GULF POWER COMPANY

TEN YEAR SITE PLAN

FOR ELECTRICAL GENERATING FACILITIES

AND

ASSOCIATED TRANSMISSION LINES

Submitted to the
State of Florida
Department of Veteran and Community Affairs
Division of Local Resource Management
Bureau of Land and Water Management
Power Plant Siting Program

APRIL 1 1983

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CHAPTER 1

DESCRIPTION OF EXISTING FACILITIES

UTILITY GULF POWER COMPANY FCG Form 1A

EXISTING GENERATING FACILITIES

(1) Plant	(2) Unit No.	(3) Location	(4) Type	(5) Fuel Pri	(6) Fuel Alt	(7) Com'l In-Service Mo/Yr	(8) Exptd Retrmnt Mo/Yr	(9) Gen Max Nameplate kW	(10) Net Capability Summer MW	(11) Net Capability Winter MW	(12) Fuel Transp Pri	(13) Fuel Transp Alt
								1,229,000	1061.6	1061.6		
Crist	1	Pensacola	F	NG	HO	1/45	1990	28,125	21.9	21.9	PL	TK
	2	25/1N/30W	F	NG	HO	6/49	1990	28,125	21.0	21.0	PL	TK
	3		F	NG	HO	9/52	1990	37,500	37.8	37.8	PL	TK
	4		F	C	NG	7/59	1996	93,750	81.1	81.1	WA	PL
	5		F	C	NG	6/61	1996	93,750	85.6	85.6	WA	PL
	6		F	C	NG	5/70	2005	369,750	323.2	323.2	WA	-
	7		F	C	no	8/73	2008	578,000	491.0	491.0	WA	-
								381,850	379.5	383.0		
Lansing Smith	1	Panama City	F	C	no	6/65	2002	149,600	160.2	160.2	WA	-
	2	36/2S/15W	F	C	no	6/67	2004	190,400	188.0	188.0	WA	-
	A		CT	LO	no	5/71	1991	41,850	31.3	34.8	TK	-
								98,000	93.1	93.1		
Scholz	1	Sneads	F	C	no	3/53	1990	49,000	46.4	46.4	RR	-
	2	12/3N/7W	F	C	no	10/53	1990	49,000	46.7	46.7	RR	-
								548,250	510.0	510.0		
Daniel(1)	1	Jackson County, MS	F	C	HO	4/77	2017	274,125	255.0	255.0	RR	-
	2	42/5S/6W	F	C	HO	6/81	2021	274,125	255.0	255.0	RR	-
Total System as of December 31, 1982 -									2044.2	2047.7		

(1) Gulf acquired ownership of 50% of Units 1 and 2 on June 1, 1981.

FCG Form 1B

UTILITY GULF POWER COMPANY

EXISTING GENERATING FACILITIES
LAND USE AND INVESTMENT

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Land Area		Plant Capital Investment in ($1,000)			
Plant Name	Total Acres	In Use Acres	Land	Site Improvements	Buildings & Equipment	Total
Steam Total			5,875	86,605	434,192	526,672
Crist	677.99	230	1,782	34,205	190,680	226,667
Lansing Smith	864.70	270	221	11,460	58,891	70,572
Scholz	293.15	168	45	4,831	18,985	23,861
Daniel	2,657.00(1)	500(1)	3,827(2)	36,109(2)	165,443(2)	205,379(2)
Caryville (Weather Station)					193	193
Combustion Turbine Total				645	3,553	4,198
Lansing Smith CT				645	3,553	4,198

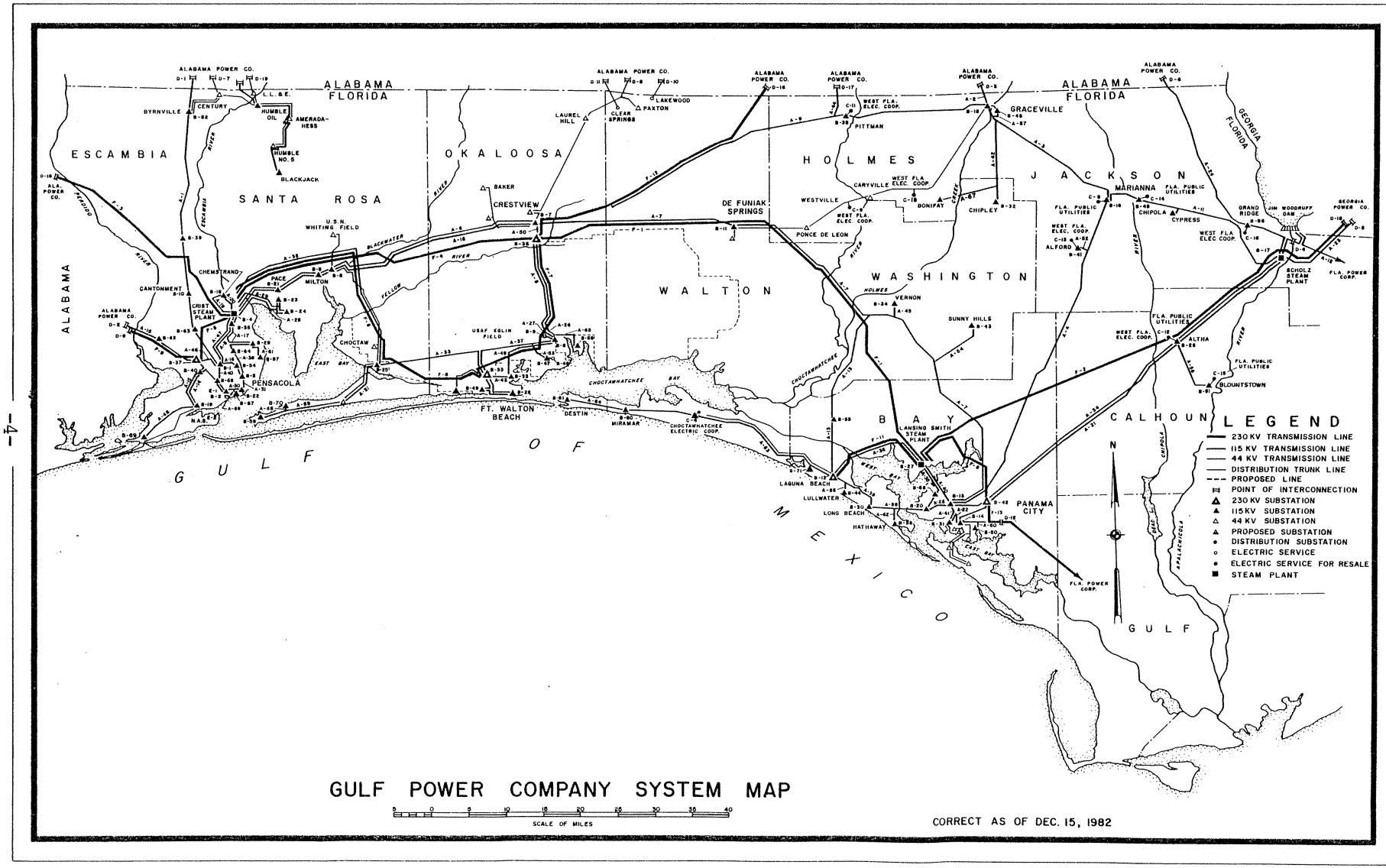
(1) Daniel Plant information refers to total area owned jointly by Gulf and Mississippi Power.
(2) Gulf Power's portion of Plant Daniel only.

