### TEN YEAR SITE PLAN 1991 - 2000

### FOR ELECTRIC GENERATING FACILITIES

AND

**ASSOCIATED TRANSMISSION LINES** 

**APRIL, 1991** 



## GULF POWER COMPANY TEN YEAR SITE PLAN

FOR ELECTRIC GENERATING FACILITIES

AND

ASSOCIATED TRANSMISSION LINES

Submitted To The State Of Florida Department Of Community Affairs

Division of Resource Planning and Management Bureau of State Planning Power Plant Siting Program

APRIL 1, 1991

#### TABLE OF CONTENTS

		Page
	Chapter I	
	DESCRIPTION OF EXISTING FACILITIES	
Form lA	Existing Generation Facilities	1
Form 1B	Existing Generating Facilities - Land Use and Investment	3
Form 1C	Existing Generating Facilities - Environmental Considerations	4
	Chapter II	
	FORECAST OF ELECTRIC POWER DEMAND	
Form 2	History and Forecast of Energy Consumption and Number of Customers by Customer Class	7
Graph 1	Energy Use	10
Form 3A	Energy Sources	11
Form 3B	Fuel Requirements	13
Form 4	History and Forecast of Seasonal Peak Demand and Annual Net Energy for Load	15
Graph 2	History and Forecast of Load and Capacity Additions	17
Form 5	Previous Year Actual and Two-Year Forecast of Peak Demand and Net Energy for Load by Month	19
	Forecasting Documentation	
	Load Forecasting Methodology Overview	21

	I.	Customer Forecast	
		Residential Customer Forecast	. 22
		Commercial Customer Forecast	23
	II.	Energy Sales Forecast	
		Residential Sales Forecast	24
		Commercial Sales Forecast	27
		Industrial Sales Forecast	29
		Street Lighting Sales Forecast	30
		Wholesale Forecast	31
	III.	Peak Demand Forecast	32
	IV.	Conservation Programs	
		Residential Conservation	34
		Commercial Conservation	35
		Street Lighting	36
		Results Summary	36
	v.	Small Power Production	38
		Chapter III	
	F	ORECAST OF FACILITIES REQUIREMENTS	
Form 6		nned and Prospective Generating Facility	
roim 6		dditions and Changes	39
Form 7	A Fore M	ecast of Capacity, Demand, and Scheduled Laintenance at Time of Summer Peak	. 40
Form 7		ecast of Capacity, Demand, and Scheduled Maintenance at Time of Winter Peak	. 4]
	Avai	lability of Purchased Power	. 42

		•
	Chapter IV	
	SITE DESCRIPTION AND IMPACT ANALYSIS	
Form 8A	Status Report and Specifications of Proposed Generating Facilities	45
Form 8B	Status Report and Specification of Proposed Directly Associated Transmission Lines	49

## CHAPTER I DESCRIPTION OF EXISTING FACILITIES

			UTILITY: G EXISTING GEN	UTILITY: GULF POWER COMPANY EXISTING GENERATING FACILITIES	ANY TIES				TYP FORM 1A Page 1 of 2	1 1A of 2
(2)	(3)	(4)	(5) (6)	(2)	(8)	(6)	(10) (11) Net Capability	) ity	(12) (13)	(13)
4: -11			Fuel	Com'l In-	Exptd	Gen Max	C. Common	11:04:01	Fuel 1	Fuel Transp
No.	Location	Туре	Pri Alt	Mo/Yr	Mo/Yr	KN KN		MA MA	Pri	Alt
	Escambia County					1,229,000	1109.7	1109.7		
	25/1N/30W						:	:		
-		FS	NG HO	1/45	12/04	28,125	23.5	23.5	7	¥
2		FS	NG HO	67/9	12/04	28,125		54.9	7	¥
m		FS	NG HO	9/52	12/04	37,500		39.4	Ч	¥
4		FS	C NG	65/2	12/14	93,750	89.5	89.5	MA	7
2		FS	C NG	6/61	12/16	93,750	87.5	87.5	M	ፈ
9		FS	C NG	5/70	12/15	369,750	331.5 3	331.5	MA	占
7		F3	: :	8/73	12/18	578,000	513.4 5	513.4	¥.	;
	Bay County					381,850		391.8		
-	36/2S/15W	FS	; u	9/9	12/15	149.600	165.2	165.2	ž	;
~ ~		FS	;	29/9	12/17	190,400		191.8	M	:
∢		5	: 07	5/71	12/01	41,850	34.8	34.8	¥	:
	Jackson County					98,000	94.5	94.5		
-	# 1 /NC /21	FS	: . ပ	3/53	12/08	000'67		46.9	R	¥
2		FS	:	10/53	12/08	46,000	47.6	47.6	RR	¥.
	Jackson County, MS 42/5S/6W					548,250	515.0 5	515.0		
-		FS	오	21/6	12/22	274,125	257.7 2	257.7	æ	¥
7		FS	오	6/81	12/26	274,125		257.3	RR	¥
m	Monroe County, GA	FS	; u	1/87	12/27	222,750	210.4 2	210.4	RR	:
				Total System	Total System as of December 31, 1990	oer 31, 1990	2321.4 23	2321.4		

1

Abbreviations:

Fuel

FS - Fossil Steam

CT - Combustion Turbine
NG - Natural Gas
C - Coal
LO - Light Oil
HO - Heavy Oil

Fuel Transportation

PL · Pipeline WA · Water TK · Truck RR · Railroad

NOTE: (A) Unit capabilities shown represent Gulf's portion of Daniel Units 1 & 2 (50%) and Scherer Unit 3 (25%).

TYP FORM 1B

Existing Generating Facilities

Land Use and Investment

(1)	(2) Land Area	(3) Area	(4)	(5) ant Capital Inves	(5) Plant Capital Investment in (\$1,000)	8
Plant Name	Total	In Use Acres	Land	Site (B) Improvements	Buildings & Equipment (C)	Total
Steam Total			6,803	152,299	662,066	821,168
Crist	989	350	1,792	56,676	264,201	322,669
Lansing Smith	1,185	400	196	18, 135	68,214	86,545
Scholz	293	168	45	5,520	23,058	28,623
Daniel	2,657	500	3,666	38,653	158,087	200,406
Scherer	12, 158	005'6	1,104	33,306	148,287	182,697
Caryville (Weather Station)	ation)			6	219	228
Combustion Turbine Total	tal  -			269	3,527	4,224
Lansing Smith CT				269	3,527	4,224

As of 12/31/90. £ 6 6 6 6 5

9

Includes buildings.

Buildings excluded due to inclusion in Col. 5

Daniel Plant information refers to total area owned jointly by Gulf and Mississippi Power.

Gulf Power's portion of Plant Daniel only.

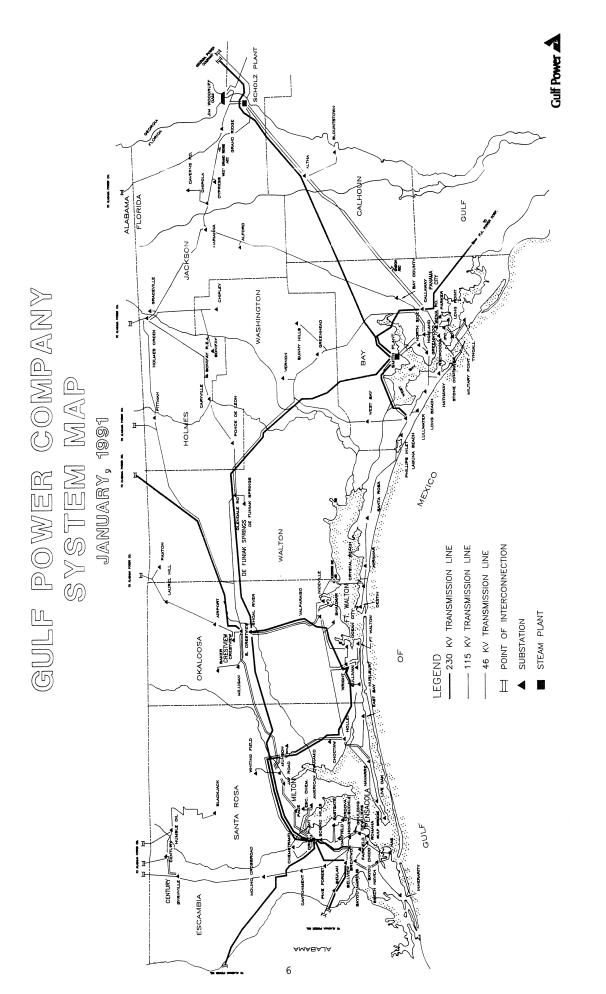
Scherer Plant information refers to total area owned by Georgia Power and area owned jointly

by Gulf and Georgia Power. "In Use Acres" includes cooling water lake. Gulf Power's portion of Plant Scherer only. Includes acquisition adjustment in the amount of \$7,903,084.

