

# LOCKHART POWER COMPANY

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POST OFFICE BOX 10 • LOCKHART, SOUTH CAROLINA 29364

TELEPHONE (864) 545-2211  
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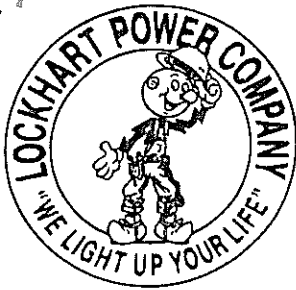
## INTEGRATED RESOURCE PLAN

THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

DOCKET NO. 93-430-E  
ORDER NO. 94-348  
04-21-94

JULY, 1999





# LOCKHART POWER COMPANY

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June 25, 1999

THE HONORABLE GARY WALSH  
Executive Director  
South Carolina Public Service Commission  
Post Office Drawer 11649  
Columbia, South Carolina 29211

Docket No. 93-430-E  
Order No. 94-348

Dear Mr. Ballentine:

Pursuant to Docket No. 93-430-E, Order No. 94-348 dated April 21, 1994 please find enclosed for filing Lockhart power Company's **INTERGRATED RESOURCE PLAN** dated July, 1999.

Very truly yours,

Jim Seay

Process Improvement Manager



# INTEGRATED RESOURCE PLAN

THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

DOCKET NO. 93-430-E  
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JULY, 1999

# LOCKHART POWER COMPANY

## INTEGRATED RESOURCE PLAN

1     **1.    STATEMENT OF OBJECTIVE**

2     Lockhart Power Company's (LPC) objective in developing an Integrated Resource Plan  
3     (IRP) is to minimize our long run total costs and produce the least cost to our  
4     customers consistent with the availability of an adequate and reliable supply of electric  
5     energy while maintaining system flexibility and considering environmental impacts.  
6     We intend for the plan to also improve customer service, offer additional customer  
7     options, and improve efficiencies of energy usage.

8

9     **2.    RELEVANT SUPPORTING DOCUMENTATION**

10

11     a. See ATTACHMENTS

12

1 --- DEMAND FORECAST

13

2 --- SUPPLY AND SALES FORECAST

14

3 --- LONG RANGE CAPITAL BUDGET

15

4 --- LOCKHART POWER COMPANY ENERGY SOURCES

16

17

b.    See EXHIBITS

18

LSA-1 --- CASH FLOW BREAKEVEN TEST

19

WORKSHEET

20

21

22

23

1     **3.     SUPPLY RESOURCES**

2

3     LPC presently utilizes three sources of supply --- its own hydroelectric facility,  
4     purchases from a small PURPA qualifying facility, and purchases from Duke Power  
5     Company. LPC purchases approximately 75% of its total system input in MWH's.  
6     SEE ATTACHMENT 4. For the foreseeable future LPC intends to continue using  
7     these three sources to meet its load requirements. LPC uses its run-of-river hydro  
8     plant as a peaking unit through out the year. LPC's purchases from the PURPA  
9     facility at a price defined as the lowest energy charge per KWH, i.e. no demand  
10    charge, that Duke Power Company (DPC) charges LPC on DPC's Schedule RESALE.  
11    LPC purchases power from DPC under their Schedule RESALE which is approved by  
12    the Federal Energy Regulatory Commission (FERC). We conclude that DPC's rates to  
13    LPC are presumptively just and reasonable, having been permitted by the FERC. We  
14    plan to continue to use the above described three supply sources for the foreseeable  
15    future. However, LPC intends to investigate other sources to determine if the costs  
16    and benefits, both short run and long run, meet the objectives of our IRP. The sources  
17    we intend to investigate include, but are not limited to the following:

18

19                    GENERATION --- Diesel Fueled Peaking for peak shaving.  
20                    Additional Hydro for peak shaving.

21                    PURCHASES --- Spot, Short Term, Long Term from present  
22                    supplier to reduce supply cost. Spot, Short Term, Long Term  
23                    from Independent Power Producers or Exempt Wholesale  
24                    Generators to reduce supply cost.