UTILITY GULF POWER COMPANY

FCG Form 1C

EXISTING GENERATING FACILITIES
ENVIRONMENTAL CONSIDERATIONS FOR STEAM GENERATING UNITS

(1) Plant Name	(2) Unit	(3) Flue Gas Cleaning Particulate	(4) Flue Gas Cleaning SOx	(5) Flue Gas Cleaning NOx	(6) Cooling Type
Crist	1	no	no	no	WCTM
	2	no	no	no	WCTM
	3	no	no	no	WCTM
	4	EP	no	no	WCTM
	5	EP	no	no	WCTM
	6	EP	no	no	WCTM
	7	EP	no	no	WCTM
Lansing Smith	1	EP	no	no	OTS
	2	EP	no	no	OTS
Scholz	1	EP	no	no	OTF
	2	EP	no	no	OTF
Daniel	1	EP	no	no	CP
	2	EP	no	no	CP



GULF POWER COMPANY SYSTEM MAP

CORRECT AS OF DEC. 15, 1982

CHAPTER II

FORECAST OF ELECTRIC POWER DEMAND

UTILITY GULF POWER COMPANY

HISTORY AND FORECAST OF ENERGY CONSUMPTION AND NUMBER OF CUSTOMERS BY CUSTOMER CLASS

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Rural & Residential					Commercial		
Year	Population	Members Per Household	GWH	Average No. of Customers	Average KWH Consumption Per Customer	GWH	Average No. of Customers	Average KWH Consumption Per Customer
1973	519,287	2.87	1,800	142,434	12,637	946	18,938	49,964
1974	530,534	2.82	1,835	150,257	12,212	969	19,589	49,457
1975	541,781	2.77	1,889	154,170	12,253	1,041	19,769	52,642
1976	553,028	2.72	2,046	158,492	12,913	1,128	20,364	55,376
1977	564,275	2.67	2,156	163,121	13,220	1,207	20,964	57,559
1978	575,521	2.62	2,243	168,156	13,342	1,254	21,567	58,124
1979	586,768	2.57	2,225	172,906	12,868	1,269	21,949	57,832
1980	598,015	2.52	2,335	180,166	12,959	1,293	22,459	57,564
1981	612,965	2.47	2,361	187,489	12,591	1,352	23,243	58,190
1982	620,088	2.42	2,364	194,228	12,169	1,432	23,962	59,748
1983	630,837	2.37	2,541	201,497	12,608	1,432	24,713	57,953
1984	641,548	2.32	2,641	209,054	12,634	1,479	25,477	58,058
1985	652,185	2.28	2,730	216,057	12,637	1,523	26,250	58,007
1986	662,556	2.24	2,822	223,402	12,634	1,573	27,113	58,013
1987	672,748	2.20	2,919	230,999	12,637	1,625	28,010	58,010
1988	682,796	2.16	3,012	238,392	12,635	1,679	28,942	58,008
1989	692,677	2.13	3,097	245,186	12,633	1,735	29,903	58,033
1990	699,962	2.10	3,185	252,027	12,636	1,789	30,826	58,042
1991	711,942	2.07	3,271	258,934	12,634	1,851	31,882	58,047
1992	721,319	2.04	3,360	265,925	12,634	1,912	33,199	57,588

UTILITY GULF POWER COMPANY

HISTORY AND FORECAST OF ENERGY CONSUMPTION AND NUMBER OF CUSTOMERS BY CUSTOMER CLASS

(10)	(11)	(12) Industrial		(13)	(14)	(15)	(16)
Year	GWH	Average No. of Customers		Average KWH Consumption Per Customer	Street & Highway Lighting GWH	Other Sales to Ultimate Consumers GWH	Total Sales to Ultimate Consumers GWH
1973	1,382	159		8,688,182	9.318	0	4,137
1974	1,325	159		8,333,692	12.933	0	4,142
1975	1,340	160		8,372,019	12.950	0	4,283
1976	1,435	154		9,321,214	12.955	0	4,622
1977	1,494	156		9,577,808	13.537	0	4,871
1978	1,530	160		9,560,894	13.877	0	5,041
1979	1,552	164		9,465,628	14.037	0	5,060
1980	1,494	166		9,002,560	14.357	0	5,136
1981	1,482	165		8,983,484	14.038	0	5,209
1982	1,432	170		8,421,987	14.100	0	5,242
1983	1,562	179		8,725,084	13.723	0	5,549
1984	1,621	183		8,858,765	12.971	0	5,754
1985	1,642	186		8,826,704	12.244	0	5,907
1986	1,679	192		8,742,198	11.544	0	6,086
1987	1,697	197		8,615,081	10.865	0	6,252
1988	1,699	199		8,537,970	10.658	0	6,401
1989	1,700	202		8,541,839	10.819	0	6,543
1990	1,708	205		8,333,746	10.976	0	6,693
1991	1,712	208		8,232,990	11.134	0	6,845
1992	1,716	209		8,212,641	11.293	0	6,999