	Utility: Gulf Power Company	Power Company			TYP FORM 1C
Environ	Existing Generating Facilities Environmental Considerations for Steam Generating Units	ing Facilities for Steam Genera	ting Units		Page 1 of 2
(1)	(2)	(3)	(4)	(5)	(9)
		Flue	Flue Gas Cleaning		ni loo
Plant Name	Unit	Particulate	SOX	NOX	Type
Crist	-	Ö	<u>e</u>	ou	ИСТМ
	2	6	ou	<u>e</u>	WCTM
	ĸ	6	OU	o <u>c</u>	WCTM
	7	EP	٥ و	e e	WCTM
	5	EP	2	٥	WCTM
	9	EP	2	ou	WCTM
	7	Ð	01	ou	WCTM
Lansing Smith	-	БР	0	ou	015
	2	Б	2	ou	015
Scholz	-	Б	00	00	OTF
	2	ЕР	91	00	01F
Daniel	-	EP	92	00	<b>3</b>
	2	ЕР	00	OU	CP
Scherer	M	EP	9	ou	NDCT

# Abbreviations:

EP - Electrostatic Precipitator WCIM - Wet cooling tower, mechanical draft OTS - Once-through, saline OTF - Once-through, fresh CP - Cooling pond NDCT - Natural Draft Cooling Tower



## CHAPTER II FORECAST OF ELECTRIC POWER DEMAND

COMPANY	
GULF POWER	
UTILITY:	

TYP FORM 2	PAGE 1 OF 3	
		CLASS
		CUSTOMER
		В
		CUSTOMERS
		9
١ΝΥ		NUMBER
/dWO		AND
JIILITY: GULF POWER COMPANY		HISTORY AND FORECAST OF ENERGY CONSUMPTION AND NUMBER OF CUSTOMERS BY CUSTOMER CLASS
LITY:		ENERGY
5		P
		FORECAST
		AND
		HISTORY

AL AND RESIDENTIAL  AVERAGE KWH  NO. OF CONSUMPTION  GWH CUSTOMERS PER CUSTOMER GWH CUSTOMERS  2,364 194,228 12,169 1,432 23,962 59,748  2,364 194,228 12,254 1,439 25,487 58,805  2,561 212,379 12,254 1,439 25,487 58,805  2,564 222,308 12,221 1,777 28,983 61,326  2,964 222,816 12,729 1,913 30,576 62,570  3,055 223,936 12,783 2,189 32,757 63,760  3,055 224,859 12,883 2,089 32,757 65,305  3,435 26,20,38 13,173 2,169 33,500 64,761  3,536 225,129 13,173 2,169 33,500 64,761  3,536 225,129 13,173 2,169 33,500 64,761  3,536 225,129 13,173 2,169 33,500 64,761  3,536 225,129 13,243 2,410 35,469 65,887  3,577 283,072 13,331 2,687 39,632 66,887  3,677 277,404 13,272 2,410 36,469 67,884  3,580 228,762 13,331 2,688 41,124 68,285  4,089 305,469 13,385 2,888 61,124  6,089 310,980 13,419 2,835 41,857 67,742	(3)
AVERAGE KUH AVERAGE  CONSUMPTION  12,591 12,591 12,592 12,169 12,224 12,057 12,057 12,057 12,057 12,059 12,729 12,729 12,729 12,729 12,729 12,729 13,173 13,821 13,202 13,173 13,500 13,173 13,202 13,203 13,409 13,500 13,173 13,500 13,173 13,500 13,173 13,500 13,173 13,202 13,203 13,204 13,304 13,202 13,204 13,304 13,204 13,304 13,304 13,305 13,305 13,306 13,419 13,419 13,806	RURAL AND RESIDENTIAL
12,591 1,352 23,243 12,169 1,432 23,962 12,254 1,499 25,487 12,057 1,599 27,336 12,729 1,913 30,576 12,729 1,913 30,576 12,729 1,913 30,576 12,729 1,913 30,576 13,173 2,169 33,500 13,173 2,169 33,500 13,173 2,218 33,957 13,202 2,256 34,804 13,202 2,256 34,804 13,202 2,256 34,804 13,202 2,256 34,804 13,203 2,410 36,469 13,272 2,547 38,092 13,381 2,687 39,632 13,386 2,753 40,385 13,385 2,808 41,124 13,419 2,835 41,857	MEMBERS
12,591 1,352 23,243 12,169 1,432 23,962 12,254 1,499 25,487 12,057 1,559 27,336 12,729 1,913 30,576 12,729 1,913 30,576 12,733 1,986 31,821 12,883 2,089 32,757 13,173 2,169 33,957 13,202 2,256 34,804 13,204 2,218 33,957 13,243 2,410 36,469 13,254 2,490 37,321 13,243 2,410 36,469 13,354 2,438 38,860 13,354 2,438 38,860 13,381 2,687 39,632 13,385 2,808 41,124 13,419 2,835 41,857	PER HOUSEHOLD GWH
12,591       1,352       23,243         12,169       1,432       23,962         12,254       1,499       25,487         12,057       1,559       27,336         12,221       1,777       28,983         12,729       1,913       30,576         12,783       1,986       31,821         12,783       2,189       32,757         13,173       2,169       33,500         13,732       2,218       33,957         13,202       2,256       34,804         13,243       2,410       35,469         13,243       2,410       35,469         13,231       2,410       35,469         13,331       2,638       38,860         13,381       2,687       39,632         13,385       2,886       41,124         13,419       2,835       41,857	
12,169     1,432     23,962       12,254     1,499     25,487       12,057     1,559     27,336       12,221     1,777     28,983       12,729     1,913     30,576       12,763     1,986     31,821       12,883     2,089     32,757       13,173     2,169     33,500       13,173     2,218     33,957       13,202     2,256     34,804       13,202     2,256     34,804       13,243     2,410     36,469       13,272     2,490     37,321       13,331     2,638     38,860       13,381     2,687     39,632       13,396     2,753     40,385       13,419     2,835     41,124       13,419     2,835     41,187	2.67 2,361
12,254     1,499     25,487       12,057     1,559     27,336       12,221     1,777     28,983       12,729     1,913     30,576       12,783     1,986     31,821       12,883     2,089     32,757       13,173     2,169     33,500       13,173     2,218     33,957       13,202     2,256     34,804       13,202     2,256     34,804       13,243     2,410     36,469       13,272     2,490     37,321       13,272     2,490     37,321       13,331     2,638     38,860       13,381     2,687     39,632       13,396     2,753     40,385       13,419     2,835     41,124       13,419     2,835     41,857	
12,057 1,559 27,336 12,221 1,777 28,983 12,729 1,913 30,576 12,783 2,089 32,757 13,173 2,169 33,500 13,173 2,218 33,957 13,202 2,256 34,804 13,304 2,332 35,576 13,243 2,410 36,469 13,272 2,547 38,092 13,331 2,638 38,860 13,381 2,687 39,632 13,396 2,753 40,385 13,396 2,783 41,124 13,419 2,835 41,857	2.60 2,472
12,221 1,777 28,983 12,729 1,913 30,576 12,783 2,089 32,757 13,173 2,169 33,500 13,173 2,218 33,957 13,202 2,256 34,804 13,304 2,332 35,576 13,243 2,410 36,469 13,272 2,40 37,321 13,272 2,547 38,092 13,381 2,687 39,632 13,386 2,783 41,124 13,419 2,835 41,857	2.53 2,561
12,729 1,913 30,576 12,763 1,986 31,821 12,883 2,089 32,757 13,173 2,169 33,500 13,173 2,218 33,957 13,202 2,256 34,804 13,304 2,332 35,576 13,243 2,410 36,469 13,243 2,410 37,321 13,272 2,547 38,092 13,381 2,687 39,632 13,396 2,753 40,385 13,396 2,783 41,124 13,419 2,835 41,857	2.51 2,736
12,763 1,986 31,821 12,883 2,089 32,757 13,173 2,169 33,500 13,173 2,218 33,957 13,202 2,256 34,804 13,243 2,410 36,469 13,243 2,410 36,469 13,272 2,547 38,092 13,381 2,687 39,632 13,396 2,753 40,385 13,396 2,733 41,124	2,48 2,964
12,883       2,089       32,757         13,173       2,169       33,500         13,173       2,218       33,957         13,202       2,256       34,804         13,304       2,332       35,576         13,243       2,410       36,469         13,254       2,490       37,321         13,272       2,547       38,092         13,331       2,638       38,860         13,381       2,687       39,632         13,396       2,753       40,385         13,419       2,835       41,124         13,419       2,835       41,857	2.47 3,055
13,173     2,169     33,500       13,173     2,218     33,957       13,202     2,256     34,804       13,304     2,332     35,576       13,243     2,410     36,469       13,254     2,490     37,321       13,272     2,547     38,092       13,331     2,638     38,860       13,381     2,687     39,632       13,396     2,753     40,385       13,419     2,835     41,124       13,419     2,835     41,857	
13,173     2,218     33,957       13,202     2,256     34,804       13,304     2,332     35,576       13,243     2,410     36,469       13,254     2,490     37,321       13,272     2,547     38,092       13,331     2,638     38,860       13,381     2,687     39,632       13,396     2,753     40,385       13,419     2,835     41,124       13,419     2,835     41,857	
13,202     2,256     34,804       13,304     2,332     35,576       13,243     2,410     36,469       13,254     2,490     37,321       13,272     2,547     38,092       13,331     2,638     38,860       13,381     2,687     39,632       13,396     2,753     40,385       13,419     2,835     41,124       13,419     2,835     41,857	
13,304     2,332     35,576       13,243     2,410     36,469       13,254     2,490     37,321       13,272     2,547     38,092       13,331     2,638     38,860       13,381     2,687     39,632       13,396     2,753     40,385       13,385     2,808     41,124       13,419     2,835     41,857	
13,243     2,410     36,469       13,254     2,490     37,321       13,272     2,547     38,092       13,331     2,638     38,860       13,381     2,687     39,632       13,396     2,753     40,385       13,385     2,808     41,124       13,419     2,835     41,857	2,41 3,536
13,254     2,490     37,321       13,272     2,547     38,092       13,331     2,638     38,860       13,381     2,687     39,632       13,396     2,753     40,385       13,385     2,808     41,124       13,419     2,835     41,857	
13,272     2,547     38,092       13,331     2,638     38,860       13,381     2,687     39,632       13,396     2,753     40,385       13,385     2,808     41,124       13,419     2,835     41,857	
13,331     2,638     38,860       13,381     2,687     39,632       13,396     2,753     40,385       13,385     2,808     41,124       13,419     2,835     41,857	
13,381     2,687     39,632       13,396     2,753     40,385       13,385     2,808     41,124       13,419     2,835     41,857	
13,396 2,753 40,385 13,385 2,808 41,124 13,419 2,835 41,857	2.35 3,940
13,385 2,808 41,124 13,419 2,835 41,857	
13,419 2,835 41,857	2.34 4,089
	2.33 4,173