25

26

27

1     **4.     VARIOUS ENERGY ALTERNATIVES, EFFICIENT ENERGY CHOICES AND**  
2     **PROPER PRICING SIGNALS**

3     LPC has and continues to do the following:

4             A.     Designed its rates to economically encourage improved load factors and  
5                     reduce monthly demands by:

6                     1.     Incorporates a demand penalty by use of a demand ratchet  
7                             in its commercial, industrial, and resale rates. This encourages  
8                             peak shaving.

9                     2.     Divides its commercial and industrial rates into a first 200  
10                            hours use of billing demand rate and an over 200 hours use of  
11                            billing demand rate with the rates in the latter considerably less  
12                            expensive than the first 200 hours use block. This encourages  
13                            peak shaving.

14                    3.     Incorporated stringent conservation requirements in its  
15                            Residential - All Electric and General Service - All Electric rates.  
16                            This encourages conservation.

17                    4.     Designed its Residential and Residential - All Electric  
18                            rates such that they are identical during the summer months, the  
19                            season of LPC's system peak. This encourages peak shaving and  
20                            conservation.

21                    5.     Designed its General Service commercial and General  
22                            Service - All Electric rates such that they are identical during the  
23                            summer months, the season of LPC's system peak. This  
24                            encourages peak shaving and conservation.

25                    6.     Converted its Residential rate and Residential - All  
26                            -Electric rate (summer months) from a declining block rate to an  
27                            inverted rate. This encourages conservation.



1 B. Provides our residential customers with energy conservation information  
2 through weekday radio messages to encourage conservation and educate  
3 customers on how to conserve.  
4

5 **5. EVALUATING POTENTIAL OPTIONS**  
6

7 LPC will employ unbiased analysis techniques for potential options included in its IRP.  
8 LPC will evaluate each option by including all appropriate costs and and benefits and  
9 will provide a detailed explanation with supporting evidence for our choice.  
10

11 **6. EVALUATING THE COST EFFECTIVENESS OF SUPPLY-SIDE AND**  
12 **DEMAND SIDE OPTIONS**  
13

14 LPC will evaluate the cost effectiveness of each supply-side and demand-side option by  
15 considering relevant costs and benefits. LPC will evaluate each option by the cash  
16 flow breakeven method. SEE EXHIBIT LSA-1. Worksheets will be used to show the  
17 detail for Columns 2, 3, 4, and 5. Savings and Environmental costs will be included as  
18 Added Net Sales or an Expense depending on the value developed for that particular  
19 item. If Column 13 shows that the project takes longer than five years to break even,  
20 the project will probably not be implemented. If Column 13 shows that the project  
21 takes less than five years to break even, the project may be implemented.  
22  
23

24 **7. MEASURE OF NET BENEFITS**  
25

26 LPC will provide the net benefits resulting from the options chosen for use, keeping  
27 within the objective stated in 1. Benefits will be quantified on the Worksheets  
28 described in 6. above. Benefits are considered to be, but are not limited to, cost  
29 savings, peak load shaving, conservation, load shifting, valley filling, environmental

1 concerns, improvement of customer service, offering of additional customer options,  
2 improved efficiencies of energy usage, and improved outage times and reliability.

3  
4 **8. ENVIRONMENTAL COSTS**

5  
6 LPC will consider environmental costs on a monetized basis where reasonable and  
7 sufficient data is available in its planning process and evaluation of options. Those  
8 environmental costs that cannot be monetized will be addressed on a qualitative basis  
9 within the planning process and evaluation of options. Environmental costs can be  
10 increased or reduced. The environmental costs referred to here are those costs  
11 associated with demand or supply side options which impact the customer directly or  
12 indirectly.

13  
14 **9. DEMAND AND ENERGY FORECAST**

15  
16 SEE ATTACHMENTS 1 AND 2

17  
18 **10. EVALUATION AND REVIEW OF EXISTING DEMAND-SIDE OPTIONS**

19  
20 SEE 4. ABOVE

21  
22 **11. FUTURE STUDIES**

23  
24 LPC presently has no significant studies in process. We annually evaluate the  
25 effectiveness of: (1) time-of use rates for load shifting, valley filling, and peak shaving  
26 (2) economic development rates for cost reduction, and (3) interruptible rates for peak  
27 shaving during.