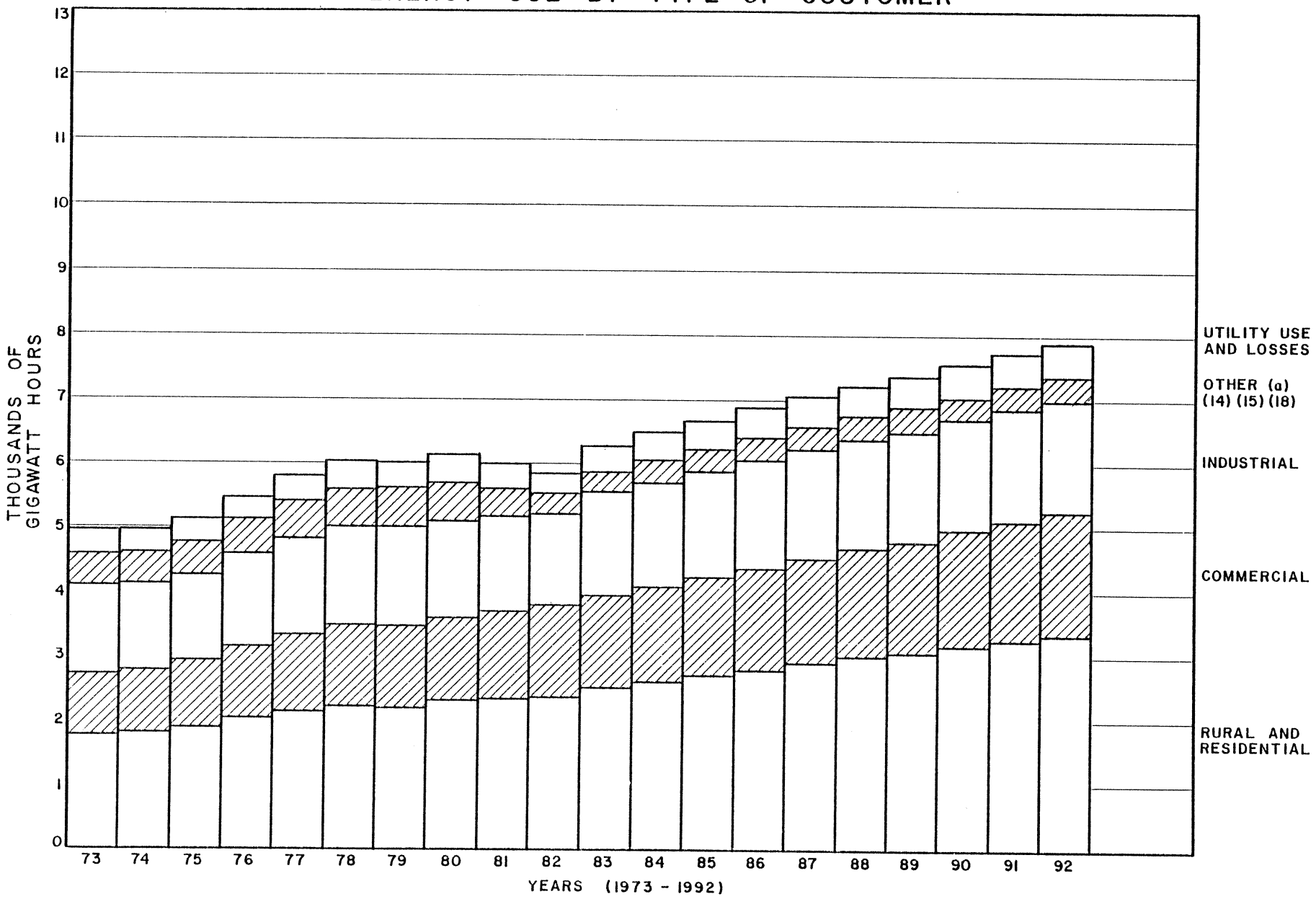
UTILITY GULF POWER COMPANY

HISTORY AND FORECAST OF ENERGY CONSUMPTION AND NUMBER OF CUSTOMERS BY CUSTOMER CLASS

(17) Year	(18) Sales For Resale GWH	(19) Utility Use & Losses GWH	(20) Net Energy For Load GWH	(21) Other Customers (Average No.)	(22) Total No. of Customers
1973	448	393	4,978	60	161,591
1974	470	371	4,983	60	170,065
1975	505	360	5,148	59	174,158
1976	519	334	5,475	60	179,070
1977	552	401	5,823	60	184,301
1978	569	434	6,044	59	189,942
1979	558	412	6,030	59	195,078
1980	574	437	6,148	60	202,851
1981	400	395	6,004	57	210,954
1982	313	305	5,859	59	218,419
1983	338	409	6,296	59	226,450
1984	335	431	6,520	59	234,775
1985	333	443	6,683	59	242,554
1986	339	465	6,890	59	250,768
1987	346	478	7,076	59	259,267
1988	353	489	7,243	59	267,594
1989	360	500	7,403	59	275,352
1990	368	512	7,572	59	283,119
1991	375	523	7,743	59	291,085
1992	382	534	7,916	59	299,394

Note: Columns (18) and (20) includes contracted energy allocated to certain customers by Southeastern Power Administration (SEPA).

GRAPH I
HISTORY AND FORECAST
OF ENERGY USE BY TYPE OF CUSTOMER



NOTE: (a) Includes contracted energy allocated to certain resale customers by SEPA.

UTILITY GULF POWER COMPANY

ENERGY SOURCES(a) (b)

	ENERGY SOURCES		Actual 1981	Actual 1982	1983	1984	1985	1986
(1)	ANNUAL ENERGY INTERCHANGE	GWH	(1553)	(1489)	(1640)	(1329)	(1940)	(2179)
(2)	NUCLEAR	GWH	None	None	None	None	None	None
(3)	COAL	GWH	7486	7329	7925	7829	8565	9004
(4)	RESIDUAL - TOTAL	GWH	None	None	None	None	None	None
(5)	Steam	GWH	None	None	None	None	None	None
(6)	CC	GWH	None	None	None	None	None	None
(7)	CT	GWH	None	None	None	None	None	None
(8)	Diesel	GWH	None	None	None	None	None	None
(9)	DISTILLATE - TOTAL	GWH	3	0	2	2	19	20
(10)	Steam	GWH	None	None	None	None	None	None
(11)	CC	GWH	None	None	None	None	None	None
(12)	CT	GWH	3	0	2	2	19	20
(13)	Diesel	GWH	None	None	None	None	None	None
(14)	NATURAL GAS - TOTAL	GWH	68	19	9	18	39	45
(15)	Steam	GWH	68	19	9	18	39	45
(16)	CC	GWH	None	None	None	None	None	None
(17)	CT	GWH	None	None	None	None	None	None
(18)	Diesel	GWH	None	None	None	None	None	None
(19)	OTHER	GWH	None	None	None	None	None	None
(20)	NET ENERGY FOR LOAD	GWH	6004	5859	6296	6520	6683	6890

(a) Includes contracted energy allocated to certain resale customers by Southeastern Power Administration (SEPA).

(b) Includes energy generated from the capacity sold under existing Unit Power Sales contracts.

UTILITY GULF POWER COMPANY

ENERGY SOURCES(a)(b)

	ENERGY SOURCES		1987	1988	1989	1990	1991	1992
(1)	ANNUAL ENERGY INTERCHANGE	GWH	(1820)	(2330)	(2105)	(2169)	(2141)	(1342)
(2)	NUCLEAR	GWH	None	None	None	None	None	None
(3)	COAL	GWH	8872	9554	9479	9741	9884	9258
(4)	RESIDUAL - TOTAL	GWH	None	None	None	None	None	None
(5)	Steam	GWH	None	None	None	None	None	None
(6)	CC	GWH	None	None	None	None	None	None
(7)	CT	GWH	None	None	None	None	None	None
(8)	Diesel	GWH	None	None	None	None	None	None
(9)	DISTILLATE - TOTAL	GWH	5	0	0	0	0	0
(10)	Steam	GWH	None	None	None	None	None	None
(11)	CC	GWH	None	None	None	None	None	None
(12)	CT	GWH	5	0	0	0	0	0
(13)	Diesel	GWH	None	None	None	None	None	None
(14)	NATURAL GAS - TOTAL	GWH	19	19	29	0	0	0
(15)	Steam	GWH	19	19	29	0	0	0
(16)	CC	GWH	None	None	None	None	None	None
(17)	CT	GWH	None	None	None	None	None	None
(18)	Diesel	GWH	None	None	None	None	None	None
(19)	OTHER	GWH	None	None	None	None	None	None
(20)	NET ENERGY FOR LOAD	GWH	7076	7243	7403	7572	7743	7916

(a) Includes contracted energy allocated to certain resale customers by Southeastern Power Administration (SEPA).