\* HISTORICAL AND PROJECTED FIGURES INCLUDE PORTIONS OF ESCAMBIA, SANTA ROSA, OKALOOSA, WALTON, BAY, WASHINGTON, HOLMES, AND JACKSON COUNTIES SERVED BY GULF POWER COMPANY.

TYP FORM 2 PAGE 2 OF 3		(16)	TOTAL SALES TO	ULTIMATE	CONSUMERS GWH		5,209	5,241	2,597	2,905	6,299	6,636	968'9	7,226	7,574	7,774	7,856	8,098	8,255	8,425	8,578	8,793	8,970	9,156	9,323	9,478
	CUSTOMER CLASS	(15)	OTHER SALES TO	ULTIMATE	CONSUMERS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MBER OF CUSTOMERS BY	(14)	STREET AND	HIGHWAY	LIGHTING GWH		14	14	14	14	14	14	14	5	16	17	18	18	18	19	19	19	19	20	20	21
GULF POWER COMPANY	HISTORY AND FORECAST OF ENERGY CONSUMPTION AND NUMBER OF CUSTOMERS BY CUSTOMER CLASS	(13)		AVERAGE KWH	CONSUMPTION PER CUSTOMER		8,983,485	8,421,988	9,161,324	9,894,417	9,782,246	8,949,099	9,019,271	9,553,842	9,147,029	8,817,297	8,624,726	8,707,131	8,641,003	8,583,551	8,539,604	8,564,933	8,608,307	8,663,704	8,719,300	8,777,624
	FORECAST OF ENER	(12)	INDUSTRIAL	AVERAGE	NO. OF CUSTOMERS		165	170	176	179	181	195	204	506	529	247	546	254	258	261	564	267	270	273	276	279
	HISTORY AND	(11)			HAS	:	1,482	1,432	1,612	1,771	1,771	1,745	1,840	1,968	2,095	2,178	2,148	2,212	2,229	2,240	2,254	2,287	2,324	2,365	2,407	5,449
		(10)			YEAR	:	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000

GULF POWER COMPANY

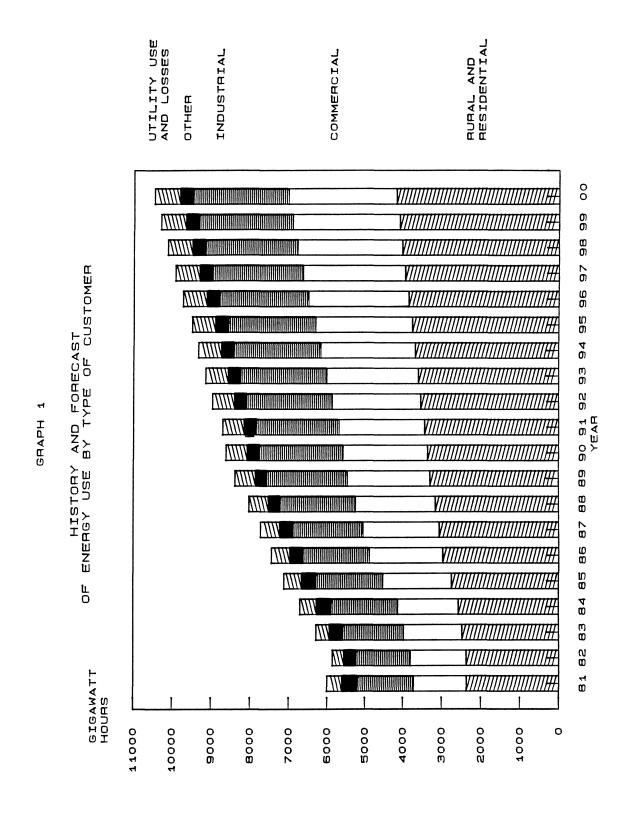
TYP FORM 2 PAGE 3 OF 3

PAGE 3 OF 3

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

(25)	TOTAL NO. OF CUSTOMERS	210,954	218,419 227,439	239,956	263,646	271,449	277,881	283,830	295,331	301,720	308,463	315,054	321,496	327,956	334,385	340,688	346,936	353, 183
(21)	OTHER CUSTOMERS (AVERAGE NO.)	57	59 62	63	62	62	29	63	89	89	89	89	89	89	89	89	89	89
(20)	NET ENERGY FOR LOAD GVH	6,004	5,859 6,284	6,703	7,435	7,723	8,016	8,378	8,695	8,957	9,129	9,315	6,482	9,717	9,910	10,111	10,294	10,462
(19)	UTILITY USE AND LOSSES GWH	395	306 351	433	475	667	202	528 545	551	295	578	290	601	617	629	945	929	799
(18)	SALES FOR RESALE GWH	400	313 336	364	324	328	283	276	288	292	596	300	303	307	310	313	316	319
(17)	YEAR	1981	1982 1983	1984	1986	1987	1988	1989	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000

NOTE: SALES FOR RESALE AND NET ENERGY FOR LOAD INCLUDE CONTRACTED ENERGY ALLOCATED TO CERTAIN CUSTOMERS BY SOUTHEASTERN POWER ADMINISTRATION (SEPA).



TYP FORM 3A Page 1 of 2	1993 1994	(2,187) (2,242)	None	11,302 11,545		0 0	None None	None None	None	2 1	_	None None	2 1	None None	12 11	12 11	None None	None None	None
	1992	(2,399)	None	11,340	0	0	None	None	None	2	None	None	2	None	14	14	None	None	None
oany 5)	1991	(1,931)	None	10,620	0	0	None	None	None	-	None	None	<b>-</b> -	None	۲۵	5	None	None	None
Utility: Gulf Power Company (a) (b) Energy Sources	Actual 1990	205	None	8,043	4	4	None	None	None	2	None	None	2	None	26	26	None	None	None
Utility: Enel	Actual 1989	(416)	None	8,773	-	-	None	None	None	2	None	None	2	None	18	18	None	None	None
		HMS	GUH	GUH	HMS	GWH	GVH	GWH	BUN	HMS	BWH	EVH	H.B	BAH	HMS	GWH	GWH	BWH	GWH
	Energy Sources	Annual Energy Interchange	Nuclear	Coal	Residual -Total	Steam	22	CT	Diesel	Distillate -Total	Steam	22	CT	Diesel	Natural Gas -Total	Steam	22	CT	Diesel

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

None

None

None

None

None

None

E.H

9,315

9,129

8,957

8,695

8,612

8,378

EV.

Net Energy for Load

Other

(b) Includes energy generated and sold under existing power sales contracts.