1     **12. FLEXIBILITY AND QUICK RESPONSE**

2     LPC intends to remain flexible enough to react quickly to changes in a manner  
3     consistent with minimizing costs while maintaining reliability.

4  
5     **13. MAINTENANCE**

6  
7     Maintenance is a continuous process at LPC. Actual maintenance costs for 1997 and  
8     1998 are shown below as well as the forecast of maintenance costs for 1999 through  
9     2013.

10     

<u>YEAR</u>	<u>MAINTENANCE COST</u>	<u>YEAR</u>	<u>MAINTENANCE COST</u>
11     1997	\$794,300	2006	\$1,049,954
12     1998	767,191	2007	1,091,952
13     1999	797,878	2008	1,135,630
14     2000	829,794	2009	1,181,055
15     2001	862,986	2010	1,228,298
16     2002	897,505	2011	1,277,429
17     2003	933,405	2012	1,328,526
18     2004	970,741	2013	1,381,667
19     2005	1,009,571		

20  
21     **14. THIRD PARTY POWER PURCHASES**

22     LPC will investigate other purchase sources if the occasion arises and is willing to  
23     pursue any other purchase sources to determine if the costs and benefits, both short run  
24     and long run, provide our customers with the options consistent with our IRP  
25     objective. LPC has recently contacted the Piedmont Municipal Power Agency through  
26     one of its member cities to pursue possible purchases from this agency.

1       **15. NEW TECHNOLOGIES**

2  
3       LPC will continuously evaluate, pursuant to its IRP objective, new technology for both  
4       demand-side and supply-side options.

5  
6       **16. FUTURE SUPPLY-SIDE OPTIONS**

7  
8       LPC presently has no certain scheduled supply side options other than those described  
9       in 3.

10  
11       **17. CAPTURING LOST OPPORTUNITY RESOURCES**

12       LPC gives attention to capturing lost-opportunity resources which include cost-effective  
13       energy efficiency savings such as in new construction, renovation, and in routine  
14       replacement of existing equipment. In routine replacement of any and all equipment,  
15       LPC includes energy and efficiency savings as a component of evaluation. A forecast  
16       of replacements is shown on ATTACHMENT 3.

17  
18       **18. DYNAMICS OF IRP PROCESS**

19  
20       LPC realizes that the IRP process is dynamic and that modifications may be necessary  
21       over time. As new issues arise, existing issues or components of the plan change in  
22       significance and improved analysis techniques developed; LPC intends to file revisions  
23       to its IRP with The Public Service Commission of South Carolina and request that the  
24       Commission incorporate the revision into LPC's IRP or approve it as a separate  
25       consideration.

DOCKET NO. 93-430-E

ORDER NO. 94-348

SUMMER  
DEMAND FORECAST

MW'S

*****					
DESCRIPTION	1999	2000	2001	2002	2003
-----	-----	-----	-----	-----	-----
SYSTEM SUMMER PEAK DEMAND IN MW'S					
1 SYSTEM PEAK DEMAND	76	76.7	77.5	78.2	79

*****					
DESCRIPTION	1999	2000	2001	2002	2003
-----	-----	-----	-----	-----	-----
DEMAND SOURCES					
2 COMPANY OWNED HYDRO GENERATION	17.4	18.0	18.0	18.0	18.0
6 PURCHASED FROM PURPA QUALIFYING FACILITY	SEE NOTE 1				
7 PURCHASES FROM DUKE POWER COMPANY	58.6	58.7	59.5	60.2	61.0
8 TOTAL DEMAND SOURCES	76	76.7	77.5	78.2	79

NOTE 1: The PURPA qualifying facility is an unmanned station and instantaneous reading are not available. Since the Summer peak occurs during low river flow, this facility contributes little if any to the peak.