(b) Includes energy generated from the capacity sold under existing Unit Power Sales contracts.

UTILITY GULF POWER COMPANY

FUEL REQUIREMENTS

	FUEL REQUIREMENTS		Actual 1981	Actual 1982	1983	1984	1985	1986
(1)	NUCLEAR	BTUx1012	None	None	None	None	None	None
(2)	COAL	1000 TON	3425	3300	3560	3552	3857	4057
(3)	RESIDUAL - TOTAL	1000 BBL	None	None	None	None	None	None
(4)	Steam	1000 BBL	None	None	None	None	None	None
(5)	CC	1000 BBL	None	None	None	None	None	None
(6)	CT	1000 BBL	None	None	None	None	None	None
(7)	Diesel	1000 BBL	None	None	None	None	None	None
(8)	DISTILLATE - TOTAL	1000 BBL	43	30	38	38	81	83
(9)	Steam	1000 BBL	34	29	34	34	34	34
(10)	CC	1000 BBL	None	None	None	None	None	None
(11)	CT	1000 BBL	9	1	4	4	47	49
(12)	Diesel	1000 BBL	None	None	None	None	None	None
(13)	NATURAL GAS - TOTAL	1000 MCF	1332	412	494	531	793	871
(14)	Steam	1000 MCF	1332	412	494	531	793	871
(15)	CC	1000 MCF	None	None	None	None	None	None
(16)	CT	1000 MCF	None	None	None	None	None	None
(17)	Diesel	1000 MCF	None	None	None	None	None	None
(18)	OTHER	BTUx10^6	None	None	None	None	None	None
(19)	ANNUAL AVG. FOSSIL NET H.R.	BTU/KWH	11090	10905	10900	10855	10862	10865

UTILITY GULF POWER COMPANY

FUEL REQUIREMENTS

	FUEL REQUIREMENTS		1987	1988	1989	1990	1991	1992
(1)	NUCLEAR	BTUx1012	None	None	None	None	None	None
(2)	COAL	1000 TON	3988	4262	4220	4296	4341	4049
(3)	RESIDUAL - TOTAL	1000 BBL	None	None	None	None	None	None
(4)	Steam	1000 BBL	None	None	None	None	None	None
(5)	CC	1000 BBL	None	None	None	None	None	None
(6)	CT	1000 BBL	None	None	None	None	None	None
(7)	Diesel	1000 BBL	None	None	None	None	None	None
(8)	DISTILLATE - TOTAL	1000 BBL	54	43	42	43	41	41
(9)	Steam	1000 BBL	41	41	41	41	41	41
(10)	CC	1000 BBL	None	None	None	None	None	None
(11)	CT	1000 BBL	13	2	1	2	0	0
(12)	Diesel	1000 BBL	None	None	None	None	None	None
(13)	NATURAL GAS - TOTAL	1000 MCF	456	518	560	0	0	0
(14)	Steam	1000 MCF	456	518	560	0	0	0
(15)	CC	1000 MCF	None	None	None	None	None	None
(16)	CT	1000 MCF	None	None	None	None	None	None
(17)	Diesel	1000 MCF	None	None	None	None	None	None
(18)	OTHER	BTUx10^6	None	None	None	None	None	None
(19)	ANNUAL AVG. FOSSIL NET H.R.	BTU/KWH	10831	10833	10853	10729	10697	10655

UTILITY GULF POWER COMPANY

HISTORY AND FORECAST OF SEASONAL PEAK DEMAND AND ANNUAL NET ENERGY FOR LOAD

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Summer Peak Demand - MW					Annual Net Energy for Load			
	Firm					GWH			
Year	Retail	Wholesale	Total	Interrupt	Total	Retail	Wholesale	Total	Load Factor %
1973					1,014			4,978	56.02
1974					1,081			4,983	52.60
1975					1,078			5,148	54.52
1976					1,140			5,475	54.65
1977					1,180			5,823	56.33
1978					1,257			6,044	54.89
1979					1,232			6,030	55.87
1980					1,392			6,148	50.28
1981					1,309			6,004	52.36
1982	N/A	N/A	N/A	NONE	1,232			5,859	54.28
1983					1,328			6,296	54.12
1984					1,373			6,520	54.06
1985					1,416			6,683	54.41
1986					1,462			6,890	54.31
1987					1,501			7,076	54.32
1988					1,536			7,243	54.17
1989					1,568			7,403	54.38
1990					1,602			7,572	54.43
1991					1,634			7,743	54.56
1992					1,669			7,916	54.45

NOTE: Includes expected capacity and energy allocated to certain resale customers by Southeastern Power Administration (SEPA).