TYP FORM 3A	Page 2 of 2	

5	Utility: Gulf Power Company (a) (b)	ver Company (a) (b)			Page	Page 2 of 2
	Energy Sourc	səs				
	1995	1996	1997	1998	1999	2000
GWH	(1,482)	(1,160)	(1,472)	(737)	(595)	(1,447)
GWH	None	None	None	None	None	None
GWH	10,928	10,797	11,275	10,666	10,660	11,571
GWH	0	0	0	0	0	0
GWH	0	0	0	0	0	0
GWH	None	None	None	None	None	None
GWH	None	None	None	None	None	None
GWH	None	None	None	None	None	None
GWH	-	-	-	-	-	<b>-</b> -
GWH	None	None	None	None	None	None
GWH	None	None	None	None	None	None
GWH	-	<del>-</del>	_	-	-	-
ВМН	None	None	None	None	None	None
GWH	35	62	106	181	228	337
GWH	12	54	32	07	52	09
GWH	None	None	None	None	None	None
GWH	23	55	7.2	141	176	277
GWH	None	None	None	None	None	None
ВМН	None	None	None	None	None	None
ВМН	9,482	9,717	9,910	10,111	10,294	10,462
				(a) (b)  Energy Sources  (1,482)	Energy Sources  1995	(1,482) (1,160) (1,472) (737) (595)  None None None None None None None None

<sup>(</sup>a) Includes contracted energy allocated to certain resale customers by Southeastern Power

Administration (SEPA)
(b) Includes energy generated and sold under existing power sales contracts.

		ň	Utility: Gulf Power Company	Power Company				TYP FORM 3B Page 1 of 2
			Fuel Req	Fuel Requirements				
Fuel Requirements	жments		Actual 1989	Actual 1990	1991	1992	1993	1994
Nuclear		12 BTUx10	None	None	None	None	None	None
Coal		1000 TON	3,803	3,518	4,418	4,723	969'7	4,794
Residual	-Total	1000 BBL	<b>-</b> ,	12	0 (	0 0	0 0	0 6
	Steam CC	1000 BBL 1000 BBL	None	12 None	None	None	None	None
	CT	1000 BBL	None	None	None	None	None	None
	Diesel	1000 BBL	None	None	None	None	None	None
Distillate	-Total	1000 BBL	33	27	38	32	25	22
	Steam	1000 BBL	27	22	37	56	22	54
	23	1000 BBL	None	None	None	None	None	None
	ст	1000 BBL	9	5	-	м	ĸ	-
	Diesel	1000 BBL	None	None	None	None	None	None
Natural Gas	-Total	1000 MCF	707	1,037	89	195	172	158
	Steam	1000 MCF	707	1,037	89	195	172	158
	22	1000 MCF	None	None	None	None	None	None
	CT	1000 MCF	None	None	None	None	None	None
	Diesel	1000 MCF	None	None	None	None	None	None
		9						
Other		BTUX10	None	None	None	None	None	None
Annual Avg. Fossil	Fossil	BTU/KWH	10,621	10,765	10,141	10,161	10,169	10, 164

Net H.R.

			Utility: Gulf	Gulf Power Company			TYP F	TYP FORM 3B
			Fuel Requirements	ements			Page	Page 2 of 2
Fuel Requirements	ements		1995	1996	1997	1998	1999	2000
Nuclear		12 BTUx10	None	None	None	None	None	None
Soal		1000 TON	4,534	067'7	4,705	4,475	4,475	4,757
Residual	-Total	1000 BBL	0 0	0 (	0 (	0 (	0 (	0 (
	Steam	1000 BBL	None	None	None	None	None	None
	CT Diesel	1000 BBL 1000 BBL	None	None	None	None	None	None
Distillate	-Total	1000 BBL	97	36	39	31	27	19
	Steam	1000 BBL	45	35	38	30	26	18
	3 5	1000 BBL	None 1	None 1	None	None	None	None 1
	Diesel	1000 BBL	None	None	None	None	None	None
Natural Gas	-Total	1000 MCF	473	1,077	1,437	2,457	3,078	4,534
	Steam	1000 MCF	172	366	475	950	793	932
	ខ	1000 MCF	None	None	None	None	None	None
	CT	1000 MCF	301	711	296	1,837	2,285	3,602
	Diesel	1000 MCF	None	None	None	None	None	None
		9						
Other		BTUx10	None	None	None	None	None	None
Annual Avg. Fossil Net H.R.	Fossil	ВТU/КЧН	10,206	10,235	10,270	10,321	10,337	10,201

UTILITY: GULF POWER COMPANY

TYP FORM 4 PAGE 1 OF 2

LOAD
FOR
ANNUAL NET ENERGY FOR LOAD
NET
ANNUAL
AND
AL PEAK DEMAND AND A
PEAK
SEASONAL
<u>Р</u>
AND FORECAST OF SEASONAL
AND
HISTORY

ANNIAL	LOAD	*	:	52.4%	54.3%	52.9%	54.7%	55.9%	50.4%	54.3%	56.3%	56.3%	55.1%	24.6%	54.8%	55.0%	55.0%	55.1%	55.0%	55.2%	55.3%	55.4%	55.3%
COAD		TOTAL	:	6,004	5,859	6,284	6,703	7,115	7,435	7,723	8,016	8,378	8,612	8,695	8,957	9,129	9,315	6,482	9,717	9,910	10,111	10,294	10,462
ANNUAL NET ENERGY FOR LOAD	GWH	WHOLESALE		400	313	336	364	359	324	328	283	276	594	288	292	596	300	303	307	310	313	316	319
ANNUAL		RETAIL	:	2,605	2,547	5,948	6,338	6,757	7,110	7,395	7,733	8,102	8,319	8,407	8,665	8,833	9,015	9,178	9,411	009'6	6,798	226'6	10,142
		TOTAL	:	1,309	1,232	1,355	1,395	1,454	1,684	1,624	1,620	1,698	1,785	1,817	1,862	1,896	1,934	1,966	2,010	2,048	2,087	2,122	2,154
- MV		INTERRUPT		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUMMER PEAK DEMAND - MW		TOTAL		1,309	1,232	1,355	1,395	1,454	1,684	1,624	1,620	1,698	1,785	1,817	1,862	1,896	1,934	1,966	2,010	2,048	2,087	2,122	2,154
SUMMER F	FIRM	WHOLESALE		82	99	92	80	87	ይ	ይ	55	09	69	89	69	20	71	22	E,	7.4	22	22	92
		RETAIL		1,231	1,166	1,279	1,315	1,367	1,611	1,551	1,565	1,638	1,716	1,749	1,793	1,826	1,863	1,894	1,937	1,974	2,012	2,047	2,078
		YEAR	:	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000

NOTE: Wholesale and total columns include contracted capacity and energy allocated to certain resale customers by Southeastern Power Administration (SEPA)