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SUMMER  
DEMAND FORECAST

MW'S

*****					
DESCRIPTION	2004	2005	2006	2007	2008
-----	-----	-----	-----	-----	-----
SYSTEM SUMMER PEAK DEMAND IN MW'S					
1 SYSTEM PEAK DEMAND	79.7	80.5	81.3	82.1	82.9

*****					
DESCRIPTION	2004	2005	2006	2007	2008
-----	-----	-----	-----	-----	-----
DEMAND SOURCES					
2 COMPANY OWNED HYDRO GENERATION	18.0	18.0	18.0	18.0	18.0
6 PURCHASED FROM PURPA QUALIFYING FACILITY	SEE NOTE 1				
7 PURCHASES FROM DUKE POWER COMPANY	61.7	62.5	63.3	64.1	64.9
8 TOTAL DEMAND SOURCES	79.7	80.5	81.3	82.1	82.9

NOTE 1: The PURPA qualifying facility is an unmanned station and instantaneous reading are not available. Since the Summer peak occurs during low river flow, this facility contributes little if any to the peak.

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SUMMER  
DEMAND FORECAST

MW'S

\*\*\*\*\*

DESCRIPTION	2009	2010	2011	2012	2013
SYSTEM SUMMER PEAK DEMAND IN MW'S					
1 SYSTEM PEAK DEMAND	83.7	84.5	85.3	86.1	86.9

\*\*\*\*\*

DESCRIPTION	2009	2010	2011	2012	2013
DEMAND SOURCES					
2 COMPANY OWNED HYDRO GENERATION	18.0	18.0	18.0	18.0	18.0
6 PURCHASED FROM PURPA QUALIFYING FACILITY	SEE NOTE 1				
7 PURCHASES FROM DUKE POWER COMPANY	65.7	66.5	67.3	68.1	68.9
8 TOTAL DEMAND SOURCES	83.7	84.5	85.3	86.1	86.9

NOTE 1: The PURPA qualifying facility is an unmanned station and instantaneous reading are not available. Since the Summer peak occurs during low river flow, this facility contributes little if any to the peak.

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WINTER  
DEMAND FORECAST

MW'S

*****					
DESCRIPTION	1999	2000	2001	2002	2003
-----	-----	-----	-----	-----	-----
SYSTEM WINTER PEAK DEMAND IN MW'S					
1 SYSTEM PEAK DEMAND	61.6	62.2	62.7	63.3	63.9

*****					
DESCRIPTION	1999	2000	2001	2002	2003
-----	-----	-----	-----	-----	-----
DEMAND SOURCES					
2 COMPANY OWNED HYDRO GENERATION	18.0	18.0	18.0	18.0	18.0
6 PURCHASED FROM PURPA QUALIFYING FACILITY	SEE NOTE 1				
7 PURCHASES FROM DUKE POWER COMPANY	43.6	44.2	44.7	45.3	45.9
8 TOTAL DEMAND SOURCES	61.6	62.2	62.7	63.3	63.9

NOTE 1: The PURPA qualifying facility is an unmanned station and instantaneous reading are not available. Since the Summer peak occurs during low river flow, this facility contributes little if any to the peak.



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WINTER  
DEMAND FORECAST

MW'S

*****					
DESCRIPTION	2004	2005	2006	2007	2008
-----	-----	-----	-----	-----	-----
SYSTEM WINTER PEAK DEMAND IN MW'S					
1 SYSTEM PEAK DEMAND	64.5	65.1	65.7	66.3	66.9

*****					
DESCRIPTION	2004	2005	2006	2007	2008
-----	-----	-----	-----	-----	-----
DEMAND SOURCES					
2 COMPANY OWNED HYDRO GENERATION	18.0	18.0	18.0	18.0	18.0
6 PURCHASED FROM PURPA QUALIFYING FACILITY	SEE NOTE 1				
7 PURCHASES FROM DUKE POWER COMPANY	46.5	47.1	47.7	48.3	48.9
8 TOTAL DEMAND SOURCES	64.5	65.1	65.7	66.3	66.9

NOTE 1: The PURPA qualifying facility is an unmanned station and instantaneous reading are not available. Since the Summer peak occurs during low river flow, this facility contributes little if any to the peak.