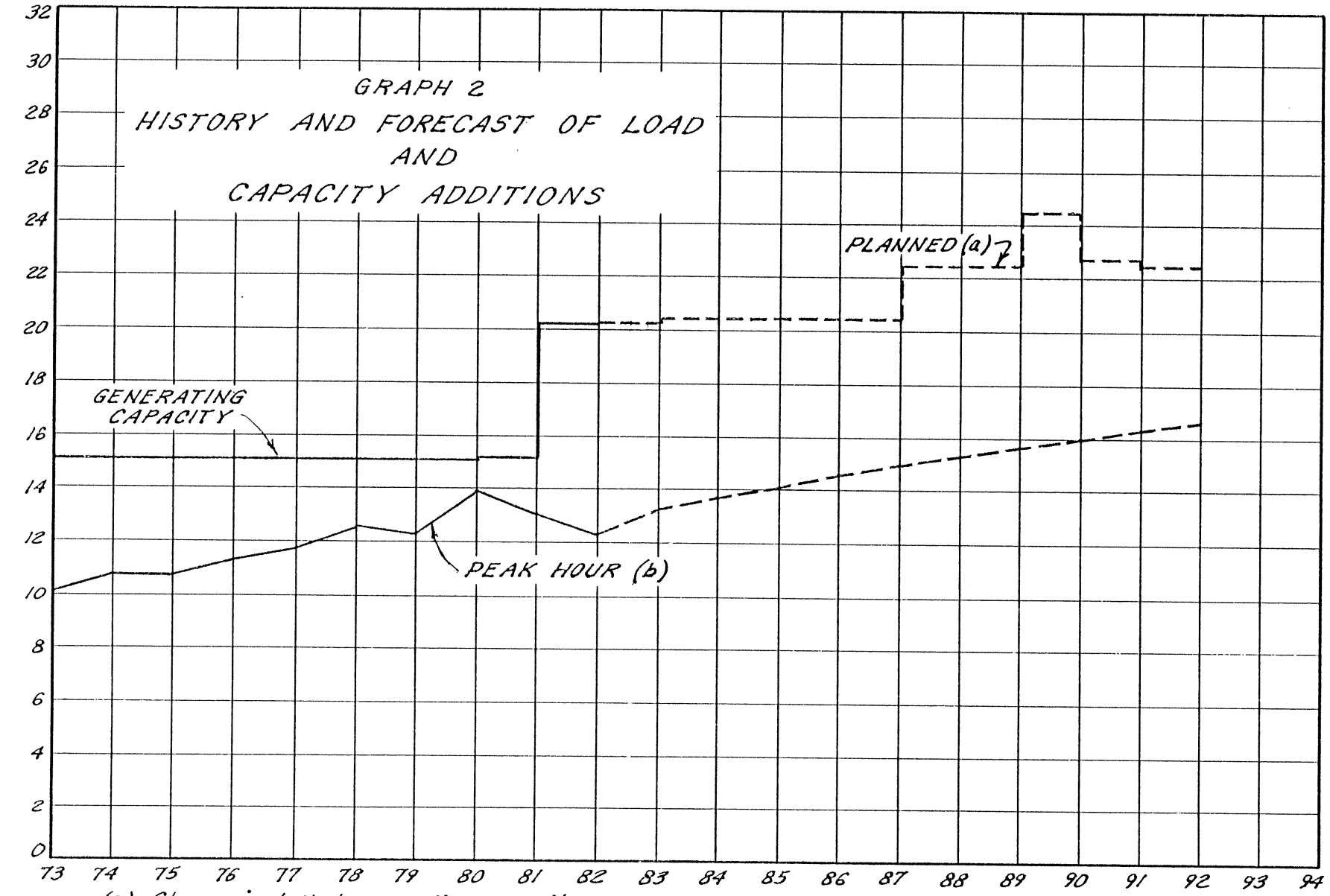
UTILITY GULF POWER COMPANY

HISTORY AND FORECAST OF SEASONAL PEAK DEMAND AND ANNUAL NET ENERGY FOR LOAD

(11)	(12)	(13)	(14)	(15)	(16)
	Winter Peak Demand - MW				
	Firm				
Year	Retail	Wholesale	Total	Interrrupt	Total
1973-74	N/A	N/A	N/A	NONE	790
1974-75					826
1975-76					976
1976-77					1,121
1977-78					1,072
1978-79					1,154
1979-80					1,132
1980-81					1,189
1981-82					1,217
1982-83					1,130
1983-84					1,188
1984-85					1,224
1985-86					1,281
1986-87					1,325
1987-88					1,364
1988-89					1,401
1989-90					1,438
1990-91					1,478
1991-92					1,516
1992-93					1,542

NOTE: Includes expected capacity and energy allocated to certain resale customers by Southeastern Power Administration (SEPA).

SUMMER

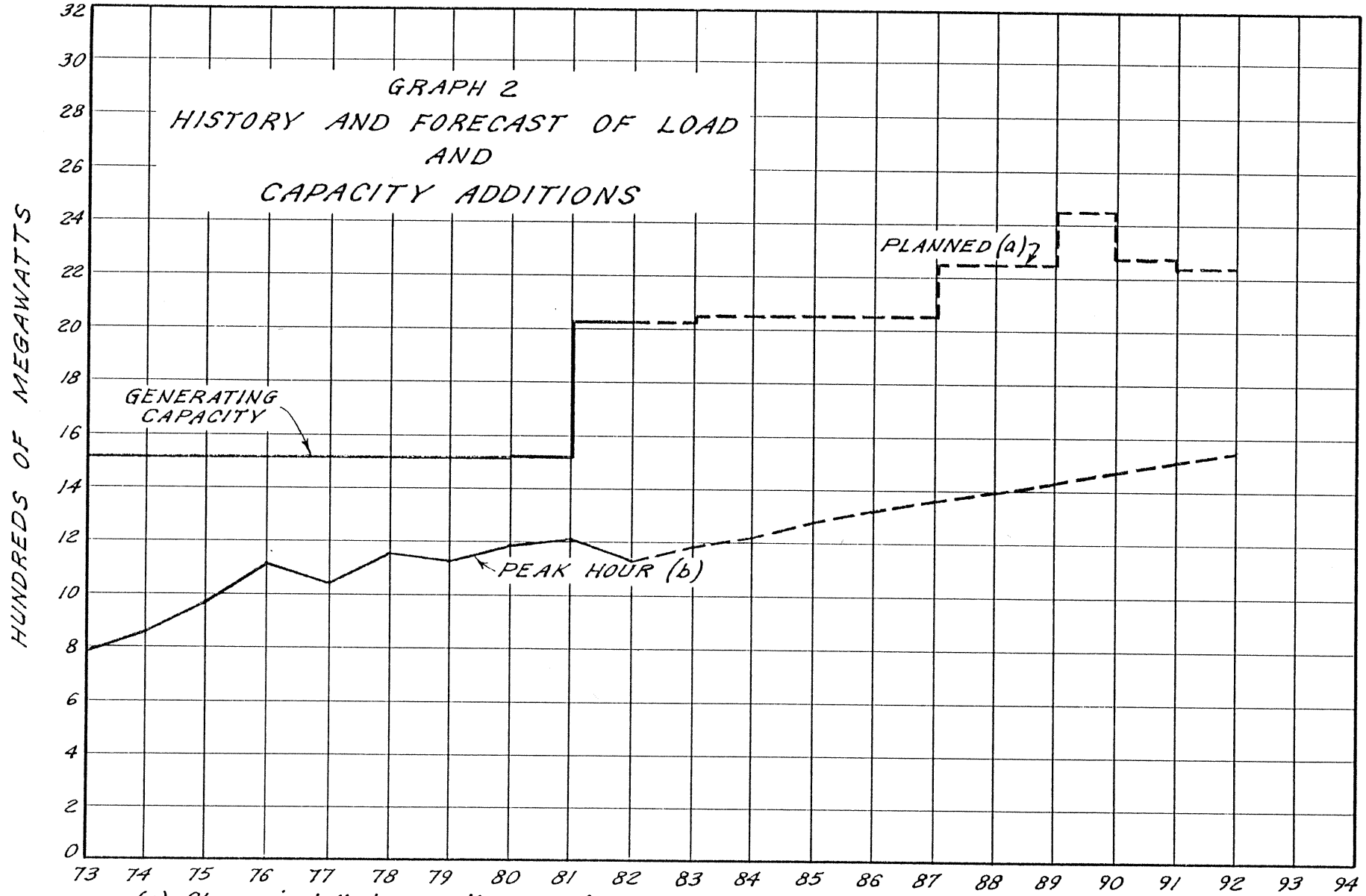


(a) Shows installed generating capacity only; Refer to form 7A for net available capacity.

NOTE: (b) Includes expected capacity allocated to certain resale customers by SEPA

WINTER

GRAPH 2
HISTORY AND FORECAST OF LOAD AND CAPACITY ADDITIONS



(a) Shows installed generating capacity only: Refer to form 7B for net available capacity.

