80	8.0
Knox County	1,450	145.0	140	14.0
Loudon County	320	32.0	30	3.0
Area	3,210	321.0	320	32.0

+Peak year of plant construction projected to occur in 1987.

++Plant operation projected to begin in 1990. CRBRP project-related requirements for wastewater disposal for migration condition A are the same for all years after the first year of plant operation.

*Outside of Oak Ridge

TABLE 2.6-2

CRBRP PROJECT RELATED REQUIREMENTS FOR WASTEWATER DISPOSAL FOR MIGRATION CONDITION B

Place	Peak Year of Plant Construction+ Population	Peak Year of Plant Construction+ Wastewater (1,000 gpd)	Typical Year of Plant Operation++ Population	Typical Year of Plant Operation++ Wastewater (1,000 gpd)
Anderson County*	250	25.0	20	2.0
Oak Ridge	760	76.0	50	5.0
Roane County	1,260	126.0	80	8.0
Knox County	2,270	227.0	140	14.0
Loudon County	500	50.0	30	3.0
Area	5,040	504.0	320	32.0

+Peak year of plant construction projected to occur in 1987.
++Plant operation projected to begin in 1990. CRBRP project-related requirements for wastewater disposal for migration condition B are the same for all years after the first year of plant operation.
*Outside of Oak Ridge

TABLE 2.6-3

CRBRP PROJECT RELATED REQUIREMENTS FOR SOLID WASTE DISPOSAL FOR MIGRATION CONDITION A

Place	Peak Year of Plant Construction+		Typical Year of Plant Operation++	
	Population	Solid Waste (100 lbs/day)	Population	Solid Waste (100 lbs/day
Anderson County*	160	6.4	20	0.8
Oak Ridge	480	19.2	50	2.0
Roane County	800	32.0	80	3.2
Knox County	1,450	57.6	140	5.6
Loudon County	320	12.8	30	1.2
Area	3,210	128.0	320	12.8

+Peak year of plant construction projected to occur in 1987.

++Plant operation projected to begin in 1990. CRBRP project-related requirements for solid waste disposal for migration condition A are the same for all years after the first year of plant operation.

*Outside of Oak Ridge

TABLE 2.6-4

CRBRP PROJECT RELATED REQUIREMENTS FOR SOLID WASTE DISPOSAL FOR MIGRATION CONDITION B

Place	Peak Year of Plant Construction+		Typical Year of Plant Operation++	
	Population	Solid Waste (100 lbs/day)	Population	Solid Waste (100 lbs/day
Anderson County*	250	10.0	20	0.8
Oak Ridge	760	30.4	50	2.0
Roane County	1,260	50.4	80	3.2
Knox County	2,270	90.8	140	5.6
Loudon County	500	20.0	30	1.2
Area	5,040	201.6	320	12.8

+Peak year of plant construction projected to occur in 1987.

++Plant operation projected to begin in 1990. CRBRP project-related requirements for solid waste disposal for migration condition B are the same for all years after the first year of plant operation. 14

*Outside of Oak Ridge

TABLE 2.7-1

CRBRP COMMUTER TRAFFIC IMPACTS ON KEY HIGHWAY SEGMENTS FOR MIGRATION CONDITIONS A AND B*

Highway Segment	Existing** Peak Hour Level of Service	Existing Level of** Service for Hour Which CRBRP Commuter Traffic Contributes	Projected Level of Service for Hour Which CRBRP Commuter Traffic Contributes for Migration Condition A	Projected Level of Service for Hour Which CRBRP Commuter Traffic Contributes for Migration Condition B	Projected Level of*** Service for Hour Which CRBRP Commuter Traffic Contributes During a Typical Year of Plant Operation (1994)
1. State Route 58 between I-40 and Bear Creek Road (CRBRP Access Road)	D	C	D	D	E
2. State Route 58 Between Bear Creek Road (CRBRP Access Road) and ORGDP	D	B	D	D	E
3. State Route 58 Between ORGDP and Intersection State Route 95	D	B	C	C	D
4. State Route 95 from Intersection State Route 58 to Beginning of 4-Lane in Oak Ridge	E	C	D	D	F
5. State Route 95 Between I-40 and Bear Creek Road (CRBRP Access Road)	E	D	E	E	F

*Peak year of construction expected to occur in 1987. Plant operation expected to begin in 1990.

**Based on Tennessee Department of Transportation hourly traffic counts for 1978-1981.

***Projected service levels are the same with or without the CRBRP traffic. Operation workforce is expected to commute to and from the plant during the existing peak hour.

Note: Assumptions used in evaluating the traffic situation include:

1. No sponsored van and bus program.
2. Commuter vehicle occupancy = 2.0 for migration conditions A and B and 1.5 for CRBRP operation workforce commuters.
3. No truck deliveries to construction site during shift commuting hours.
4. CRBRP construction work shift hours will be staggered such that CRBRP commuting traffic will not coincide with the existing non-CRBRP related peak hour traffic.
5. Intersections SR95 and SR58, SR58 and Bear Creek Road, and SR95 and Bear Creek Road to be upgraded prior to significant construction employment buildup.
6. Annual increase in non-CRBRP related traffic volumes = 2 percent
7. Operation workforce day shift equals 200 employees.
8. Peak year of construction = 1987.

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