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ORDER NO. 94-348

WINTER  
DEMAND FORECAST

MW'S

*****					
DESCRIPTION	2009	2010	2011	2012	2013
-----	-----	-----	-----	-----	-----
SYSTEM WINTER PEAK DEMAND IN MW'S					
1 SYSTEM PEAK DEMAND	67.5	68.1	68.7	69.3	69.9

*****					
DESCRIPTION	2009	2010	2011	2012	2013
-----	-----	-----	-----	-----	-----
DEMAND SOURCES					
2 COMPANY OWNED HYDRO GENERATION	18.0	18.0	18.0	18.0	18.0
6 PURCHASED FROM PURPA QUALIFYING FACILITY	SEE NOTE 1				
7 PURCHASES FROM DUKE POWER COMPANY	49.5	50.1	50.7	51.3	51.9
8 TOTAL DEMAND SOURCES	67.5	68.1	68.7	69.3	69.9

NOTE 1: The PURPA qualifying facility is an unmanned station and instantaneous reading are not available. Since the Summer peak occurs during low river flow, this facility contributes little if any to the peak.

DOCKET NO. 93-430-E

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SUPPLY AND SALES FORECAST

MWH'S

\*\*\*\*\*

DESCRIPTION	1999	2000	2001	2002	2003
-----	----	----	----	----	----
SYSTEM REQUIREMENTS					
1 METERED SALES	371597	379029	386610	394342	402228
2 COMPANY USE	346	353	360	367	374
3 LOSSES	17329	17676	18030	18391	18759
4 REQUIRED SYSTEM INPUT	389272	397058	405000	413100	421361

\*\*\*\*\*

DESCRIPTION	1999	2000	2001	2002	2003
-----	----	----	----	----	----
SUPPLY SOURCES					
5 COMPANY OWNED HYDRO	91770	91770	91770	91770	91770
GENERATION					
6 PURCHASES FROM PURPA	4250	4250	4250	4250	4250
QUALIFYING FACILITY					
7 PURCHASES FROM DUKE	293252	301038	308980	317080	325341
POWER COMPANY					
8 TOTAL SUPPLY	389272	397058	405000	413100	421361

DOCKET NO. 93-430-E  
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SUPPLY AND SALES FORECAST

MWH'S

\*\*\*\*\*

DESCRIPTION	2004	2005	2006	2007	2008
-----	----	----	----	----	----
SYSTEM REQUIREMENTS					
1 METERED SALES	402228	410272	418477	426847	435383
2 COMPANY USE	381	389	397	405	413
3 LOSSES	19134	19517	19907	20305	20711
4 REQUIRED SYSTEM INPUT	421743	430178	438781	447557	456507

\*\*\*\*\*

DESCRIPTION	2004	2005	2006	2007	2008
-----	----	----	----	----	----
SUPPLY SOURCES					
5 COMPANY OWNED HYDRO GENERATION	91770	91770	91770	91770	91770
6 PURCHASES FROM PURPA QUALIFYING FACILITY	4250	4250	4250	4250	4250
7 PURCHASES FROM DUKE POWER COMPANY	325723	334158	342761	351537	360487
8 TOTAL SUPPLY	421743	430178	438781	447557	456507

DOCKET NO. 93-430-E  
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SUPPLY AND SALES FORECAST

MWH'S

\*\*\*\*\*

DESCRIPTION	2009	2010	2011	2012	2013
-----	----	----	----	----	----
SYSTEM REQUIREMENTS					
1 METERED SALES	444090	452972	462031	471272	480697
2 COMPANY USE	421	429	438	447	456
3 LOSSES	21125	21547	21978	22418	22866
4 REQUIRED SYSTEM INPUT	465636	474948	484447	494137	504019