NOTE: (b) Includes expected capacity allocated to certain resale customers by SEPA

UTILITY GULF POWER COMPANY

FCG Form 5

PREVIOUS YEAR ACTUAL AND TWO-YEAR FORECAST OF PEAK DEMAND AND NET ENERGY FOR LOAD BY MONTH

(1)	(2)	(3)	(4)		(5)	(6)	(7)
	ACTUAL					FORECAST	
	1982		1983			1984	
MONTH	PEAK DEMAND MW	NEL GWH	PEAK DEMAND MW	ACTUAL	NEL GWH	PEAK DEMAND MW	NEL GWH
JAN	1,217	499	1,130	1,037	521	1,188	546
FEB	901	389	1,007	1,020	431	911	451
MAR	931	420	868		429	906	448
APR	747	390	800		408	850	434
MAY	1,082	484	1,132		534	1,162	549
JUN	1,215	612	1,291		636	1,320	650
JUL	1,232	619	1,328		684	1,373	704
AUG	1,221	626	1,267		661	1,318	687
SEP	1,196	527	1,211		579	1,257	601
OCT	1,002	450	979		461	994	468
NOV	782	403	858		420	880	431
DEC	982	441	1,086		530	1,127	550
TOTAL		5,859			6,296		6,520

NOTE: Includes contracted capacity and energy allocated to certain resale customers by Southeastern Power Administration (SEPA).

FORECASTING

I. Introduction

Gulf Power Company annually prepares projections of customers, kilowatt hours and peak demands. These projections are established for two basic purposes. First, the short-term projections are used as a basis for estimation of revenues and establishment of operating and maintenance budgets. Second, the long-term projections serve as a basis for decisions related to facilities planning, construction, and fuel supply. A combination of Disaggregated End-Use and Econometric End-Use modeling techniques are employed by the Company to develop these projections.

The Disaggregated End-Use technique produces monthly estimates of customers, kilowatt hours, and revenue for rate schedules within customer classifications. The resulting output is also a primary driver of portions of the territorial peak demand forecasting model. This methodology has consistently provided accurate results over the short-term (3 - 5 year) time frame. Extensive data related to local construction activity, employment projections, electric appliance and equipment stocks, and current business cycles and conditions is collected through on-site interviews with customers, major employers, and other institutions vital to the economic outlook. The projected impact of the Company's energy conservation

programs is directly incorporated into the forecast, and is based on information collected through marketing and load research programs and engineering estimates. The Disaggregated End-Use methodology yields discrete estimates of monthly customers, kilowatt hours, and revenues that allow for a detailed analysis and reconciliation with actual results.

The Company's Econometric End-Use Model was developed through a joint effort with Southern Company Services, Inc. and Data Resources, Inc., a nationally recognized specialist in the field of economic forecasting. The model utilizes both local and national economic data bases to project population, employment, military activity, income, and other economic indicators for Gulf's service area. Quarterly projections of residential customers, kilowatt hour sales by customer classification, and territorial peak demands are established. The residential energy portion of the model is end-use oriented, utilizing historical and projected appliance saturation data. A comparison of the results obtained through the econometric technique with prior year projections allows analysis of changes to underlying assumptions related to economic factors, social trends, emerging technologies, and periodic enhancements to the model.

The official long-term forecast of customers, kilowatt hour sales, and peak demands is established using a combination of the Disaggregated End-Use and Econometric End-Use techniques. The Disaggregated End-Use approach has,

as expected, produced greater accuracy in the near-term projections of customers and kilowatt hour sales. This is primarily due to the detail involved in the required inputs and the capability to continuously monitor and make necessary adjustments as changes take place in the market. The Econometric End-Use model employs an extensive series of historical data and is expected to give the most reliable results over the long-term (10 - 12 years). Reconciliation and explanation of basic differences in the results of the two approaches leads to establishment of a consolidated forecast which is presented to the management of the Company for adoption.

II. Disaggregated End-Use Model

Due to the fact that traditional aggregate time series and econometric models have not proven suitable for evaluating the impacts of conservation programs established since the oil embargo, new approaches to load and energy forecasting have evolved during the last decade. In order to evaluate the effects of conservation programs on various sectors of the market, more detail was incorporated into these forecasting techniques. These models are usually referred to as end-use models and exhibit disaggregation of the market into specific end-use sectors.

Gulf Power Company produced its first residential class end-use forecast in 1978. This came about partly as a result of the highly successful Good ¢ents home program which was initiated in 1975. The Company immediately recognized the need to incorporate the effects of this program, as well as other significant changes in the market, into its planning process. Appliance saturation survey data, historical billing data, load research data, and theoretical insights from the economic, engineering, and sociodemographic disciplines are all utilized extensively as inputs to the residential model. Enhancements have been made to the model on an annual basis as more data has become available. Because the Company's conservation programs have traditionally been performance-oriented and targeted to major end-use categories, the disaggregated

end-use approach has proven to be a useful tool in evaluating the potential effectiveness and impact of specific conservation measures resulting from these programs.

The Company produced its first truly disaggregated commercial sector forecast in 1982. Utilizing primarily historical billing data and information gathered through Gulf's commercial load reporting system, the end result was a forecast which reflected the impact of conservation programs on specific types of businesses (SIC codes). As with the residential end-use model, further enhancements will be made each year as more end-use data becomes available.

Approximately ninety percent of the total energy consumption of Gulf's industrial customer class is attributable to thirty customers. Local office personnel contact each of these industries and discuss their operations and employment projections for the short-term forecast period. This allows for detailed monitoring of industrial class usage and resolution of deviations from the forecast. The remainder of the industrial forecast is produced in a manner similar to the commercial projections, using historical billing data by industry type as a basis for future estimates.

III. Econometric End-Use Model

(a) An Overview

An econometric model is a mathematical formulation which relates a dependent variable such as KWH sales to expected and reasonable causal socioeconomic variables. Though exact relationships between KWH consumption and socioeconomic variables will in all probability not be discovered due to continuously changing stimuli, approximations of these relationships can be estimated and used to predict future consumption patterns under different socioeconomic scenarios.

The model combines end-use residential appliances and consumption information with certain socioeconomic information. Regression analysis is used to estimate end-use equations for the formulation of residential units and the expected appliance saturation of these residences. The econometric model then determines the expected usage rates of this dynamic stock of end-use items for different socioeconomic conditions over time.

The econometric model, which is continuously being revised and enhanced over time, was jointly developed by Data Resources, Inc. (DRI), the Load Forecasting Section of Southern Company Services, Inc., and Gulf Power Company. Of major importance in any regional forecast is the expected National Economic

Forecast, which begins the forecasting sequence through exogeneous inputs to the service area's regional economic model.

DRI's model of the U.S. economy is one of several nationally accepted models using quarterly equation systems that describe and endogenously produce measurable facets of the national economy. DRI's models produce both short and long-term forecasts under several different groups of assumptions, and their output (projections) by quarter are used by DRI's clients to test the impact of their own assumptions on the national economic outlook, and by DRI's clients, such as Gulf, as exogeneous inputs into their own regional systems.