15

UTILITY: GULF POWER COMPANY

TYP FORM 4
PAGE 2 OF 2

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

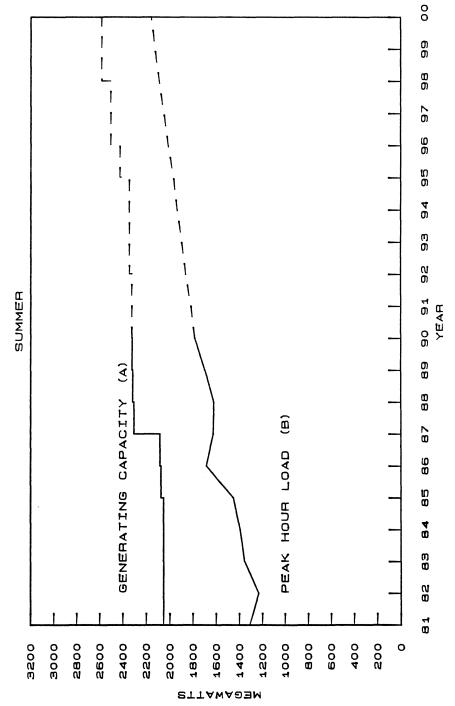
WINTER PEAK DEMAND - MW

YEAR         RETAIL         WHOLESALE         TOTAL         INTERRUPT           1981-82         1,149         68         1,217         0           1982-83         978         59         1,037         0           1982-84         1,234         72         1,306         0           1982-85         1,450         81         1,531         0           1982-86         1,365         47         1,412         0           1985-86         1,365         47         1,412         0           1986-87         1,303         57         1,360         0           1986-87         1,342         60         1,402         0           1986-87         1,342         60         1,402         0           1988-90         1,764         57         1,821         0           1989-90         1,764         57         1,846         0           1990-91         1,659         55         1,714         0           1991-92         1,724         56         1,768         0           1992-93         1,729         57         1,846         0           1992-94         1,870         59         1,929 <th></th> <th></th> <th>FIRM</th> <th></th> <th></th> <th></th>			FIRM			
1,149 68 978 59 1,234 72 1,450 81 1,365 47 1,303 57 1,498 56 1,712 55 1,773 55 1,789 57 1,870 59 1,974 60 2,029 62 2,082	YEAR	RETAIL	WHOLESALE	TOTAL	INTERRUPT	TOTAL
1,149 68 978 59 1,234 72 1,450 81 1,450 81 1,365 47 1,498 56 1,749 56 1,772 55 1,773 55 1,789 57 1,823 58 1,870 60 1,977 60 1,994 61 2,082 62	:		:	:		
978 59 1,234 72 1,450 81 1,365 47 1,303 57 1,498 56 1,764 57 1,712 56 1,773 57 1,789 57 1,870 59 1,977 60 1,994 61 2,082 62	81-82	1,149	89	1,217	0	1,217
1,234 72 1,450 81 1,365 47 1,303 57 1,498 56 1,764 57 1,659 55 1,712 56 1,712 56 1,733 57 1,789 57 1,870 60 1,977 60 1,994 61 2,029 62	82-83	826	59	1,037	0	1,037
1,450 81 1,365 47 1,342 60 1,498 56 1,764 57 1,659 55 1,712 56 1,712 56 1,733 57 1,789 57 1,870 60 1,977 60 1,994 61 2,029 62	83-84	1,234	22	1,306	0	1,306
1,365 1,303 1,342 60 1,498 56 1,764 57 1,659 55 1,712 56 1,733 57 1,789 57 1,823 58 1,977 60 1,994 61 2,029 62	84-85	1,450	81	1,531	0	1,531
1,303 57 1,342 60 1,498 56 1,764 57 1,659 55 1,712 56 1,789 57 1,873 57 1,977 60 1,977 60 2,029 62	85-86	1,365	25	1,412	0	1,412
1,342 60 1,498 56 1,764 57 1,659 55 1,712 56 1,733 57 1,789 57 1,870 59 1,917 60 1,957 60 2,029 62	86-87	1,303	22	1,360	0	1,360
1,498 56 1,764 57 1,659 55 1,712 56 1,733 57 1,823 57 1,870 59 1,917 60 1,957 60 2,029 62	82-28	1,342	09	1,402	0	1,402
1,764 57 1,659 55 1,712 56 1,733 57 1,789 57 1,870 59 1,917 60 1,957 60 2,029 62	88-89	1,498	29	1,554	0	1,554
1,659 55 1,712 56 1,753 56 1,789 57 1,823 58 1,870 59 1,917 60 1,957 60 2,029 62	89-90	1,764	22	1,821	0	1,821
1,712 56 1,753 57 1,789 57 1,823 58 1,870 59 1,917 60 1,994 61 2,029 62	90-91	1,659	55	1,714	0	1,714
1,753 57 1,789 57 1,823 58 1,870 59 1,917 60 1,994 61 2,029 62	91-92	1,712	29	1,768	0	1,768
1,789 57 1,823 58 1,870 59 1,917 60 1,994 61 2,029 62 2,082 62	92-93	1,753	57	1,810	0	1,810
1,823 58 1,870 59 1,917 60 1,994 61 2,029 62 2,082 62	93-94	1,789	25	1,846	0	1,846
1,870 59 1,917 60 1,994 61 2,029 62 2,082 62	94-95	1,823	58	1,881	0	1,881
1,917 60 1,957 60 1,994 61 2,029 62 2,082 62	95-36	1,870	59	1,929	0	1,929
1,957 60 1,994 61 2,029 62 2,082 62	26-96	1,917	09	1,977	0	1,977
1,994 61 2,029 62 2,082 62	86-26	1,957	09	2,017	0	2,017
2,029 62 2,082 62	66-86	1,994	19	2,055	0	2,055
2,082 62	9-2000	2,029	29	2,091	0	2,091
	0-2001	2,082	9	2,144	0	2,144

NOTE: Wholesale and total columns include contracted capacity and energy allocated to certain resale customers by Southeastern Power Administration (SEPA).

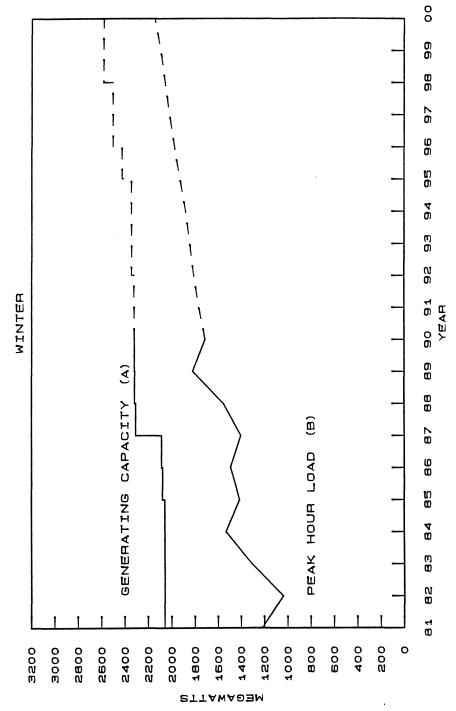
NOTE: Values for 1990-91 are projections.





SHOWS INSTALLED GENERATING CAPACITY ONLY; REFER TO FORM 74 FOR NET AVAILABLE CAPACITY. INCLUDES CAPACITY ALLOCATED TO CERTAIN RESALE CUSTOMERS BY SEPA. € @ NOTE:

GRAPH 2 HISTORY AND FORECAST OF LOAD AND CAPACITY ADDITIONS



SHOWS INSTALLED GENERATING CAPACITY ONLY; REFER TO FORM 78 FOR NET AVAILABLE CAPACITY. INCLUDES CAPACITY ALLOCATED TO CERTAIN RESALE CUSTOMERS BY SEPA. € @ NOTE:

UTILITY: GULF POWER COMPANY

TYP FORM 5

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

ACTUA			FORE	FORECAST	
		1991		1992	
	PEAK DEMAND NEL	PEAK DEMAND NEL MW GUH	NEL	PEAK DEMAND NEL MW GWH	NEL
			:		:
		1,714	246	1,768	770
		1,327	581	1,366	009
		1,394	618	1,435	637
		1,166	574	1,199	591
		1,583	719	1,625	741
		1,791	888	1,838	914
		1,817	922	1,862	276
		1,776	925	1,822	951
		1,661	803	1,703	825
		1,329	623	1,363	645
		1,234	287	1,272	909
		1,485	402	1,534	733
•			:		:
ω,	612		8,695		8,957

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

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FORECASTING DOCUMENTATION

#### GULF POWER COMPANY

#### LOAD FORECASTING METHODOLOGY

#### OVERVIEW

Gulf Power Company views the forecasting effort as a dynamic process requiring ongoing efforts to yield results which allow informed planning and decision-making. The total forecast is an integration of different techniques and methodologies, each applied to the task for which it is best suited. Many of the techniques take advantage of the extensive data made available through the Company's marketing efforts, which are predicated on the philosophy of knowing and understanding the needs, perceptions and motivations of our customers and actively promoting wise and efficient uses of energy which satisfy customer needs. Gulf is recognized as an industry leader in the successful implementation of cost-effective conservation programs, beginning with the introduction of the highly successful Good Cents Home concept in 1976, and continuing with concerted efforts to meet the mandates of the 1980 Florida Energy Efficiency and Conservation Act (FEECA). This philosophy entails focused market research efforts, coupled with field marketing efforts that maintain an open line of communication with our customers, and yields increased knowledge and understanding of changes in the marketplace. Also included in these efforts is continued research support for promising new energy technologies, including solar photovoltaics, electric vehicles, fuel cells and high efficiency equipment.

The Forecasting and Marketing Planning section of the Marketing and Load Management Department is responsible for preparing forecasts of customers, energy and peak demand. A description of the methods used in the development of these forecasts follows.

#### I. CUSTOMER FORECAST

#### A. RESIDENTIAL CUSTOMER FORECAST

The immediate short-term forecast (0-2 years) of customers is based primarily on projections prepared by division personnel. The divisions remain abreast of local market and economic conditions within their service territories through direct contact with economic development agencies, developers, builders, lending institutions and other key contacts. The immediate short-term forecasts prepared by the divisions, which are developed through various forecasting methods, are analyzed for consistency and the incorporation of major construction projects and business developments is reviewed. The end result is a near-term forecast of residential customers by type of dwelling.

For the remaining forecast horizon (3-25 years), the Regional Economic Growth Impact Study (REGIS), a mathematically intensive forecasting model, is utilized in the development of residential customers. At the center of this system is a cohort survival routine approach in which population by age group is aged from one time period to the next. The model's migration/demographic component, given an initial population age distribution, together with forecasts of migration, births and deaths, projects population by age group into the future.

The forecast of residential customers is an outcome of the final section of the migration/demographic element of the model. The number of residential customers Gulf expects to serve is

calculated by multiplying the total number of households located in the eight counties in which Gulf provides service by the percentage of customers in these eight counties for which Gulf currently provides service.

The number of households referred to above is computed by applying a household formation trend to the previously mentioned population by age group, and then by summing the number of households in each of five adult age categories. As indicated, there is a relationship between households, or residential customers, and the age structure of the population of the area, as well as household formation trends. The household formation trend is the product of initial year household formation rates in the Gulf service area and projected U.S. trends in household formation.