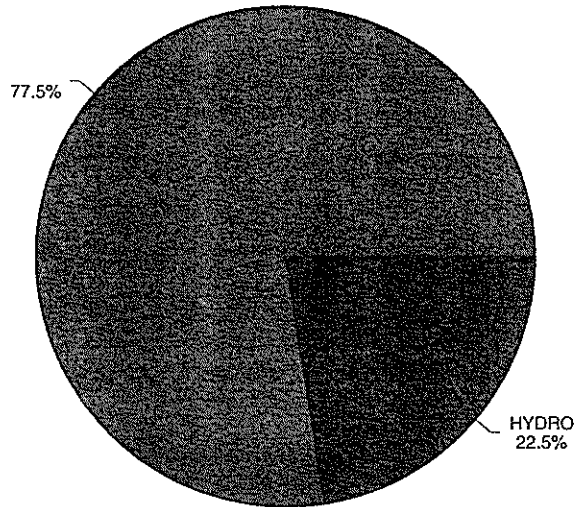
\*\*\*\*\*

DESCRIPTION	2009	2010	2011	2012	2013
-----	----	----	----	----	----
SUPPLY SOURCES					
5 COMPANY OWNED HYDRO GENERATION	91770	91770	91770	91770	91770
6 PURCHASES FROM PURPA QUALIFYING FACILITY	4250	4250	4250	4250	4250
7 PURCHASES FROM DUKE POWER COMPANY	369616	378928	388427	398117	407999
8 TOTAL SUPPLY	465636	474948	484447	494137	504019

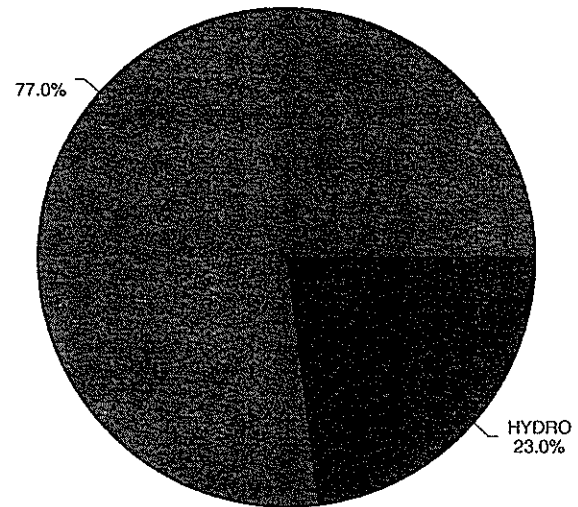
**LOCKHART POWER COMPANY --- LONG RANGE CAPITAL BUDGET (\$000'S)**  
**(Revised)**

ITEM #	DESCRIPTION OF ITEM	OWNER	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
P R O D U C T I O N	1	REWIND GENERATORS	JHS	350	350	250						
	2	REPLACE TRANSFORMER CABLES	JHS	35	35							
	3	REPLACE HEAD GATES-DAM	JOS	40	40	40	45					
	4	REPLACE CONTROL FOR DAM	LMM	15								
	5	SUPERVISION FOR DIGITEK	LMM	100								
	6	AUTOMATE TRIP GATES	JOS		80							
	7											
	8											
	9											
	10											
T R A N S	11	REPLACE 34KV BREAKER	HBP	85	85	85	100	100	100	100	100	100
	12	TRANSMISSION SWITCHES	HBP	25	25	25	25	25	25	25	25	25
	13	TRANSMISSION LINES	HBP		100	100	100	100				
	14	REPLACE INTRAC SYSTEM	LMM				220					
	15											
	16											
	17											
	18											
	19											
	20											
D I S T R	21	REPLACE TRANSFORMERS	HBP	120	60	60	60	60				
	22	REPLACE REGULATORS	HBP	20	20	20	20	20	20	20	20	20
	23	DISTRIBUTION BREAKERS	HBP	25	25	25	25	25	25	25	25	25
	24	DISTRIBUTION SWITCHES	HBP	15	15	15	20	20	25	25	25	25
	25	DISTRIBUTION LINES	HBP	50	25	25	25	50	50	50	50	50
	26	RADIO CONTROL DISTRIBUTION	HBP	25	25	25	25	25	25	25	25	25
	27	UPGRADE SUBSTATIONS	HBP	100	100	100	100	100	100	100		
	28											
	29											
	30											
G E N E R A L	31	COMPUTER UPGRADE	PWI						125			
	32	REPLACE VEHICLES	HBP	150	100	85	85	95	100	100	100	100
	33	FERC RELICENSING	PWI	100								
	34											
	35											
	36											
	37											
	38											
	39											
	40											
41	ROUTINE W.O.'S & J.O.'S	HBP	425	425	425	450	500	500	525	525	525	525
42	TOTAL CAPITAL EXPENDITURES		1680	1510	1280	1300	1120	1095	995	895	895	895
E X P E N S E	43	ELECTRIC SYSTEM STUDY	JHS				50					
	44	DEMOLISH SMOKE STACK	JOS									
	45	RE-SURFACE PARKING LOT	JOS		14							
	46											
	47											
	48											
49												
50	TOTAL SPECIAL EXPENSED COSTS		0	14	0	50	0	0	0	0	0	0
51	TOTAL CASH FLOW RELATED EXPENDITURES		1680	1524	1280	1350	1120	1095	995	895	895	895
52	PRE-TAX EARNINGS		2100	2100	2200	2200	2300	2300	2400	2400	2500	2500
53	AFTER TAX EARNINGS		1317	1317	1379	1379	1442	1442	1505	1505	1568	1568
54	TAX DEPRECIATION		1014	1154	1205	1246	1302	1352	1374	1372	1375	1391
55	NET CASH FLOW (DIVIDENDS)		651	947	1304	1275	1624	1699	1884	1982	2048	2064
56	DIVIDENDS AS % OF EARNINGS		49.4%	71.9%	94.6%	92.5%	112.6%	117.8%	125.2%	131.7%	130.6%	131.6%