The Gulf econometric end-use model begins with inputs from DRI's national forecast which drives certain sectors of the service area economic model to produce input into the energy modules, which in turn produces energy forecasts by class. The energy forecasts by class are used along with other variables in the peak demand model. An electric energy price projection, along with other socioeconomic variables unique to the Gulf service area, and a projection of losses from supply to sales, are also incorporated in these models.

The major link between Gulf's service area economic model and the national economy is the employment sector. The employment sector is used within the model as a surrogate for the creation of disposable

income and wealth, with disposable income being the true driver of a regional economy.

(b) Energy and Customers

Variables forecast within the economic modules are classified as to how they affect the customer classes: residential, commercial, industrial, wholesale, and street lighting.

The residential portion of the energy model contains sub-models, which are driven by the forecast of customers, appliance saturation, and usage per customer to generate total residential KWH sales.

Customers are forecast as a function of a two year weighted average of real per capita income and customers in the prior period. Real income is used as the proxy for the ability to form residential units and to purchase the stock of residential appliances.

Usage per customer is a function of the stock of appliances owned by the average customer, the price of electricity and other competitive fuels, and real income.

The commercial portion of the energy model is principally a function of commercial employment, which tracks the growth of commercial activity.

The industrial portion of the energy model is divided into four sub-models:

1. Chemicals
2. Paper
3. Other Manufacturing
4. Non-Manufacturing

Each of these energy sub-models is a function of local production, price of electricity and competitive fuels, and pollution control equipment.

The wholesale portion is a function of the sales of commercial and residential energy, since the REA Cooperatives do not currently have significant industrial loads.

(c) Peak Hour Demand

The demand portion of the SCS/Gulf econometric model was utilized to produce Gulf's 1983 peak hour demand budget and forecast. The equations within the demand model were developed using regression techniques to correlate the historical data with weather-normalized class peak hour demands.

The residential term of the demand model was restructured for the 1983 budget to remove the dependency on residential energy. The residential term now has as independent variables the number of customers, appliance saturation levels, and the price of electricity.

The commercial term of the demand model still relies on energy as an input, but also incorporates the effect of the price of electricity.

The wholesale term of the model was separated between REA and FPU in order to obtain a better correlation with historical demands for these customers. This split also allows the adjustment of the wholesale term to reflect known REA terminations.

The industrial term was not changed in format

but has been updated with the latest available actual energies and demands to more accurately depict recent trends.

All input variables for the peak-hour demand models were taken from Gulf's approved 1983 energy and customer budgets.

SUMMER PEAK HOUR DEMAND MODEL

The equations for the components that comprise the summer peak hour demand model and the total territorial demand follow.

(1) Residential & Commercial Demand

Below is the equation utilized in the calculation of the residential and commercial summer peak demand:

$$MW_{RES/COM} = e^{k}$$

WHERE:

$$k = \left[-5.2111 + 0.88094 \times LOG \left(A \times B + \frac{0.662C}{2.208}\right) - 0.3306 \times LOG \left(0.7D + 0.3E\right) \right]$$

A = Appliance Saturation Factor

B = Number of Residential Customers (From Energy Forecast)

C = 3rd Quarter Commercial Energy (From Energy Forecast)

D = Residential Price of Electricity

E = Commercial Price of Electricity

e = 2.718282

The appliance saturation factor depicts the average per-customer demand for each appliance category based on the latest appliance saturation survey and the expected demand contribution of each appliance. When this is multiplied by the number of customers, the total residential demand is determined.

The commercial demand is derived from the third quarter (Summer) commercial energy for each year of the energy forecast. Then an adjustment is made to the sum of the residential energy and commercial energy to account for the conservation effect of price.

(2) Industrial Demand

The industrial demand for each year of the forecast is calculated utilizing the third quarter (or summer) industrial energy obtained from the energy forecast. The equation for the industrial summer peak demand is shown below:

$$MW_{IND} = e^{(-8.8198 + 1.0982 \times LOG\ F)}$$

WHERE:

F = 3rd Quarter Industrial Energy (From Energy Forecast)

e = 2.718282

(3) Wholesale Demand

The REA and FPU demand for each year of the forecast is calculated utilizing the third quarter (or summer) REA and FPU energy obtained

from the energy forecast. The wholesale demand is the sum of the REA and the FPU summer demands for each year. The equations involved in the calculation of the wholesale summer peak demand are shown below:

$MW_{WHS} = *MW_{REA} + MW_{FPU}$ (REA DEMAND + FPU DEMAND)

WHERE:

$$*MW_{REA} = e^{(-8.985 + 1.1457 \times \text{LOG } G)}$$

$$MW_{FPU} = e^{(-10.48 + 1.2901 \times \text{LOG } H)}$$

G = 3rd Quarter REA Energy (From Energy Forecast)

H = 3rd Quarter FPU Energy (From Energy Forecast)

e = 2.718282

*Includes capacity allocated to certain resale customers by Southeastern Power Administration (SEPA).

(4) Total Territorial Demand

The total territorial demand, not including losses, for each year of the forecast is the sum of the demand components described previously in (1) - (3) plus the additional components of the total territorial demands produced by photovoltaics and electric vehicles. The equations for total territorial demand (without losses) are expressed below:

$$\text{TOTAL MW (Without Losses)} = MW_{RES/COM} + MW_{IND} + MW_{WHS} + MW_{EV} - MW_{PV}$$

WHERE:

$MW_{RES/COM}$ = Residential and Commercial Summer Peak Demand

MW_{IND} = Industrial Summer Peak Demand

MW_{WHS} = Wholesale Summer Peak Demand

MW_{EV} = Summer Peak Demand due to Electric Vehicles

MW_{PV} = Capacity Produced from Photovoltaics

Electric vehicles are expected to have a small, positive effect on demand, while photovoltaics will reduce system demand requirements somewhat toward the end of Gulf's forecast period.

The total territorial demand including losses and SEPA allocated capacity is calculated as shown below:

$$\text{TOTAL MW (With Losses and SEPA Allocations)} = \left[\text{TOTAL MW (Without Losses)} - \text{SEPA MW}\right] \times \frac{1}{0.9} + \text{SEPA MW}$$

WINTER PEAK HOUR DEMAND MODEL

The 1983 winter demand forecast was derived using an econometric/regression model which was developed for Gulf by Southern Company Services.