#### B. COMMERCIAL CUSTOMER FORECAST

The immediate short-term forecast (0-2 years) of commercial customers, as in the residential sector, is prepared by the divisions. A review of the assumptions, techniques and results for each division is undertaken, with special attention given to the incorporation of major commercial development projects.

Beyond the immediate short-term period, commercial customers are forecast as a function of residential customers, reflecting the growth of commercial services to meet the needs of new residents. Implicit in the commercial customer forecast is the relationship between growth in total real disposable income and growth in the commercial sector.

#### II. ENERGY SALES FORECAST

#### A. RESIDENTIAL SALES FORECAST

The residential energy sales forecast is prepared using the Residential End-Use Energy Planning System (REEPS), a model developed for the Electric Power Research Institute (EPRI) by Cambridge Systematics, Incorporated, under Project RP1211-2. The REEPS model integrates elements of both econometric and engineering end-use approaches to energy forecasting. Market penetrations and energy consumption rates for major appliance end-uses are treated explicitly. REEPS produces forecasts of appliance installations, operating efficiencies and utilization patterns for space heating, water heating, air conditioning and cooking, as well as other major end-uses. Each of these decisions is responsive to energy prices and demand-side initiatives, as well as household/dwelling characteristics and geographical variables.

The major behavioral responses in the simulation model have been estimated statistically from an analysis of household survey data. Surveys provide the data source required to identify the responsiveness of household energy decisions to prices and other variables.

The REEPS model forecasts energy decisions for a large number of different population segments. These segments represent households with different demographic and dwelling characteristics. Together, the population segments reflect the full distribution of characteristics in the customer population. The total service area

forecast of residential energy decisions is represented as the sum of the choices of various segments. This approach enhances evaluation of the distributional impacts of various demand-side initiatives.

For each of the major end-uses, REEPS forecasts equipment purchases, efficiency and utilization choices. The model distinguishes among appliance installations in new housing, retrofit installations and purchases of portable units. Within the simulation, the probability of installing a given appliance in a new dwelling depends on the operating and performance characteristics of the competing alternatives, as well as household and dwelling features. The installation probabilities for certain end-use categories are highly interdependent.

The functional form of the appliance installation models is the multinomial logit or its generalization, the nested logit. The parameters of these models quantify the sensitivity of appliance installation choices to costs and other characteristics. The magnitudes of these parameters have been estimated statistically from household survey data.

Appliance operating efficiency and utilization rates are simulated in the REEPS model as interdependent decisions. Efficiency choice is dependent on operating cost at the planned utilization rate, while actual utilization depends on operating cost given the appliance efficiency. Appliance and building standards affect efficiency directly by mandating higher levels than those otherwise expected.

The sensitivity of efficiency and utilization decisions to costs, climate, household and dwelling size, and income has been estimated from historical survey data. Energy prices, income, and household and dwelling size significantly affect space conditioning and residual energy use. Household and dwelling size also influence water heating usage. Climate significantly impacts space heating and air conditioning.

Major appliance base year unit energy consumption (UEC) estimates are based on either metered appliance data or conditioned energy demand regression analysis. The latter is a technique employed in the absence of metered observations of individual appliance usage, and involves the disaggregation of total household demand for electricity into appliance specific demand functions.

Conditional energy demand models are multivariate regressions which explain residential customers' demands for electricity as functions of the energy-using equipment that they own, weather conditions, demographic and dwelling characteristics, and other factors playing a major role in total household energy consumption. The mathematics underlying this method rely upon the premise that consumption through a particular end-use must be zero if the end-use is not present, and if the end-use is present, energy consumption levels are represented as dependent on weather, demographics, income and other variables.

The total electrical energy consumption, E, of a household can be represented as:

$$E = E_0 + \sum_{i=1}^{N} E_i$$

Where  $E_i$  is the electrical energy consumed by a specified major appliance i, and  $E_0$  is the electrical energy consumed by the remaining, unspecified set of appliances. The methodology of conditional energy demand analysis produces cross sectional, ordinary least squares regression estimates of the appliance coefficients. The regressions were performed using input data from the Gulf Power Company 1986 and 1988 Residential Market Surveys, billing cycle monthly energy data, and billing cycle monthly weather data.

The residential sales forecast reflects the continued impacts of Gulf Power's Good Cents Home program and efficiency improvements undertaken by customers as a result of Centsable Energy Check audits, as well as conversions to higher efficient outdoor lighting. Additional information on the Residential Conservation programs and program features are provided in the Conservation section.

#### B. COMMERCIAL SALES FORECAST

COMMEND, a commercial end-use model developed by the Georgia Institute of Technology through EPRI Project RP1216-06, serves as the basis for the major portion of Gulf's commercial energy sales forecast.

The COMMEND model is an extension of the capital-stock approach used in most econometric studies. This approach views the demand for energy as a product of three factors. The first of these factors is the physical stock of energy-using capital, the second

factor is base year energy use, and the third is a utilization factor representing utilization of equipment relative to the base year.

Changes in equipment utilization are modeled using short-run econometric fuel price elasticities. Fuel choice is forecast with a life-cycle cost/behavioral microsimulation submodel, and changes in equipment efficiency are determined using engineering and cost information for space heating, cooling and ventilation equipment and econometric elasticity estimates for the other end-uses (lighting, water heating, ventilation, cooking, refrigeration, and others).

Three characteristics of COMMEND distinguish it from traditional modeling approaches. First. the reliance engineering relationships to determine future heating and cooling efficiency provides a sounder basis for forecasting long-run changes in space heating and cooling energy requirements than a pure econometric approach can supply. Second, the simulation model a variety of engineering data on the energy-using characteristics of commercial buildings. Third, COMMEND provides estimates of energy use detailed by end-use, fuel type and building type.

Gulf's most recent Commercial Market Survey, conducted in 1984, provided much of the input data required for the COMMEND model. The model produces forecasts of energy use for the end-uses mentioned above, within each of the following business categories:

1. Food Stores

7. Elementary/Secondary Schools

2. Offices

- 8. Colleges/Trade Schools
- 3. Retail and Personal Services 9. Hospitals/Health Services
- 4. Public Utilities
- 10. Hotels/Motels
- 5. Automotive Services
- 11. Religious Organizations

6. Restaurants

12. Miscellaneous

The Commercial Sales forecast reflects the continued impacts of Gulf Power's Commercial Good @ents building program and efficiency improvements undertaken by customers as a result of Commercial Energy Audits and Technical Assistance Audits, as well as conversions to higher efficient outdoor lighting. Additional information on the Commercial Conservation programs and program features are provided in the Conservation section.

### C. <u>INDUSTRIAL SALES FORECAST</u>

The short-term industrial energy sales forecast is developed using a combination of on-site surveys of major industrial customers, trending techniques, and multiple regression analysis. Forty-three of Gulf's largest industrial customers are interviewed to identify load changes due to equipment addition, replacement or changes in operating characteristics.

The short-term forecast of monthly sales to these major industrial customers is a synthesis of the detailed survey information and historical monthly load factor trends. The

forecast of short-term sales to the remaining smaller industrial customers is developed using multiple regression analysis.

The long-term forecast of industrial energy sales is based on econometric models of the chemical, pulp and paper, other manufacturing, and non-manufacturing sectors. The industrial forecast is further refined by accounting for expected cogeneration installations, and a supplemental energy rate.

### D. STREET LIGHTING SALES FORECAST

The forecast of monthly energy sales to street lighting customers is based on projections of the number of fixtures in service, for each of the following fixture types:

HIGH PRESSURE SODIUM VAPOR	MERCURY VAPOR
5,400 Lumen	3,200 Lumen
8,800 Lumen	7,000 Lumen
20,000 Lumen	9,400 Lumen
25,000 Lumen	17,000 Lumen
46,000 Lumen	48,000 Lumen

In the short-term, the estimated monthly kilowatt-hour consumption for each fixture type is multiplied by the projected number of fixtures in service to produce total monthly sales for a given type of fixture. This methodology allows Gulf to explicitly evaluate the impacts of lighting programs, such as mercury to high pressure sodium conversions. In the long-term, kilowatt-hour consumption grows at the same rate as projected fixture growth which, in itself, is modeled as a function of projected residential customer growth.

### E. WHOLESALE ENERGY FORECAST

The short-term forecast of energy sales to wholesale customers is based on interviews with these customers, as well as recent historical data. A forecast of total monthly energy requirements at each wholesale delivery point is produced.

The long-term forecast is based on estimates of annual growth rates for each delivery point, according to future growth potential.

### F. COMPANY USE & INTERDEPARTMENTAL ENERGY

The 1991 Annual Forecast for Company and Interdepartmental energy usage was based on recent historical values, with appropriate adjustments to reflect increases in energy requirements through 1990, for new Company facilities. The 1991 forecasted Company usage was then projected through the year 2015, at the same growth rate each year as the growth in residential customers. The monthly spreads were derived using historical relationships between monthly and annual energy usage.