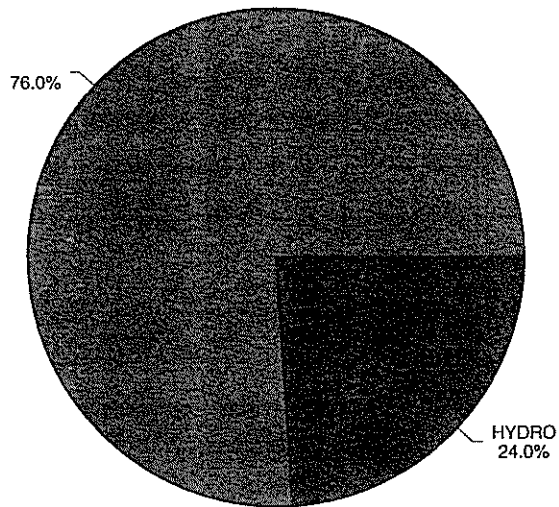
# LOCKHART POWER COMPANY ENERGY SOURCES IN PERCENT OF MWH'S INPUT



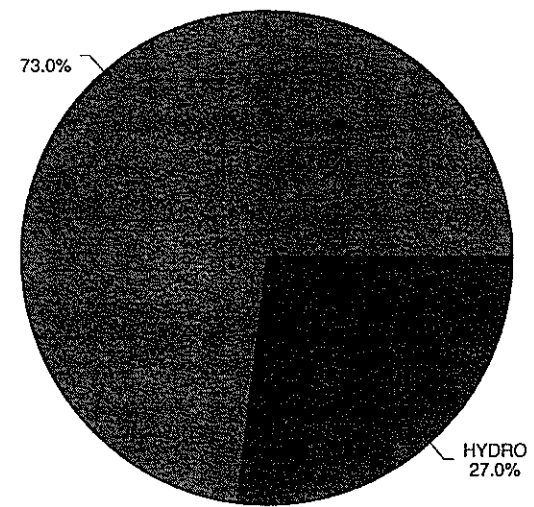
1998



1997



1996



1995

Note: Purchased Power obtained from Duke Power Company and Pacolet Hydro

LOCKHART POWER COMPANY

CASH FLOW BREAKEVEN TEST

YEAR		OPERATING RESULTS (MS)					CAPITOL EMPLOYED		CASH FLOW				
PRO- JECT	FIS- CAL	ADDED NET SALES	PRE-TAX PROFIT, AFTER EXPENSE, BEFORE DEPR.	DEPRECIATION ON		INCOME TAX	PROFIT AFTER TAX	GROSS CASH FLOW	'FIXED ASSETS	ALLOCATED TRANS- FERRED ASSETS	NET	CUMULATIVE NET	
				REQUEST ITEMS	TRANSFERS								
	1	2	3	4	5	6	7	8	9	10	11	12	13
—	—	—	—	—	—	34% 3 - (4 + 5)	3 - (4 + 5 + 8)	—	4 + 7	—	—	9 - 10	ALGEBRAIC SUM OF COL. 12
1													
2													
3													
4													
5													