The winter demand is not segregated by customer class, but does incorporate projections from each customer class. The projected energies and customers

are from Gulf's approved 1983 customer and energy budgets. The basic form of the winter demand model is:

Winter Peak Demand (MW) =

1.0041 x (0.72 A x B + 0.0017 C + 0.0013 D)

+ 0.0008278 E + 0.5F

WHERE:

A = Residential Appliance Saturation Factor

B = No. Residential Customers - 1st Quarter (January-March)

C = Commercial Energy - 1st Quarter (From Energy Forecast)

D = Wholesale Energy - 1st Quarter (From Energy Forecast)

E = Industrial Energy - 1st Quarter (From Energy Forecast)

F = MW's for Electric Vehicles

CHAPTER III

FORECAST OF FACILITIES REQUIREMENTS

UTILITY GULF POWER COMPANY FCG Form 6

PLANNED AND PROSPECTIVE GENERATING FACILITY ADDITIONS AND CHANGES

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
				Fuel		Const	Com'l In-	Gen Max	Net Capability				
Plant Name	Unit No.	Location	Type	Pri	Alt	Start Mo/Yr	Service Mo/Yrl	Nameplate KW	Summer MW	Winter MW	Fuel Transp Pri	Fuel Transp Alt	Status
Robert W. Scherer		Monroe Co. GA											
(25%)	3						2/87		202.0	202.0	RR	-	U
(25%)	4						2/89		202.0	202.0	RR	-	U
Crist	1r	Pensacola, FL					(1990)		(21.9)	(21.9)			
	2r	Pensacola, FL					(1990)		(21.0)	(21.0)			
	3r	Pensacola, FL					(1990)		(37.8)	(37.8)			
Scholz	1-2r	Sneads, FL					(1990)		(93.1)	(93.1)			
Smith	A r	Panama City, FL					(1991)		(31.3)	(34.8)			
							Total		198.9	195.4			

UTILITY GULF POWER COMPANY

FCG Form 7A

FORECAST OF CAPACITY, DEMAND, AND SCHEDULED MAINTENANCE AT TIME OF SUMMER PEAK [a]

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total Installed Capacity	Firm Capacity Import	Total Available Capacity	Firm Peak Demand	Margin Before Maintenance		Scheduled Maintenance	Margin After Maintenance	
Year	MW	MW [b]	MW	MW	MW	% of PK.	MW	MW	% of PK.
1983	2044	(192)	1852	1328	524	39.46	NONE	524	39.46
1984	2044	(323)	1721	1373	348	25.35		348	25.35
1985	2044	(361)	1683	1416	267	18.86		267	18.86
1986	2044	(464)	1580	1462	118	8.07		118	8.07
1987	2246	(615)	1631	1501	130	8.66		130	8.66
1988	2246	(665)	1581	1536	45	2.93		45	2.93
1989	2448	(356)	2092	1568	524	33.42		524	33.42
1990	2274	(356)	1918	1602	316	19.73		316	19.73
1991	2243	(356)	1887	1634	253	15.48		253	15.48
1992	2243	(334)	1909	1669	240	14.38		240	14.38

NOTE: a. Capacity allocations and changes must be made by June 30 to be considered in effect at tne time of the Summer peak. All values are Summer Net MW.

b. Includes expected capacity allocated to certain resale customers by Southeastern Power Administration (SEPA), TVA seasonal exchange, and capacity sold in existing Unit Power Sales contracts.

UTILITY GULF POWER COMPANY

FCG Form 7B

FORECAST OF CAPACITY, DEMAND, AND SCHEDULED MAINTENANCE AT TIME OF WINTER PEAK (a)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total Installed Capacity	Firm Capacity Import	Total Available Capacity	Firm Peak Demand	Margin Before Maintenance		Scheduled Maintenance	Margin After Maintenance	
Year	MW	MW (b)	MW	MW	MW	% of PK.	MW	MW	% of PK.
1983-84	2048	(204)	1844	1188	656	55.22	Not Available	656	55.22
1984-85	2048	(237)	1811	1224	587	47.96		587	47.96
1985-86	2048	(393)	1655	1281	374	29.20		374	29.20
1986-87	2048	(470)	1578	1325	253	19.09		253	19.09
1987-88	2250	(672)	1578	1364	214	15.69		214	15.69
1988-89	2250	(620)	1630	1401	229	16.35		229	16.35
1989-90	2452	(669)	1783	1438	345	23.99		345	23.99
1990-91	2278	(362)	1916	1478	438	29.63		438	29.63
1991-92	2243	(362)	1881	1516	365	24.08		365	24.08
1992-93	2243	(362)	1881	1542	339	21.98		339	21.98

NOTE: a. Capacity additions and changes must be made by November 30 to be considered in effect at the time of the Winter peak. All values are Winter Net MW.

b. Includes expected capacity allocated to certain resale customers by Southeastern Power Administration (SEPA), TVA seasonal exchange, and capacity sold in existing Unit Power Sales contracts.

AVAILABILITY OF PURCHASED POWER

Gulf Power Company coordinates its planning and operation with the other operating companies of the Southern electric system: Alabama Power Company, Georgia Power Company, and Mississippi Power Company. In any year an individual operating company may have a temporary surplus or deficit in generating capacity, depending on the relationship of its planned generating capacity to its load and reserve responsibility. Each company buys or sells its temporary deficit or surplus capacity from or to the pool. This is done through the mechanism of an Inter-Company Interchange Contract among the companies which is reviewed and updated annually.

OFF SYSTEM SALES

Unit Power Sales

Gulf Power Company, along with the other Southern operating companies, has negotiated the sales of unit capacity and energy to several utilities outside the Southern system. The length of the contracts involves the year 1983 through the remaining years of the Ten Year Site Plan. Gulf's allocated share of the capacity and energy sales varies from year to year and is reflected in the reserves on Forms 7A and 7B and the energy and fuel use on Forms 3A and 3B.

Long Term Sales

Contracts have also been finalized for the sale of non-firm capacity and energy through 1986. Reserves shown in this filing have not been reduced for this capacity; however, the energy sales have been reflected on Forms 3A and 3B.

CHAPTER IV

SITE DESCRIPTION

AND

IMPACT ANALYSIS

UTILITY GULF POWER COMPANY

FCG Form 8A

STATUS REPORT
SPECIFICATIONS OF PROPOSED GENERATING FACILITIES

(1)	Plant Name & Unit	Robert W. Scherer Electric Generating Center
(2)	Status	This facility is not located in the State of Florida
(3)	Anticipated Construction Timing	
(4)	Capacity	Summer 404 MW(1) Winter 404 MW
(5)	Type	
(6)	Primary and Alternate Fuel	
(7)	Air Pollution Control Strategy	
(8)	Cooling Method	
(9)	Total Site Area	
(10)	Anticipated Capital Investment	
(11)	Certification Status	
(12)	Status With Federal Agencies	

(1) Gulf to acquire 202 MW of Unit 3 in February, 1987, and 202 MW of Unit 4 in February, 1989, for a total of 404 MW.

UTILITY GULF POWER COMPANY FCG Form 8B

STATUS REPORT AND SPECIFICATIONS OF PROPOSED
DIRECTLY-ASSOCIATED TRANSMISSION LINES

(1) Point of Origin and Termination

No new directly-associated transmission lines in Florida are required.

(2) Number of Lines

(3) Right-Of-Way

(4) Line Length

(5) Voltage

(6) Anticipated Construction Timing

(7) Anticipated Capital Investment

(8) Substations

(9) Participation