### III. PEAK DEMAND FORECAST

The peak demand forecast is prepared using the Hourly Electric Load Model (HEIM), developed by ICF, Incorporated, for EPRI under Project RP1955-1. The model forecasts hourly electrical loads over the long-term.

Load shape forecasts have always provided an important input to traditional system planning functions. Forecasts of the pattern of demand have acquired an added importance due to structural changes in the demand for electricity and increased utility involvement in influencing load patterns for the mutual benefit of the utility and its customers.

HEIM represents an approach designed to better capture changes in the underlying structure of electricity consumption. Rapid increases in energy prices during the 1970's and early 1980's brought about changes in the efficiency of energy-using equipment. Additionally, sociodemographic and microeconomic developments have changed the composition of electricity consumption, including changes in fuel shares, housing mix, household age and size, construction features, mix of commercial services, and mix of industrial products.

In addition to these naturally occurring structural changes, utilities have become increasingly active in offering customers options which result in modified consumption patterns. An important input to the design of such demand-side programs is an assessment of their likely impact on utility system loads.

HEIM has been designed to forecast electric utility load shapes and to analyze the impacts of factors such as alternative weather conditions, customer mix changes, fuel share changes, and demand-side programs. The structural detail of HEIM provides forecasts of hourly class and system load curves by weighting and aggregating load shapes for individual end-use components.

Model inputs include energy forecasts and load shape data for the user-specified end-uses. Inputs are also required to reflect new technologies, rate structures and other demand-side programs. Model outputs include hourly system and class load curves, load duration curves, monthly system and class peaks, load factors and energy requirements by season and rating period.

The methodology embedded in HEIM may be referred to as a "bottom-up" approach. Class and system load shapes are calculated by aggregating the load shapes of component end-uses. The system demand for electricity in hour i is modeled as the sum of demands by each end-use in hour i:

### IV. CONSERVATION PROGRAMS

As mentioned earlier, Gulf's forecast of energy sales and peak demand reflect the continued impacts of our conservation programs. The following provides a listing of the conservation programs and program features in effect and estimates of reductions in peak demand and net energy for load reflected in the forecast as a result of these programs.

### A. RESIDENTIAL CONSERVATION

In the residential sector, Gulf's Good Cents New Home program is designed to make cost effective increases in the efficiencies of the new home construction market above that currently being provided by placing additional requirements on cooling equipment efficiencies and sizing, increased water heating efficiencies, increased insulation levels in walls, ceilings, and floors, and tighter restrictions on glass area.

Gulf's Good pents Improved Home program is designed to make cost effective increases in efficiencies in the existing home market by requiring improvements in the insulation levels in walls, ceilings, and floors, and increased efficiency requirements on the heating and cooling systems and water heating systems.

Further conservation benefits are achieved in the existing home market with Gulf's Residential Energy Audit program which is designed to provide existing residential customers with cost-effective energy conserving options that increase comfort and

reduce operating costs. The goal of this program is to upgrade the customer's home to the Good Cents Improved Home standard by providing specific whole house recommendations, a list of qualified companies who provide installation services, and information on "low-interest" financing.

Additional conservation benefits are realized in the residential sector through Gulf's Outdoor Lighting program by conversion of existing less efficient mercury vapor lighting to higher efficient high pressure sodium lighting.

### B. COMMERCIAL CONSERVATION

In the commercial sector, Gulf's Good Øents Building program is designed to make cost effective increases in efficiencies in both new and existing commercial buildings with requirements resulting in energy conserving investments that address the thermal efficiency of the building envelope, interior lighting, heating and cooling equipment efficiency, and solar glass area. Additional recommendations are made, where applicable, on energy conserving options that include thermal storage, heat recovery systems, water heating heat pumps, solar applications, energy management systems, and high efficiency outdoor lighting.

The Commercial Energy Audit (EA) and Technical Assistance Audit (TAA) programs are designed to provide commercial customers with assistance in identifying cost effective energy conservation opportunities and introduce them to various technologies which will lead to improvements in the energy efficiency level of their

business. The program is designed with enough flexibility to allow for a simple walk through analysis (EA) or a detailed economic evaluation of potential energy improvements through a more in-depth audit process (TAA) which includes equipment energy usage monitoring, computer energy modeling, life cycle equipment cost analysis, and feasibility studies.

### C. STREET LIGHTING CONVERSION

Gulf's Street Lighting program is designed to achieve additional conservation benefits by conversion of existing less efficient mercury vapor lighting to higher efficient high pressure sodium lighting.

### D. CONSERVATION RESULTS SUMMARY

The following table provides direct estimates of the energy savings (reductions in peak demand and net energy for load) realized by Gulf's conservation programs. These numbers relfect estimates of conservation undertaken by customers as a result of Gulf Power Company's involvement. The conservation without Gulf's involvement has contributed to further unquantifiable reductions to demand and net energy for load. These unquantifiable additional reductions are captured in the time series regressions in our demand and energy forecasts.

## HISTORICAL TOTAL CONSERVATION PROGRAMS CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

	SUMMER	WINTER	NET ENERGY
	PEAK	PEAK	FOR LOAD
	(KW)	(KW)	(KWH)
1989	160,245	207,891	385,175,068

## 1991 BUDGET FORECAST TOTAL CONSERVATION PROGRAMS INCREMENTAL ANNUAL REDUCTIONS AT GENERATOR

	SUMMER	WINTER	NET ENERGY
	PEAK	PEAK	FOR LOAD
	(KW)	(KW)	(KWH)
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000	11,447 11,823 12,891 12,973 12,970 13,159 13,378 13,783 14,150 14,222 14,208	13,866 14,486 15,750 16,861 17,607 18,262 18,955 19,501 20,112 20,048	28,202,337 29,171,006 31,644,645 31,986,654 32,117,035 32,623,719 33,220,656 34,237,474 35,172,892 35,451,852 35,423,079

# 1991 BUDGET FORECAST TOTAL CONSERVATION PROGRAMS CUMULATIVE ANNUAL REDUCTIONS AT GENERATOR

St	UMMER	WINTER	NET ENERGY
	PEAK	PEAK	FOR LOAD
	(KW)	(KW)	(KWH)
1991 183 1992 196 1993 209 1994 223 1995 235 1996 248 1997 263 1998 276 1999 293	1,692 3,515 6,406 9,379 2,349 5,508 8,886 2,669 6,819 1,041 5,249	221,757 236,243 251,994 268,667 285,528 303,135 321,397 340,352 359,853 379,965 400,013	413,377,405 442,548,411 474,193,056 506,179,710 538,296,744 570,920,463 604,141,119 638,378,593 673,551,485 709,003,337 744,426,416

NOTE: DOES NOT INCLUDE EXPECTED IMPACTS OF THE FOLLOWING PILOT PROGRAMS:

- 1) THERMAL ENERGY STORAGE 2) TRANSTEXT ADVANCED ENERGY MANAGEMENT 3) HEAT PIPES

### V. SMALL POWER PRODUCTION

The current forecasts also consider Gulf's active position in the promotion of renewable energy resources, the most recent examples being our involvement in two waste-to-energy facilities located within our service area. In addition to aiding in the initial stages of planning, installation and operation of these facilities, the Company has initiated preliminary studies to assess the feasibility of construction of other waste disposal units at various sites in Northwest Florida. Following is a list of the cumulative small power producer capability anticipated in the base case forecast. This includes both waste-to-energy projects and other renewable fuel projects.

<u>Year</u>	Small Power Producers Net Capability (MW)	<u>Year</u>	Small Power Producers Net Capability (MW)
1990	11	2003	45
1991	11	2004	45
1992	11	2005	45
1993	11	2006	45
1994	11	2007	45
1995	40	2008	45
1996	40	2009	45
1997	45	2010	45
1998	45	2011	45
1999	45	2012	45
2000	45	2013	45
2001	45	2014	45
2002	45	2015	45

## CHAPTER III

## FORECAST OF

### **FACILITIES REQUIREMENTS**

UTILITY: GULF POWER COMPANY

PLANNED AND PROSPECTIVE GENERATING FACILITY ADDITIONS AND CHANGES

£	(2)	(3)	(4)	(5)	(5) (6)	3	(8)	6)	(10)	(11)	(12)	(12) (13)	(14)
to large	Unit	; + coo	Ş	F.	Fuel	Const	Comil In- Service	Gen Max Nameplate	Net Cap Summer	Net Capability Summer Winter	Fuel	Fuel Transp	
	. Oz	רחבמרוחו	<u> </u>			170	- COE		E	Ē		A11	Status
Scholz	⋖	Jackson County 12/3N/7W	5	SN.	9	06/92	05/95		79.0	79.0 79.0	Ч	¥	۵
Scholz	ω	Jackson County 12/3N/7W	5	NG	9	26/90	96/50		79.0	0.62 0.62	7	¥	۵
Peaking Unit		Unknown	5	NG	07	96/90	05/98		79.0	79.0	ᆸ	¥	۵
Peaking Unit		Unknown	5	N.	0	26/90	05/2000		79.0	79.0 79.0	占	¥	۵
							TOTAL		316.0 316.0	316.0 316.0			
Abbreviations: CT - Combustion Turbine	T - Combustic	on Turbine											

NG - Natural Gas LO - Light Oil PL - Pipeline TK - Truck P - Planned, but not authorized by utility

UTILITY: GULF POWER COMPANY

FORECAST OF CAPACITY, DEMAND, AND SCHEDULED MAINTENANCE AT TIME OF SUMMER PEAK (A)

AFTER VANCE		PER CENT	OF PEAK		18.0%	15.1%	13.1%	10.9%	13.1%	14.6%	12.5%	14.3%	12.5%	14.6%
MARGIN AFTER MAINTENANCE			æ	:	327	281	546	211	258	293	257	298	592	315
		SCHEDULED MAINTENANCE	¥		NONE									
ARGIN BEFORE MAINTENANCE		PER CENT	OF PEAK		18.0%	15.1%	13.1%	10.9%	13.1%	14.6%	12.5%	14.3%	12.5%	14.6%
MARGIN BEFOR MAINTENANCE			¥	:	327	281	549	211	258	293	257	298	265	315
	FIRM	PEAK DEMAND	₹	:	1817	1862	1896	1934	1966	2010	2048	2087	2122	2154
	TOTAL	AVAILABLE CAPACITY	₹	:	2144	2143	2145	2145	2224	2303	2305	2385	2387	5469
	FIRM	CAPACITY IMPORT	MW (B)	:	(178)	(200)	(198)	(198)	(198)	(198)	(196)	(195)	(193)	(190)
	TOTAL	INSTALLED	¥		2322	2343	2343	2343	2422	2501	2501	2580	2580	5659

(A) CAPACITY ALLOCATIONS AND CHANGES MUST BE MADE BY JUNE 30 TO BE CONSIDERED IN EFFECT AT THE TIME OF THE SUMMER PEAK. ALL VALUES ARE SUMMER NET MW. NOTE:

AND ESTIMATED CONTRACTED DEMAND SIDE OPTIONS.

1992 1993 1994 1995 1996 1997 1998 1999

YEAR

<sup>(</sup>B) INCLUDES CAPACITY SOLD IN ALL EXISTING UNIT POWER SALES CONTRACTS, CONTRACTED CAPACITY ALLOCATED TO CERTAIN RESALE CUSTOMERS BY THE SOUTHEASTERN POWER ADMINISTRATION (SEPA),

TYP FORM 7B

MARGIN AFTER MAINTENANCE

MARGIN BEFORE MAINTENANCE

UTILITY: GULF POWER COMPANY

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

	PER CENT	OF PEAK		21.5%	18.5%	16.2%	14.0%	15.3%	16.6%	14.3%	16.2%	14.3%	15.2%
		æ		380	335	562	564	295	328	289	332	562	325
SCHEDIII ED	MAINTENANCE	æ		NOT	AVAILABLE								
	PER CENT	OF PEAK		21.5%	18.5%	16.2%	14.0%	15.3%	16.6%	14.3%	16.2%	14.3%	15.2%
		₹	:	380	335	586	564	295	328	289	332	588	325
FIRM	DEMAND	£		1768	1810	1846	1881	1929	1977	2017	2055	2091	2144
TOTAL AVATI ABI F	CAPACITY	₹		2148	2145	2145	2145	2224	2305	2306	2387	2390	5469
FIRM	IMPORT	MW (B)		(174)	(198)	(198)	(198)	(198)	(196)	(195)	(193)	(190)	(190)
TOTAL	CAPACITY	MM		2322	2343	2343	2343	2422	2501	2501	2580	2580	5659
		YEAR	: : : : : : : : : : : : : : : : : : : :	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01

NOTE: (A) CAPACITY ALLOCATIONS AND CHANGES MUST BE MADE BY NOVEMBER 30 TO BE CONSIDERED IN EFFECT AT THE TIME OF WINTER PEAK. ALL VALUES ARE WINTER NET MW.

<sup>(</sup>B) INCLUDES CAPACITY SOLD IN ALL EXISTING UNIT POWER SALES CONTRACTS, CONTRACTED CAPACITY ALLOCATED TO CERTAIN RESALE CUSTOMERS BY THE SOUTHEASTERN POWER ADMINISTRATION (SEPA), AND ESTIMATED CONTRACTED DEMAND SIDE OPTIONS.

### 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, Mississippi Power Company, and Savannah Electric and 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 Intercompany 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, have negotiated the sales of capacity and energy to several utilities outside the Southern system. The term of the contracts started prior to 1991 and extends into 2010. Gulf's 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 December of the year 1993. Reserves shown in this filing have not been reduced for this capacity; however, the energy sales have been reflected on Forms 3A and 3B.

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CHAPTER IV
SITE DESCRIPTION
AND
IMPACT ANALYSIS

TYP FORM 8A Page 1 of 4

	Utility: Gulf Power Company	Company Page 1 of 4
	Status Report Specifications of Proposed Generating Facilities	nerating Facilities
£	plant Name & Unit	Schol z A
(5)	Status	This facility is planned but not authorized
(3)	Anticipated Construction Timing	In-Service May, 1995
(4)	Capacity	Summer 79.0 MW Winter 79.0 MW
(5)	Туре	Combustion Turbine
(9)	Primary and Alternate Fuel	Primary - Natural Gas; Alternate - Light Oil (distillate)
(3)	Air Pollution Control Strategy	Steam Injection for NOx control
(8)	Cooling Method	NA
6)	Total Site Area	293 acres (total plant site)
(10)	Anticipated Capital Investment	\$ 35,708,000
(11)	Certification Status	Not applied
(12)	Status with Federal Agencies	Not applied

TYP FORM 8A Page 2 of 4

Utility: Gulf Power Company

Status Report Specifications of Proposed Generating Facilities

	Plant Name & Unit	Scholz B
St	Status	This facility is planned but not authorized
Ā	Anticipated Construction Timing	In-Service May, 1996
ن	Capacity	Summer 79.0 MW Winter 79.0 MW
-	Туре	Combustion Turbine
۵.	Primary and Alternate Fuel	Primary · Natural Gas; Alternate · Light Oil (distillate)
⋖	Air Pollution Control Strategy	Steam Injection for NOx control
О	Cooling Method	NA
-	Total Site Area	293 acres (total plant site)
⋖	(10) Anticipated Capital Investment	\$ 37,288,000
0	(11) Certification Status	Not applied
(12)	Status with Federal Agencies	Not applied

Utility: Gulf Power Company

TYP FORM 8A Page 3 of 4

6 6 6 6 6 6 6	Status Report Specifications of Proposed Generating Facilities Flant Name & Unit Status Anticipated Construction Timing Anticipated Construction Timing Type Capacity Vinter 79.0 MW Winter 79.0 MW Winter 79.0 MW Winter 79.0 MW Type Combustion Turbine Primary and Alternate Fuel Air Pollution Control Strategy Cooling Method Total Site Area Total Site Area Unknown Anticipated Panital Investment Second Construction Specification Formation Formatio	Peaking Unit This facility is planned but not authorized In-Service May, 1998 Summer 79.0 MW Winter 79.0 MW Winter 79.0 MW Winter 79.0 MW Winter 79.0 MW Unknown Steam Injection for NOx control NA Unknown
3 8	Anticipated Lapital Investment Certification Status	* 40,704,000 Not and led
E :		Not applied
(12)	Status with Federal Agencies	Not applied

Page 4

Status Report

Specifications of Proposed Generating Facilities

3	Plant Name & Unit	Peaking Unit
(2)	Status	This facility is planned but not authorized
(3)	Anticipated Construction Timing	In-Service May, 2000
(4)	Capacity	Summer 79.0 MW Winter 79.0 MW
(5)	Туре	Combustion Turbine
(9)	Primary and Alternate Fuel	Primary - Natural Gas; Alternate - Light Oil (distillate)
3	Air Pollution Control Strategy	Steam Injection for NOx control
(8)	Cooling Method	NA
6)	Total Site Area	Unknown
(10)	(10) Anticipated Capital Investment	\$ 44,635,000
(11)	(11) Certification Status	Not applied
(12)	(12) Status with Federal Agencies	Not applied

Utility: Gulf Power Company

Status Report and Specifications of Proposed Directly-Associated Transmission Lines

€	(1) Point of Origin and Termination	Scholz to Smith - Thomasville 230 KV loop
(2)	Number of Lines	2
(3)	(3) Right-of-Way	Length: on company property Width:
(4)	(4) Line Length	0.3 miles each
(5)	(5) Voltage	230 KV
(9)	(6) Anticipated Construction Timing	In-Service January, 1995
(2)	(7) Anticipated Capital Investment	\$ 171,000
(8)	Substations	None
6)	(9) Participation	None

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